Testing Laboratory 3787

RADIO TEST REPORT

FCC ID	:	UDX-600191010
Equipment	:	Catalyst Wireless 9163E Series Wi-Fi 6E Access Point
Brand Name	:	CISCO
Model Name	:	CW9163E-B, CW9163E-MR
Applicant	:	Cisco Systems, Inc. 170 West Tasman Drive, San Jose, CA 95134 USA
Manufacturer	:	Cisco Systems, Inc. 170 West Tasman Drive, San Jose, CA 95134 USA
Standard	:	47 CFR FCC Part 15.247

The product was received on Apr. 07, 2023, and testing was started from Apr. 12, 2023 and completed on Sep. 08, 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
FR340101AF	01	Initial issue of report	Sep. 19, 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]

For Radio 3

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

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

1.1.2 Antenna Information

Ant.	2.4GHz Port	5GHz Port	Bluetooth / Zigbee	GPS	Brand	Model Name	Antenna Type	Connector	Remark	Gain (dBi)
1	2	2	-	-	CISCO	CW-ANT-O1-NS	Dipole	N-Type	External Antenna	Note 1
2	1	1	-	-	CISCO	CW-ANT-O1-NS	Dipole	N-Type	External Antenna	
3	-	-	-	-	CISCO	CW-ANT-O1-NS	Dipole	N-Type	External Antenna	
4	-	-	-	-	CISCO	CW-ANT-O1-NS	Dipole	N-Type	External Antenna	
5	1	1	-	-	AWAN	A8M6P-100005	PIFA	N-Type	Internal Antenna	
6	-	-	1	-	AWAN	A8M6P-100003	PIFA	N-Type	Internal Antenna	
7	-	-	-	1	AWAN	A8M6P-100004	PIFA	N-Type	Internal Antenna	
8	-	-	-	2	CISCO	CW-ANT-GPS2	Patch	SMA	External Antenna	

Note1:

Ant.	Gain (dBi)										
	2.4GHz	5GHz UNII 1	5GHz UNII 2A	5GHz UNII 2C	5GHz UNII 3	6GHz UNII 5	6GHz UNII 6	6GHz UNII 7	6GHz UNII 8	Bluetooth / Zigbee	GPS
1	4	8	8	8	8	-	-	-	-	-	-
2	4	8	8	8	8	-	-	-	-	-	-
3	-	-	-	-	-	8	8	8	8	-	-
4	-	-	-	-	-	8	8	8	8	-	-
5	4.9	3	3	3.1	3	2.8	3.2	3.2	2.7	-	-
6	-	-	-	-	-	-	-	-	-	5.7	-
7	-	-	-	-	-	-	-	-	-	-	3.7
8	-	-	-	-	-	-	-	-	-	-	3.18

Note2: The above information was declared by manufacturer.
Note3: The 6GHz function of Antennas 3~5 doesn't be enabled at this time.

Note4: Directional gain information

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$
BF	$DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$	$DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

Ex.

Directional Gain (NSS1) formula : $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

NSS1(g1,1) = $10^{G1/20}$; NSS1(g1,2)= $10^{G2/20}$;

gj,k =(Nss1(g1,1) + Nss1(g1,2))^2

DG = 10 log[(Nss1(g1,1) + Nss1(g1,2))^2 / N_{ANT}] => 10 log[($10^{G1/20}$ + $10^{G2/20}$)^2 / N_{ANT}]

Where ;

Dipole

2.4G G1= 4 dBi ; G2= 4 dBi ;DG= 7.01dBi

5G G1= 8 dBi ; G2= 8 dBi ;DG= 11.01dBi

<For Radio 1 (2.4GHz/5GHz Functions)>

IEEE 802.11b/g/n/VHT/ax

For 1TX/2RX:

The EUT supports the antenna with TX diversity functions.

Both Port 1 and Port 2 support transmit and receive functions, but only one of them will be used to transmit at one time.

For 2TX/2RX:

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

Port 1 and Port 2 could transmit/receive simultaneously.

<For Scanning Radio 2 (2.4GHz/5GHz Functions)>

IEEE 802.11b/g/n/VHT/ax

For 1TX/1RX:

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

<For Radio 3 / Bluetooth/Zigbee Functions>

For 1TX/1RX:

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

<For Radio 4 / GPS Functions>

For 1RX:

The EUT supports the antenna with RX diversity functions.

Both Port 1 and Port 2 support receive functions, but only one of them will be used to receive at one time.

1.1.3 Mode Test Duty Cycle

For Radio 3

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.869	0.61	2.174m	1k
BT-LE(2Mbps)	0.623	2.06	1.12m	1k

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

1.1.4 EUT Operational Condition

EUT Power Type	From PoE			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	QSPR Version 5.0-00202			
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	SW
CW9163E-B	Cisco
CW9163E-MR	Meraki

Note1: From the above models, model: CW9163E-B was selected as representative model for the test and its data was recorded in this report.

Note2: The above information was declared by manufacturer.

1.1.6 Table of Serial Number

Test items	Serial Number
1. AC Power-line Conducted Emissions 2. Emissions in Restricted Frequency Bands below 1GHz	DSM2711000W
3. DTS Bandwidth 4. Maximum Conducted Output Power 5. Power Spectral Density 6. Emissions in Restricted Frequency Bands above 1GHz 7. Emissions in Non-restricted Frequency Band	DSM2711000B

Note: The above information was declared by manufacturer.

1.1.7 Table for Radio Function

Radio	Support Band
1	2.4GHz / 5GHz UNII 1~UNII 3
2	Scanning 2.4GHz / 5GHz UNII 1~UNII 3
3	Bluetooth / Zigbee
4	GPS

Note1: The above information was declared by manufacturer.

Note2: The Radio 1 and Radio 2 can't be operated simultaneously.

1.1.8 Table for EUT Information

EUT	RJ-45 Connector	Console Connector
1	Brand Name: UDE Model Name: R66-MK-3001	Brand Name: UDE Model Name: R66-MK-2001
2	Brand Name: ODS Model Name: CMK-RJ45-CAP	Brand Name: ODS Model Name: CMK-RJ45-CG

Note1: From the above EUTs, EUT 1 was selected as representative EUT for all the tests and its data was recorded in this report; EUT 2 was selected as representative EUT for AC Power-line Conducted Emissions, Emissions in Non-restricted Frequency Bands below 1GHz and its data was recorded in this report.

Note2: The above information was declared by manufacturer.

1.2 Applicable Standards

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

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

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

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

1.3 Testing Location Information

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

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH01-CB	Eason Chen	22.9~24 / 61~63	Apr. 17, 2023~Jun. 06, 2023
Radiated below 1GHz	03CH04-CB	Chris Li	22~23.5 / 58~63	Apr. 12, 2023~Sep. 05, 2023
	03CH02-CB	Chris Li	21.8~23.3 / 59~60	Sep. 04, 2023~Sep. 05, 2023
Radiated above 1GHz	03CH01-CB	Chris Li	21.7~22.9 / 58~62	Apr. 12, 2023~May 27, 2023
AC Conduction	CO02-CB	Peter Wu	22~23 / 58~59	Jul. 19, 2023~Sep. 08, 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 (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%

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%
Conducted Emission	3.1 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.1 dB	Confidence levels of 95%
Bandwidth Measurement	2.2%	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	188
2440MHz	200
2478MHz	175
2480MHz	100
BT-LE(2Mbps)	-
2402MHz	200
2440MHz	200
2478MHz	200
2480MHz	50

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	CTX
1	EUT 1 + Radio 1 (2.4GHz) + PoE 1
2	EUT 1 + Radio 1 (2.4GHz) + PoE 2
3	EUT 1 + Radio 1 (2.4GHz) + PoE 3
4	EUT 1 + Radio 1 (2.4GHz) + PoE 4
5	EUT 1 + Radio 1 (2.4GHz) + PoE 5
Mode 3 has been evaluated to be the worst case among Mode 1~5, thus measurement for Mode 6 ~ 9 will follow this same test mode.	
6	EUT 1 + Radio 1 (5GHz) + PoE 3
7	EUT 1 + Scanning Radio 2 (2.4GHz) + PoE 3
8	EUT 1 + Scanning Radio 2 (5GHz) + PoE 3
9	EUT 1 + Radio 3 (Bluetooth) + PoE 3
Mode 3 has been evaluated to be the worst case among Mode 1~9, thus measurement for Mode 10 will follow this same test mode.	
10	EUT 2 + Radio 1 (2.4GHz) + PoE 3
Mode 3 has been evaluated to be the worst case among Mode 1~10, thus measurement for Mode 11 will follow this same test mode.	
11	EUT 1 + Radio 3 (Zigbee) + PoE 3
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
1	EUT 1 + Radio 3

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	CTX
	After evaluating, the worst case was found at Y axis. So the measurement will follow this same test configuration.
1	EUT 1 in Y axis + Radio 1 + 2.4GHz + PoE 1
2	EUT 1 in Y axis + Radio 1 + 2.4GHz + PoE 2
3	EUT 1 in Y axis + Radio 1 + 2.4GHz + PoE 3
4	EUT 1 in Y axis + Radio 1 + 2.4GHz + PoE 4
5	EUT 1 in Y axis + Radio 1 + 2.4GHz + PoE 5
Mode 5 has been evaluated to be the worst case among Mode 1~5, thus measurement for Mode 6 ~ 9 will follow this same test mode.	
6	EUT 1 in Y axis + Radio 1 + 5GHz + PoE 5
7	EUT 1 in Y axis + Scanning Radio 2 + 2.4GHz + PoE 5
8	EUT 1 in Y axis + Scanning Radio 2 + 5GHz + PoE 5
9	EUT 1 in Y axis + Radio 3 (Bluetooth) + PoE 5
Mode 8 has been evaluated to be the worst case among Mode 1~9, thus measurement for Mode 10 will follow this same test mode.	
10	EUT 2 in Y axis + Scanning Radio 2 + 5GHz + PoE 5
Mode 8 has been evaluated to be the worst case among Mode 1~10, thus measurement for Mode 11 will follow this same test mode.	
11	EUT 1 in Y axis + Radio 3 (Zigbee) + PoE 5
For operating mode 8 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
	After evaluating, the worst case was found at Y axis. So the measurement will follow this same test configuration.
1	EUT 1 in Y axis + Radio 3

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	R1:WLAN 2.4GHz + R1:WLAN 5GHz + Scanning Radio 2: WLAN 2.4GHz + R3: Bluetooth
2	R1:WLAN 2.4GHz + R1:WLAN 5GHz + Scanning Radio 2: WLAN 5GHz + R3: Bluetooth
3	Radio 1 (WLAN 2.4GHz+5GHz) + Scanning Radio 2 (WLAN 2.4GHz) + Radio 3 (Zigbee)
4	Radio 1 (WLAN 2.4GHz+5GHz) + Scanning Radio 2 (WLAN 5GHz) + Radio 3 (Zigbee)
Refer to Sporton Test Report No.: FA340101 for Co-location RF Exposure Evaluation.	

Note: The PoEs are for measurement only, would not be marketed.

PoE information as below:

Power	Brand Name	Model Name
PoE 1	PHIHONG	POEA33U-1ATE
PoE 2	PHIHONG	POE60U-1BT-X
PoE 3	PHIHONG	POE29U-1AT(PL)
PoE 4	Delta	ADH-65AR B
PoE 5	Cisco	POEO75U-1BT

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

Equipment	Brand Name	Model Name	Remark
Mount bracket 1*1	Meraki	MA-MNT-MR-16	Used for CW9163E-MR
Mount bracket 2*1	Cisco	AIR-MNT-VERT1	Used for CW9163E-B
Waterproof Covering (Cap) 1*1	UDE	R66-MK-3001	Used for EUT 1
Waterproof Covering (Cap) 2*1	ODS	CMK-RJ45-CAP	Used for EUT 2
Waterproof Covering (Cable Gland) 1*1	UDE	R66-MK-2001	Used for EUT 1
Waterproof Covering (Cable Gland) 2*1	ODS	CMK-RJ45-CG	Used for EUT 2

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	2.5G LAN PC	DELL	T3400	N/A
B	PoE 3	PHIHONG	POE29U-1AT(PL)	N/A

For Radiated:

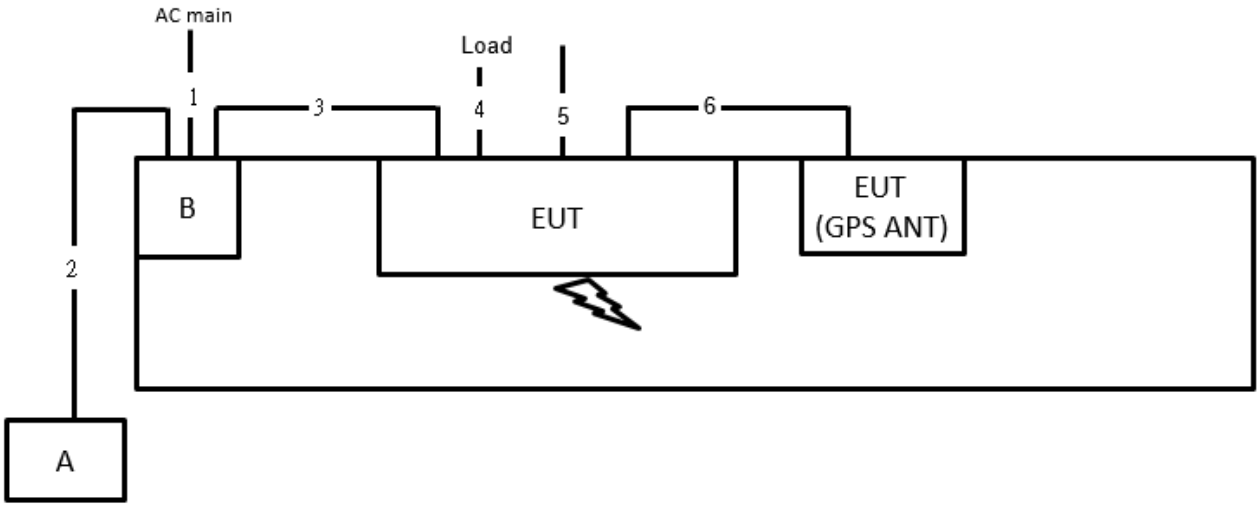
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	PoE 5	Cisco	POEO75U-1BT	N/A
B	Notebook	DELL	E6430	N/A

For RF Conducted:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	PoE 4	Delta	ADH-65AR B	N/A

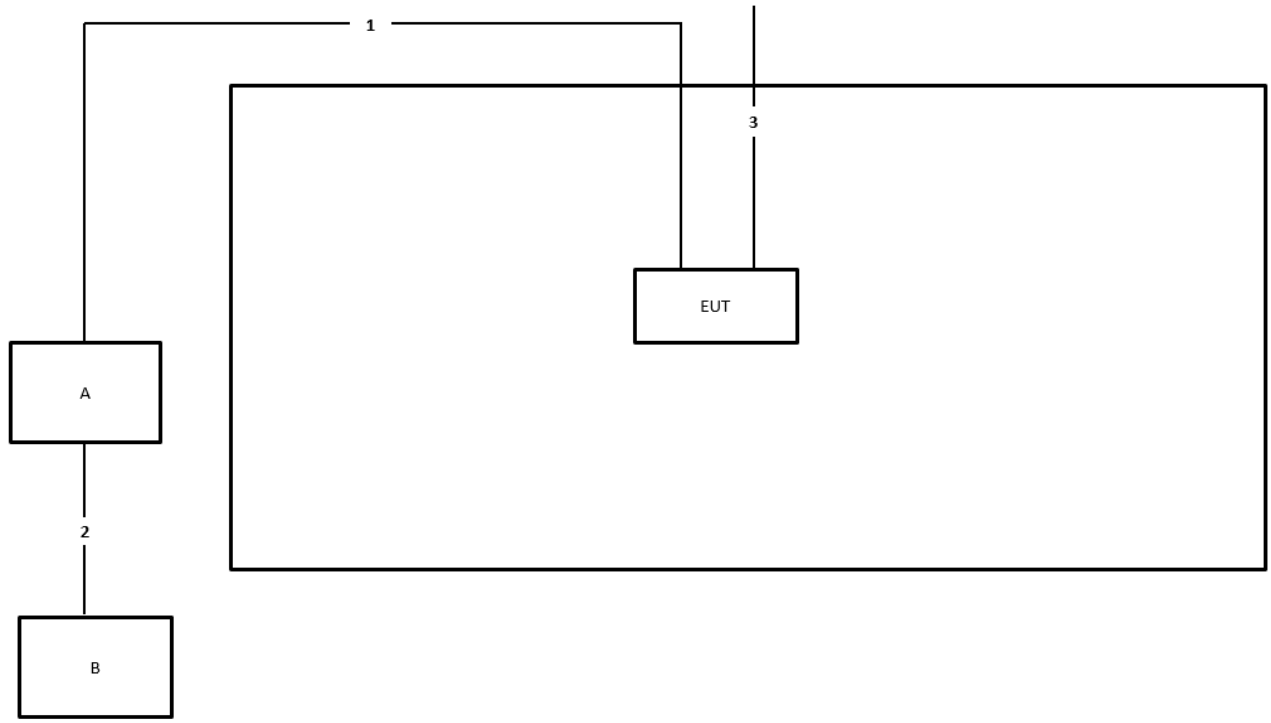
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



