Testing Laboratory
3787

RADIO TEST REPORT

FCC ID	:	W7Z-ZB220501
Equipment	:	Zigbee/Thread/BLE/NFC Hostless Module
Brand Name	:	California Eastern Laboratories
Model Name	:	CELK32SP0
Applicant	:	California Eastern Laboratories 5201 Great America Parkway, Suite 320, Santa Clara, CA 95054
Manufacturer	:	California Eastern Laboratories 5201 Great America Parkway, Suite 320, Santa Clara, CA 95954
Standard	:	47 CFR FCC Part 15.247

The product was received on Jul. 20, 2022, and testing was started from Jul. 25, 2022 and completed on Aug. 18, 2022. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this 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
FR270839AA	01	Initial issue of report	Sep. 06, 2022

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:

1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Measurement Uncertainty".

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen
Report Producer: Viola Huang

1 General Description

1.1 Information

1.1.1 RF General Information

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

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

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

1.1.2 Antenna Information

Ant.	Port	Brand Holder	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	California Eastern Laboratories	CELK32SP0	Meandered Inverted-F Antenna	N/A	2.21

Note 1: The EUT has one antenna.
Note 2: The above information was declared by manufacturer.
For Bluetooth Function (1TX/1RX):
Port 1 can be used as transmitting/receiving antenna.
For Zigbee Function (1TX/1RX):
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)	0.651	1.86	408.75u	3k
BT-LE(2Mbps)	0.357	4.47	225u	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	Tera Term (version 4.75)			
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.

1.2 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	TH02-CB	Jay Lo	24.5~24.8 / 56~61	Jul. 27, 2022~Aug. 10, 2022
Radiated below 1GHz	03CH05-CB	Simmon Cheng	24.4~25.5 / 55~58	Jul. 25, 2022 ~ Jul. 27, 2022
Radiated above 1GHz	03CH02-CB	Gordon Hung	23.8~24.9 / 55~58	Jul. 25, 2022 ~ Aug. 08, 2022
AC Conduction	CO02-CB	Peter Wu	23~24 / 58~59	Aug. 18, 2022

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%
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%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	10
2440MHz	10
2478MHz	10
2480MHz	8
BT-LE(2Mbps)	-
2402MHz	10
2440MHz	10
2478MHz	10
2480MHz	8

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 + Bluetooth function
2	EUT + Zigbee function
For operating mode 1 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	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 in X axis + Bluetooth function
2	EUT in Y axis + Bluetooth function
3	EUT in Z axis + Bluetooth function
4	EUT in X axis + Zigbee function
5	EUT in Y axis + Zigbee function
6	EUT in Z axis + Zigbee function
For operating mode 4 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
	The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found at X axis. So the measurement will follow this same test configuration.
1	EUT in X axis_Blutetooth function

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	NB	DELL	E6430	N/A
B	Fixture	Azurewave	3-24840-I1H	N/A
C	Earphone	SHYARO CHI	MIC-04	N/A
D	Mouse	Logitech	M-U0026	N/A

For Radiated (below 1GHz):

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Fixture	Azurewave	3-24840-I1H	N/A
B	hub	TOTOLING	U1003	N/A
C	Notebook	DELL	E4300	N/A
D	Fixture	Azurewave	3-24840-I1H	N/A
E	Device	Azurewave	AW-CU480/AW-CU484 /AW-CU485	N/A

For Radiated (above 1GHz):

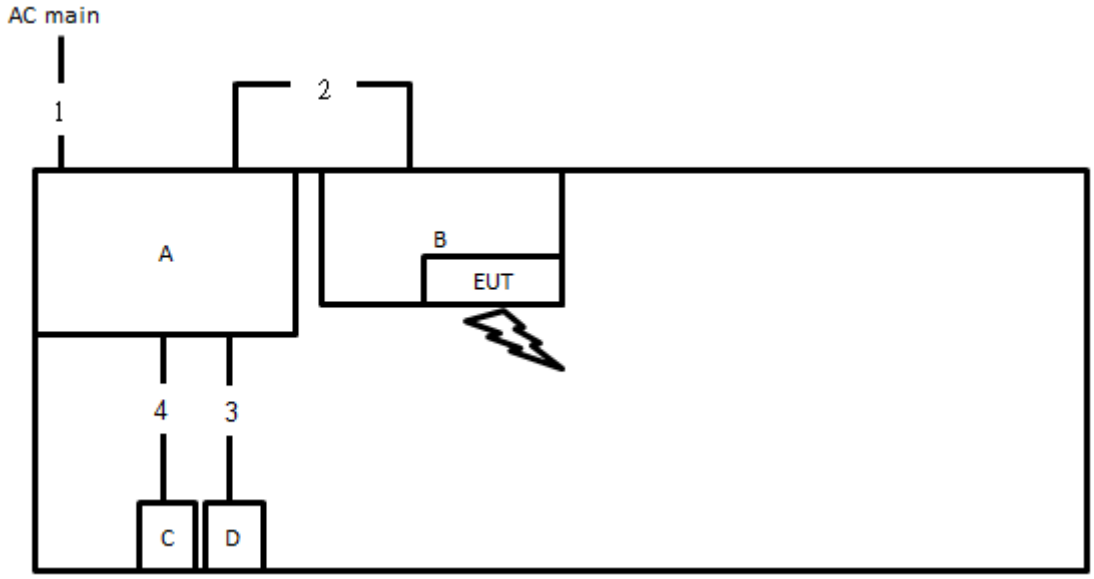
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Fixture	Azurewave	3-25410-I2	N/A
B	Notebook	DELL	E4300	N/A

For RF Conducted:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	Fixture	Azurewave	3-25410-I2	N/A

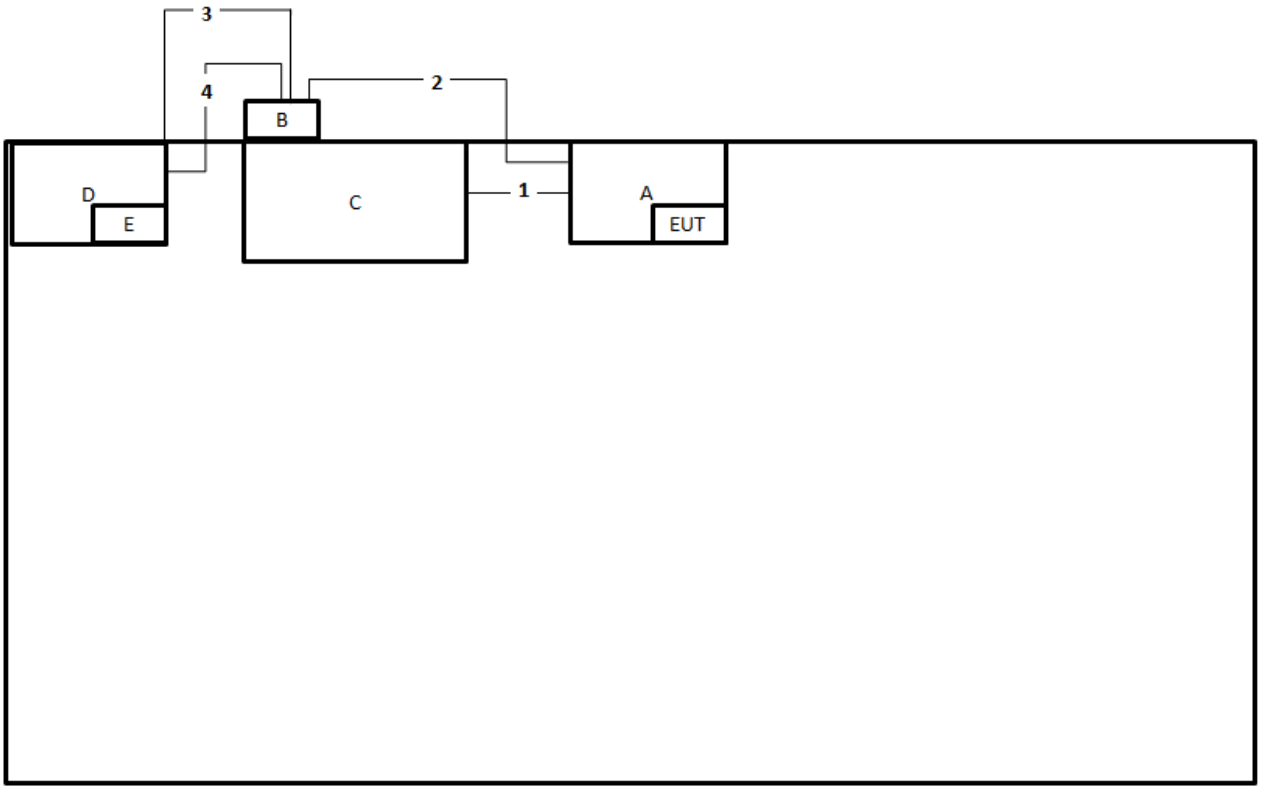
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



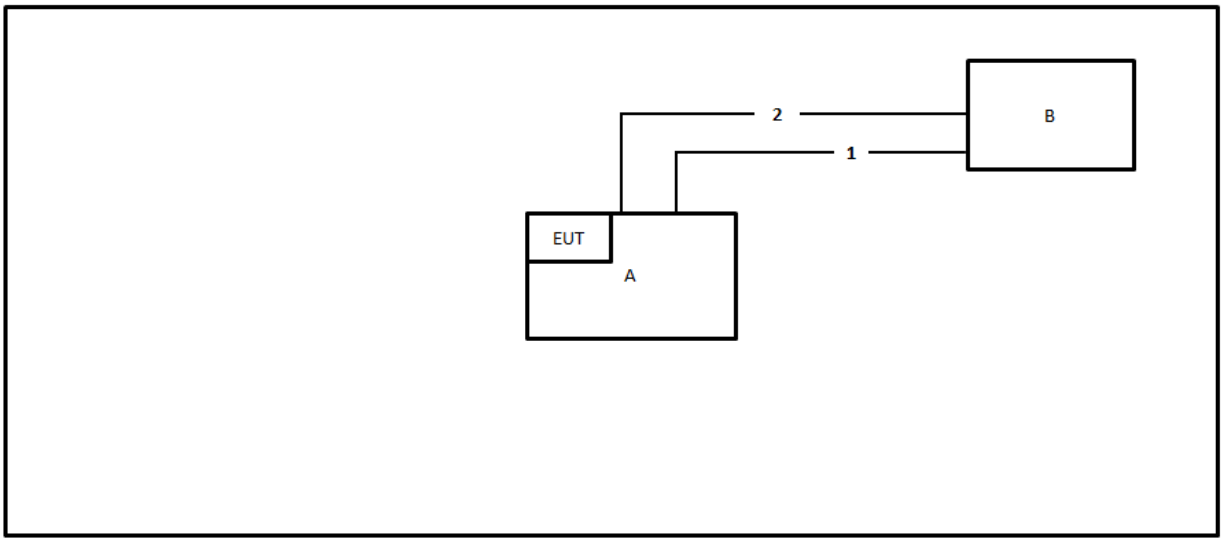
Item	Connection	Shielded	Length
1	Power cable	No	3.1m
2	USB cable	Yes	1m
3	USB Cable	Yes	1.5m
4	Audio Cable	No	1.5m

Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	USB cable	Yes	0.5m
2	USB cable	Yes	0.5m
3	USB cable	Yes	1m
4	USB cable	Yes	1m

Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	USB cable	Yes	0.5m
2	USB 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

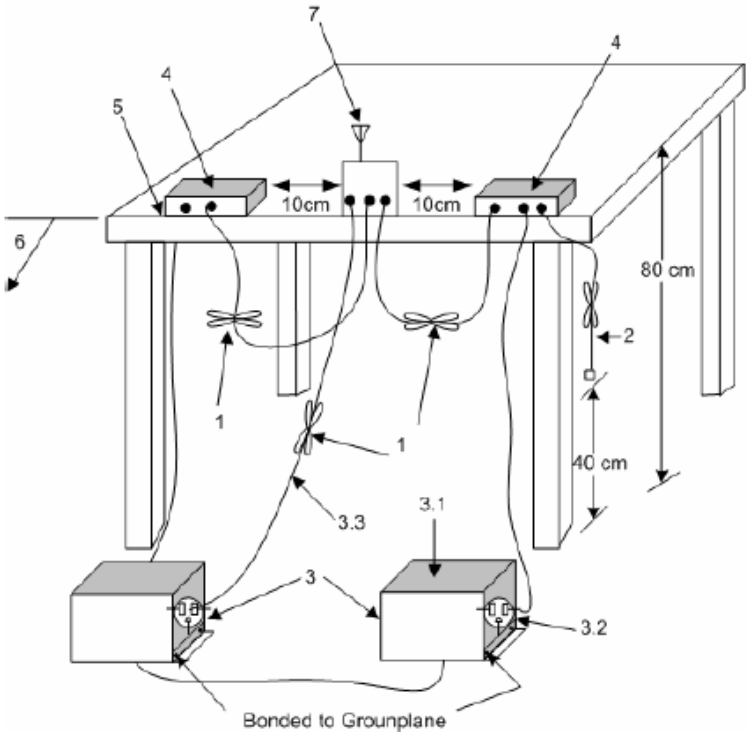
Refer a test equipment and calibration data table in this test report.

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.

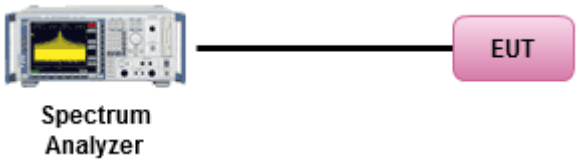
3.2.2 Measuring Instruments

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.		

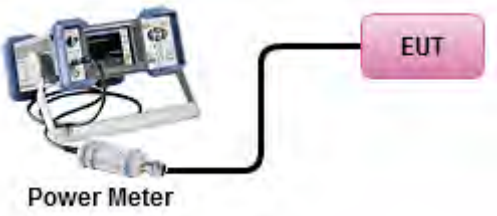
3.3.2 Measuring Instruments

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

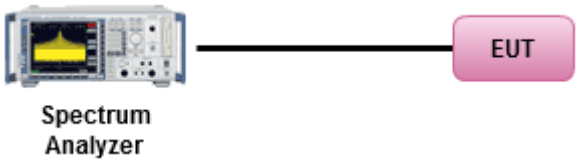
3.4.2 Measuring Instruments

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

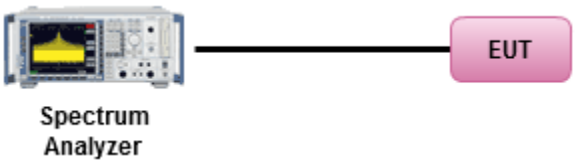
Refer a test equipment and calibration data table in this test report.

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.

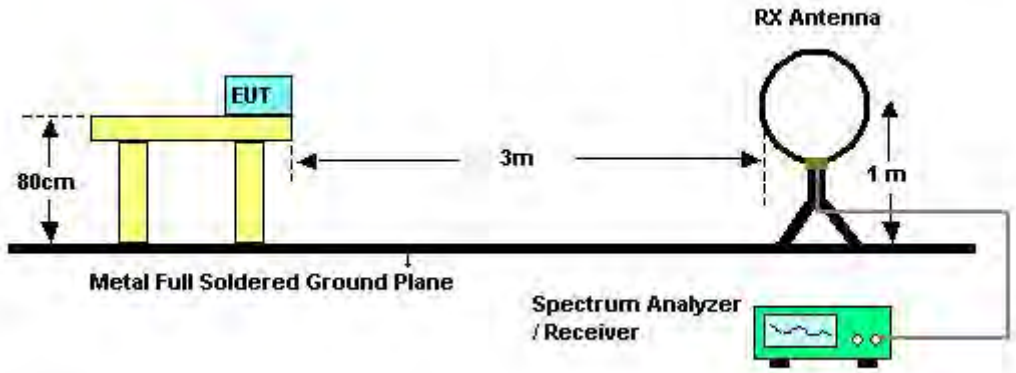
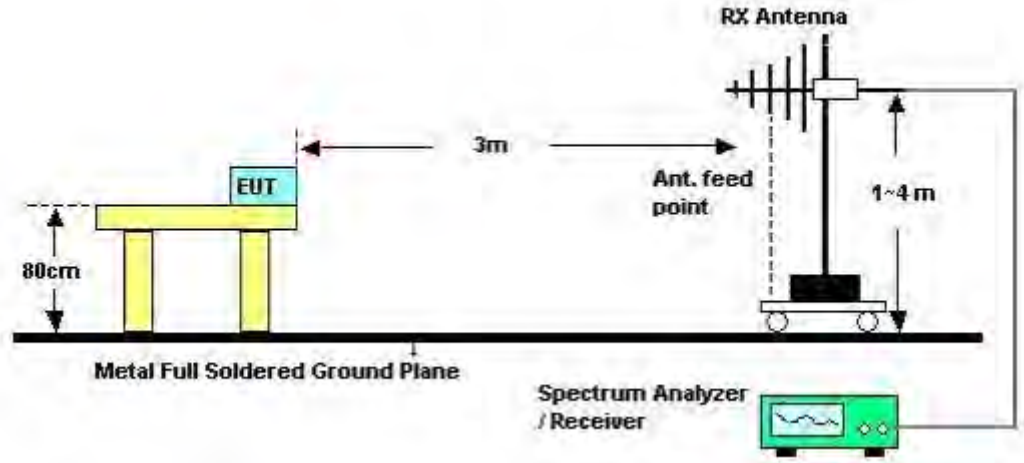
3.6.2 Measuring Instruments