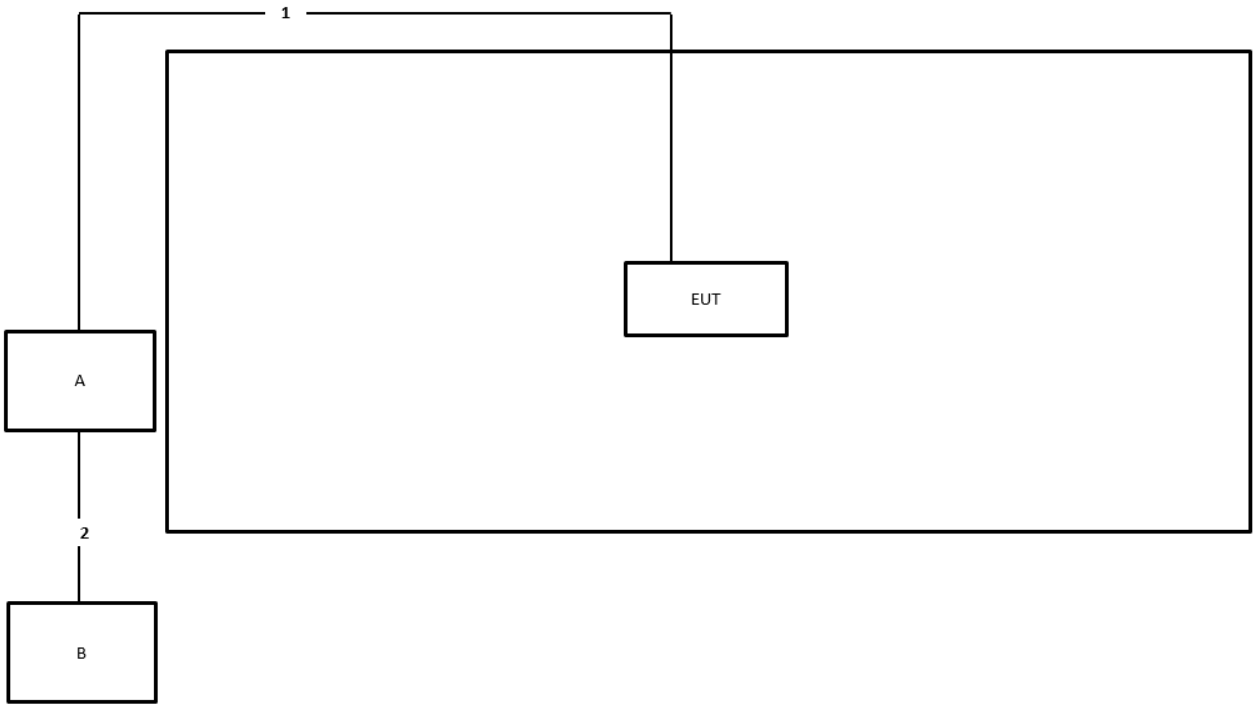
Item	Connection	Shielded	Length
1	Power cable	No	1.8m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1m
4	Console cable	No	1.8m
5	GND cable	No	1.5m
6	Ant cable	No	3m

Test Setup Diagram - Radiated Test < 1GHz



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

Test Setup Diagram - Radiated Test > 1GHz



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

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

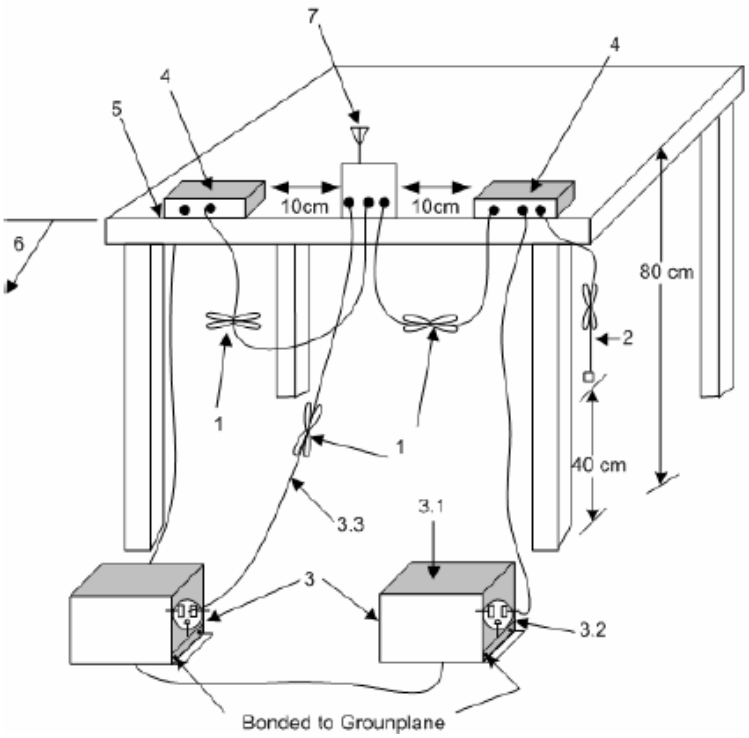
Refer a test equipment and calibration data table in this test report.

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.

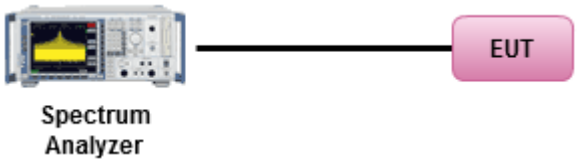
3.2.2 Measuring Instruments

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

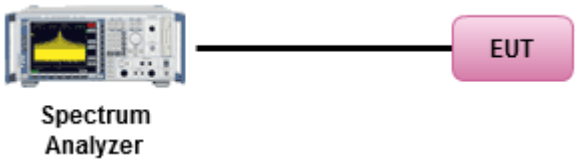
3.4.2 Measuring Instruments

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

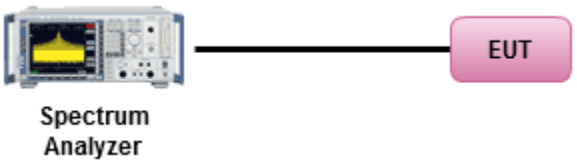
Refer a test equipment and calibration data table in this test report.

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.

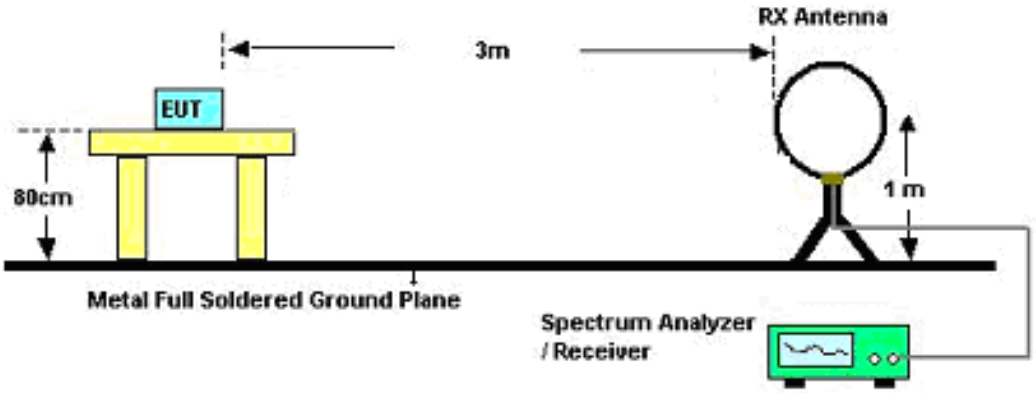
3.6.3 Test Procedures

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.		

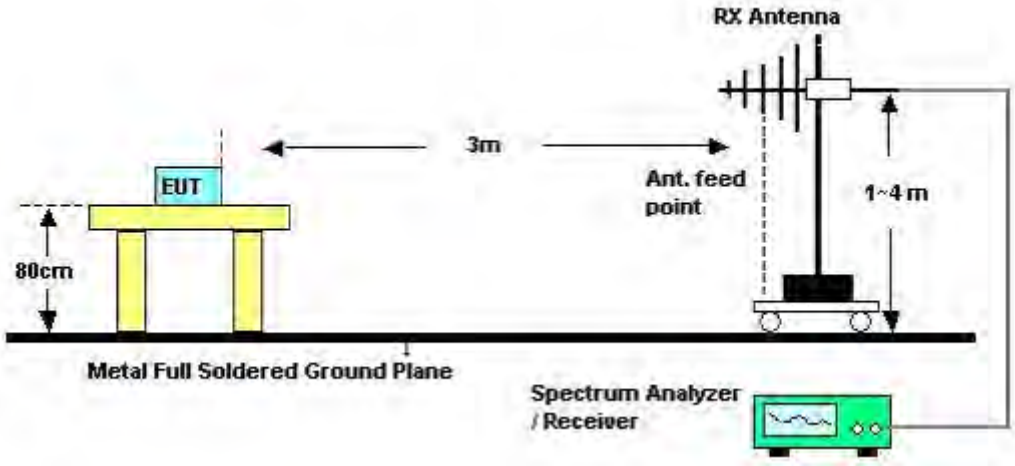
3.6.4 Test Setup

Emissions in Restricted Frequency Bands

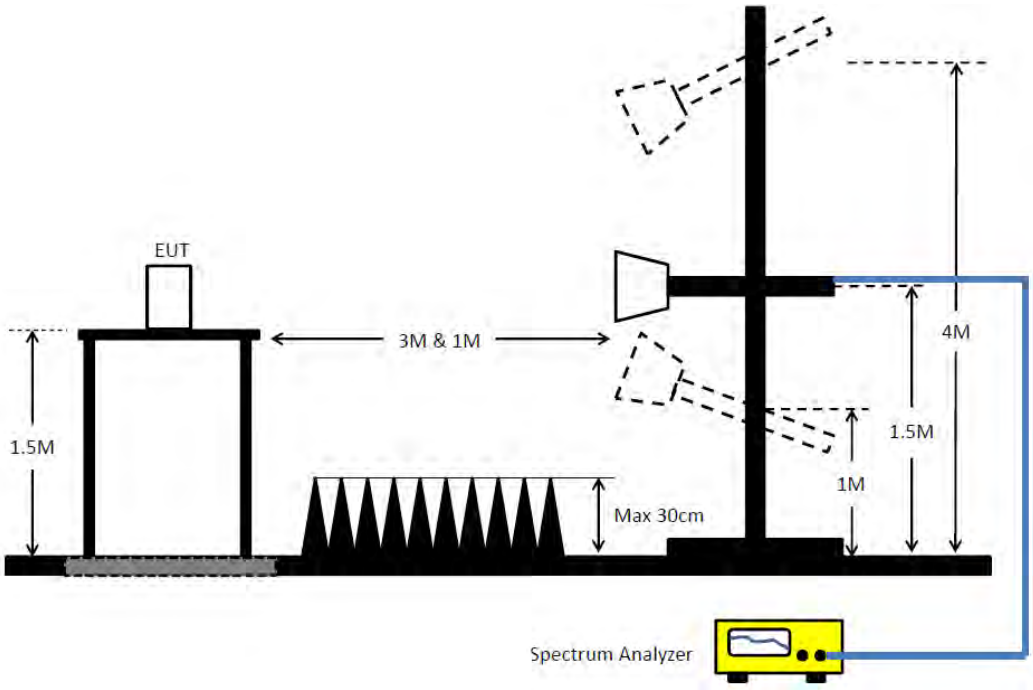
9kHz ~30MHz



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	Apr. 06, 2023	Apr. 05, 2024	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Dec. 20, 2022	Dec. 19, 2023	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 18, 2023	May 17, 2024	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Loop Antenna	Teseq	HLA 6120	31244	9kHz - 30 MHz	Mar. 23, 2023	Mar. 22, 2024	Radiation (03CH02-CB)
3m Semi Anechoic Chamber (NSA)	RIKEN	SAC-3M	03CH02-CB	30 MHz ~ 1 GHz	Mar. 25, 2023	Mar. 24, 2024	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Dec. 05, 2022	Dec. 04, 2023	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	May 14, 2022	May 13, 2023	Radiation (03CH04-CB)
Loop Antenna	Teseq	HLA 6120	31244	9kHz - 30 MHz	Mar. 23, 2023	Mar. 22, 2024	Radiation (03CH04-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH04-CB	30 MHz ~ 1 GHz	Aug. 02, 2022	Aug. 01, 2023	Radiation (03CH04-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH04-CB	30 MHz ~ 1 GHz	Aug. 01, 2023	Jul. 31, 2024	Radiation (03CH04-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	22021&AT-N06 07	30MHz ~ 1GHz	Oct. 08, 2022	Oct. 07, 2023	Radiation (03CH04-CB)
Pre-Amplifier	SGH	SGH0301	20230109-2	10M~1GHz	Jan. 13, 2023	Jan. 12, 2024	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Mar. 21, 2023	Mar. 20, 2024	Radiation (03CH04-CB
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH04-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 13, 2023	Jun. 12, 2024	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+67	30MHz – 1GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH04-CB
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-CB

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 06, 2022	May 05, 2023	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 05, 2023	May 04, 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	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 19, 2022	May 18, 2023	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 18, 2023	May 17, 2024	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)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH01-CB)
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)
Signal Analyzer	R&S	FSV3044	101320	9kHz ~ 44GHz	May 20, 2022	May 19, 2023	Conducted (TH01-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	Apr. 21, 2023	Apr. 20, 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. 22, 2023	Feb. 21, 2024	Conducted (TH01-CB)

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

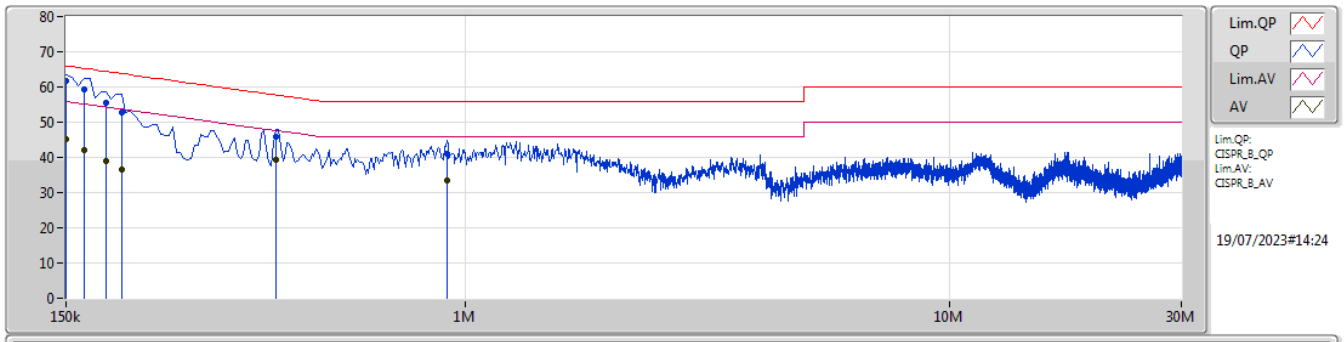
Note: Calibration Interval of instruments listed above is one year.