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

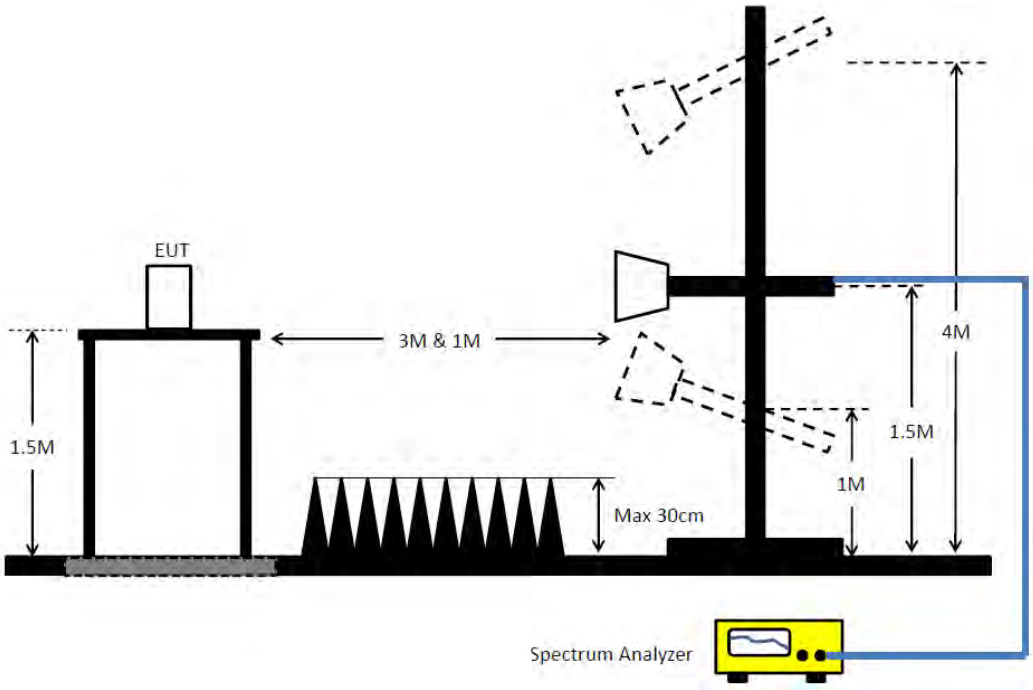
3.6.3 Test Procedures

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
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Jan. 07, 2022	Jan. 06, 2023	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Dec. 22, 2021	Dec. 21, 2022	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 06, 2022	May 05, 2023	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 19, 2021	Oct. 18, 2022	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Mar. 18, 2022	Mar. 17, 2023	Conduction (CO02-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 09, 2021	Aug. 08, 2022	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	May 14, 2022	May 13, 2023	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 25, 2022	Mar. 24, 2023	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 26, 2022	Apr. 25, 2023	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Mar. 14, 2022	Mar. 13, 2023	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 13, 2021	Oct. 12, 2022	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 26, 2022	Mar. 25, 2023	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 19, 2022	Apr. 18, 2023	Radiation (03CH02-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jul. 05, 2022	Jul. 04, 2023	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jul. 01, 2022	Jun. 30, 2023	Radiation (03CH02-CB)
Pre-Amplifier	-	-	TF-130N-R1	18GHz ~ 40GHz	Jun. 21, 2022	Jun. 20, 2023	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Oct. 25, 2021	Oct. 24, 2022	Radiation (03CH02-CB)

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	Apr. 26, 2022	Apr. 25, 2023	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Oct. 25, 2021	Oct. 24, 2022	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Oct. 25, 2021	Oct. 24, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
Switch	SPTCB	SP-SWI	SWI-02	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P1	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P2	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P3	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P4	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P5	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)

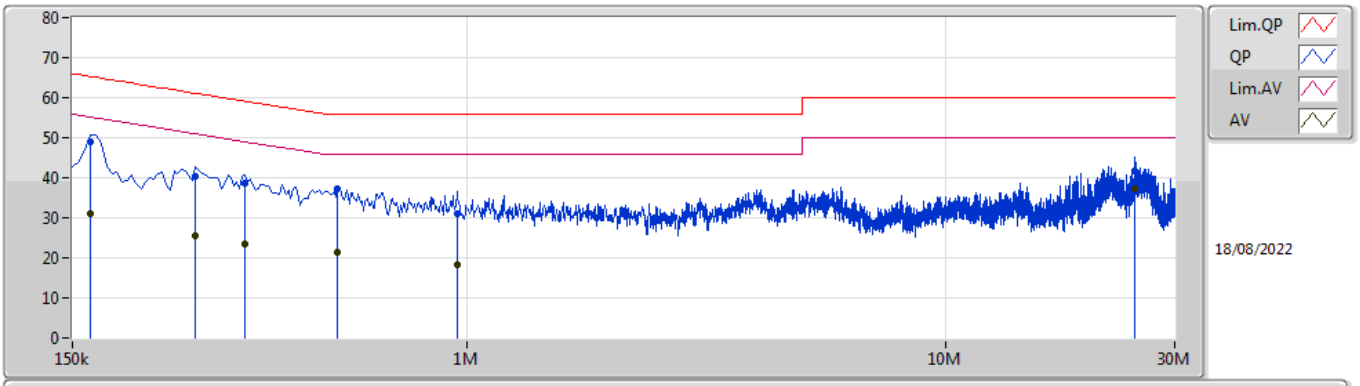
Note: Calibration Interval of instruments listed above is one year.

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

Summary

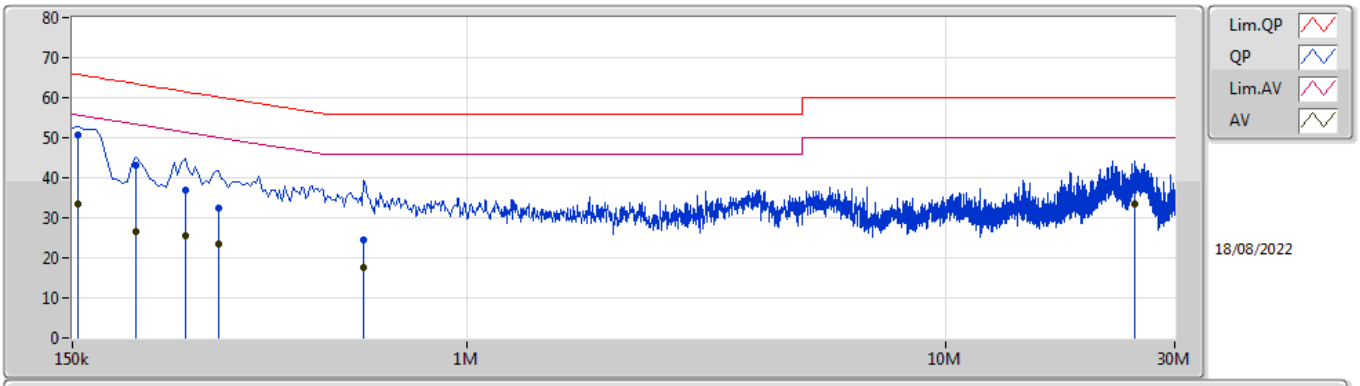
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	24.729M	37.29	50.00	-12.71	Line

Mode 1



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT			
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)			
QP	163.5k	49.07	65.27	-16.20	10.23	Line	-	38.84	0.12	0.02	10.09			
AV	163.5k	31.10	55.27	-24.17	10.23	Line	-	20.87	0.12	0.02	10.09			
QP	271.5k	40.33	61.07	-20.74	10.22	Line	-	30.11	0.12	0.02	10.08			
AV	271.5k	25.50	51.07	-25.57	10.22	Line	-	15.28	0.12	0.02	10.08			
QP	343.5k	38.49	59.12	-20.63	10.24	Line	-	28.25	0.12	0.02	10.10			
AV	343.5k	23.31	49.12	-25.81	10.24	Line	-	13.07	0.12	0.02	10.10			
QP	537k	37.26	56.00	-18.74	10.27	Line	-	26.99	0.13	0.02	10.12			
AV	537k	21.26	46.00	-24.74	10.27	Line	-	10.99	0.13	0.02	10.12			
QP	951k	30.88	56.00	-25.12	10.30	Line	-	20.58	0.14	0.02	10.14			
AV	951k	18.25	46.00	-27.75	10.30	Line	-	7.95	0.14	0.02	10.14			
QP	24.729M	41.76	60.00	-18.24	10.82	Line	-	30.94	0.40	0.20	10.22			
AV	24.729M	37.29	50.00	-12.71	10.82	Line	"Worst"	26.47	0.40	0.20	10.22			

Mode 1



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	154.5k	50.67	65.75	-15.08	10.28	Neutral	"Worst"	40.39	0.16	0.02	10.10
AV	154.5k	33.32	55.75	-22.43	10.28	Neutral	-	23.04	0.16	0.02	10.10
QP	204k	43.01	63.44	-20.43	10.24	Neutral	-	32.77	0.16	0.02	10.06
AV	204k	26.40	53.44	-27.04	10.24	Neutral	-	16.16	0.16	0.02	10.06
QP	258k	36.73	61.49	-24.76	10.26	Neutral	-	26.47	0.16	0.02	10.08
AV	258k	25.43	51.49	-26.06	10.26	Neutral	-	15.17	0.16	0.02	10.08
QP	303k	32.57	60.17	-27.60	10.27	Neutral	-	22.30	0.16	0.02	10.09
AV	303k	23.49	50.17	-26.68	10.27	Neutral	-	13.22	0.16	0.02	10.09
QP	609k	24.41	56.00	-31.59	10.30	Neutral	-	14.11	0.16	0.02	10.12
AV	609k	17.56	46.00	-28.44	10.30	Neutral	-	7.26	0.16	0.02	10.12
QP	24.734M	40.27	60.00	-19.73	10.77	Neutral	-	29.50	0.35	0.20	10.22
AV	24.734M	33.36	50.00	-16.64	10.77	Neutral	-	22.59	0.35	0.20	10.22

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)	666.25k	1.024M	1M02F1D	660k	1.022M
BT-LE(2Mbps)	1.13M	2.026M	2M03F1D	1.123M	2.022M

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

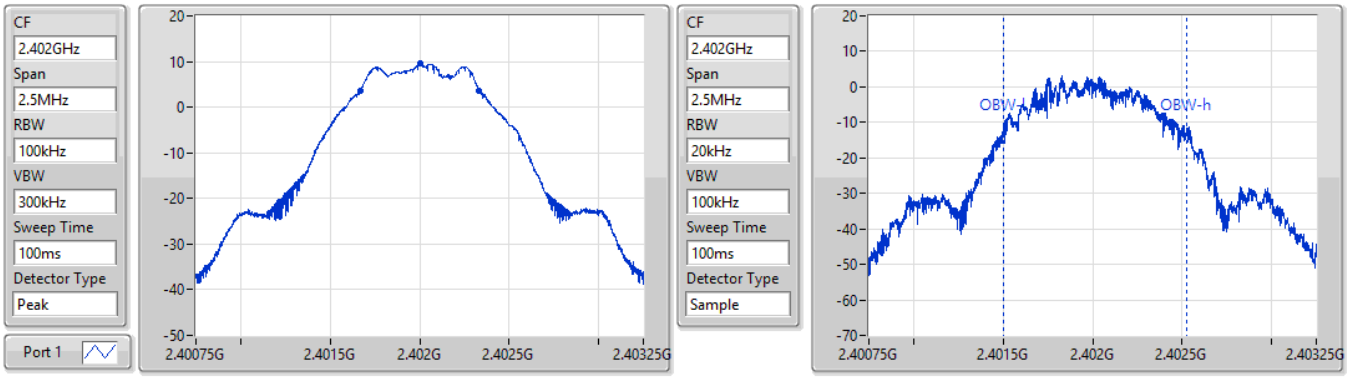
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	663.75k	1.022M
2440MHz	Pass	500k	660k	1.023M
2480MHz	Pass	500k	666.25k	1.024M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.123M	2.023M
2440MHz	Pass	500k	1.128M	2.022M
2480MHz	Pass	500k	1.13M	2.026M

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

BT-LE(1Mbps) **EBW-DTS**

2402MHz

27/07/2022

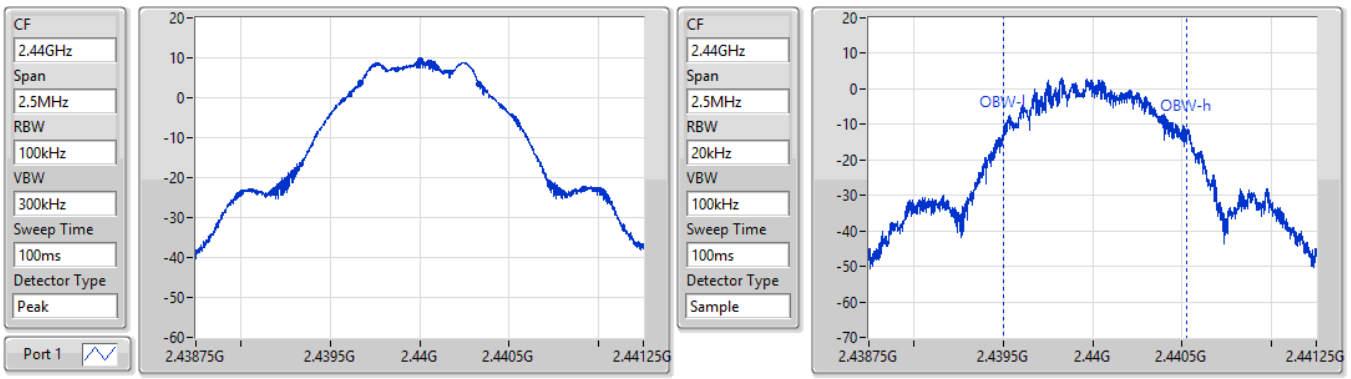


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
663.75k	2.40167G	2.402334G	1.022M	2.401505G	2.402527G	500k	1

BT-LE(1Mbps) **EBW-DTS**

2440MHz

27/07/2022

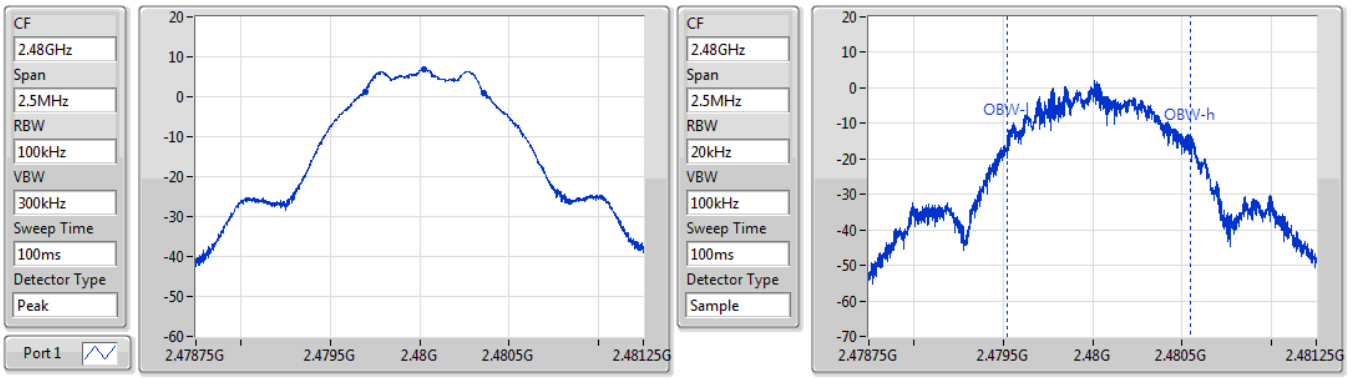


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
660k	2.439671G	2.440331G	1.023M	2.439503G	2.440526G	500k	1

BT-LE(1Mbps) EBW-DTS

2480MHz

09/08/2022

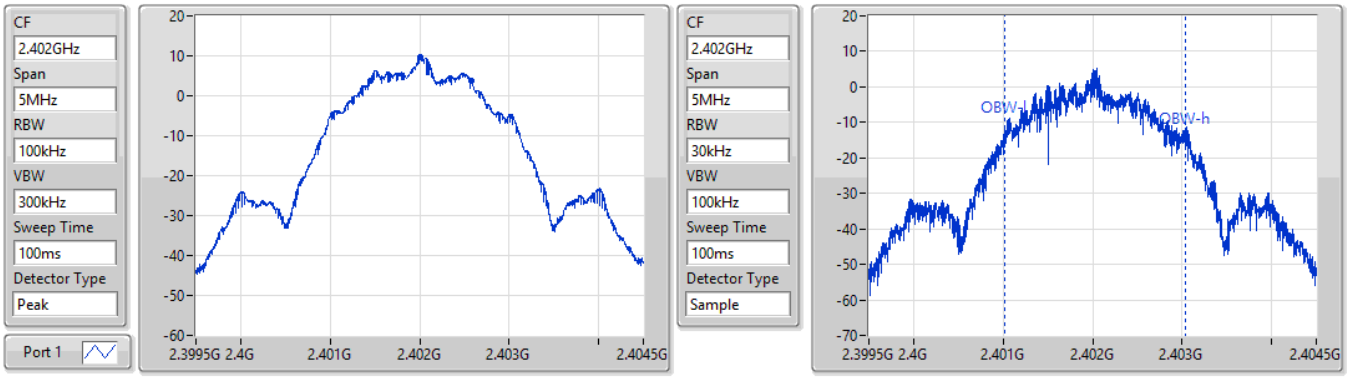


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
666.25k	2.479694G	2.48036G	1.024M	2.479524G	2.480548G	500k	1

BT-LE(2Mbps) EBW-DTS

2402MHz

27/07/2022

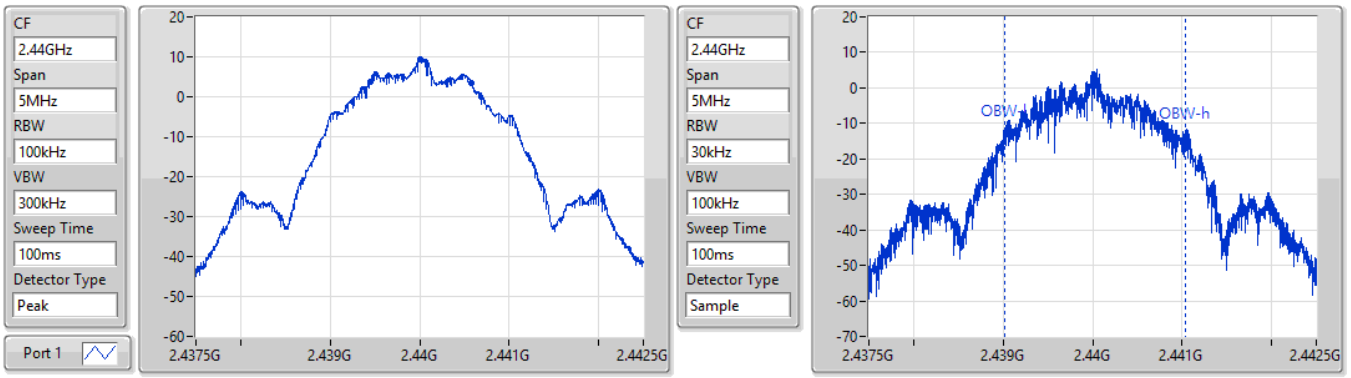


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.123M	2.40145G	2.402573G	2.023M	2.40102G	2.403044G	500k	1

BT-LE(2Mbps) EBW-DTS

2440MHz

27/07/2022

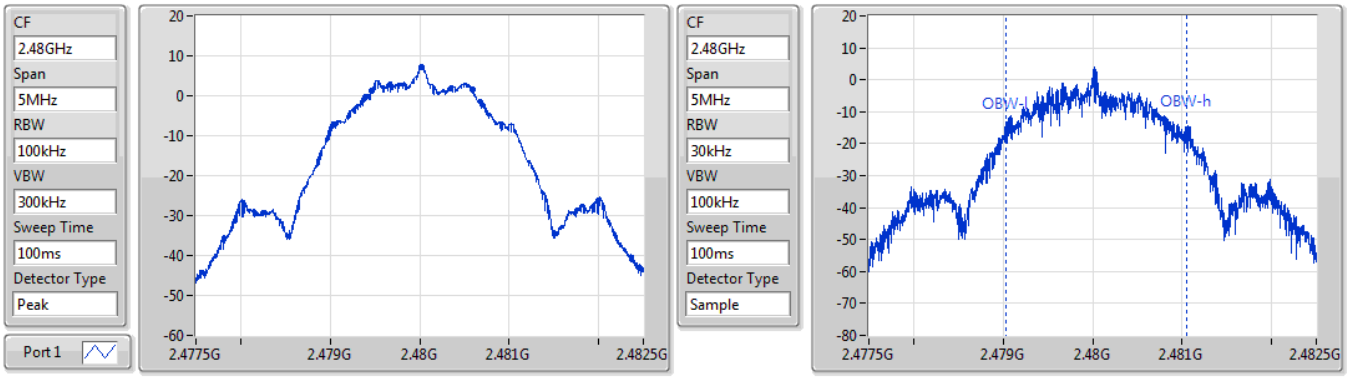


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.128M	2.439448G	2.440575G	2.022M	2.439018G	2.44104G	500k	1

BT-LE(2Mbps) EBW-DTS

2480MHz

09/08/2022



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.13M	2.479465G	2.480595G	2.026M	2.479031G	2.481057G	500k	1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	9.10	0.00813
BT-LE(2Mbps)	9.00	0.00794

Result

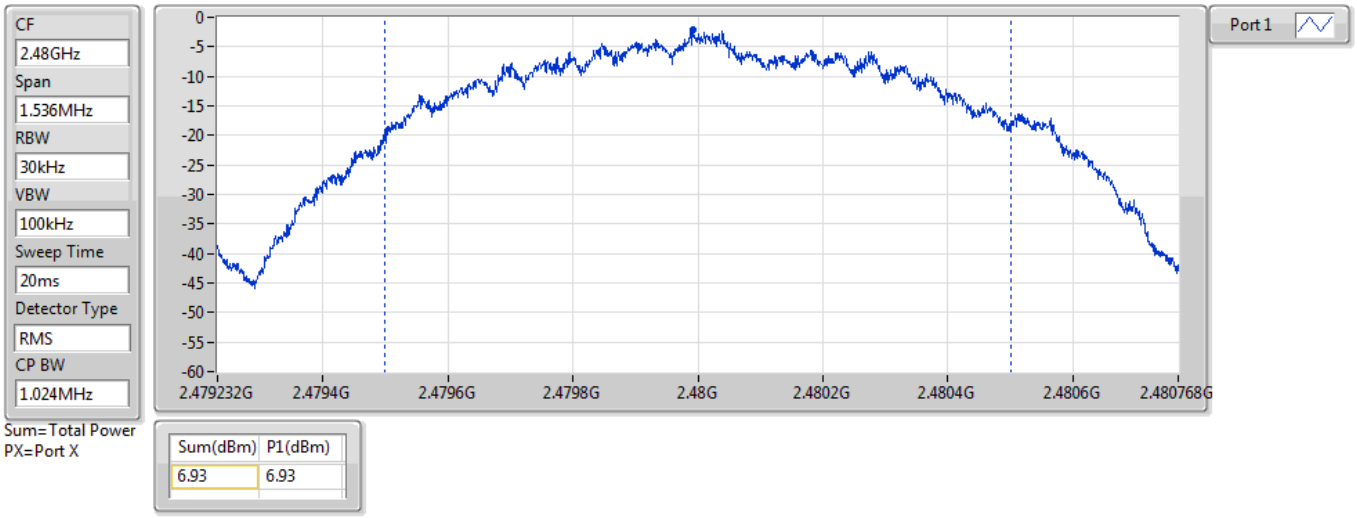
Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.21	9.10	30.00
2440MHz	Pass	2.21	9.08	30.00
2478MHz	Pass	2.21	8.98	30.00
2480MHz	Pass	2.21	6.93	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.21	9.00	30.00
2440MHz	Pass	2.21	8.91	30.00
2478MHz	Pass	2.21	8.82	30.00
2480MHz	Pass	2.21	7.08	30.00

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

BT-LE(1Mbps) **AV Power-DTS**

2480MHz_TnomVnom-DTS

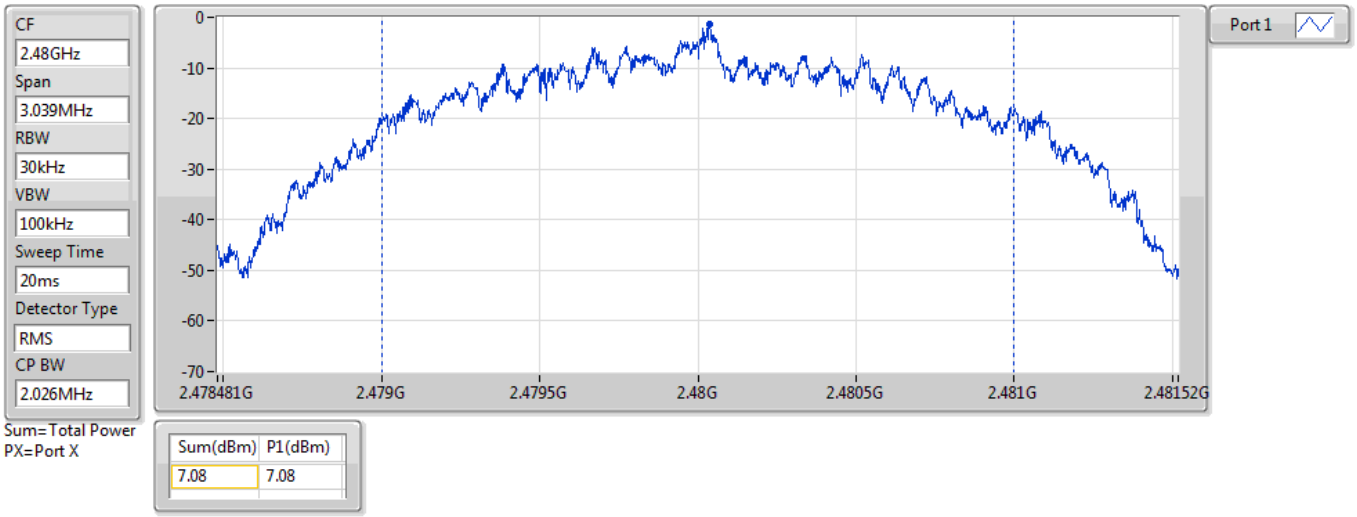
09/08/2022



BT-LE(2Mbps) **AV Power-DTS**

2480MHz_TnomVnom-DTS

09/08/2022



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-6.40
BT-LE(2Mbps)	-7.47

RBW = 3kHz;

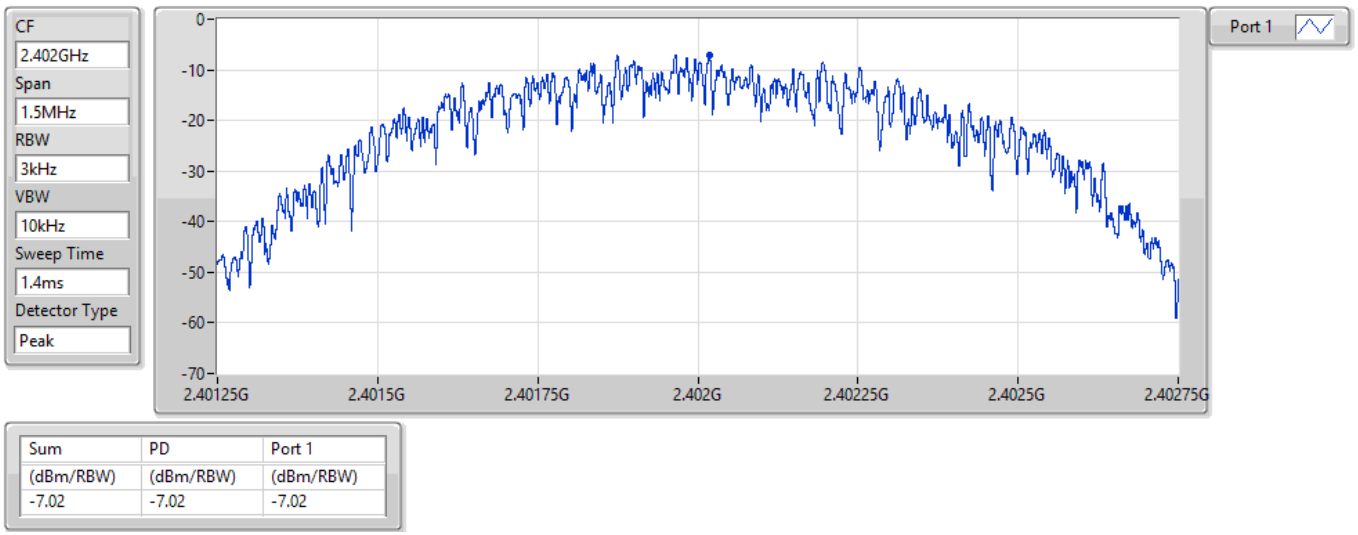
Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.21	-7.02	8.00
2440MHz	Pass	2.21	-6.40	8.00
2480MHz	Pass	2.21	-7.85	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.21	-7.47	8.00
2440MHz	Pass	2.21	-7.75	8.00
2480MHz	Pass	2.21	-10.03	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;

BT-LE(1Mbps) PSD

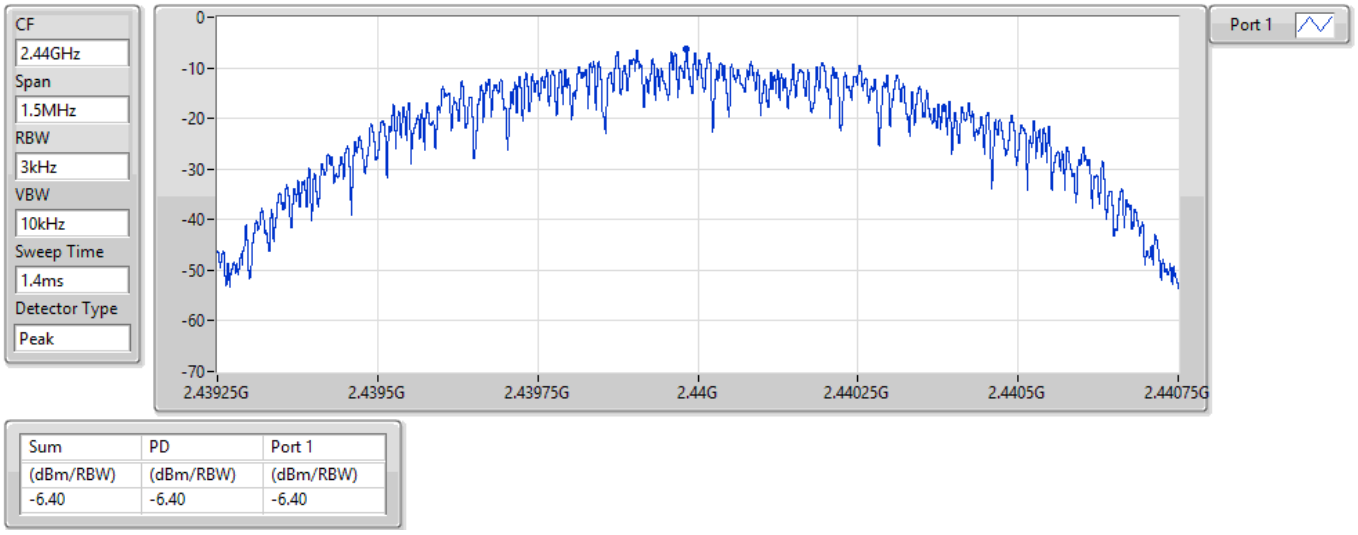
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.02	-7.02	-7.02

BT-LE(1Mbps) PSD

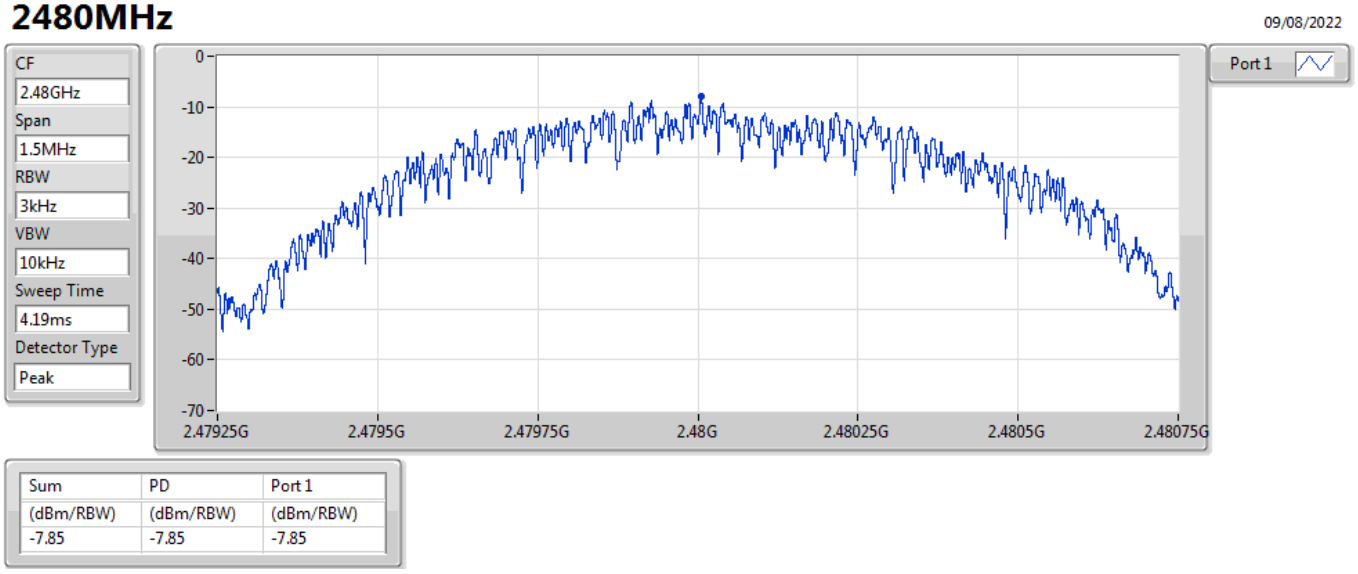
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.40	-6.40	-6.40

BT-LE(1Mbps) PSD

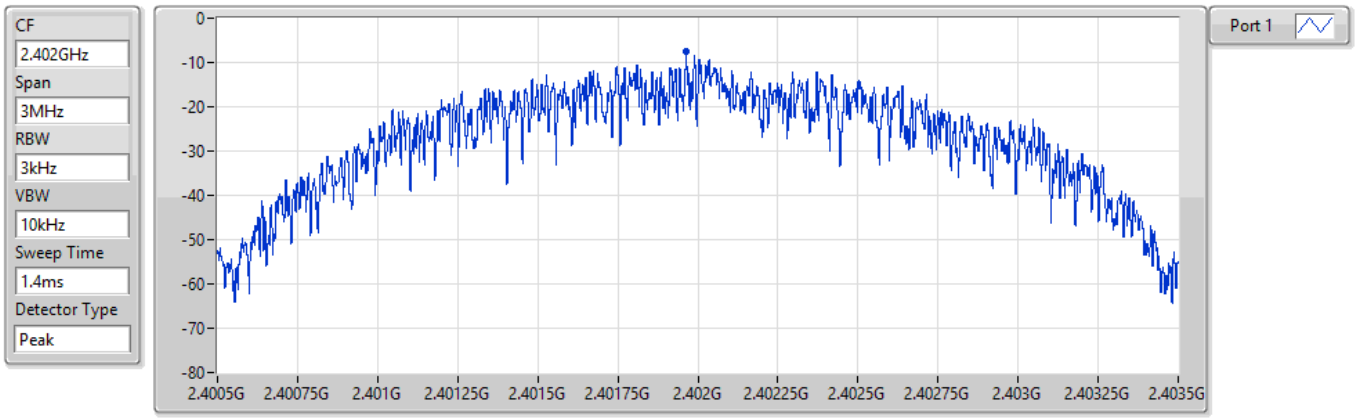
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.85	-7.85	-7.85