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

Summary

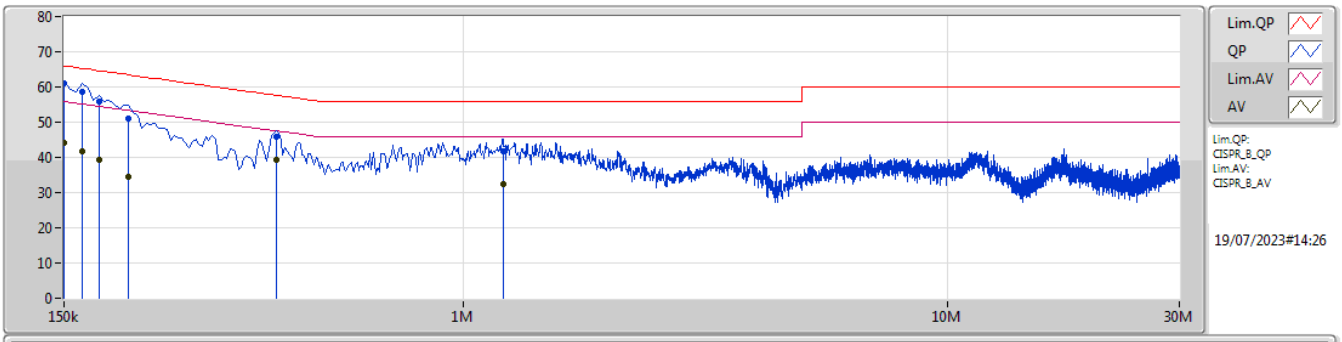
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 3	Pass	QP	150k	61.78	66.00	-4.22	Line

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	61.78	66.00	-4.22	10.21	Line	"Worst"	51.57	0.04	0.08	10.09
AV	150k	45.03	56.00	-10.97	10.21	Line	-	34.82	0.04	0.08	10.09
QP	163.5k	59.22	65.27	-6.05	10.21	Line	-	49.01	0.04	0.09	10.08
AV	163.5k	42.16	55.27	-13.11	10.21	Line	-	31.95	0.04	0.09	10.08
QP	181.5k	55.48	64.41	-8.93	10.21	Line	-	45.27	0.04	0.10	10.07
AV	181.5k	38.88	54.41	-11.21	10.21	Line	-	28.67	0.04	0.10	10.07
QP	195k	52.61	63.82	-11.21	10.21	Line	-	42.40	0.04	0.11	10.06
AV	195k	36.45	53.82	-17.37	10.21	Line	-	26.24	0.04	0.11	10.06
QP	406.5k	45.93	57.72	-11.79	10.20	Line	-	35.73	0.04	0.15	10.01
AV	406.5k	39.40	47.72	-8.32	10.20	Line	-	29.20	0.04	0.15	10.01
QP	915k	40.88	56.00	-15.12	10.14	Line	-	30.74	0.05	0.18	9.91
AV	915k	33.38	46.00	-12.62	10.14	Line	-	23.24	0.05	0.18	9.91

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	61.03	66.00	-4.97	10.22	Neutral	"Worst"	50.81	0.05	0.08	10.09
AV	150k	44.06	56.00	-11.94	10.22	Neutral	-	33.84	0.05	0.08	10.09
QP	163.5k	58.74	65.27	-6.53	10.22	Neutral	-	48.52	0.05	0.09	10.08
AV	163.5k	41.74	55.27	-13.53	10.22	Neutral	-	31.52	0.05	0.09	10.08
QP	177k	55.90	64.62	-8.72	10.22	Neutral	-	45.68	0.05	0.10	10.07
AV	177k	39.19	54.62	-15.43	10.22	Neutral	-	28.97	0.05	0.10	10.07
QP	204k	51.00	63.44	-12.44	10.22	Neutral	-	40.78	0.05	0.11	10.06
AV	204k	34.42	53.44	-19.02	10.22	Neutral	-	24.20	0.05	0.11	10.06
QP	411k	45.70	57.63	-11.93	10.21	Neutral	-	35.49	0.05	0.15	10.01
AV	411k	39.15	47.63	-8.48	10.21	Neutral	-	28.94	0.05	0.15	10.01
QP	1.208M	41.61	56.00	-14.39	10.13	Neutral	-	31.48	0.07	0.18	9.88
AV	1.208M	32.36	46.00	-13.64	10.13	Neutral	-	22.23	0.07	0.18	9.88

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)	640k	1.031M	1M03F1D	638.75k	1.031M
BT-LE(2Mbps)	1.088M	2.079M	2M08F1D	1.088M	2.056M

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

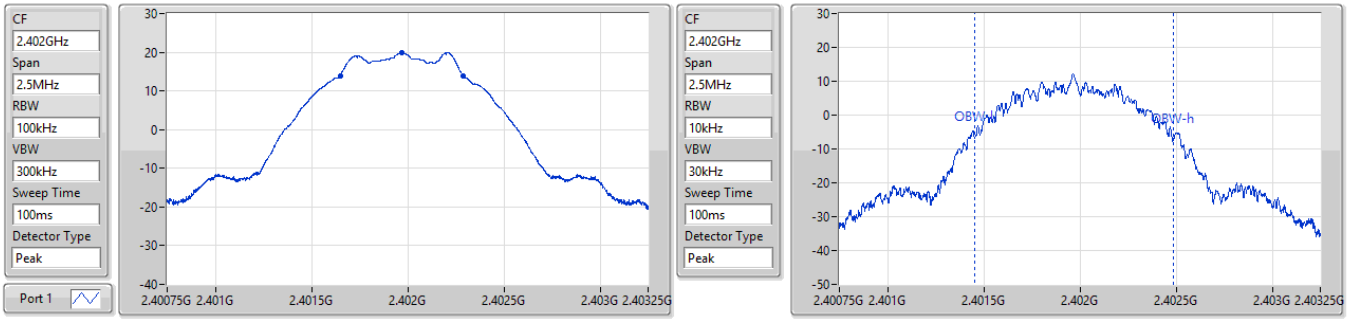
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	640k	1.031M
2440MHz	Pass	500k	638.75k	1.031M
2480MHz	Pass	500k	640k	1.031M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.088M	2.056M
2440MHz	Pass	500k	1.088M	2.069M
2480MHz	Pass	500k	1.088M	2.079M

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

17/04/2023

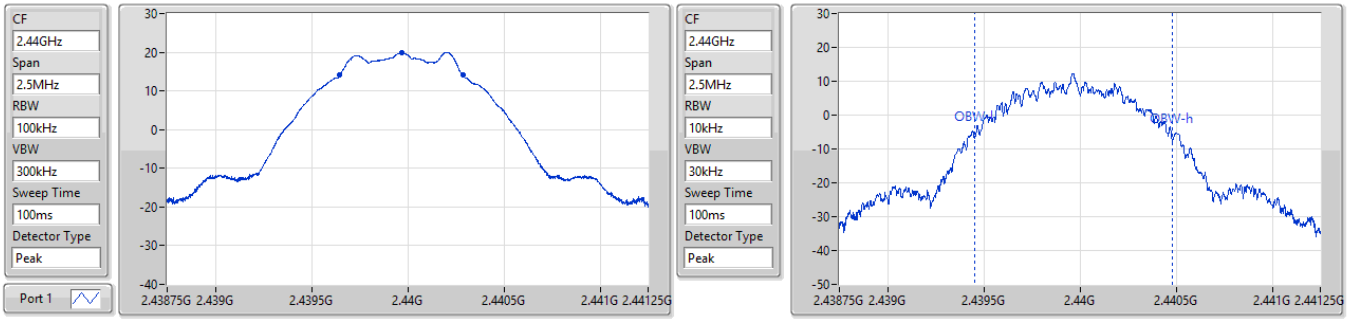


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
640k	2.401649G	2.402289G	1.031M	2.401454G	2.402485G	500k	1

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

2440MHz

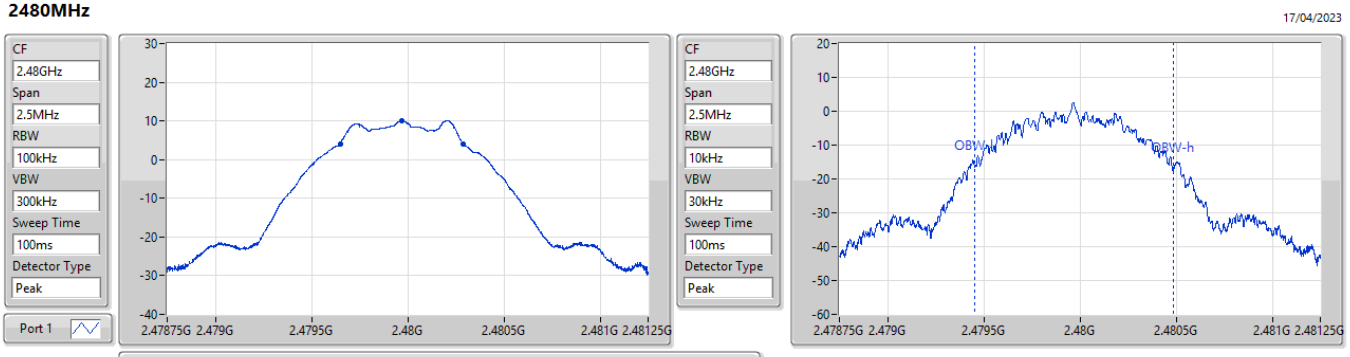
17/04/2023



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
638.75k	2.439648G	2.440286G	1.031M	2.439453G	2.440484G	500k	1

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

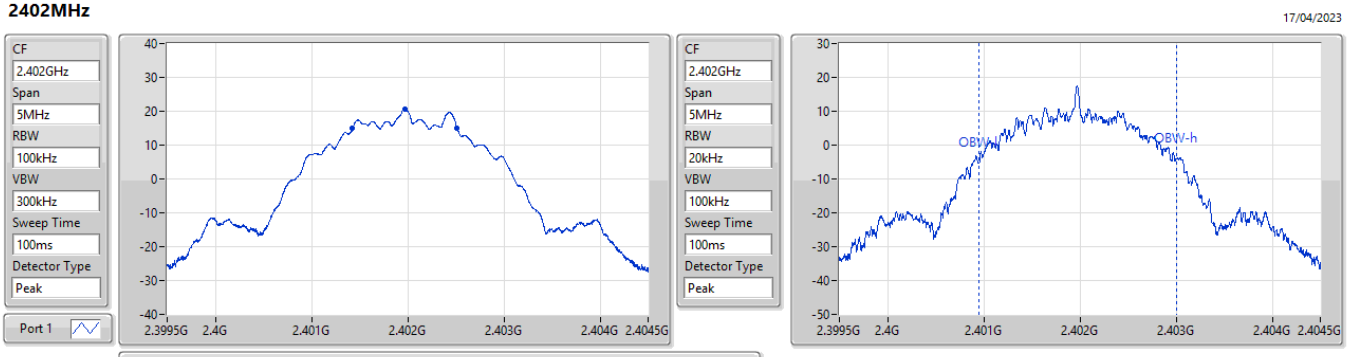
2480MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
640k	2.479649G	2.480289G	1.031M	2.479455G	2.480486G	500k	1

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

2402MHz

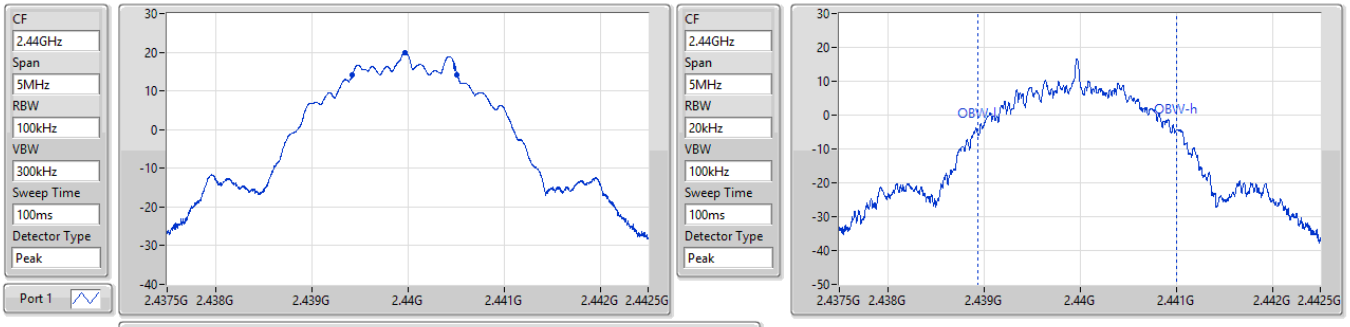


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.088M	2.401428G	2.402515G	2.056M	2.400946G	2.403002G	500k	1

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

2440MHz

17/04/2023

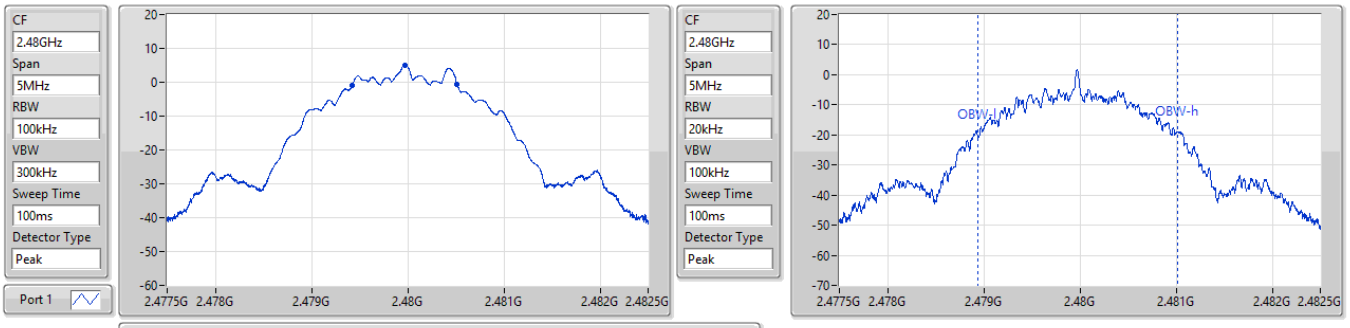


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.088M	2.439428G	2.440515G	2.069M	2.438938G	2.441007G	500k	1

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

2480MHz

17/04/2023



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.088M	2.479428G	2.480515G	2.079M	2.478936G	2.481014G	500k	1

Summary

Mode	Total Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	19.65	0.09226
BT-LE(2Mbps)	20.14	0.10328

Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	5.70	19.55	30.00
2440MHz	Pass	5.70	19.65	30.00
2478MHz	Pass	5.70	17.26	30.00
2480MHz	Pass	5.70	9.64	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	5.70	20.14	30.00
2440MHz	Pass	5.70	19.62	30.00
2478MHz	Pass	5.70	7.22	30.00
2480MHz	Pass	5.70	4.64	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	4.47
BT-LE(2Mbps)	4.57

RBW = 3kHz;

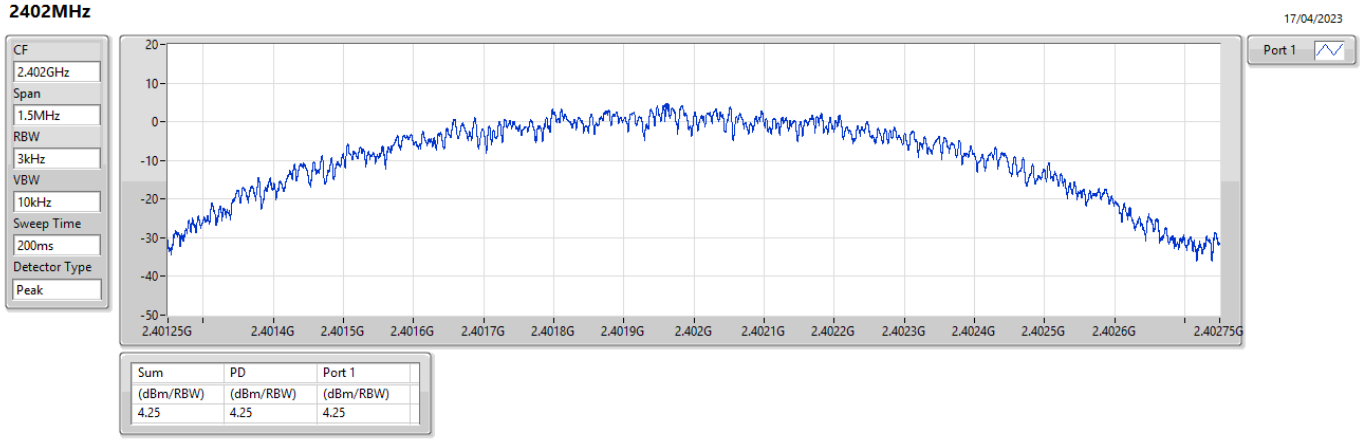
Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	5.70	4.25	8.00
2440MHz	Pass	5.70	4.47	8.00
2480MHz	Pass	5.70	-5.32	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	5.70	4.57	8.00
2440MHz	Pass	5.70	3.84	8.00
2480MHz	Pass	5.70	-10.96	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**

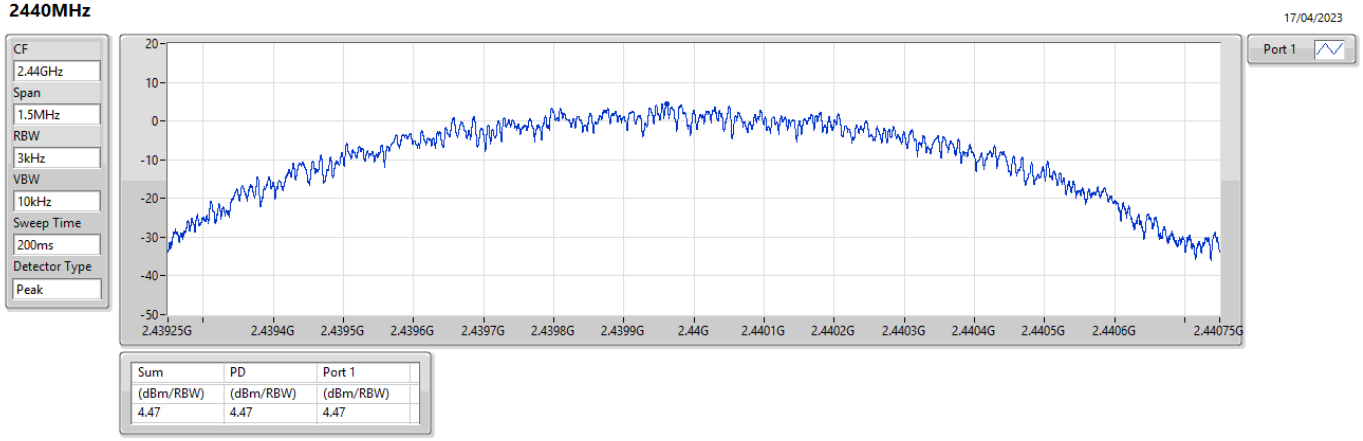
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.25	4.25	4.25