BT-LE(2Mbps) PSD

2402MHz

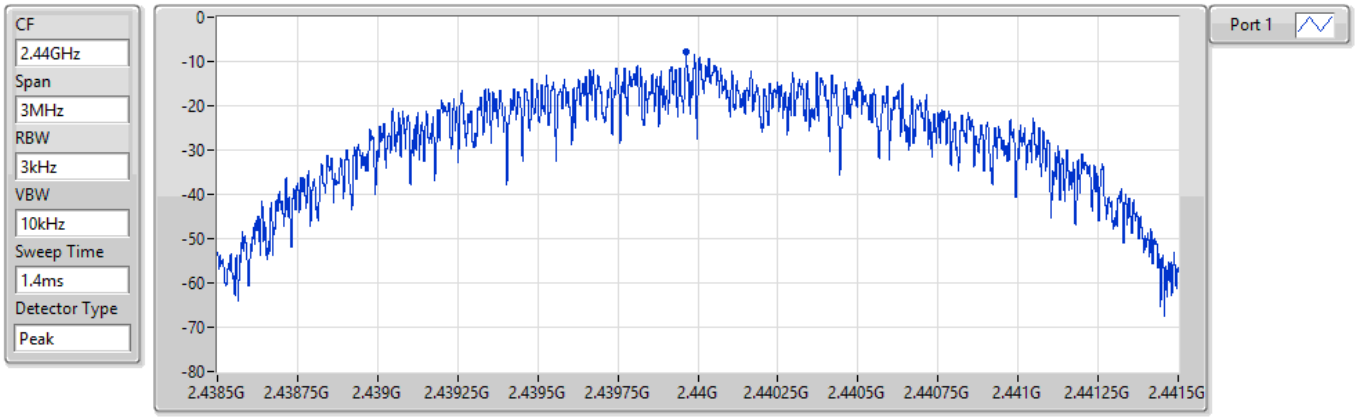


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.47	-7.47	-7.47

BT-LE(2Mbps) PSD

2440MHz

27/07/2022

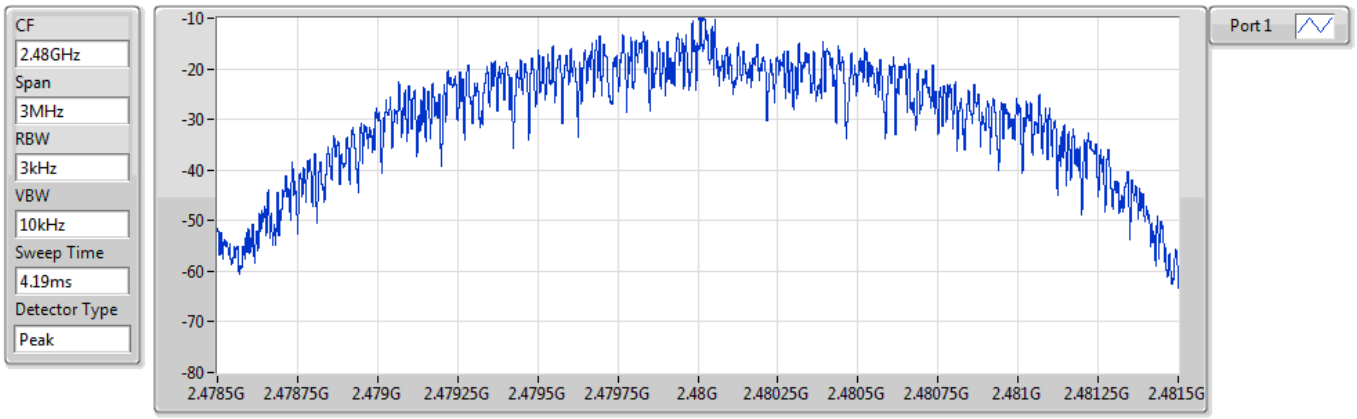


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.75	-7.75	-7.75

BT-LE(2Mbps) PSD

2480MHz

09/08/2022



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.03	-10.03	-10.03

Summary

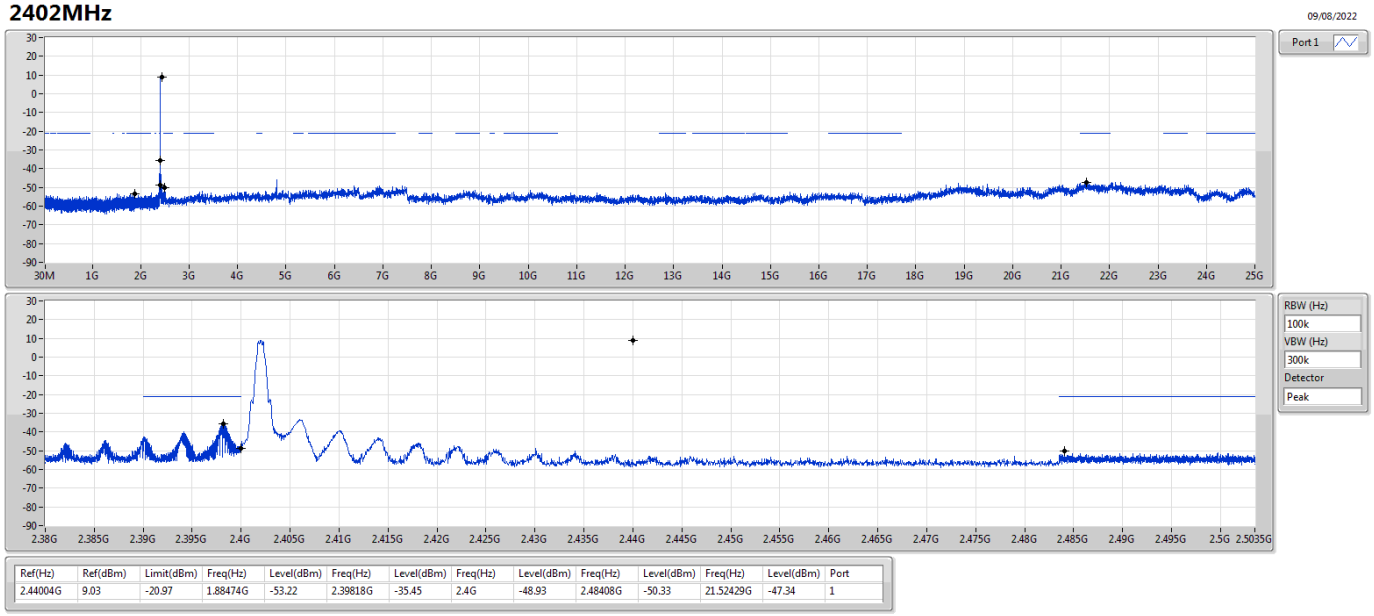
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44004G	9.03	-20.97	1.88474G	-53.22	2.39818G	-35.45	2.4G	-48.93	2.48408G	-50.33	21.52429G	-47.34	1
BT-LE(2Mbps)	Pass	2.44004G	9.21	-20.79	772.89M	-53.19	2.4G	-24.29	2.4G	-23.95	2.49093G	-50.89	21.58897G	-47.33	1

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.44004G	9.03	-20.97	1.88474G	-53.22	2.39818G	-35.45	2.4G	-48.93	2.48408G	-50.33	21.52429G	-47.34	1
2440MHz	Pass	2.44004G	9.03	-20.97	1.95847G	-53.42	2.39602G	-49.52	2.4G	-52.45	2.48394G	-50.33	21.51867G	-46.63	1
2480MHz	Pass	2.44004G	9.03	-20.97	35.88M	-53.79	2.39337G	-51.21	2.4835G	-39.52	2.48397G	-35.86	21.58053G	-47.47	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.44004G	9.21	-20.79	772.89M	-53.19	2.4G	-24.29	2.4G	-23.95	2.49093G	-50.89	21.58897G	-47.33	1
2440MHz	Pass	2.44004G	9.21	-20.79	673.02M	-53.65	2.3921G	-49.83	2.4G	-51.81	2.49167G	-50.39	21.51585G	-46.17	1
2480MHz	Pass	2.44004G	9.21	-20.79	53.79M	-53.25	2.39799G	-50.42	2.4835G	-39.46	2.48379G	-35.52	7.13492G	-49.94	1

BT-LE(1Mbps) **CSENdB-DTS**

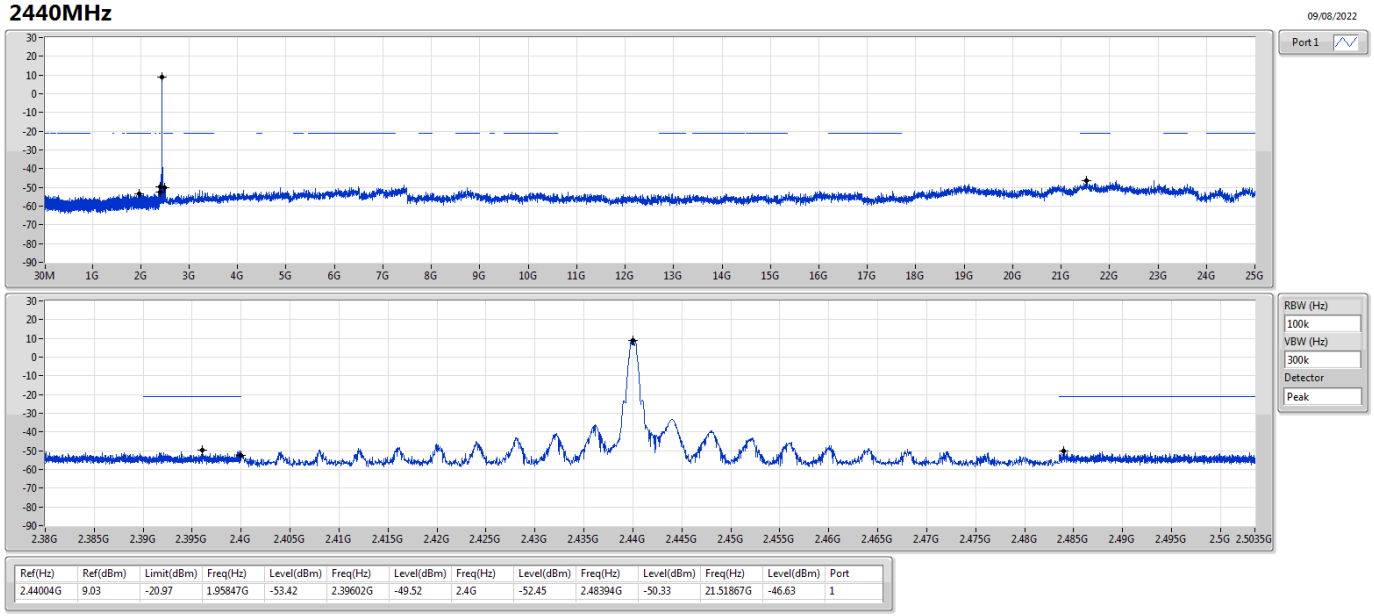
2402MHz



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
2.44004G	9.03	-20.97	1.88474G	-53.22	2.39818G	-35.45	2.4G	-48.93	2.48408G	-50.33	21.52429G	-47.34	1

BT-LE(1Mbps) **CSENdB-DTS**

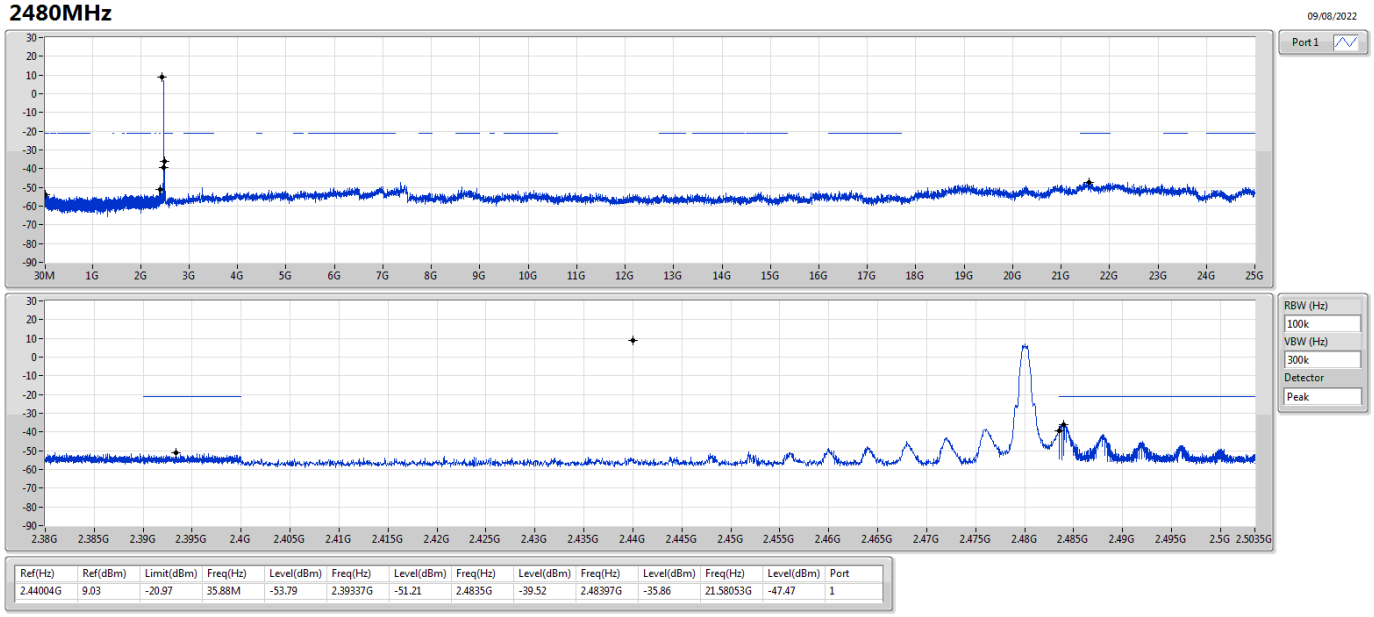
2440MHz



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
2.44004G	9.03	-20.97	1.95847G	-53.42	2.39602G	-49.52	2.4G	-52.45	2.48394G	-50.33	21.51867G	-46.63	1

BT-LE(1Mbps) **CSENdB-DTS**

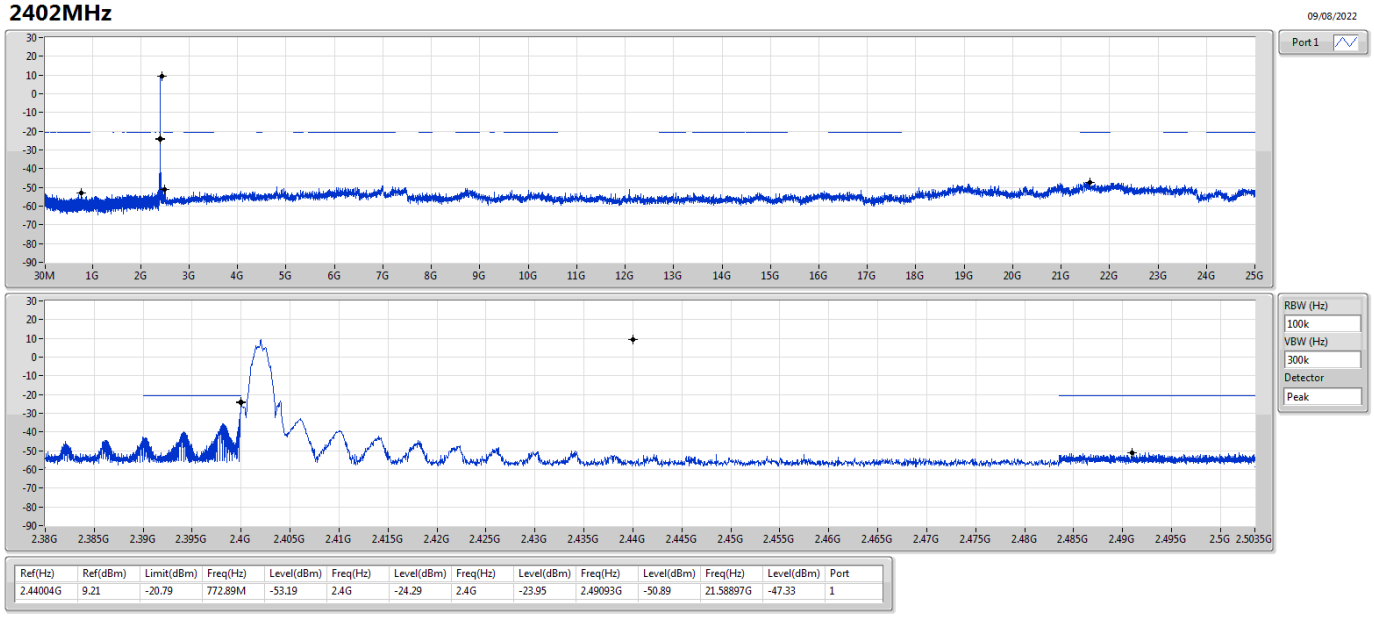
2480MHz



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
2.44004G	9.03	-20.97	35.88M	-53.79	2.39337G	-51.21	2.4835G	-39.52	2.48397G	-35.86	21.58053G	-47.47	1

BT-LE(2Mbps) **CSENdB-DTS**

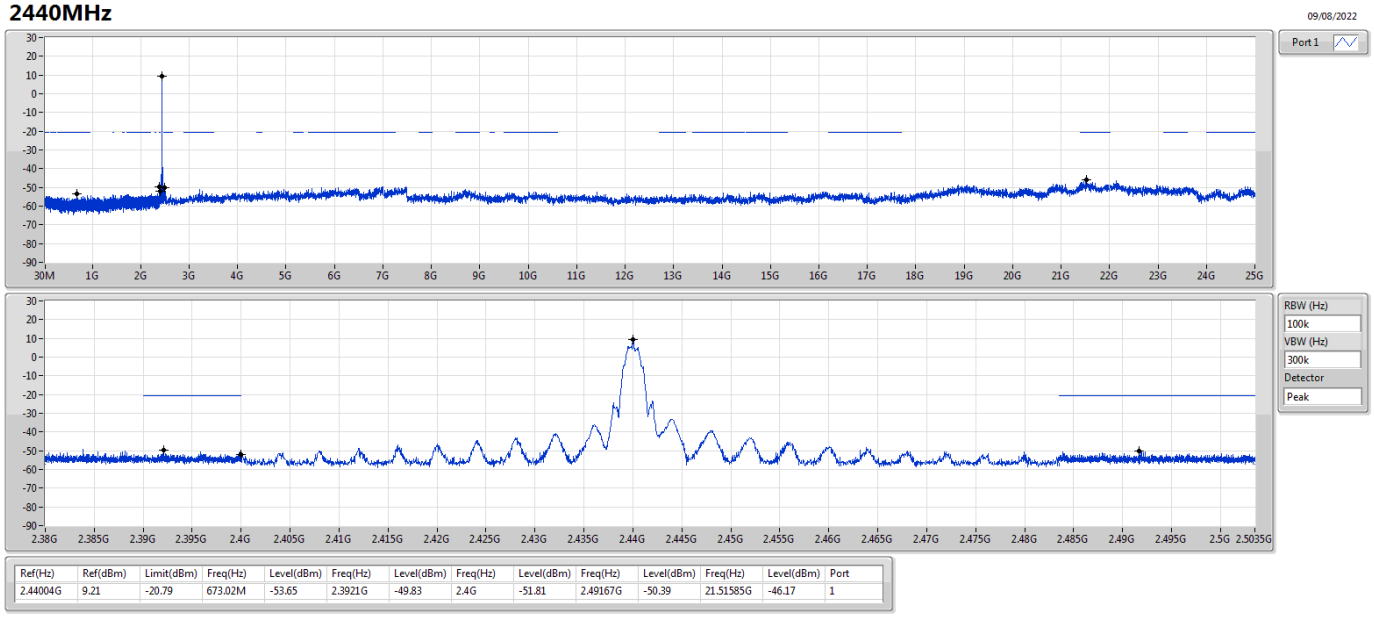
2402MHz



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
2.44004G	9.21	-20.79	772.89M	-53.19	2.4G	-24.29	2.4G	-23.95	2.49093G	-50.89	21.58897G	-47.33	1