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

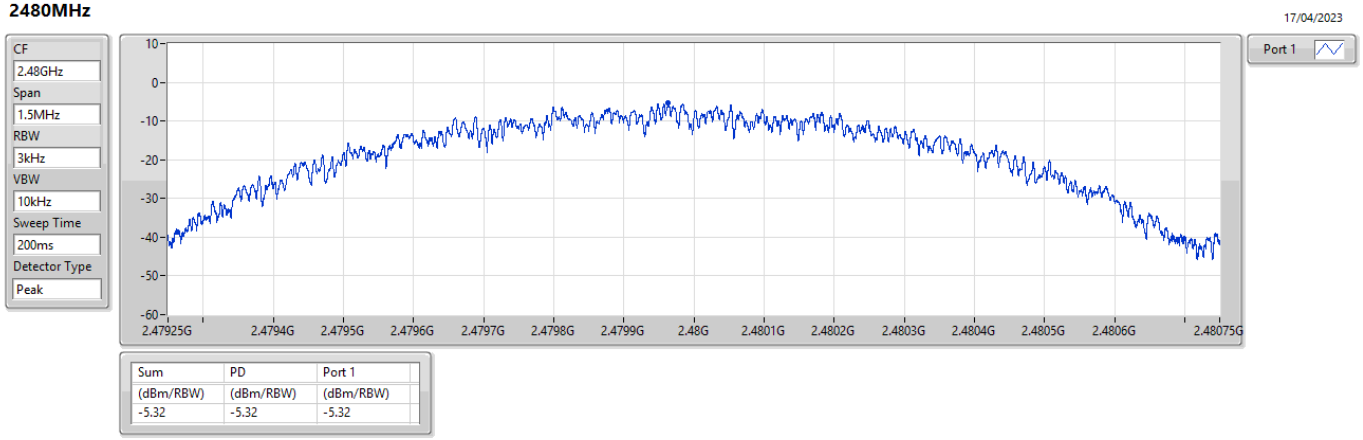
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.47	4.47	4.47

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

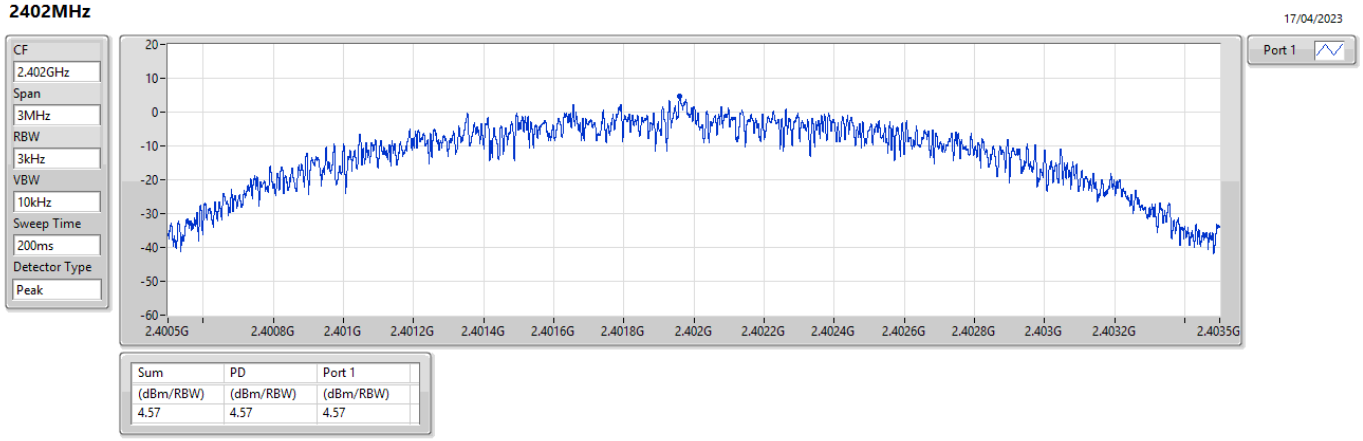
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.32	-5.32	-5.32

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

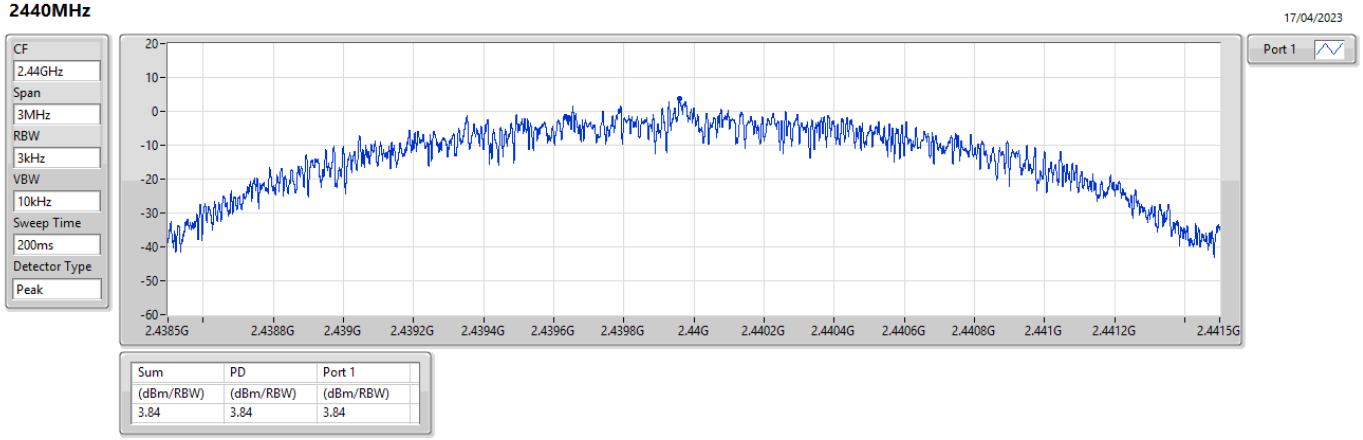
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.57	4.57	4.57

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

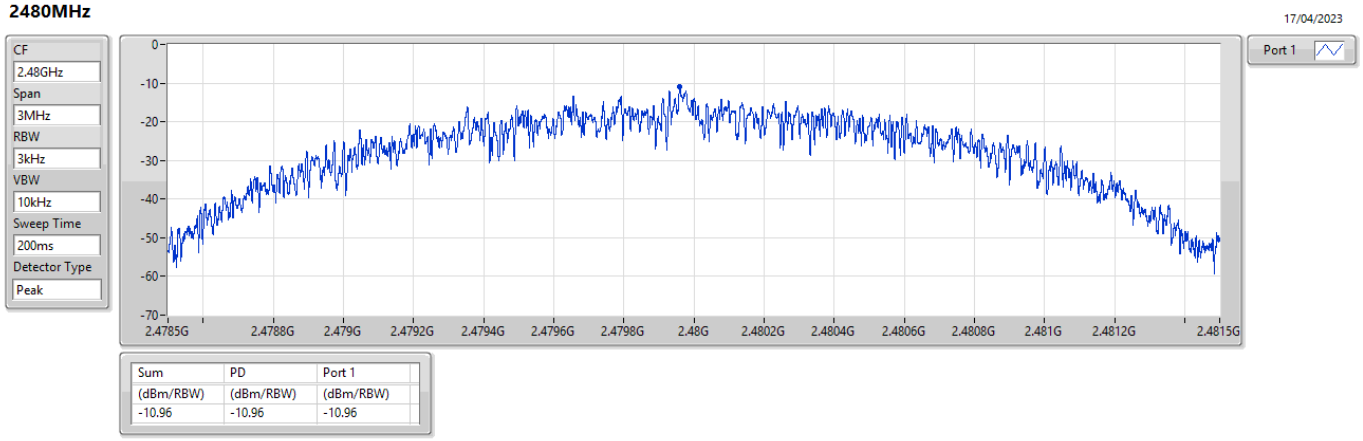
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.84	3.84	3.84

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

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.96	-10.96	-10.96

Summary

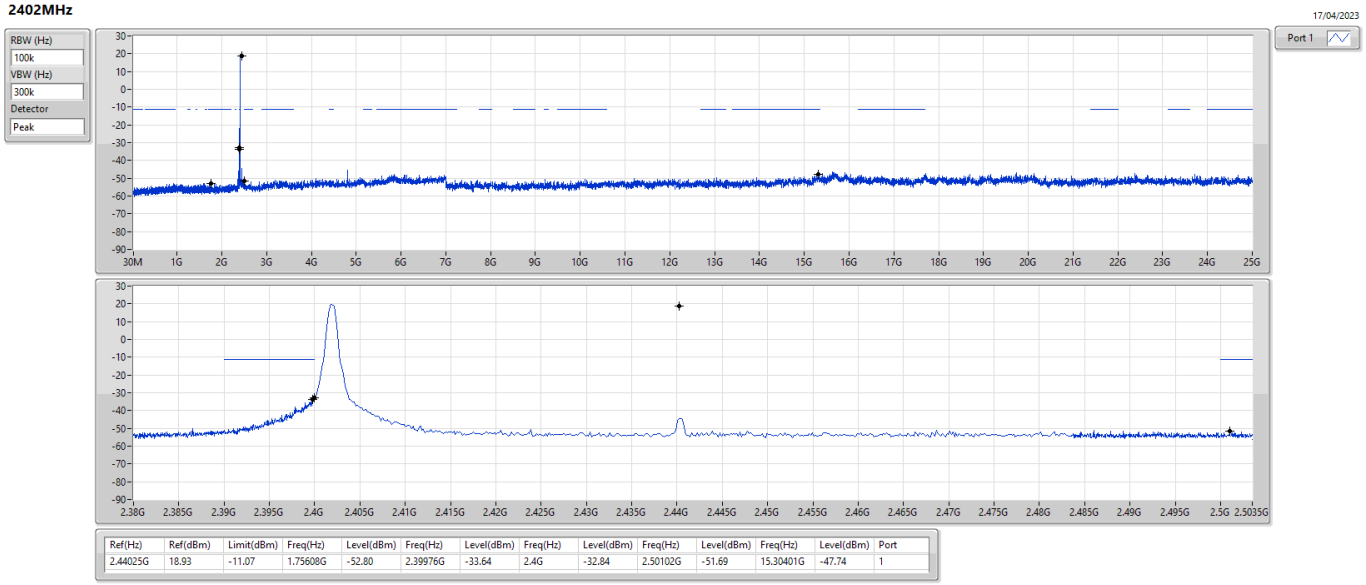
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44025G	18.93	-11.07	1.75608G	-52.80	2.39976G	-33.64	2.4G	-32.84	2.50102G	-51.69	15.30401G	-47.74	1
BT-LE(2Mbps)	Pass	2.40184G	20.76	-9.24	894.8M	-52.61	2.39996G	-11.31	2.4G	-12.42	2.50002G	-51.40	16.65942G	-47.18	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	2.44025G	18.93	-11.07	1.75608G	-52.80	2.39976G	-33.64	2.4G	-32.84	2.50102G	-51.69	15.30401G	-47.74	1
2440MHz	Pass	2.44025G	18.93	-11.07	2.18378G	-52.79	2.39632G	-52.19	2.4G	-53.97	2.5005G	-52.06	5.79361G	-47.05	1
2480MHz	Pass	2.44025G	18.93	-11.07	866.6M	-52.79	2.3994G	-52.07	2.4G	-53.14	2.50074G	-51.44	5.96515G	-47.10	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40184G	20.76	-9.24	894.8M	-52.61	2.39996G	-11.31	2.4G	-12.42	2.50002G	-51.40	16.65942G	-47.18	1
2440MHz	Pass	2.40184G	20.76	-9.24	2.16615G	-52.64	2.3996G	-51.49	2.4G	-52.83	2.50258G	-52.03	17.66895G	-47.35	1
2480MHz	Pass	2.40184G	20.76	-9.24	1.74903G	-52.52	2.39772G	-51.68	2.4G	-54.55	2.50154G	-51.39	17.69707G	-47.17	1

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

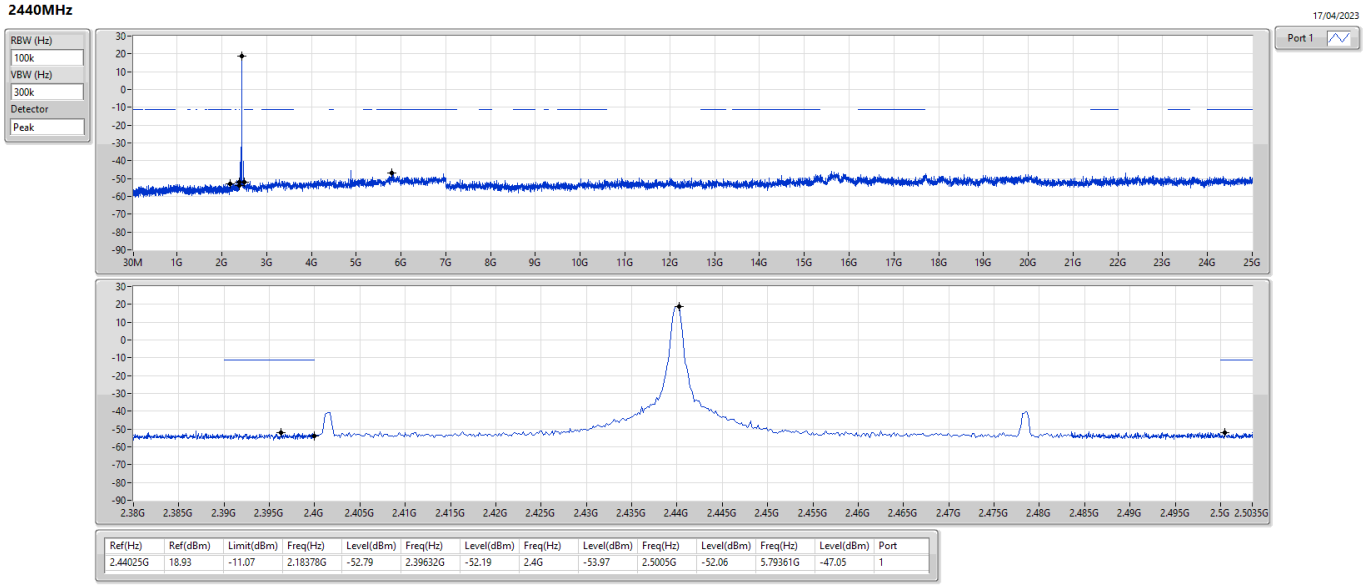
2402MHz



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
2.44025G	18.93	-11.07	1.75608G	-52.80	2.39976G	-33.64	2.4G	-32.84	2.50102G	-51.69	15.30401G	-47.74	1

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

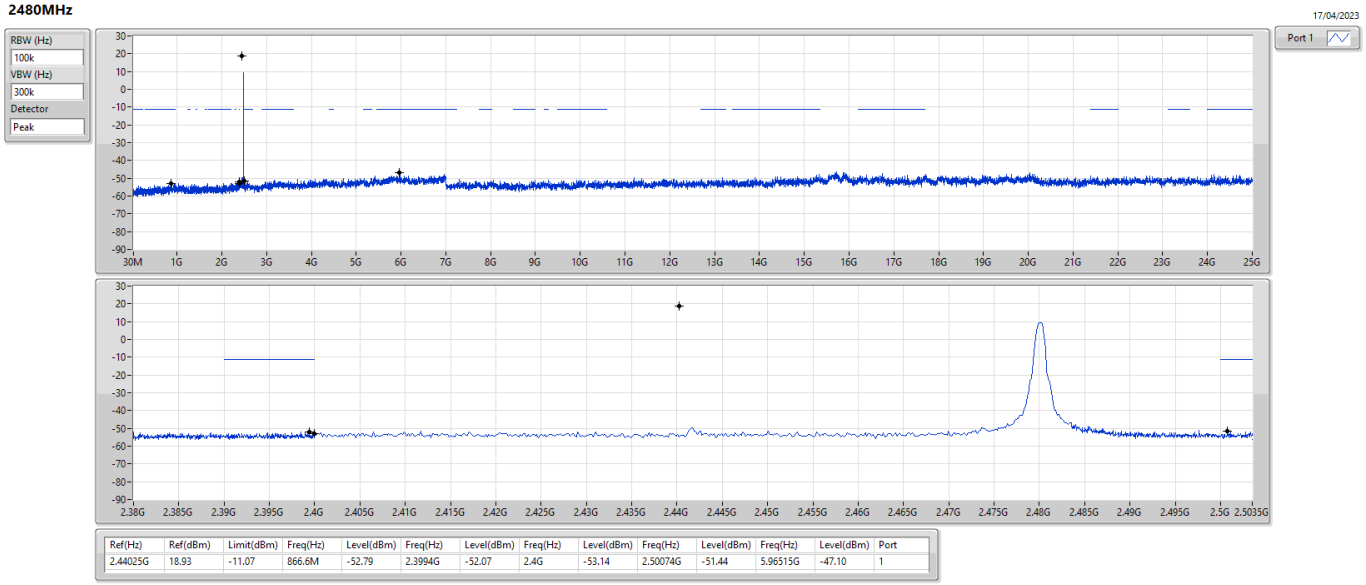
2440MHz



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
2.44025G	18.93	-11.07	2.18378G	-52.79	2.39632G	-52.19	2.4G	-53.97	2.5005G	-52.06	5.79361G	-47.05	1