BT-LE(2Mbps) **CSENdB-DTS**

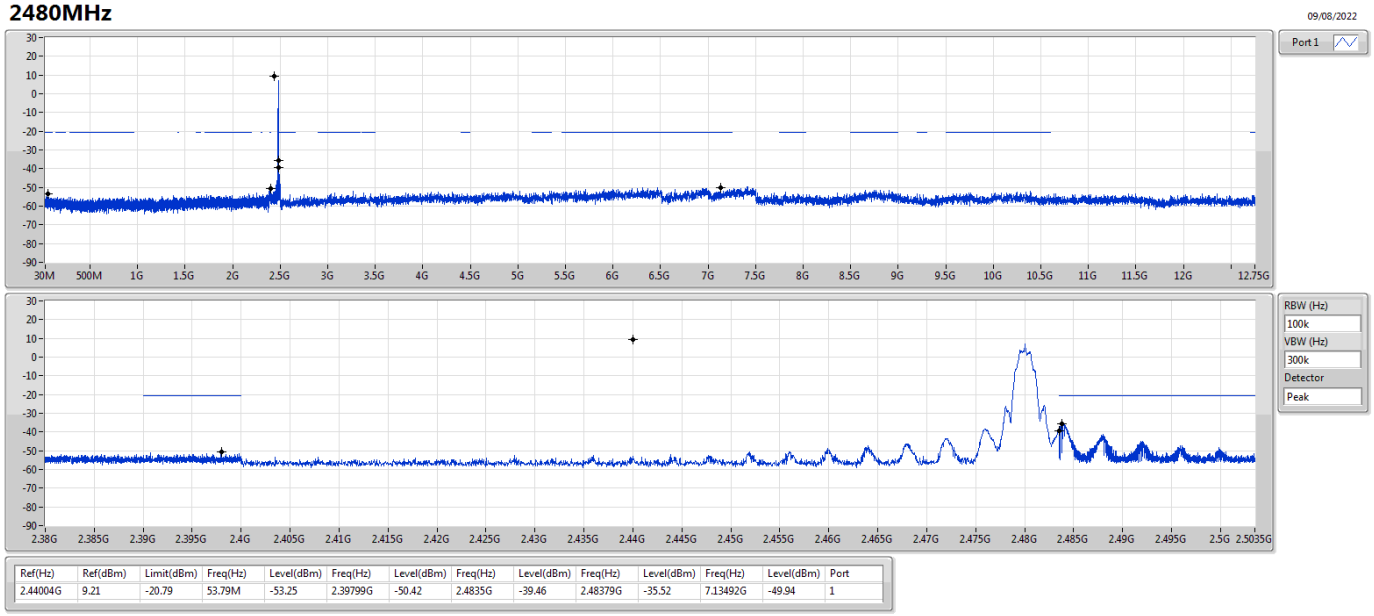
2440MHz



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
2.44004G	9.21	-20.79	673.02M	-53.65	2.3921G	-49.83	2.4G	-51.81	2.49167G	-50.39	21.51585G	-46.17	1

BT-LE(2Mbps) **CSENdB-DTS**

2480MHz

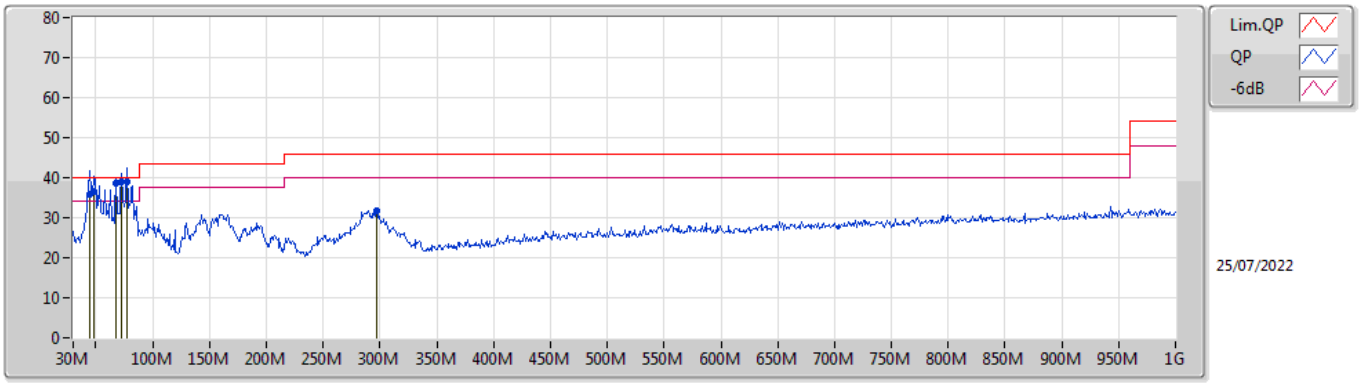


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44004G	9.21	-20.79	53.79M	-53.25	2.39799G	-50.42	2.4835G	-39.46	2.48379G	-35.52	7.13492G	-49.94	1

Summary

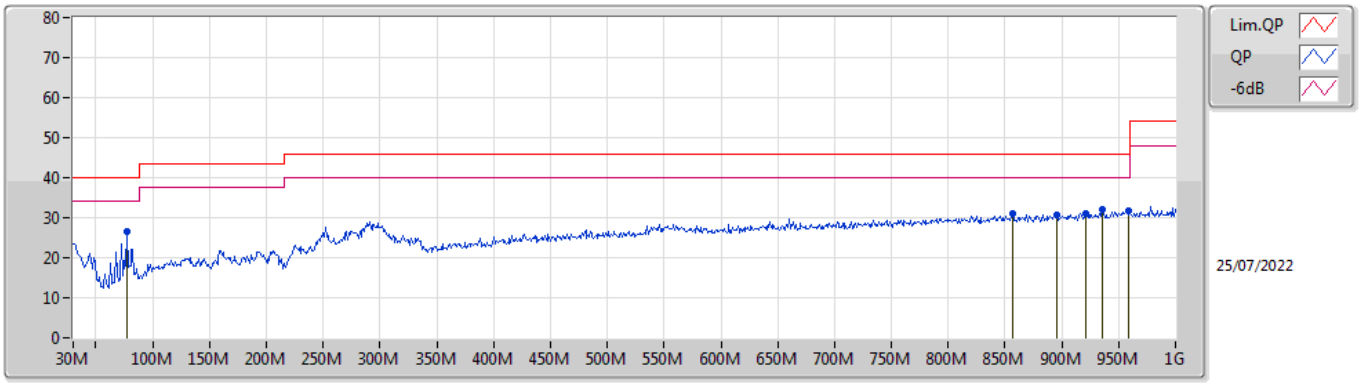
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 4	Pass	QP	77.53M	38.96	40.00	-1.04	Vertical

Mode 4



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	44.55M	35.99	40.00	-4.01	-14.61	3	Vertical	4	1.25	-	50.60	16.22	0.99	31.82
QP	48.43M	36.41	40.00	-3.59	-16.19	3	Vertical	0	1.50	-	52.60	14.59	1.07	31.85
QP	67.83M	38.50	40.00	-1.50	-18.50	3	Vertical	201	2.00	-	57.00	12.19	1.26	31.95
QP	72.68M	38.90	40.00	-1.10	-18.50	3	Vertical	192	2.00	-	57.40	12.17	1.30	31.97
QP	77.53M	38.96	40.00	-1.04	-18.14	3	Vertical	201	2.00	"Worst"	57.10	12.49	1.35	31.98
PK	296.75M	31.84	46.00	-14.16	-10.39	3	Vertical	180	1.25	-	42.23	19.02	2.69	32.10

Mode 4



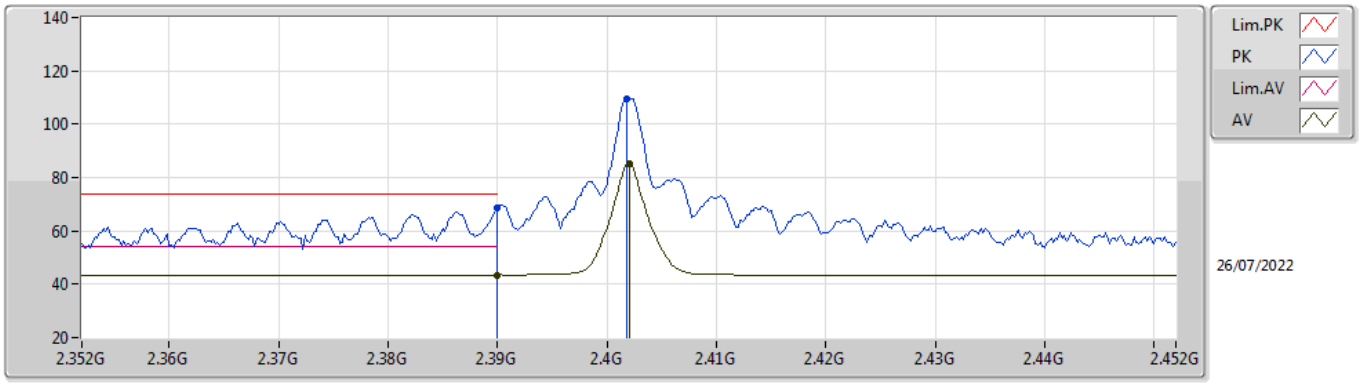
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV/m)	(dB/m)	(dB)	(dB)
PK	77.53M	26.55	40.00	-13.45	-18.14	3	Horizontal	201	3.00	"Worst"	44.69	12.49	1.35	31.98
PK	856.44M	31.16	46.00	-14.84	-1.43	3	Horizontal	359	2.00	-	32.59	25.93	5.13	32.49
PK	895.24M	30.82	46.00	-15.18	-1.02	3	Horizontal	62	1.50	-	31.84	26.19	5.28	32.49
PK	921.43M	31.12	46.00	-14.88	-0.90	3	Horizontal	236	2.00	-	32.02	26.16	5.43	32.49
PK	935.98M	31.90	46.00	-14.10	-0.63	3	Horizontal	357	3.00	-	32.53	26.33	5.52	32.48
PK	959.26M	31.65	46.00	-14.35	-0.23	3	Horizontal	62	1.50	-	31.88	26.62	5.60	32.45

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	2.4842G	73.95	74.00	-0.05	3	Horizontal	30	2.95	-

BT-LE(1Mbps)

2402MHz_TX

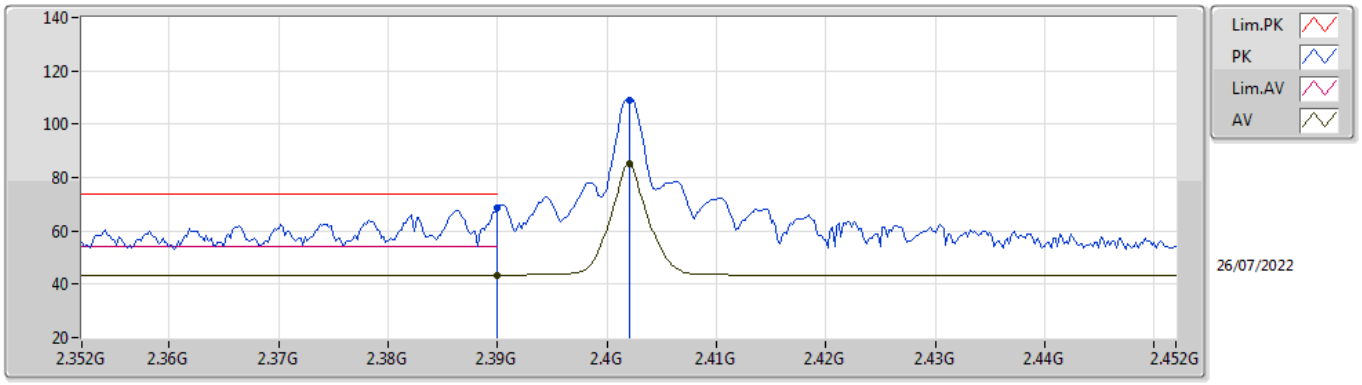


EUT X_1TX
Setting 15
02-F-G-4

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	2.39G	68.64	74.00	-5.36	37.47	3	Vertical	72	1.39	-	28.38	2.79	-
AV	2.39G	43.49	54.00	-10.51	12.32	3	Vertical	72	1.39	-	28.38	2.79	-
PK	2.4018G	109.41	Inf	-Inf	78.21	3	Vertical	72	1.39	-	28.40	2.80	-
AV	2.402G	85.26	Inf	-Inf	54.06	3	Vertical	72	1.39	-	28.40	2.80	-

BT-LE(1Mbps)

2402MHz_TX

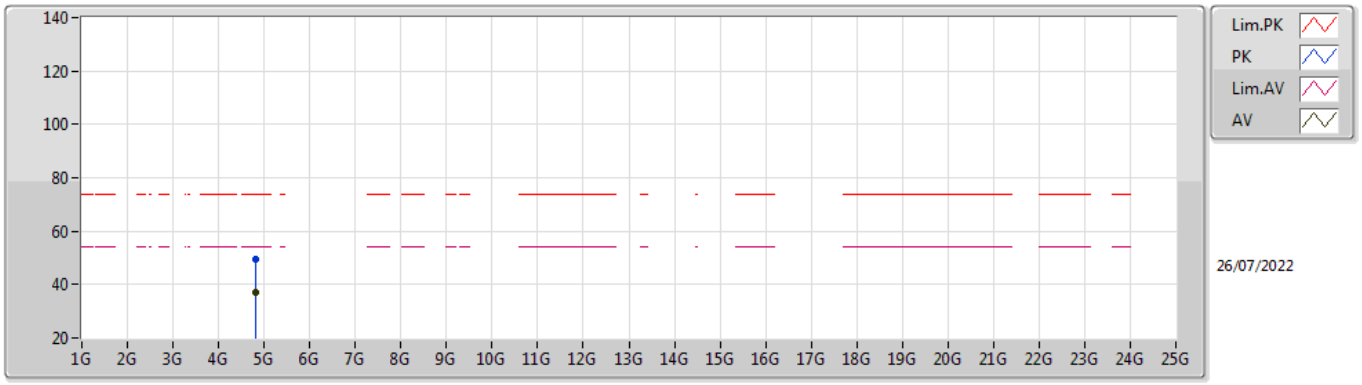


EUT X_1TX
Setting 15
02-F-G-4

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	2.39G	68.81	74.00	-5.19	37.64	3	Horizontal	48	2.14	-	28.38	2.79	-
AV	2.39G	43.50	54.00	-10.50	12.33	3	Horizontal	48	2.14	-	28.38	2.79	-
PK	2.402G	109.06	Inf	-Inf	77.86	3	Horizontal	48	2.14	-	28.40	2.80	-
AV	2.402G	85.02	Inf	-Inf	53.82	3	Horizontal	48	2.14	-	28.40	2.80	-

BT-LE(1Mbps)

2402MHz_TX

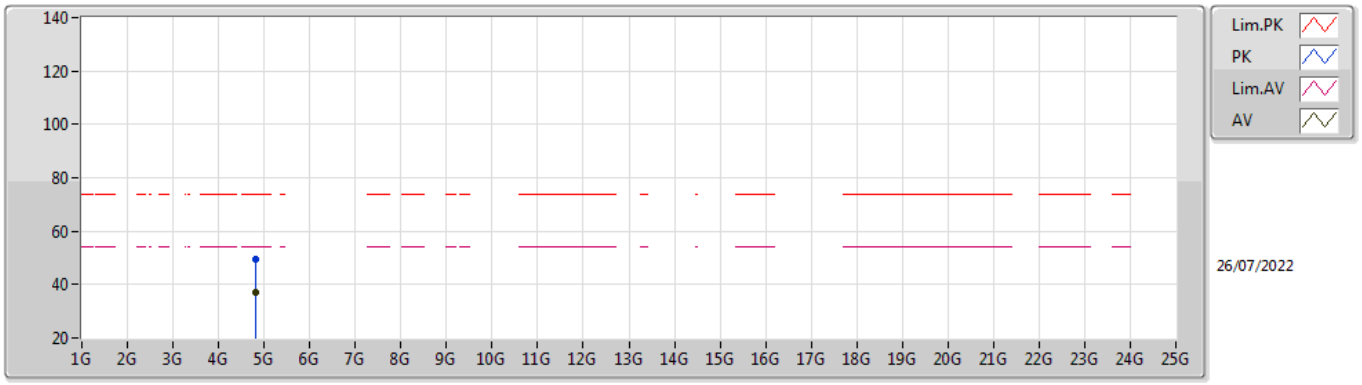


EUT X_1TX
Setting 15
02-F-G-4

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	4.80454G	49.44	74.00	-24.56	42.32	3	Vertical	78	1.50	-	32.83	5.10	30.81
AV	4.80394G	37.24	54.00	-16.76	30.13	3	Vertical	78	1.50	-	32.82	5.10	30.81

BT-LE(1Mbps)

2402MHz_TX

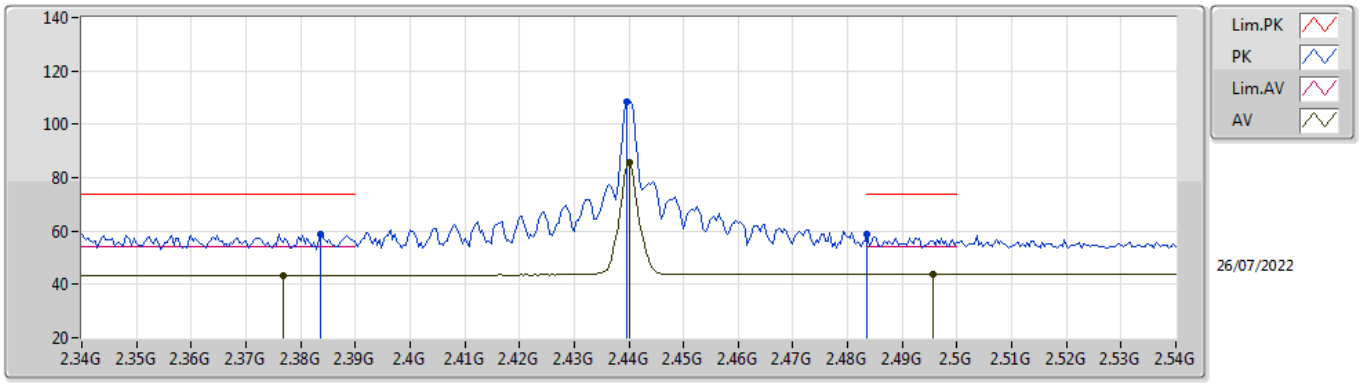


EUT X_1TX
Setting 15
02-F-G-4

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	4.80464G	49.74	74.00	-24.26	42.62	3	Horizontal	62	2.79	-	32.83	5.10	30.81
AV	4.80396G	37.26	54.00	-16.74	30.15	3	Horizontal	62	2.79	-	32.82	5.10	30.81

BT-LE(1Mbps)

2440MHz_TX

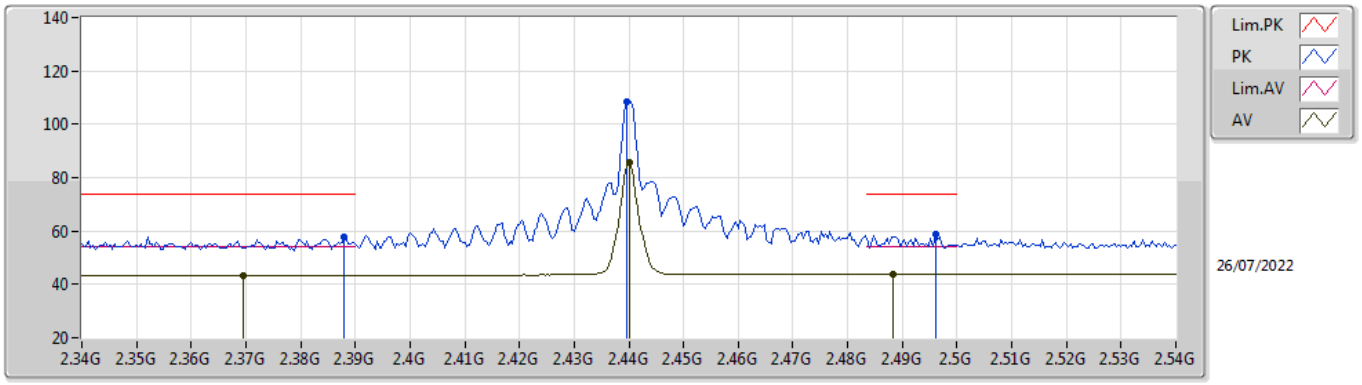


EUT X_1TX
Setting 15
02-F-G-4

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	2.3836G	58.90	74.00	-15.10	27.74	3	Vertical	71	1.82	-	28.37	2.79	-
AV	2.3768G	43.42	54.00	-10.58	12.28	3	Vertical	71	1.82	-	28.35	2.79	-
PK	2.4396G	108.42	Inf	-Inf	77.18	3	Vertical	71	1.82	-	28.40	2.84	-
AV	2.44G	85.65	Inf	-Inf	54.41	3	Vertical	71	1.82	-	28.40	2.84	-
PK	2.4835G	58.68	74.00	-15.32	27.27	3	Vertical	71	1.82	-	28.53	2.88	-
AV	2.4956G	43.76	54.00	-10.24	12.28	3	Vertical	71	1.82	-	28.58	2.90	-

BT-LE(1Mbps)

2440MHz_TX

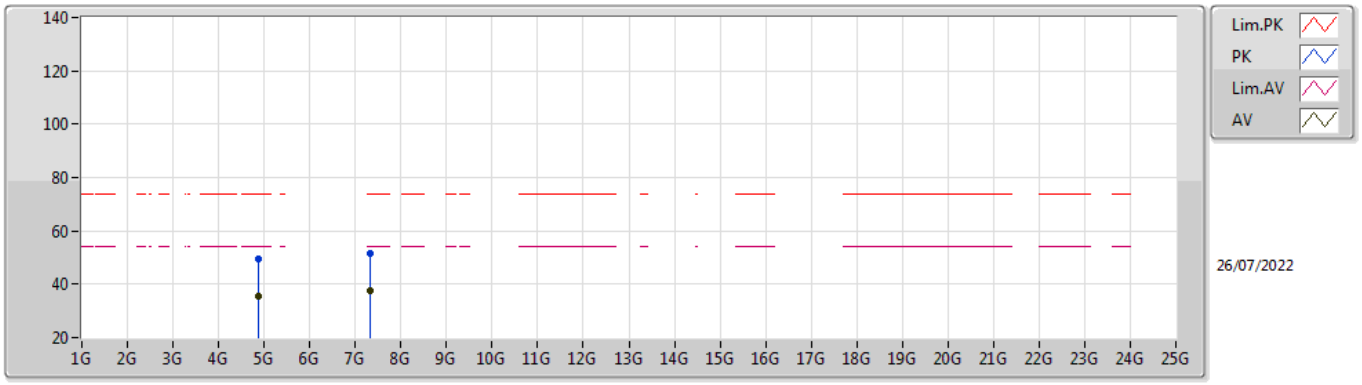


EUT X_1TX
Setting 15
02-F-G-4

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	2.388G	57.87	74.00	-16.13	26.70	3	Horizontal	49	2.06	-	28.38	2.79	-
AV	2.3696G	43.41	54.00	-10.59	12.29	3	Horizontal	49	2.06	-	28.34	2.78	-
PK	2.4396G	108.66	Inf	-Inf	77.42	3	Horizontal	49	2.06	-	28.40	2.84	-
AV	2.44G	85.58	Inf	-Inf	54.34	3	Horizontal	49	2.06	-	28.40	2.84	-
PK	2.496G	58.56	74.00	-15.44	27.08	3	Horizontal	49	2.06	-	28.58	2.90	-
AV	2.4884G	43.78	54.00	-10.22	12.34	3	Horizontal	49	2.06	-	28.55	2.89	-

BT-LE(1Mbps)

2440MHz_TX

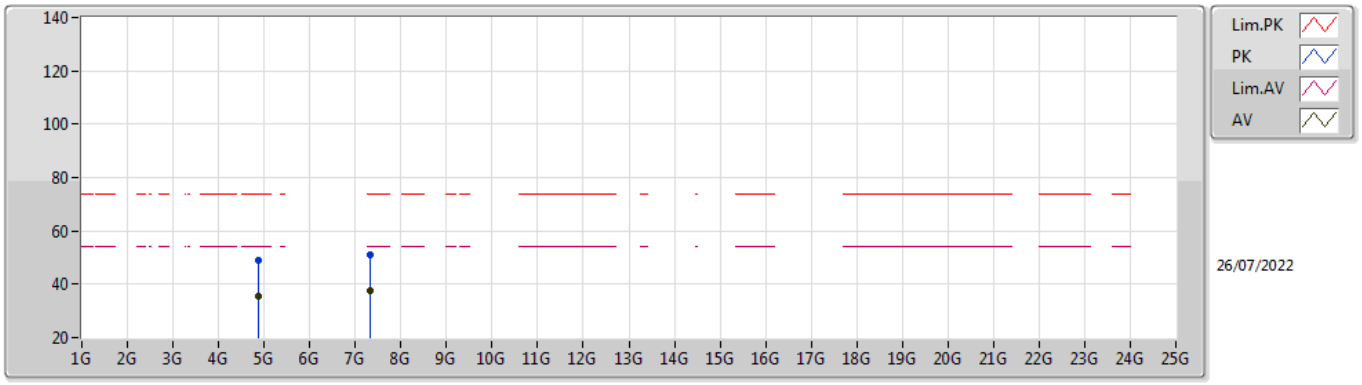


EUT X_1TX
Setting 15
02-F-G-4

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	4.88004G	49.43	74.00	-24.57	41.95	3	Vertical	94	1.59	-	33.16	5.10	30.78
AV	4.87996G	35.75	54.00	-18.25	28.27	3	Vertical	94	1.59	-	33.16	5.10	30.78
PK	7.31938G	51.39	74.00	-22.61	40.72	3	Vertical	99	1.27	-	36.44	6.16	31.93
AV	7.31948G	37.76	54.00	-16.24	27.09	3	Vertical	99	1.27	-	36.44	6.16	31.93

BT-LE(1Mbps)

2440MHz_TX

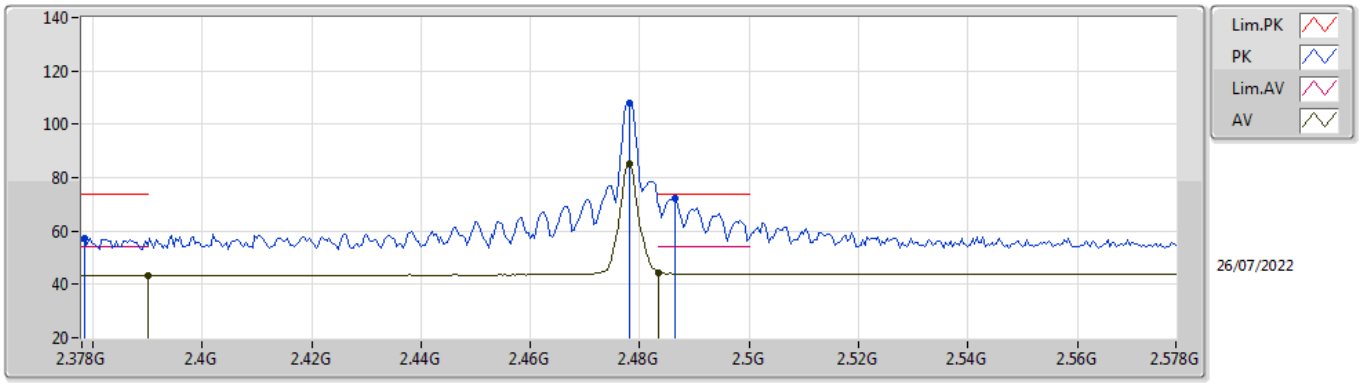


EUT X_1TX
Setting 15
02-F-G-4

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	4.88016G	48.82	74.00	-25.18	41.34	3	Horizontal	202	1.66	-	33.16	5.10	30.78
AV	4.87996G	35.62	54.00	-18.38	28.14	3	Horizontal	202	1.66	-	33.16	5.10	30.78
PK	7.32084G	51.14	74.00	-22.86	40.47	3	Horizontal	322	1.14	-	36.44	6.16	31.93
AV	7.31938G	37.75	54.00	-16.25	27.08	3	Horizontal	322	1.14	-	36.44	6.16	31.93

BT-LE(1Mbps)

2478MHz_TX

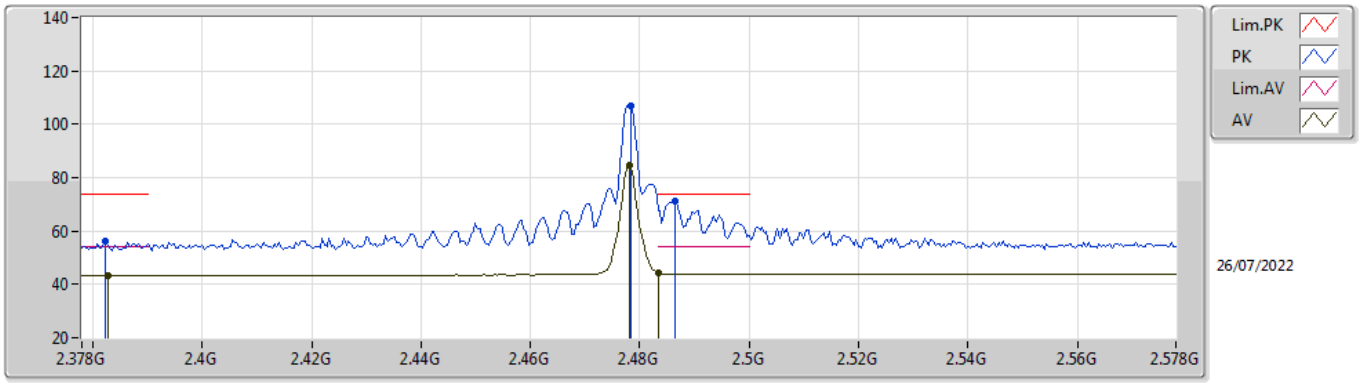


EUT X_1TX
Setting 15
02-F-G-4

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	2.3784G	57.41	74.00	-16.59	26.26	3	Vertical	72	1.68	-	28.36	2.79	-
AV	2.39G	43.36	54.00	-10.64	12.19	3	Vertical	72	1.68	-	28.38	2.79	-
PK	2.478G	108.15	Inf	-Inf	76.76	3	Vertical	72	1.68	-	28.51	2.88	-
AV	2.478G	85.26	Inf	-Inf	53.87	3	Vertical	72	1.68	-	28.51	2.88	-
PK	2.4864G	72.28	74.00	-1.72	40.84	3	Vertical	72	1.68	-	28.55	2.89	-
AV	2.4835G	44.26	54.00	-9.74	12.85	3	Vertical	72	1.68	-	28.53	2.88	-

BT-LE(1Mbps)

2478MHz_TX

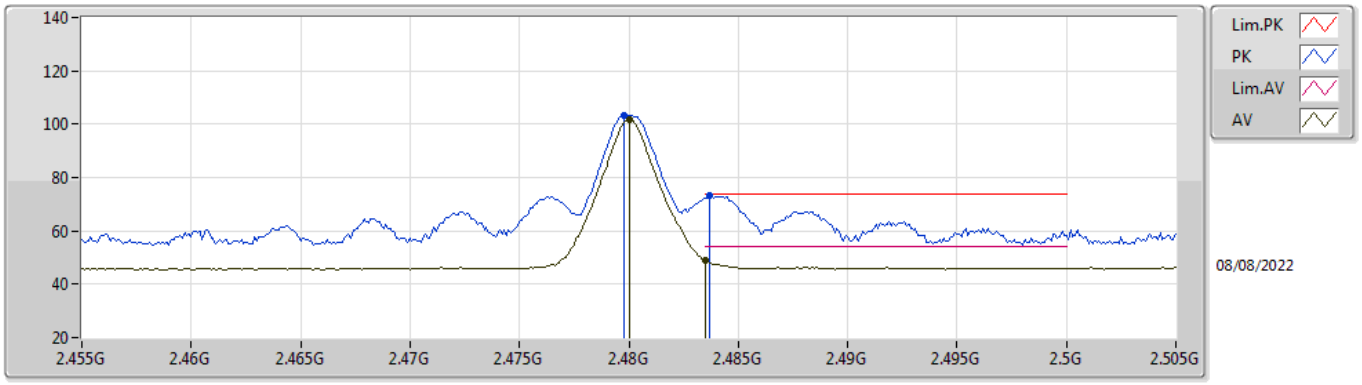


EUT X_1TX
Setting 15
02-F-G-4

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.3824G	56.17	74.00	-17.83	25.02	3	Horizontal	48	2.03	-	28.36	2.79	-
AV	2.3828G	43.35	54.00	-10.65	12.19	3	Horizontal	48	2.03	-	28.37	2.79	-
PK	2.4784G	106.98	Inf	-Inf	75.59	3	Horizontal	48	2.03	-	28.51	2.88	-
AV	2.478G	84.74	Inf	-Inf	53.35	3	Horizontal	48	2.03	-	28.51	2.88	-
PK	2.4864G	71.38	74.00	-2.62	39.94	3	Horizontal	48	2.03	-	28.55	2.89	-
AV	2.4835G	44.20	54.00	-9.80	12.79	3	Horizontal	48	2.03	-	28.53	2.88	-

BT-LE(1Mbps)

2480MHz_TX

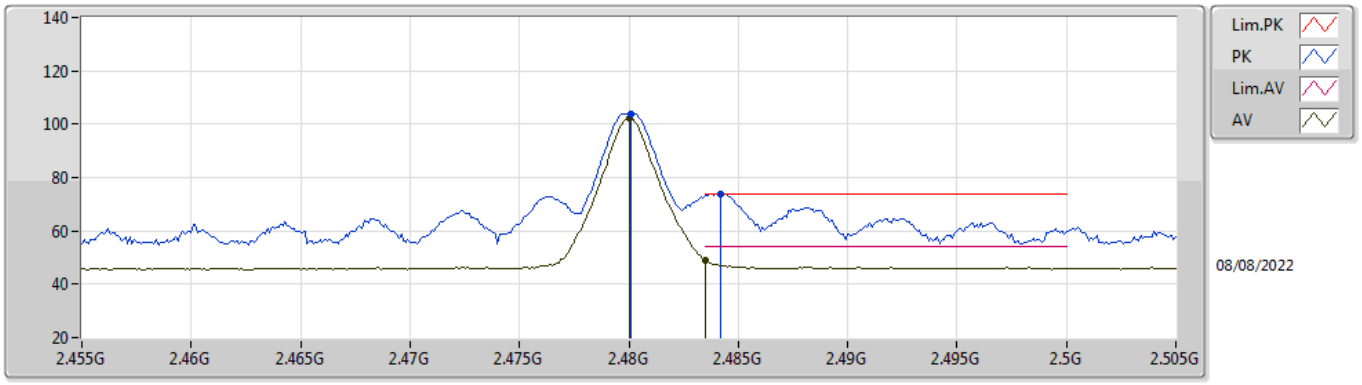


EUT X_1TX
Setting 8
03-D-E-5

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	103.03	Inf	-Inf	70.17	3	Vertical	86	2.18	-	28.42	4.44	-
AV	2.48G	101.65	Inf	-Inf	68.79	3	Vertical	86	2.18	-	28.42	4.44	-
PK	2.4837G	73.03	74.00	-0.97	40.16	3	Vertical	86	2.18	-	28.43	4.44	-
AV	2.4835G	48.73	54.00	-5.27	15.86	3	Vertical	86	2.18	-	28.43	4.44	-

BT-LE(1Mbps)