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

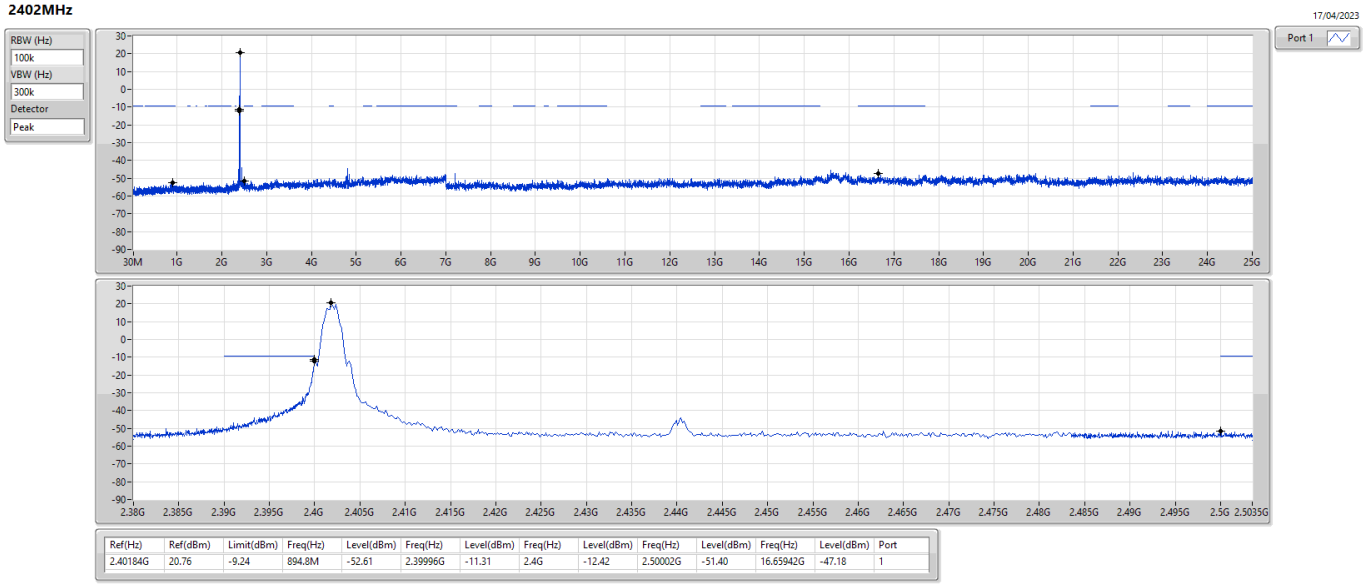
2480MHz



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
2.44025G	18.93	-11.07	866.6M	-52.79	2.3994G	-52.07	2.4G	-53.14	2.50074G	-51.44	5.96515G	-47.10	1

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

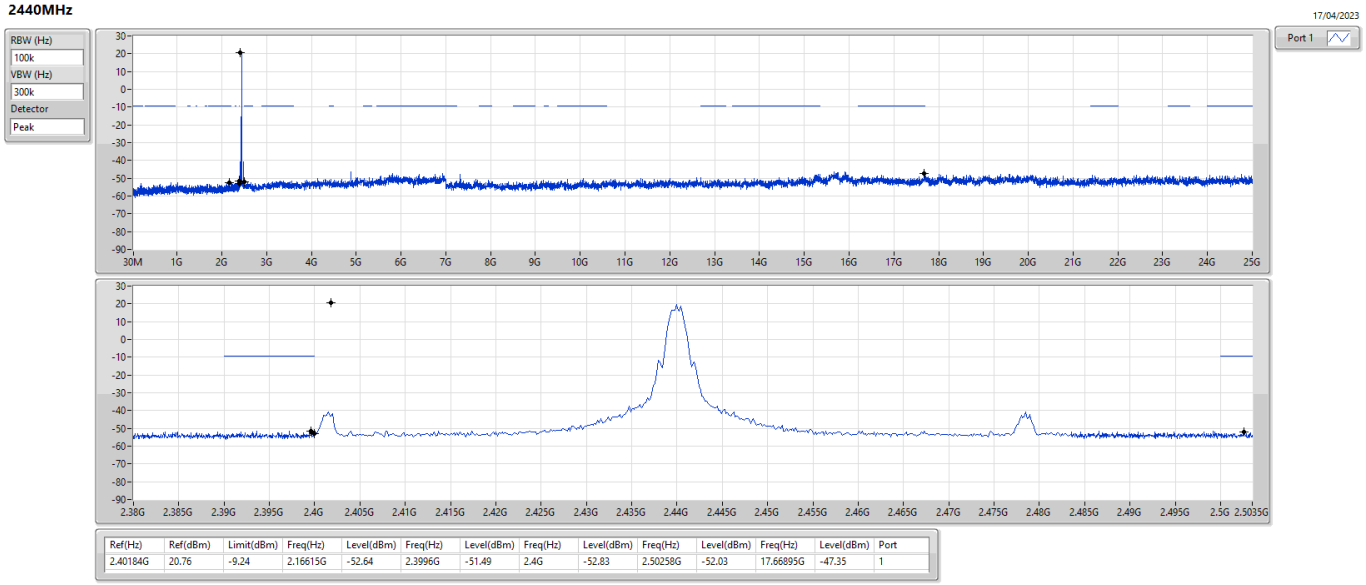
2402MHz



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
2.40184G	20.76	-9.24	894.8M	-52.61	2.39996G	-11.31	2.4G	-12.42	2.50002G	-51.40	16.65942G	-47.18	1

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

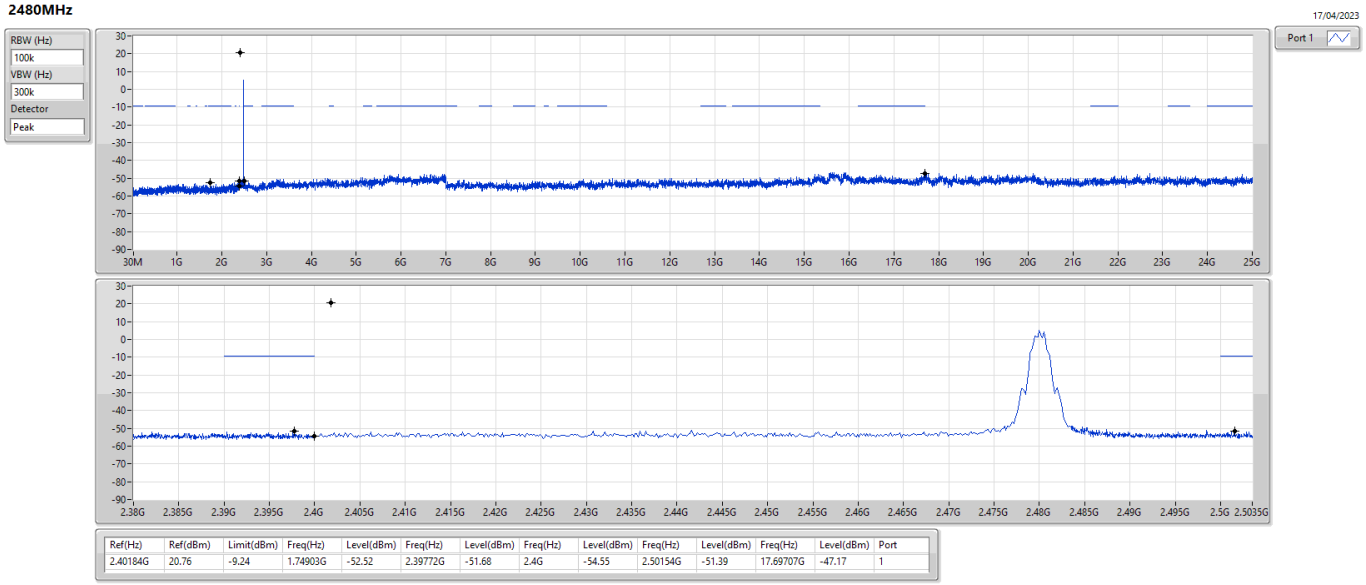
2440MHz



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
2.40184G	20.76	-9.24	2.16615G	-52.64	2.3996G	-51.49	2.4G	-52.83	2.50258G	-52.03	17.66895G	-47.35	1

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

2480MHz

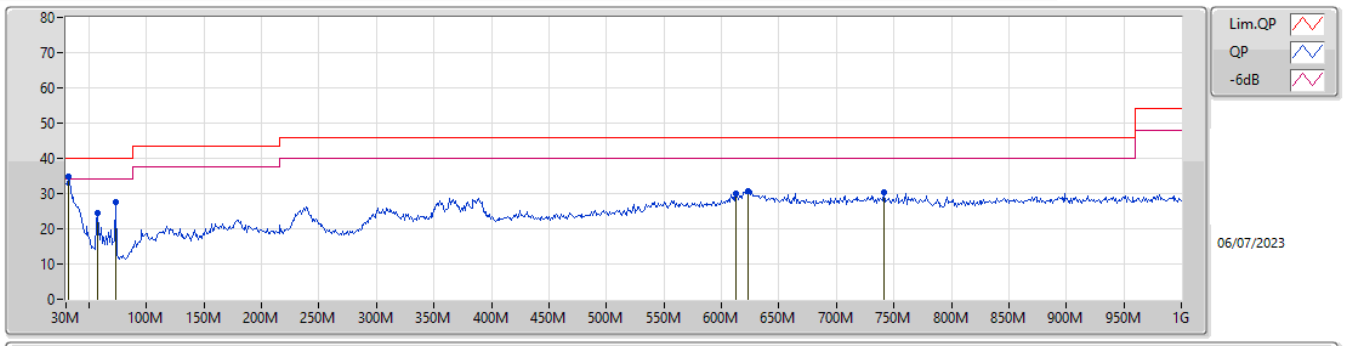


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40184G	20.76	-9.24	1.74903G	-52.52	2.39772G	-51.68	2.4G	-54.55	2.50154G	-51.39	17.69707G	-47.17	1

Summary

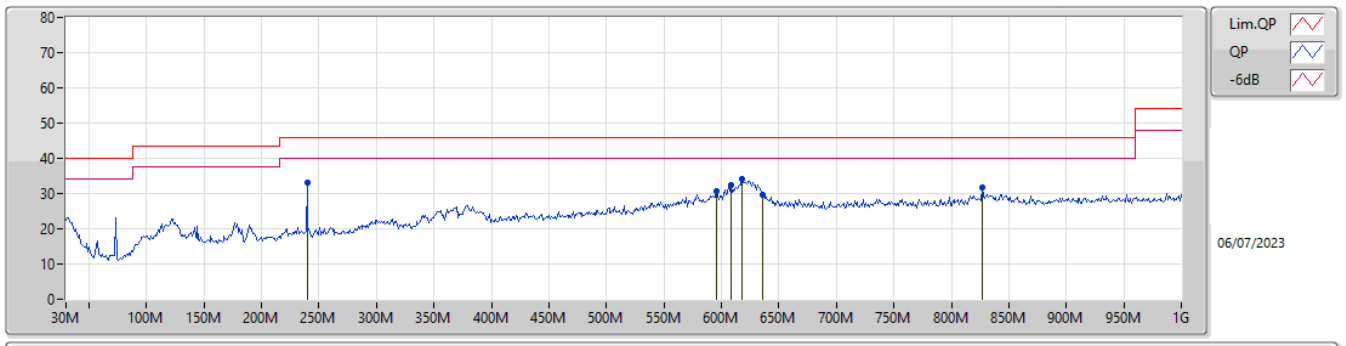
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 8	Pass	PK	31.94M	34.87	40.00	-5.13	Vertical

Mode 8



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	31.94M	34.87	40.00	-5.13	-7.31	3	Vertical	94	2.00	"Worst"	42.18	23.26	0.65	31.22
PK	57.16M	24.54	40.00	-15.46	-17.70	3	Vertical	319	1.00	-	42.24	13.16	0.85	31.71
PK	73.65M	27.49	40.00	-12.51	-18.10	3	Vertical	187	1.25	-	45.59	12.65	0.95	31.70
PK	612.97M	30.15	46.00	-15.85	-4.42	3	Vertical	360	1.50	-	34.57	25.13	2.65	32.20
PK	623.64M	30.64	46.00	-15.36	-4.27	3	Vertical	2	1.50	-	34.91	25.29	2.68	32.24
PK	741.01M	30.28	46.00	-15.72	-3.65	3	Vertical	0	2.00	-	33.93	25.72	2.94	32.31

Mode 8



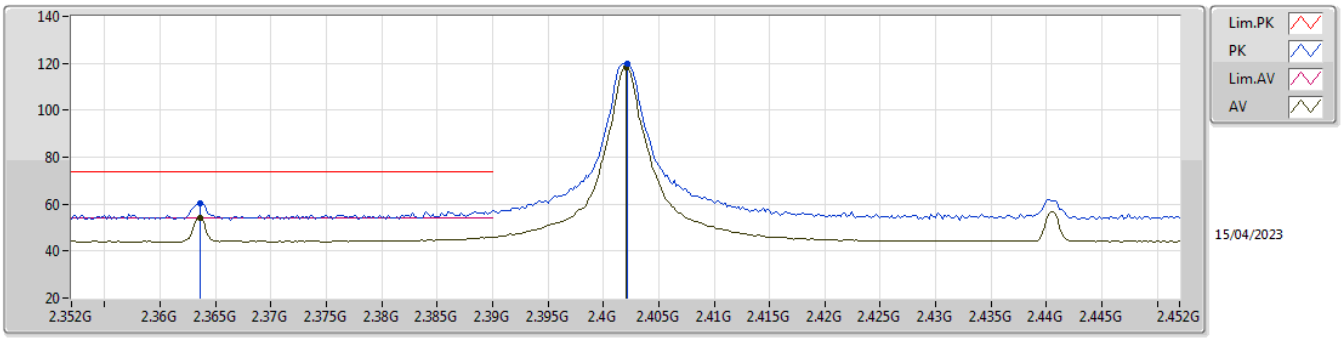
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV/m)	(dB/m)	(dB)	(dB)
PK	240M	33.27	46.00	-12.73	-12.94	3	Horizontal	122	1.25	-	46.21	17.16	1.70	31.80
PK	595.51M	30.69	46.00	-15.31	-4.72	3	Horizontal	360	1.00	-	35.41	24.82	2.61	32.15
PK	608M	32.57	46.00	-13.43	-4.49	3	Horizontal	0	1.25	-	37.06	25.05	2.64	32.18
PK	617.82M	34.11	46.00	-11.89	-4.34	3	Horizontal	7	1.25	"Worst"	38.45	25.22	2.66	32.22
PK	636.25M	29.80	46.00	-16.20	-4.32	3	Horizontal	0	1.25	-	34.12	25.26	2.71	32.29
PK	827.34M	31.75	46.00	-14.25	-3.00	3	Horizontal	352	1.50	-	34.75	26.20	3.12	32.32

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4835G	53.99	54.00	-0.01	3	Vertical	34	2.69	-
BT-LE(2Mbps)	Pass	AV	2.4835G	53.97	54.00	-0.03	3	Vertical	34	2.71	-

2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX

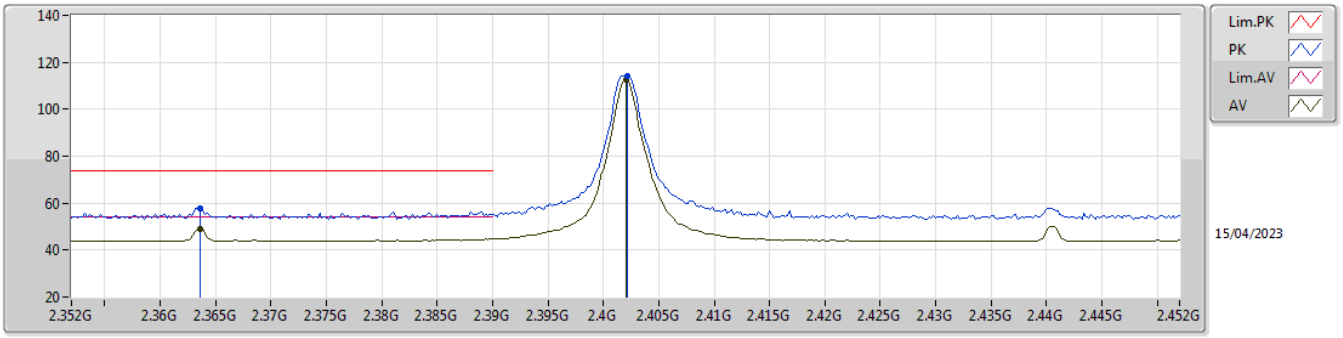


EUT Y_1TX
Setting 188
01-D-R-6

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	2.3636G	60.34	74.00	-13.66	29.05	3	Vertical	355	1.80	-	27.73	3.56	-
AV	2.3636G	53.98	54.00	-0.02	22.69	3	Vertical	355	1.80	-	27.73	3.56	-
PK	2.4022G	119.71	Inf	-Inf	88.31	3	Vertical	355	1.80	-	27.80	3.60	-
AV	2.402G	118.22	Inf	-Inf	86.82	3	Vertical	355	1.80	-	27.80	3.60	-