2480MHz_TX

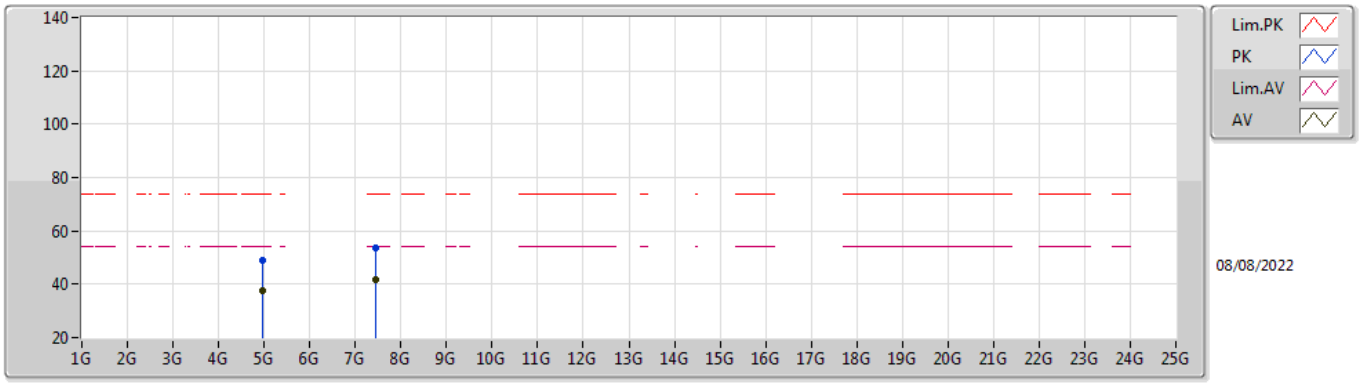


EUT X_1TX
Setting 8
03-D-E-5

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	2.4801G	103.73	Inf	-Inf	70.87	3	Horizontal	30	2.95	-	28.42	4.44	-
AV	2.48G	102.35	Inf	-Inf	69.49	3	Horizontal	30	2.95	-	28.42	4.44	-
PK	2.4842G	73.95	74.00	-0.05	41.07	3	Horizontal	30	2.95	-	28.44	4.44	-
AV	2.4835G	48.98	54.00	-5.02	16.11	3	Horizontal	30	2.95	-	28.43	4.44	-

BT-LE(1Mbps)

2480MHz_TX

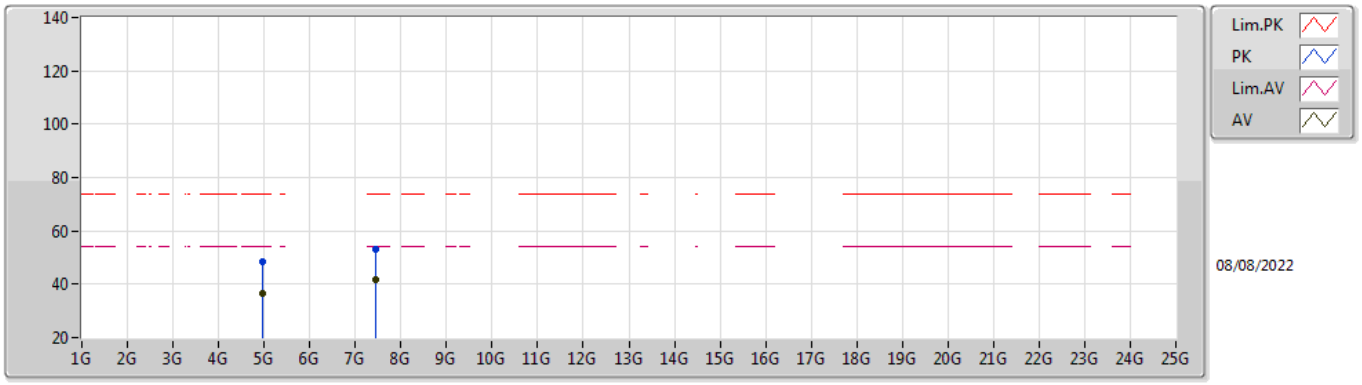


EUT X_1TX
Setting 8
03-D-E-5

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	4.95935G	49.17	74.00	-24.83	43.18	3	Vertical	14	1.77	-	33.78	7.10	34.89
AV	4.95978G	37.79	54.00	-16.21	31.80	3	Vertical	14	1.77	-	33.78	7.10	34.89
PK	7.43964G	53.60	74.00	-20.40	43.28	3	Vertical	45	1.01	-	36.92	8.60	35.20
AV	7.43938G	41.59	54.00	-12.41	31.27	3	Vertical	45	1.01	-	36.92	8.60	35.20

BT-LE(1Mbps)

2480MHz_TX

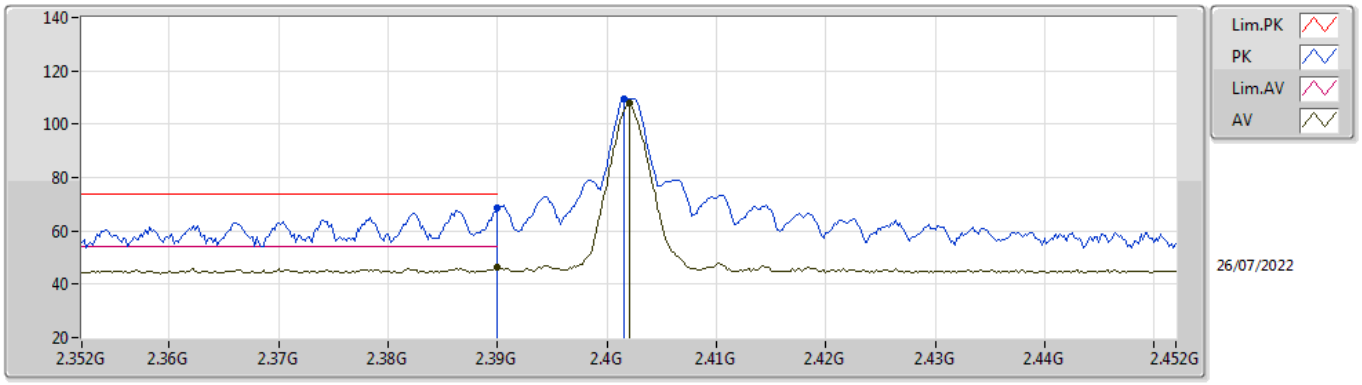


EUT X_1TX
Setting 8
03-D-E-5

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	4.96018G	48.66	74.00	-25.34	42.67	3	Horizontal	292	1.80	-	33.78	7.10	34.89
AV	4.96022G	36.75	54.00	-17.25	30.76	3	Horizontal	292	1.80	-	33.78	7.10	34.89
PK	7.43936G	53.10	74.00	-20.90	42.78	3	Horizontal	36	1.10	-	36.92	8.60	35.20
AV	7.43935G	41.84	54.00	-12.16	31.52	3	Horizontal	36	1.10	-	36.92	8.60	35.20

BT-LE(2Mbps)

2402MHz_TX

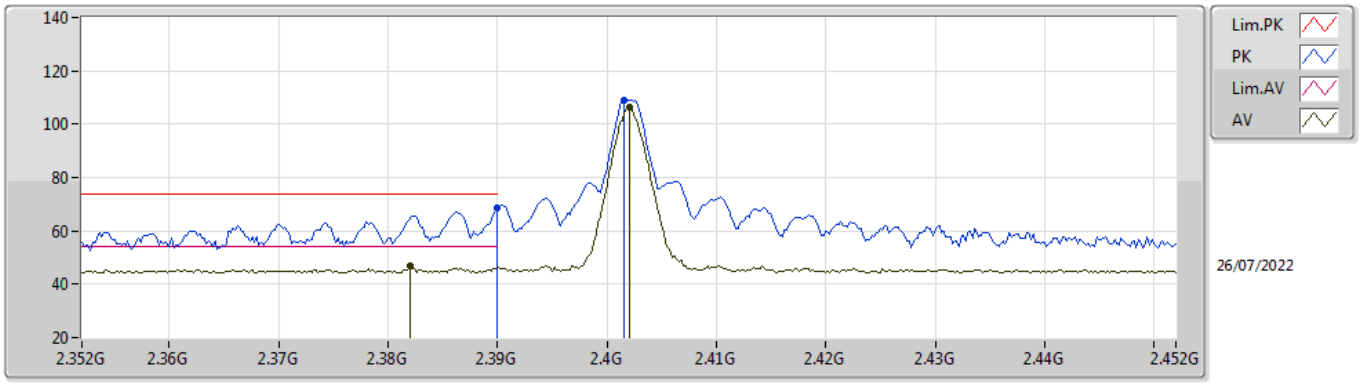


EUT X_1TX
Setting 15
02-F-G-4

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	2.39G	68.46	74.00	-5.54	37.29	3	Vertical	72	1.61	-	28.38	2.79	-
AV	2.39G	46.14	54.00	-7.86	14.97	3	Vertical	72	1.61	-	28.38	2.79	-
PK	2.4016G	109.71	Inf	-Inf	78.51	3	Vertical	72	1.61	-	28.40	2.80	-
AV	2.402G	107.82	Inf	-Inf	76.62	3	Vertical	72	1.61	-	28.40	2.80	-

BT-LE(2Mbps)

2402MHz_TX

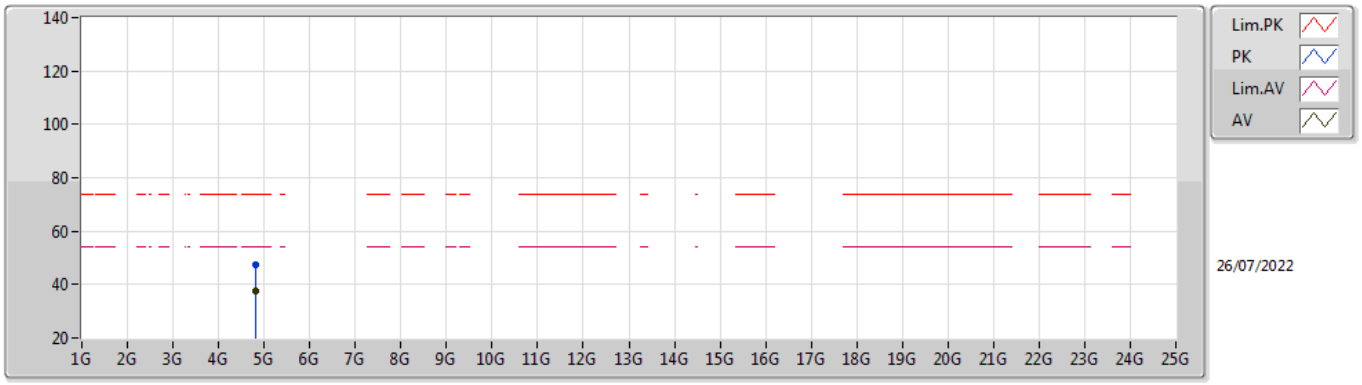


EUT X_1TX
Setting 15
02-F-G-4

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	2.39G	68.62	74.00	-5.38	37.45	3	Horizontal	47	2.13	-	28.38	2.79	-
AV	2.382G	46.64	54.00	-7.36	15.49	3	Horizontal	47	2.13	-	28.36	2.79	-
PK	2.4016G	108.81	Inf	-Inf	77.61	3	Horizontal	47	2.13	-	28.40	2.80	-
AV	2.402G	106.63	Inf	-Inf	75.43	3	Horizontal	47	2.13	-	28.40	2.80	-

BT-LE(2Mbps)

2402MHz_TX

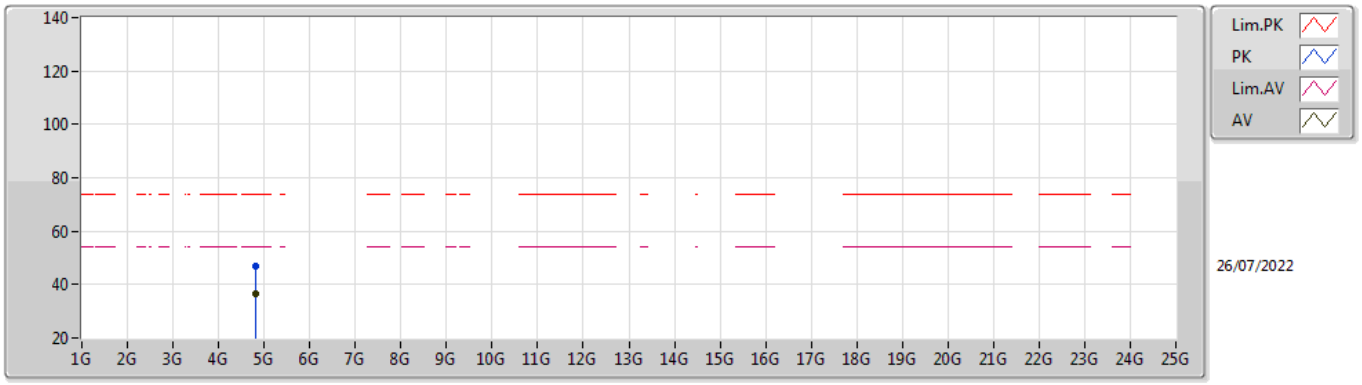


EUT X_1TX
Setting 15
02-F-G-4

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.80404G	47.19	74.00	-26.81	40.08	3	Vertical	208	1.83	-	32.82	5.10	30.81
AV	4.80398G	37.64	54.00	-16.36	30.53	3	Vertical	208	1.83	-	32.82	5.10	30.81

BT-LE(2Mbps)

2402MHz_TX

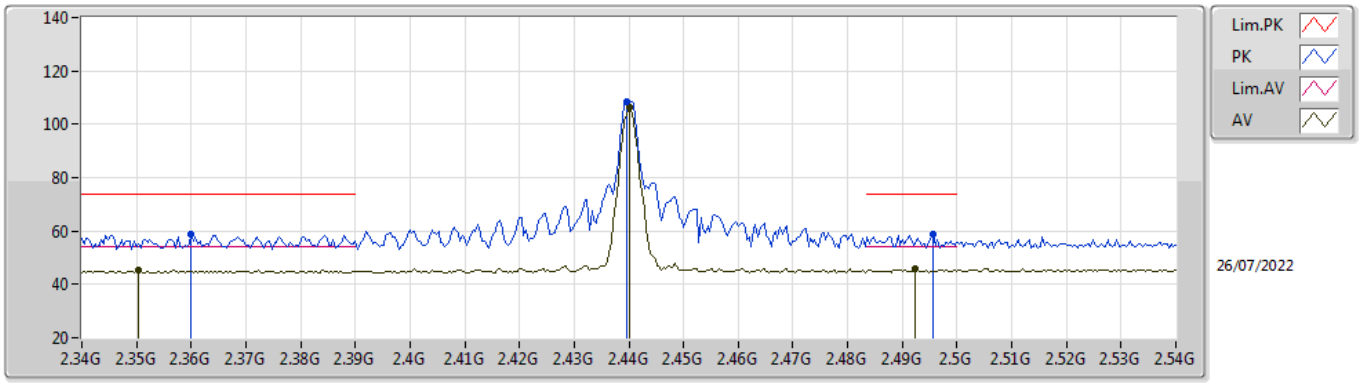


EUT X_1TX
Setting 15
02-F-G-4

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	4.80386G	46.83	74.00	-27.17	39.72	3	Horizontal	35	2.56	-	32.82	5.10	30.81
AV	4.804G	36.67	54.00	-17.33	29.56	3	Horizontal	35	2.56	-	32.82	5.10	30.81

BT-LE(2Mbps)

2440MHz_TX

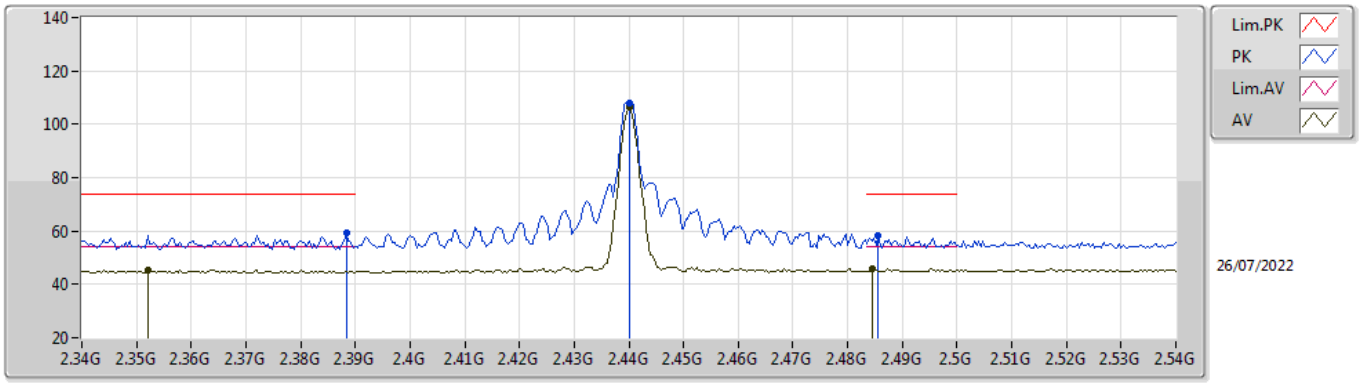


EUT X_1TX
Setting 15
02-F-G-4

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	2.36G	58.55	74.00	-15.45	27.45	3	Vertical	73	1.82	-	28.32	2.78	-
AV	2.3504G	45.33	54.00	-8.67	14.25	3	Vertical	73	1.82	-	28.30	2.78	-
PK	2.4396G	108.39	Inf	-Inf	77.15	3	Vertical	73	1.82	-	28.40	2.84	-
AV	2.44G	106.46	Inf	-Inf	75.22	3	Vertical	73	1.82	-	28.40	2.84	-
PK	2.4956G	58.68	74.00	-15.32	27.20	3	Vertical	73	1.82	-	28.58	2.90	-
AV	2.4924G	45.73	54.00	-8.27	14.27	3	Vertical	73	1.82	-	28.57	2.89	-

BT-LE(2Mbps)

2440MHz_TX

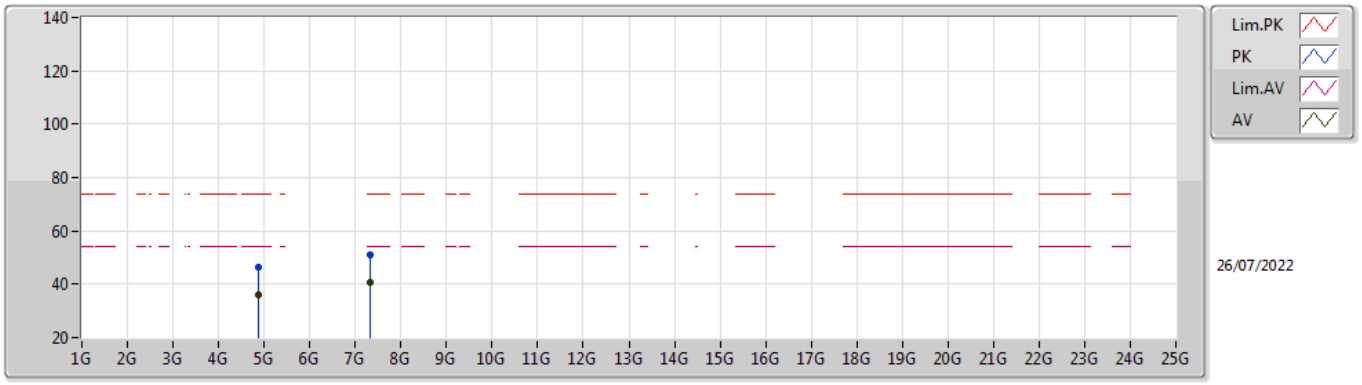


EUT X_1TX
Setting 15
02-F-G-4

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	2.3884G	59.32	74.00	-14.68	28.15	3	Horizontal	26	1.19	-	28.38	2.79	-
AV	2.352G	45.40	54.00	-8.60	14.32	3	Horizontal	26	1.19	-	28.30	2.78	-
PK	2.44G	107.87	Inf	-Inf	76.63	3	Horizontal	26	1.19	-	28.40	2.84	-
AV	2.44G	106.16	Inf	-Inf	74.92	3	Horizontal	26	1.19	-	28.40	2.84	-
PK	2.4856G	58.04	74.00	-15.96	26.61	3	Horizontal	26	1.19	-	28.54	2.89	-
AV	2.4844G	45.80	54.00	-8.20	14.38	3	Horizontal	26	1.19	-	28.54	2.88	-

BT-LE(2Mbps)

2440MHz_TX

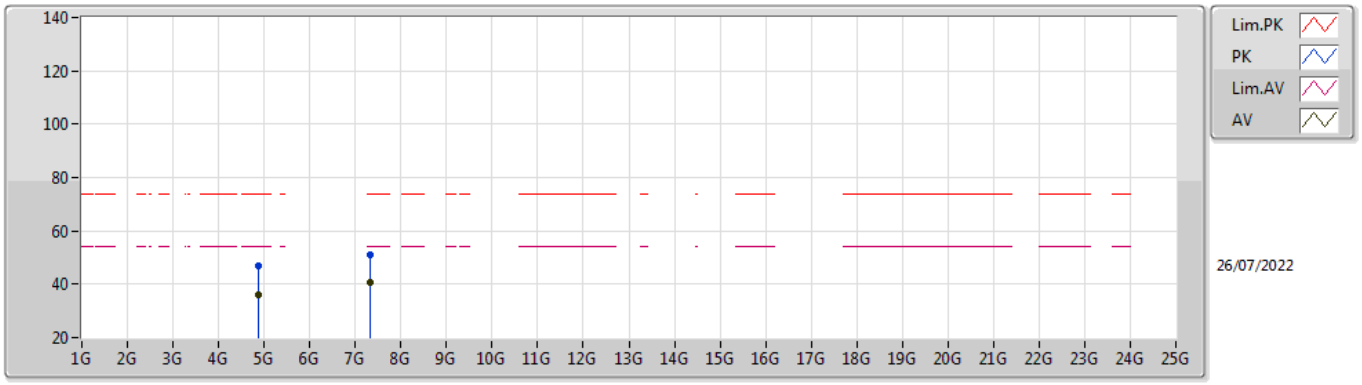


EUT X_1TX
Setting 15
02-F-G-4

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	4.87672G	46.49	74.00	-27.51	39.02	3	Vertical	226	2.78	-	33.15	5.10	30.78
AV	4.88272G	35.88	54.00	-18.12	28.39	3	Vertical	226	2.78	-	33.17	5.10	30.78
PK	7.32134G	51.22	74.00	-22.78	40.55	3	Vertical	283	1.89	-	36.44	6.16	31.93
AV	7.32G	40.66	54.00	-13.34	29.99	3	Vertical	283	1.89	-	36.44	6.16	31.93

BT-LE(2Mbps)

2440MHz_TX

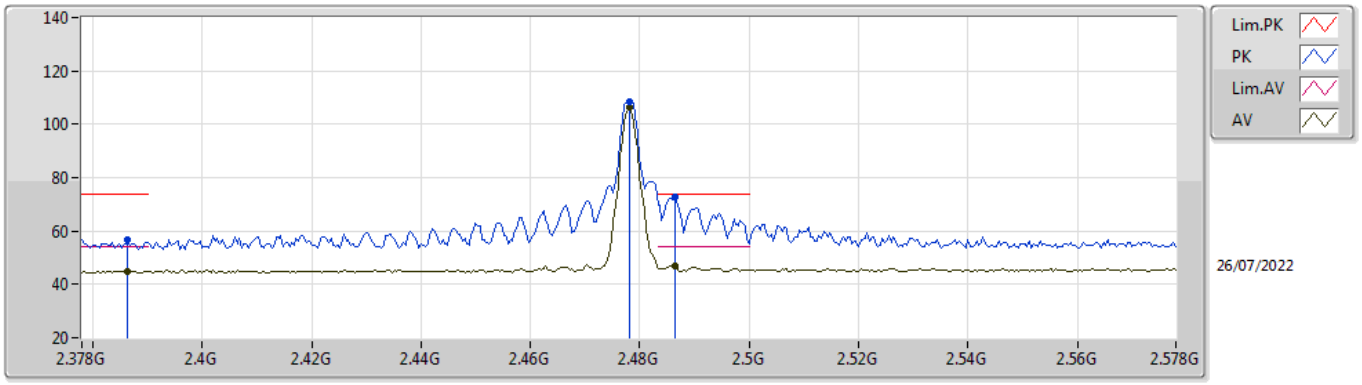


EUT X_1TX
Setting 15
02-F-G-4

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	4.88128G	46.83	74.00	-27.17	39.35	3	Horizontal	252	2.87	-	33.16	5.10	30.78
AV	4.87866G	36.12	54.00	-17.88	28.64	3	Horizontal	252	2.87	-	33.16	5.10	30.78
PK	7.3189G	50.79	74.00	-23.21	40.11	3	Horizontal	24	1.92	-	36.44	6.16	31.92
AV	7.31874G	40.61	54.00	-13.39	29.93	3	Horizontal	24	1.92	-	36.44	6.16	31.92

BT-LE(2Mbps)

2478MHz_TX

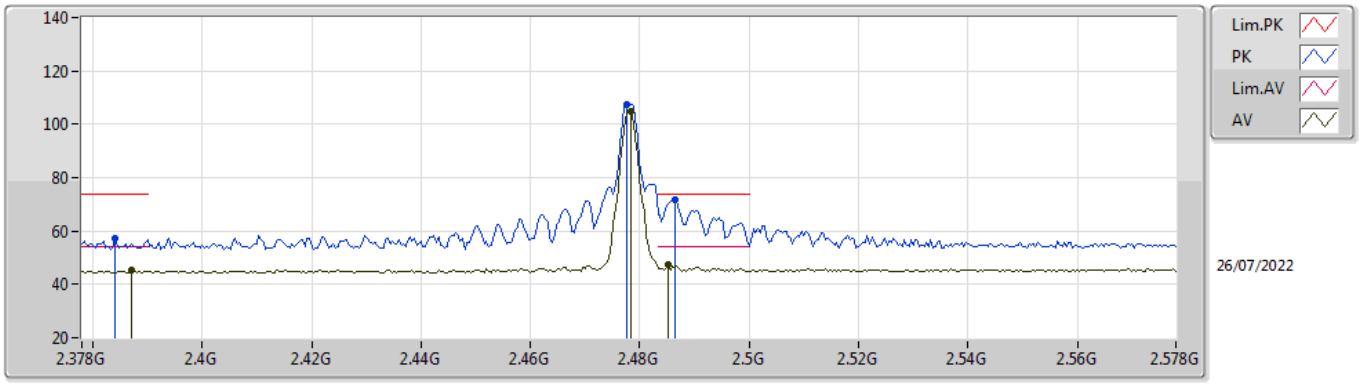


EUT X_1TX
Setting 15
02-F-G-4

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	2.3864G	56.90	74.00	-17.10	25.74	3	Vertical	73	1.66	-	28.37	2.79	-
AV	2.3864G	45.03	54.00	-8.97	13.87	3	Vertical	73	1.66	-	28.37	2.79	-
PK	2.478G	108.26	Inf	-Inf	76.87	3	Vertical	73	1.66	-	28.51	2.88	-
AV	2.478G	106.31	Inf	-Inf	74.92	3	Vertical	73	1.66	-	28.51	2.88	-
PK	2.4864G	72.61	74.00	-1.39	41.17	3	Vertical	73	1.66	-	28.55	2.89	-
AV	2.4864G	47.08	54.00	-6.92	15.64	3	Vertical	73	1.66	-	28.55	2.89	-

BT-LE(2Mbps)

2478MHz_TX

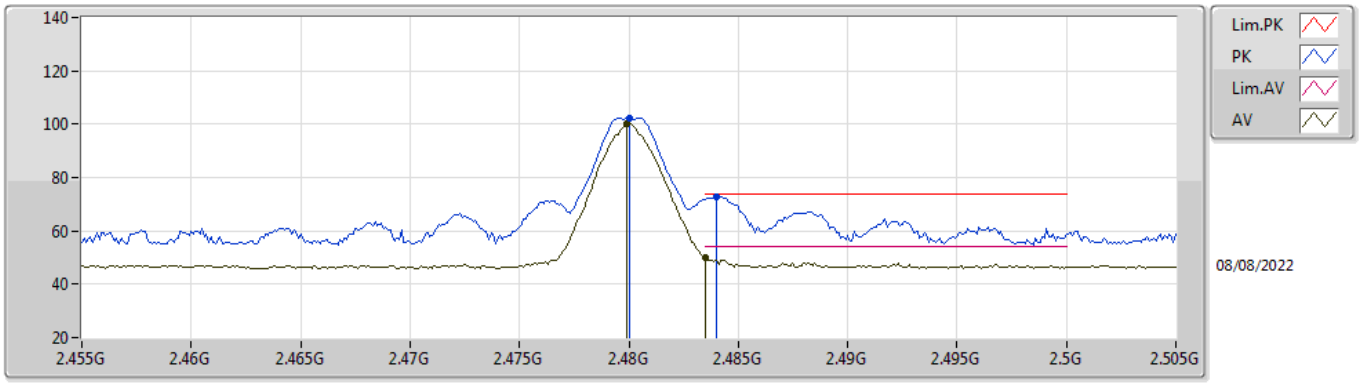


EUT X_1TX
Setting 15
02-F-G-4

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	57.19	74.00	-16.81	26.03	3	Horizontal	44	2.50	-	28.37	2.79	-
AV	2.3872G	45.15	54.00	-8.85	13.99	3	Horizontal	44	2.50	-	28.37	2.79	-
PK	2.4776G	107.33	Inf	-Inf	75.94	3	Horizontal	44	2.50	-	28.51	2.88	-
AV	2.4784G	104.60	Inf	-Inf	73.21	3	Horizontal	44	2.50	-	28.51	2.88	-
PK	2.4864G	71.58	74.00	-2.42	40.14	3	Horizontal	44	2.50	-	28.55	2.89	-
AV	2.4852G	47.29	54.00	-6.71	15.86	3	Horizontal	44	2.50	-	28.54	2.89	-

BT-LE(2Mbps)

2480MHz_TX

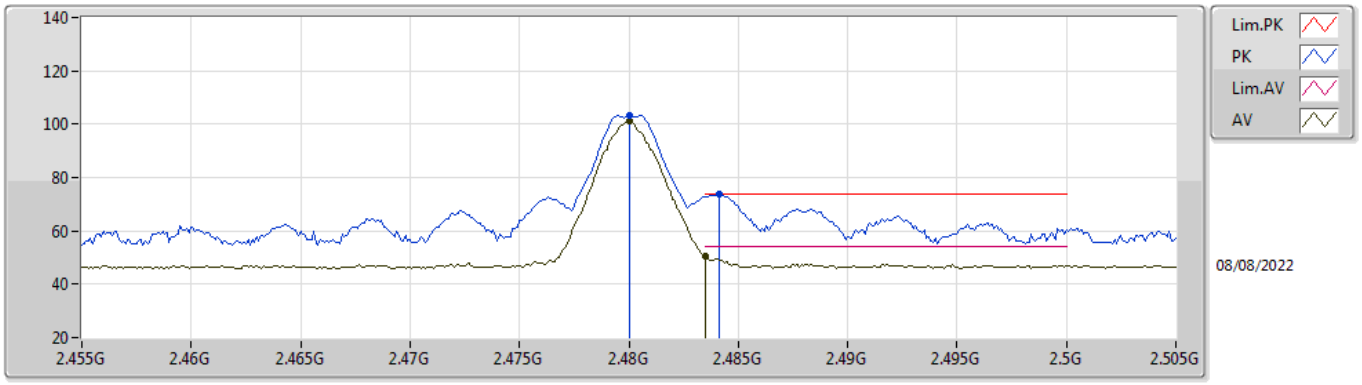


EUT X_1TX
Setting 8
03-D-E-5

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	2.48G	102.18	Inf	-Inf	69.32	3	Vertical	90	2.21	-	28.42	4.44	-
AV	2.4799G	100.33	Inf	-Inf	67.47	3	Vertical	90	2.21	-	28.42	4.44	-
PK	2.484G	72.63	74.00	-1.37	39.75	3	Vertical	90	2.21	-	28.44	4.44	-
AV	2.4835G	49.84	54.00	-4.16	16.97	3	Vertical	90	2.21	-	28.43	4.44	-

BT-LE(2Mbps)

2480MHz_TX

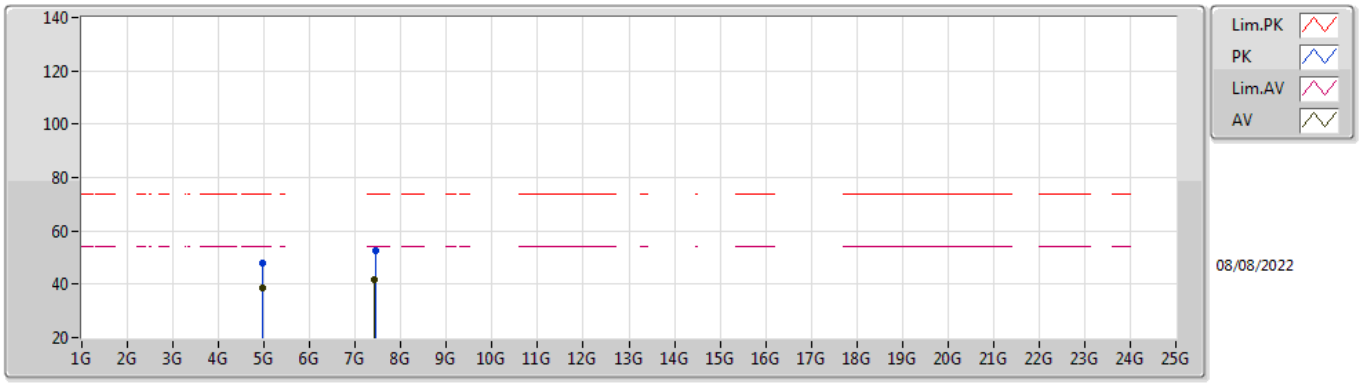


EUT X_1TX
Setting 8
03-D-E-5

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	2.48G	103.10	Inf	-Inf	70.24	3	Horizontal	164	2.98	-	28.42	4.44	-
AV	2.48G	101.24	Inf	-Inf	68.38	3	Horizontal	164	2.98	-	28.42	4.44	-
PK	2.4841G	73.61	74.00	-0.39	40.73	3	Horizontal	164	2.98	-	28.44	4.44	-
AV	2.4835G	50.48	54.00	-3.52	17.61	3	Horizontal	164	2.98	-	28.43	4.44	-

BT-LE(2Mbps)

2480MHz_TX

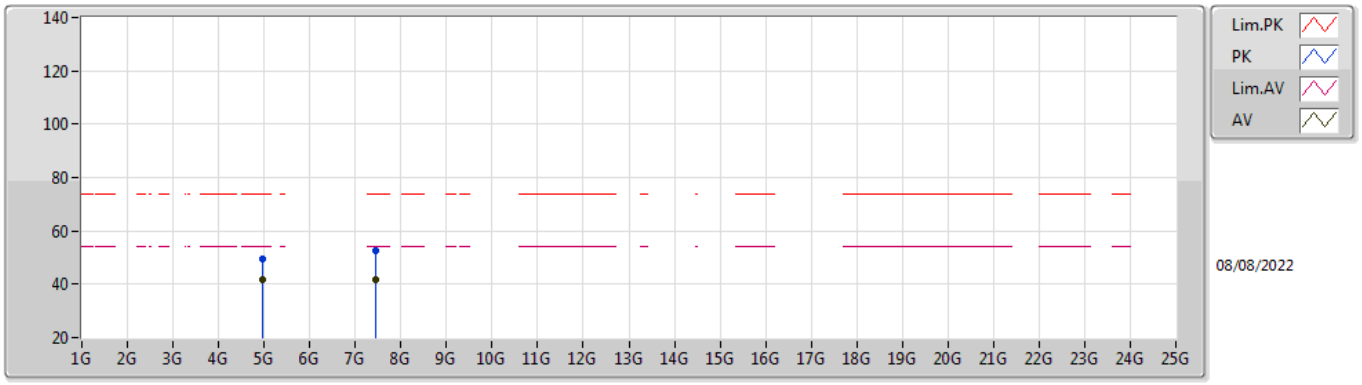


EUT X_1TX
Setting 8
03-D-E-5

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	4.95856G	47.94	74.00	-26.06	41.95	3	Vertical	14	1.80	-	33.78	7.10	34.89
AV	4.96002G	38.70	54.00	-15.30	32.71	3	Vertical	14	1.80	-	33.78	7.10	34.89
PK	7.4615G	52.75	74.00	-21.25	42.48	3	Vertical	272	2.93	-	36.88	8.60	35.21
AV	7.4159G	41.83	54.00	-12.17	31.45	3	Vertical	272	2.93	-	36.97	8.60	35.19

BT-LE(2Mbps)

2480MHz_TX



EUT X_1TX
Setting 8
03-D-E-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	4.95972G	49.41	74.00	-24.59	43.42	3	Horizontal	317	1.01	-	33.78	7.10	34.89
AV	4.96006G	41.58	54.00	-12.42	35.59	3	Horizontal	317	1.01	-	33.78	7.10	34.89
PK	7.4593G	52.37	74.00	-21.63	42.10	3	Horizontal	337	1.80	-	36.88	8.60	35.21
AV	7.4563G	41.65	54.00	-12.35	31.37	3	Horizontal	337	1.80	-	36.89	8.60	35.21