2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX

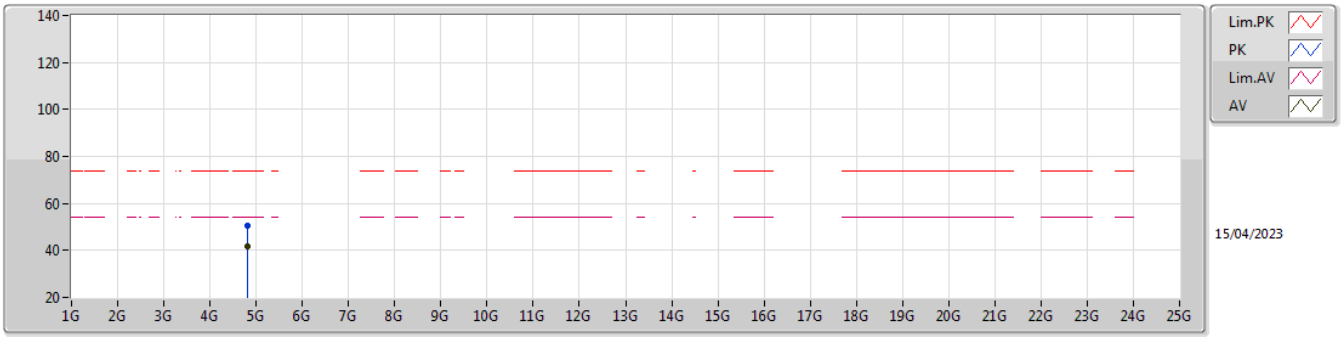


EUT Y_1TX
Setting 188
01-D-R-6

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	2.3636G	57.99	74.00	-16.01	26.70	3	Horizontal	53	1.77	-	27.73	3.56	-
AV	2.3636G	49.19	54.00	-4.81	17.90	3	Horizontal	53	1.77	-	27.73	3.56	-
PK	2.4022G	114.30	Inf	-Inf	82.90	3	Horizontal	53	1.77	-	27.80	3.60	-
AV	2.402G	112.82	Inf	-Inf	81.42	3	Horizontal	53	1.77	-	27.80	3.60	-

2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX

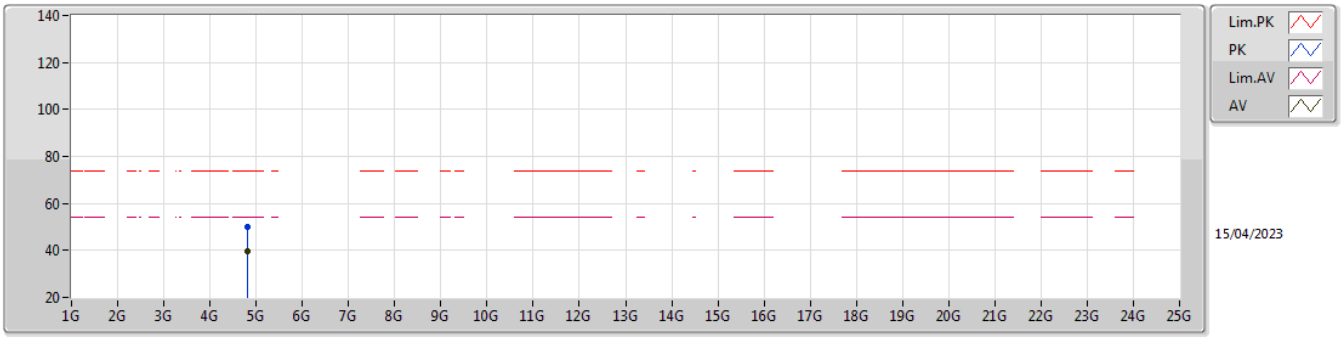


EUT Y_1TX
Setting 188
01-D-R-6

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	4.80439G	50.73	74.00	-23.27	45.19	3	Vertical	8	2.11	-	32.73	5.70	32.89
AV	4.80395G	41.79	54.00	-12.21	36.26	3	Vertical	8	2.11	-	32.72	5.70	32.89

2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX

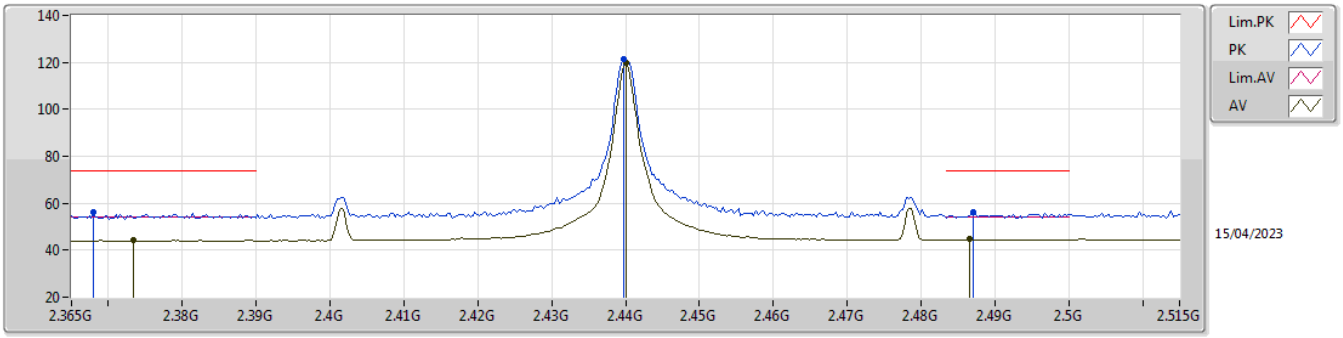


EUT Y_1TX
Setting 188
01-D-R-6

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	4.80336G	49.76	74.00	-24.24	44.23	3	Horizontal	66	2.56	-	32.72	5.70	32.89
AV	4.80397G	39.66	54.00	-14.34	34.13	3	Horizontal	66	2.56	-	32.72	5.70	32.89

2.4-2.4835GHz_BT-LE(1Mbps)

2440MHz_TX

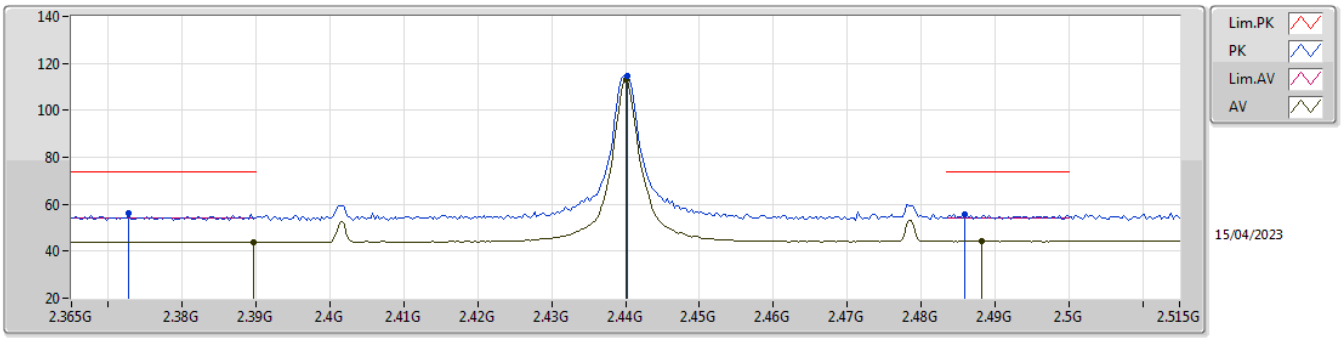


EUT Y_1TX
Setting 200
01-D-R-6

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	2.368G	56.13	74.00	-17.87	24.82	3	Vertical	360	1.80	-	27.74	3.57	-
AV	2.3734G	44.28	54.00	-9.72	12.96	3	Vertical	360	1.80	-	27.75	3.57	-
PK	2.4397G	121.16	Inf	-Inf	89.66	3	Vertical	360	1.80	-	27.88	3.62	-
AV	2.44G	119.67	Inf	-Inf	88.17	3	Vertical	360	1.80	-	27.88	3.62	-
PK	2.4871G	56.13	74.00	-17.87	24.37	3	Vertical	360	1.80	-	28.12	3.64	-
AV	2.4865G	44.62	54.00	-9.38	12.86	3	Vertical	360	1.80	-	28.12	3.64	-

2.4-2.4835GHz_BT-LE(1Mbps)

2440MHz_TX

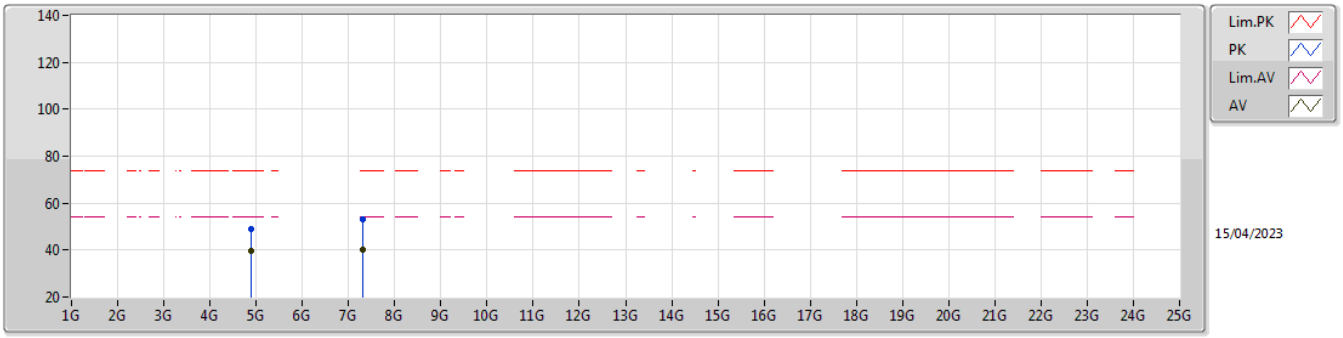


EUT Y_1TX
Setting 200
01-D-R-6

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	2.3728G	55.96	74.00	-18.04	24.64	3	Horizontal	56	1.67	-	27.75	3.57	-
AV	2.3896G	44.04	54.00	-9.96	12.67	3	Horizontal	56	1.67	-	27.78	3.59	-
PK	2.4403G	114.91	Inf	-Inf	83.41	3	Horizontal	56	1.67	-	27.88	3.62	-
AV	2.44G	113.32	Inf	-Inf	81.82	3	Horizontal	56	1.67	-	27.88	3.62	-
PK	2.4859G	55.93	74.00	-18.07	24.17	3	Horizontal	56	1.67	-	28.12	3.64	-
AV	2.4883G	44.43	54.00	-9.57	12.66	3	Horizontal	56	1.67	-	28.13	3.64	-

2.4-2.4835GHz_BT-LE(1Mbps)

2440MHz_TX

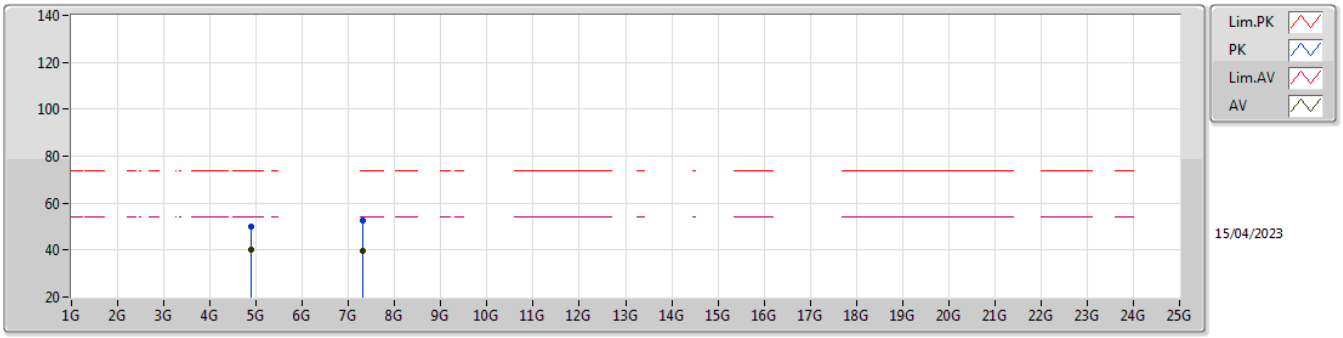


EUT Y_1TX
Setting 200
01-D-R-6

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	4.87943G	49.13	74.00	-24.87	43.22	3	Vertical	7	2.06	-	33.00	5.78	32.87
AV	4.88002G	39.67	54.00	-14.33	33.76	3	Vertical	7	2.06	-	33.00	5.78	32.87
PK	7.31886G	52.93	74.00	-21.07	41.36	3	Vertical	41	1.80	-	37.60	7.16	33.19
AV	7.3193G	40.05	54.00	-13.95	28.48	3	Vertical	41	1.80	-	37.60	7.16	33.19

2.4-2.4835GHz_BT-LE(1Mbps)

2440MHz_TX

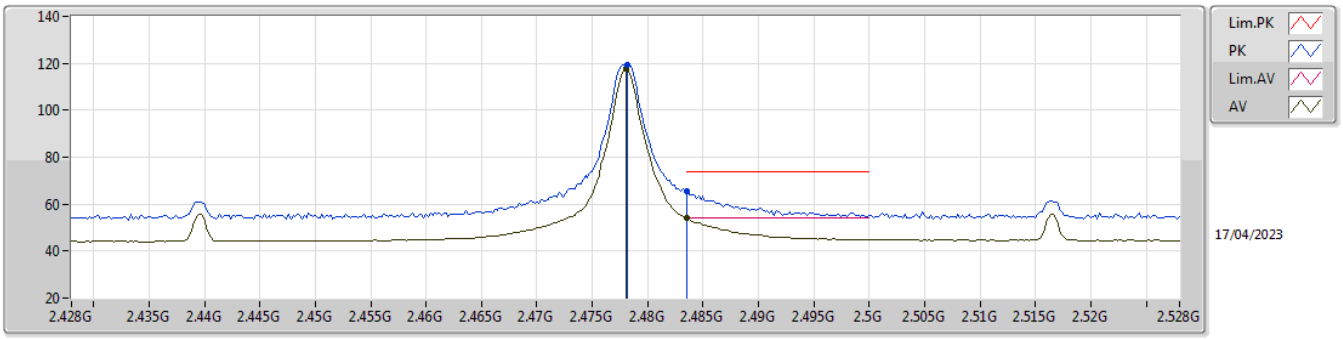


EUT Y_1TX
Setting 200
01-D-R-6

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	4.8804G	50.06	74.00	-23.94	44.15	3	Horizontal	63	2.71	-	33.00	5.78	32.87
AV	4.88003G	40.26	54.00	-13.74	34.35	3	Horizontal	63	2.71	-	33.00	5.78	32.87
PK	7.31963G	52.34	74.00	-21.66	40.77	3	Horizontal	180	2.48	-	37.60	7.16	33.19
AV	7.31904G	39.85	54.00	-14.15	28.28	3	Horizontal	180	2.48	-	37.60	7.16	33.19

2.4-2.4835GHz_BT-LE(1Mbps)

2478MHz_TX

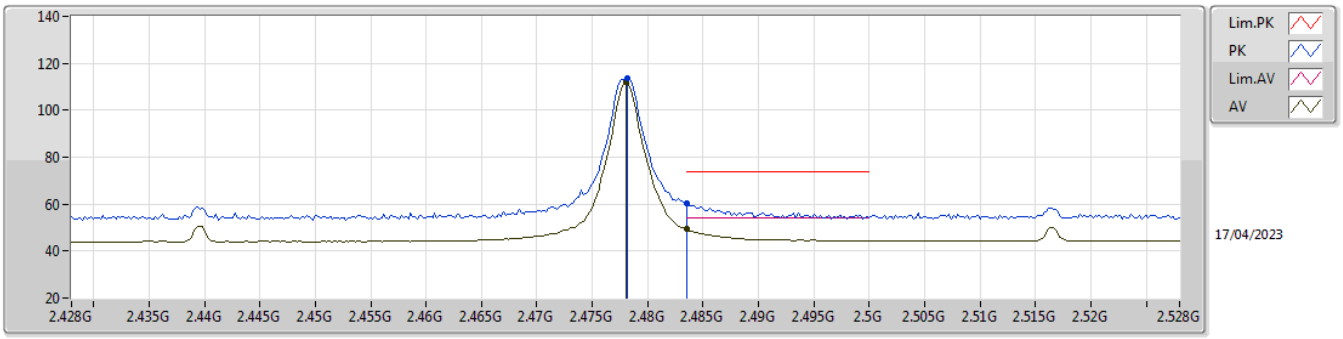


EUT Y_1TX
Setting 175
01-D-J-8

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	2.4782G	119.27	Inf	-Inf	87.56	3	Vertical	5	2.23	-	28.07	3.64	-
AV	2.478G	117.79	Inf	-Inf	86.08	3	Vertical	5	2.23	-	28.07	3.64	-
PK	2.4835G	65.42	74.00	-8.58	33.68	3	Vertical	5	2.23	-	28.10	3.64	-
AV	2.4835G	53.96	54.00	-0.04	22.22	3	Vertical	5	2.23	-	28.10	3.64	-

2.4-2.4835GHz_BT-LE(1Mbps)

2478MHz_TX

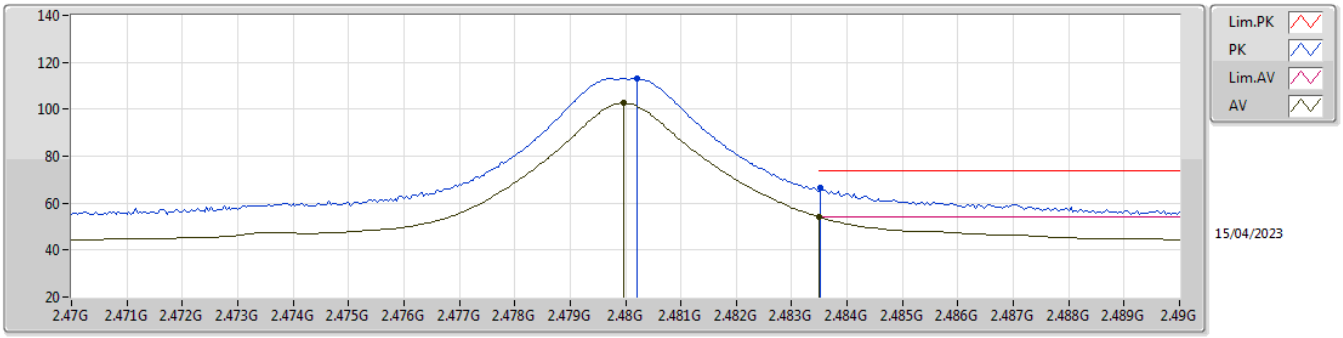


EUT Y_1TX
Setting 175
01-D-J-8

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	2.4782G	113.37	Inf	-Inf	81.66	3	Horizontal	64	1.62	-	28.07	3.64	-
AV	2.478G	111.90	Inf	-Inf	80.19	3	Horizontal	64	1.62	-	28.07	3.64	-
PK	2.4835G	60.48	74.00	-13.52	28.74	3	Horizontal	64	1.62	-	28.10	3.64	-
AV	2.4835G	49.25	54.00	-4.75	17.51	3	Horizontal	64	1.62	-	28.10	3.64	-

2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX

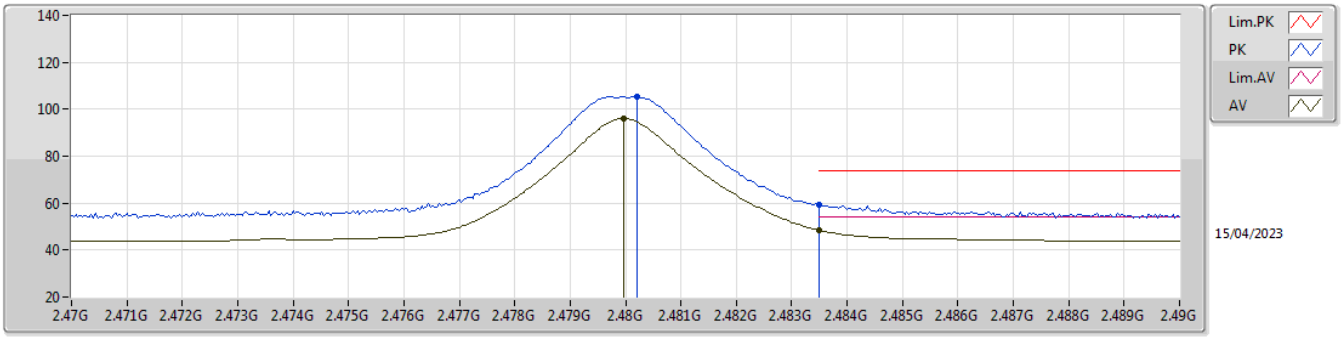


EUT Y_1TX
Setting 100
01-D-R-6

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	2.4802G	112.94	Inf	-Inf	81.22	3	Vertical	34	2.69	-	28.08	3.64	-
AV	2.47996G	102.61	Inf	-Inf	70.89	3	Vertical	34	2.69	-	28.08	3.64	-
PK	2.48352G	66.32	74.00	-7.68	34.58	3	Vertical	34	2.69	-	28.10	3.64	-
AV	2.4835G	53.99	54.00	-0.01	22.25	3	Vertical	34	2.69	-	28.10	3.64	-

2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX

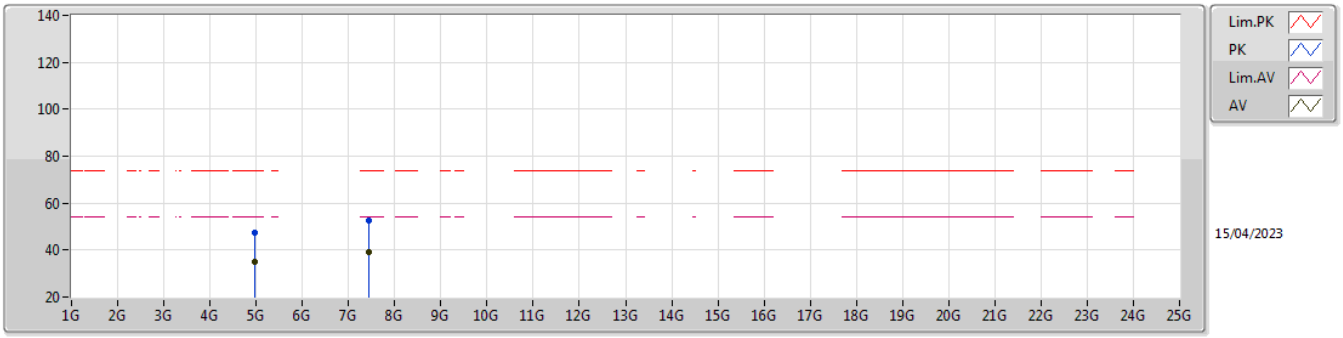


EUT Y_1TX
Setting 100
01-D-R-6

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	2.4802G	105.21	Inf	-Inf	73.49	3	Horizontal	55	1.80	-	28.08	3.64	-
AV	2.47996G	95.98	Inf	-Inf	64.26	3	Horizontal	55	1.80	-	28.08	3.64	-
PK	2.4835G	59.28	74.00	-14.72	27.54	3	Horizontal	55	1.80	-	28.10	3.64	-
AV	2.4835G	48.38	54.00	-5.62	16.64	3	Horizontal	55	1.80	-	28.10	3.64	-

2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX

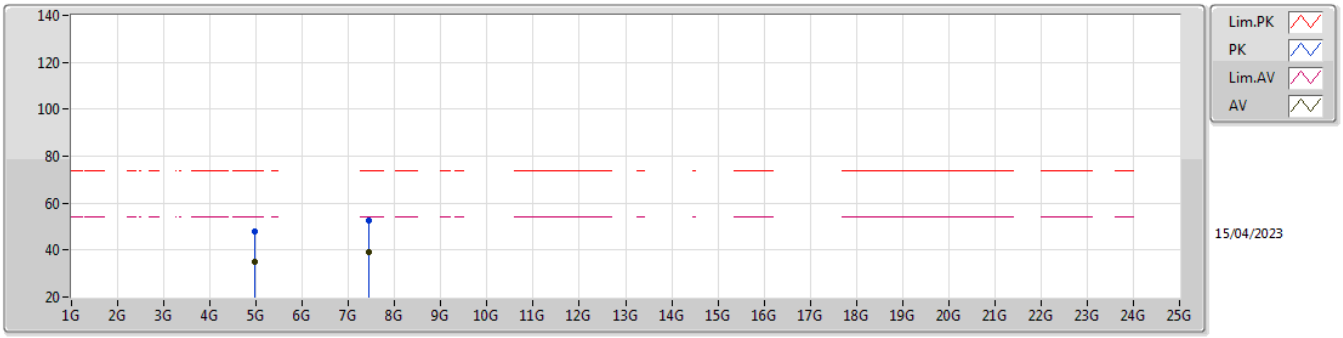


EUT Y_1TX
Setting 100
01-D-R-6

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	4.95976G	47.29	74.00	-26.71	41.27	3	Vertical	62	2.68	-	33.02	5.86	32.86
AV	4.96001G	34.89	54.00	-19.11	28.87	3	Vertical	62	2.68	-	33.02	5.86	32.86
PK	7.44081G	52.34	74.00	-21.66	40.87	3	Vertical	103	3.00	-	37.50	7.22	33.25
AV	7.44018G	39.18	54.00	-14.82	27.71	3	Vertical	103	3.00	-	37.50	7.22	33.25

2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX

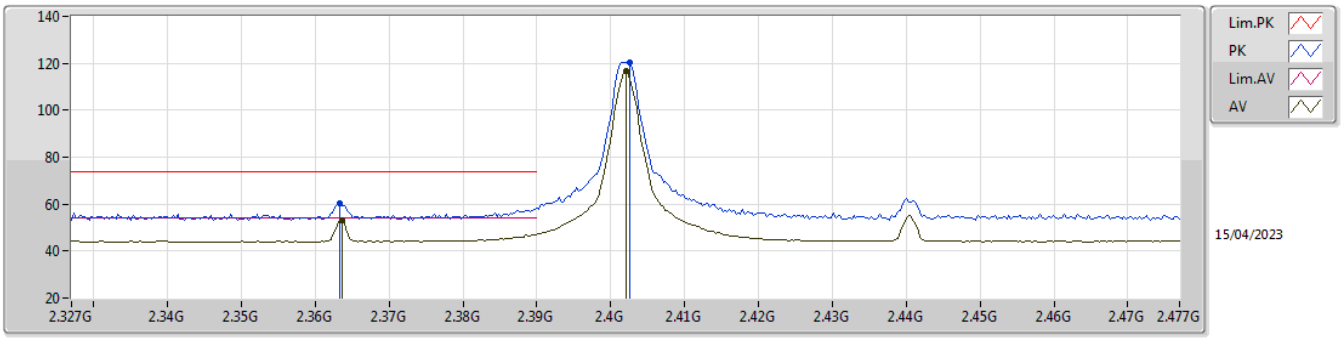


EUT Y_1TX
Setting 100
01-D-R-6

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	4.95941G	47.89	74.00	-26.11	41.87	3	Horizontal	58	2.40	-	33.02	5.86	32.86
AV	4.95969G	34.95	54.00	-19.05	28.93	3	Horizontal	58	2.40	-	33.02	5.86	32.86
PK	7.43807G	52.43	74.00	-21.57	40.96	3	Horizontal	147	2.38	-	37.50	7.22	33.25
AV	7.4383G	39.14	54.00	-14.86	27.67	3	Horizontal	147	2.38	-	37.50	7.22	33.25

2.4-2.4835GHz_BT-LE(2Mbps)

2402MHz_TX

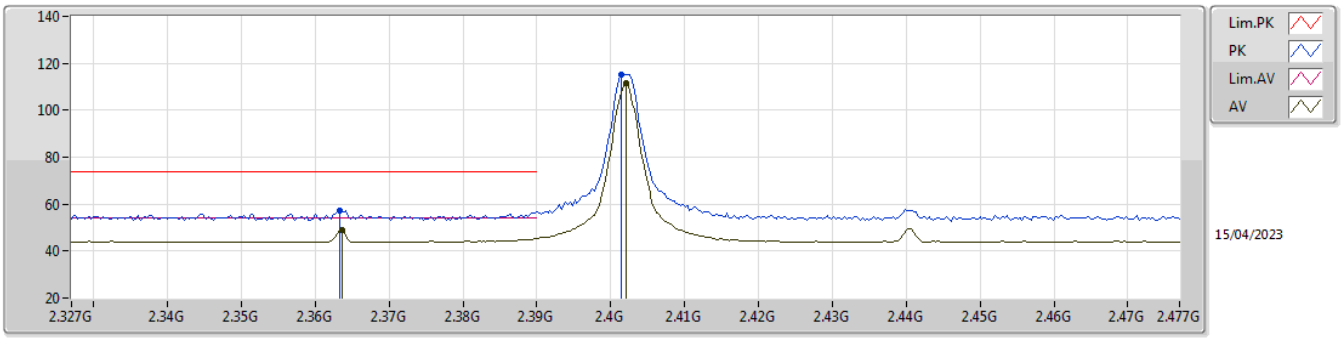


EUT Y_1TX
Setting 200
01-D-R-6

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	2.3633G	60.10	74.00	-13.90	28.81	3	Vertical	356	1.80	-	27.73	3.56	-
AV	2.3636G	53.35	54.00	-0.65	22.06	3	Vertical	356	1.80	-	27.73	3.56	-
PK	2.4026G	120.59	Inf	-Inf	89.18	3	Vertical	356	1.80	-	27.81	3.60	-
AV	2.402G	116.79	Inf	-Inf	85.39	3	Vertical	356	1.80	-	27.80	3.60	-

2.4-2.4835GHz_BT-LE(2Mbps)

2402MHz_TX

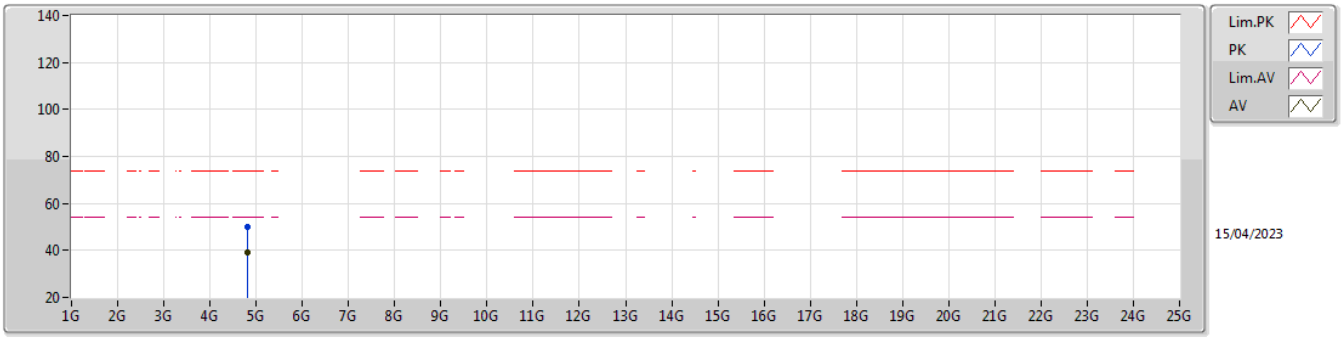


EUT Y_1TX
Setting 200
01-D-R-6

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	2.3633G	57.46	74.00	-16.54	26.17	3	Horizontal	54	1.70	-	27.73	3.56	-
AV	2.3636G	48.96	54.00	-5.04	17.67	3	Horizontal	54	1.70	-	27.73	3.56	-
PK	2.4014G	115.14	Inf	-Inf	83.74	3	Horizontal	54	1.70	-	27.80	3.60	-
AV	2.402G	111.74	Inf	-Inf	80.34	3	Horizontal	54	1.70	-	27.80	3.60	-

2.4-2.4835GHz_BT-LE(2Mbps)

2402MHz_TX

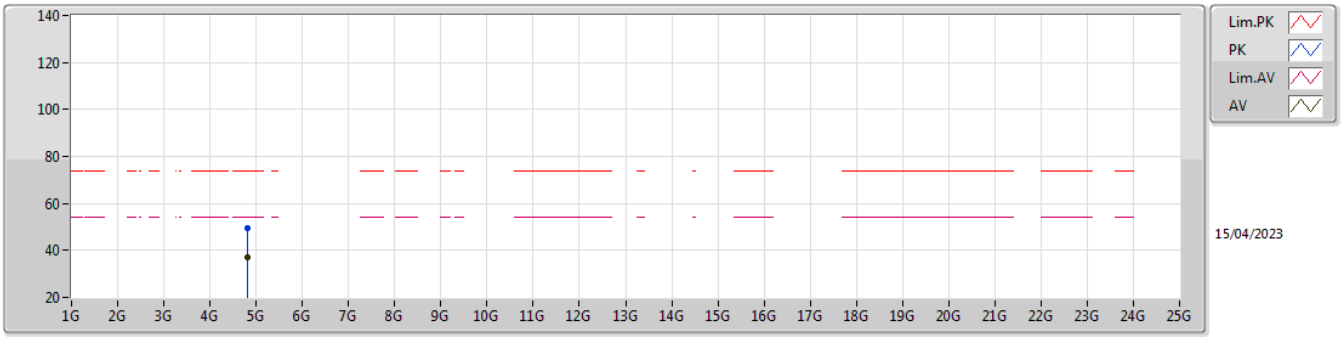


EUT Y_1TX
Setting 200
01-D-R-6

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	4.80298G	49.95	74.00	-24.05	44.42	3	Vertical	8	2.11	-	32.72	5.70	32.89
AV	4.80302G	39.14	54.00	-14.86	33.61	3	Vertical	8	2.11	-	32.72	5.70	32.89

2.4-2.4835GHz_BT-LE(2Mbps)

2402MHz_TX

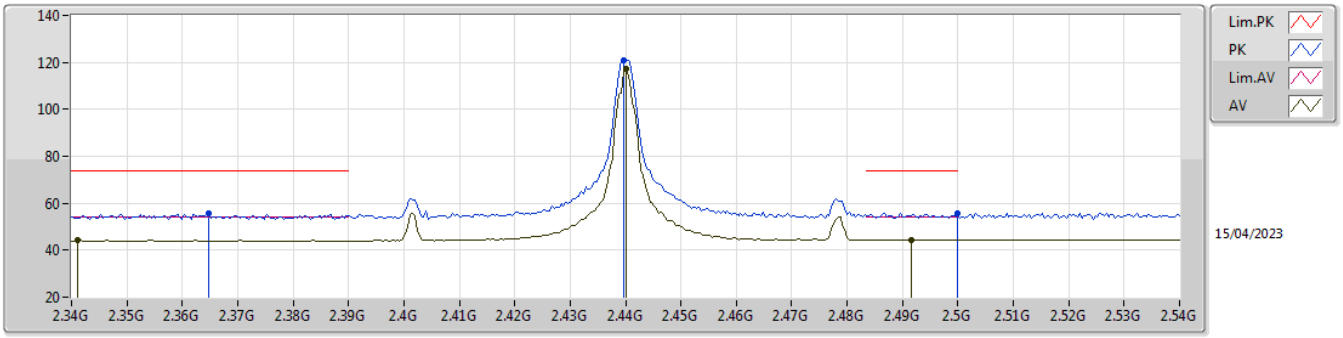


EUT Y_1TX
Setting 200
01-D-R-6

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	4.80507G	49.67	74.00	-24.33	44.12	3	Horizontal	60	2.54	-	32.73	5.71	32.89
AV	4.80482G	37.23	54.00	-16.77	31.69	3	Horizontal	60	2.54	-	32.73	5.70	32.89

2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX

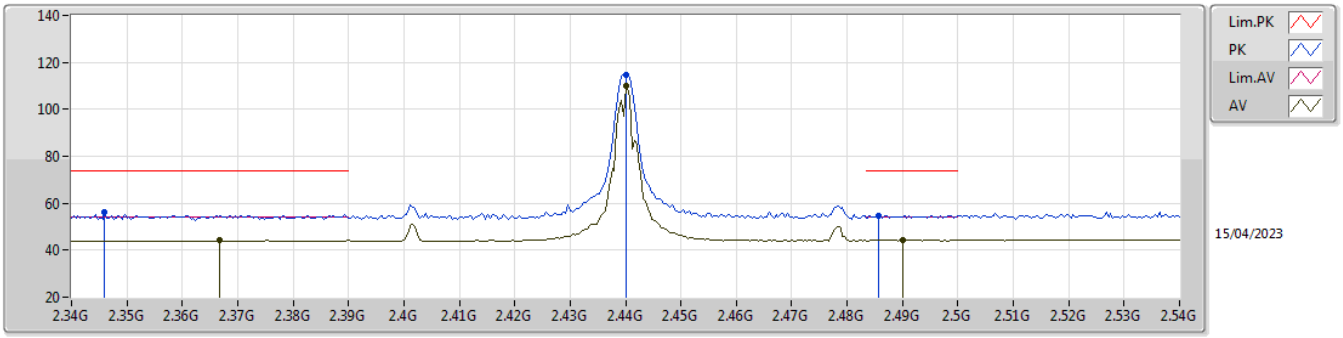


EUT Y_1TX
Setting 200
01-D-R-6

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	2.3648G	55.66	74.00	-18.34	24.37	3	Vertical	360	1.80	-	27.73	3.56	-
AV	2.3412G	44.21	54.00	-9.79	12.97	3	Vertical	360	1.80	-	27.70	3.54	-
PK	2.4396G	121.01	Inf	-Inf	89.51	3	Vertical	360	1.80	-	27.88	3.62	-
AV	2.44G	117.50	Inf	-Inf	86.00	3	Vertical	360	1.80	-	27.88	3.62	-
PK	2.5G	55.50	74.00	-18.50	23.65	3	Vertical	360	1.80	-	28.20	3.65	-
AV	2.4916G	44.45	54.00	-9.55	12.65	3	Vertical	360	1.80	-	28.15	3.65	-

2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX

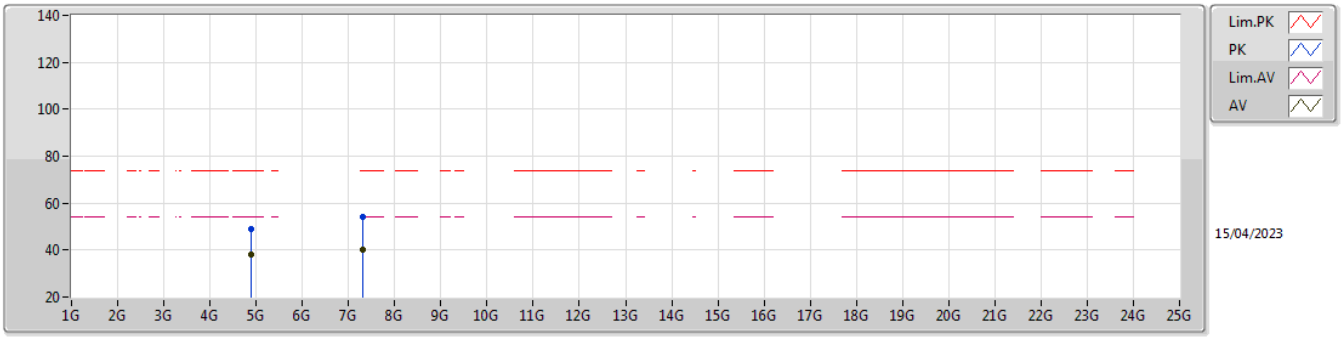


EUT Y_1TX
Setting 200
01-D-R-6

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	2.346G	55.95	74.00	-18.05	24.70	3	Horizontal	56	1.56	-	27.70	3.55	-
AV	2.3668G	44.11	54.00	-9.89	12.81	3	Horizontal	56	1.56	-	27.73	3.57	-
PK	2.44G	114.68	Inf	-Inf	83.18	3	Horizontal	56	1.56	-	27.88	3.62	-
AV	2.44G	109.80	Inf	-Inf	78.30	3	Horizontal	56	1.56	-	27.88	3.62	-
PK	2.4856G	54.83	74.00	-19.17	23.08	3	Horizontal	56	1.56	-	28.11	3.64	-
AV	2.49G	44.32	54.00	-9.68	12.53	3	Horizontal	56	1.56	-	28.14	3.65	-

2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX

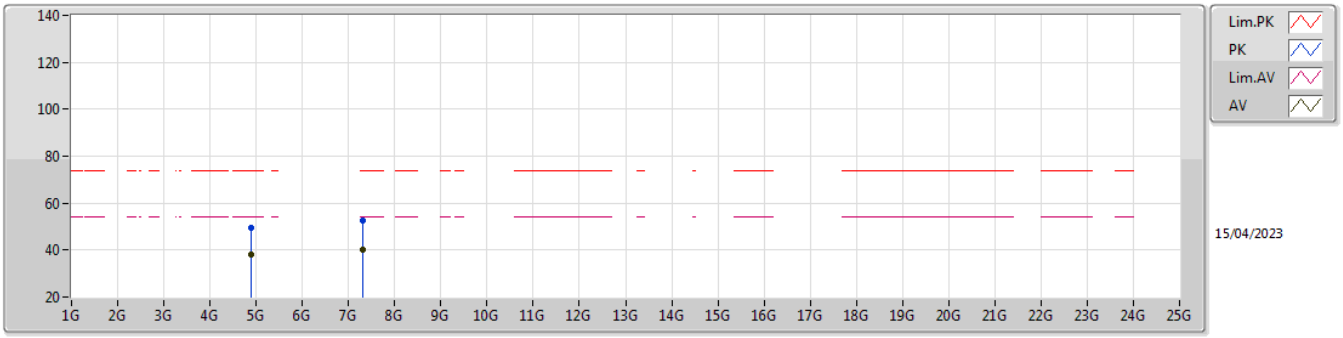


EUT Y_1TX
Setting 200
01-D-R-6

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	4.88113G	48.79	74.00	-25.21	42.88	3	Vertical	134	1.33	-	33.00	5.78	32.87
AV	4.88088G	37.93	54.00	-16.07	32.02	3	Vertical	134	1.33	-	33.00	5.78	32.87
PK	7.3217G	53.95	74.00	-20.05	42.38	3	Vertical	17	1.00	-	37.60	7.16	33.19
AV	7.32117G	40.33	54.00	-13.67	28.76	3	Vertical	17	1.00	-	37.60	7.16	33.19

2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX

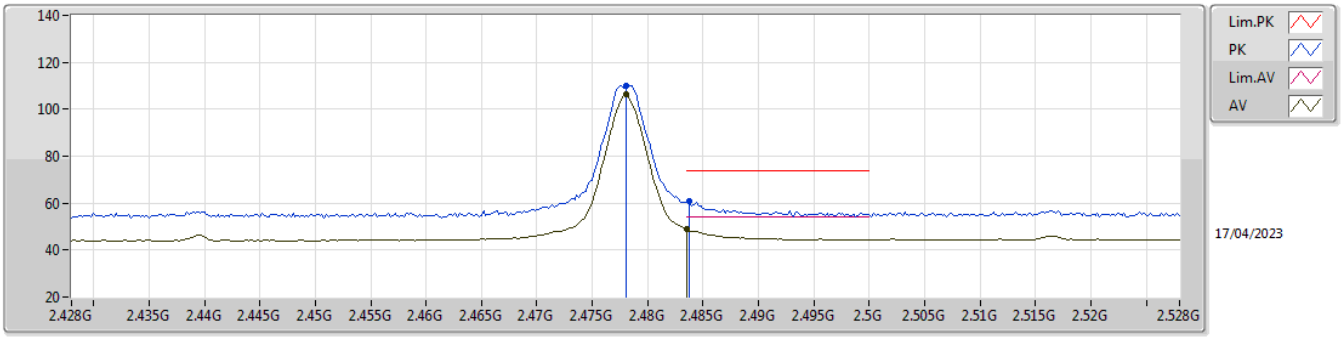


EUT Y_1TX
Setting 200
01-D-R-6

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	4.88093G	49.40	74.00	-24.60	43.49	3	Horizontal	8	2.05	-	33.00	5.78	32.87
AV	4.87893G	37.97	54.00	-16.03	32.06	3	Horizontal	8	2.05	-	33.00	5.78	32.87
PK	7.31803G	52.83	74.00	-21.17	41.26	3	Horizontal	234	2.09	-	37.60	7.16	33.19
AV	7.32122G	40.03	54.00	-13.97	28.46	3	Horizontal	234	2.09	-	37.60	7.16	33.19

2.4-2.4835GHz_BT-LE(2Mbps)

2478MHz_TX

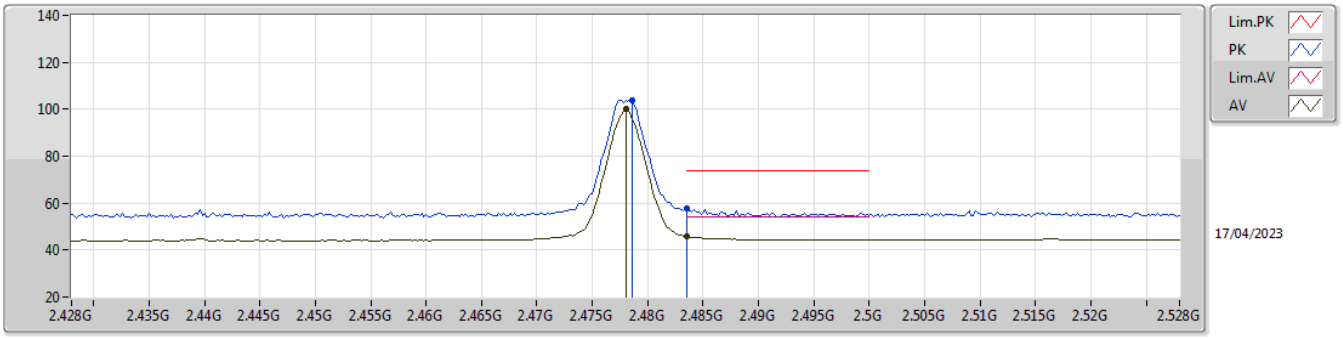


EUT Y_1TX
Setting 200
01-D-J-8

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	2.478G	109.81	Inf	-Inf	78.10	3	Vertical	5	2.24	-	28.07	3.64	-
AV	2.478G	106.46	Inf	-Inf	74.75	3	Vertical	5	2.24	-	28.07	3.64	-
PK	2.4838G	60.63	74.00	-13.37	28.89	3	Vertical	5	2.24	-	28.10	3.64	-
AV	2.4835G	49.02	54.00	-4.98	17.28	3	Vertical	5	2.24	-	28.10	3.64	-

2.4-2.4835GHz_BT-LE(2Mbps)

2478MHz_TX

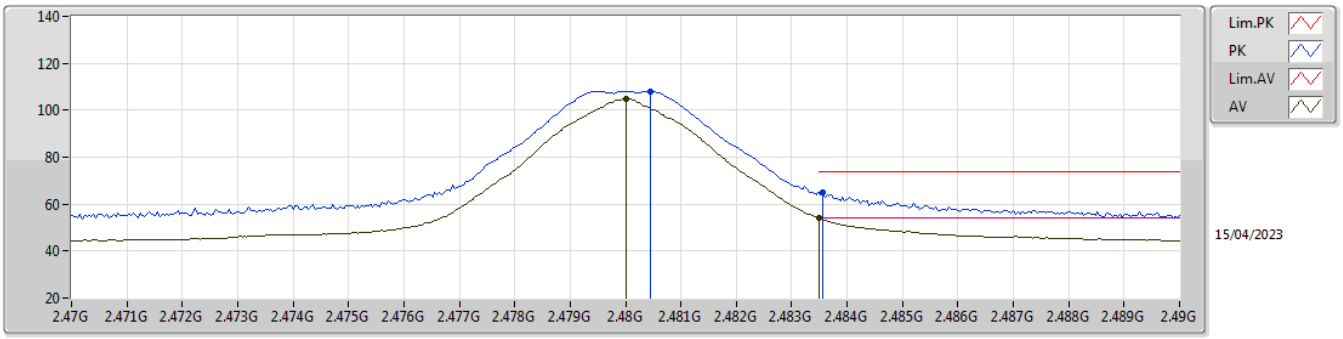


EUT Y_1TX
Setting 200
01-D-J-8

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	2.4786G	103.61	Inf	-Inf	71.90	3	Horizontal	63	1.80	-	28.07	3.64	-
AV	2.478G	100.19	Inf	-Inf	68.48	3	Horizontal	63	1.80	-	28.07	3.64	-
PK	2.4835G	57.83	74.00	-16.17	26.09	3	Horizontal	63	1.80	-	28.10	3.64	-
AV	2.4835G	45.93	54.00	-8.07	14.19	3	Horizontal	63	1.80	-	28.10	3.64	-

2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX

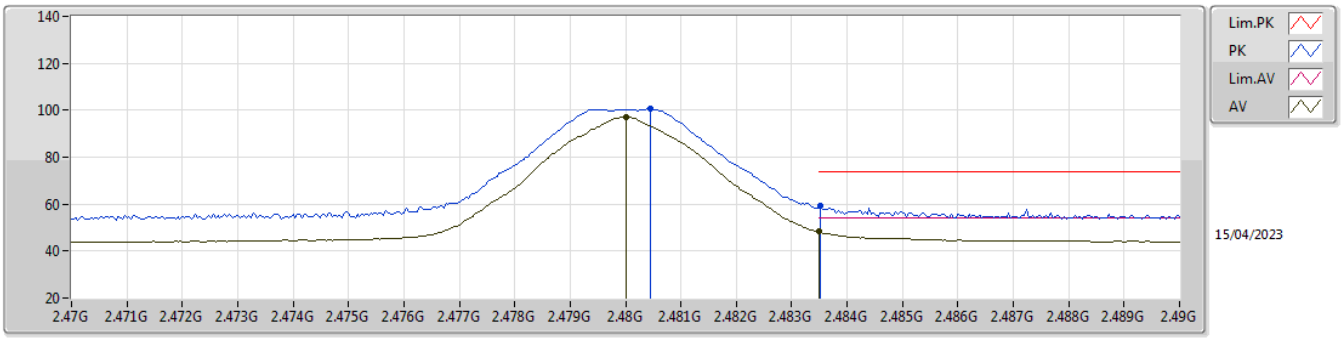


EUT Y_1TX
Setting 50
01-D-R-6

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	2.48044G	108.07	Inf	-Inf	76.35	3	Vertical	34	2.71	-	28.08	3.64	-
AV	2.48G	104.71	Inf	-Inf	72.99	3	Vertical	34	2.71	-	28.08	3.64	-
PK	2.48356G	65.09	74.00	-8.91	33.35	3	Vertical	34	2.71	-	28.10	3.64	-
AV	2.4835G	53.97	54.00	-0.03	22.23	3	Vertical	34	2.71	-	28.10	3.64	-

2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX

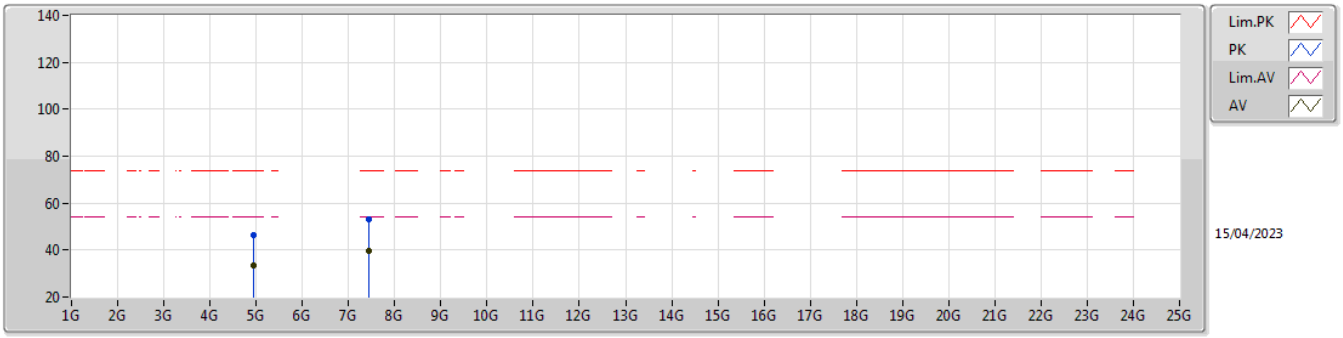


EUT Y_1TX
Setting 50
01-D-R-6

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	2.48044G	100.48	Inf	-Inf	68.76	3	Horizontal	56	1.80	-	28.08	3.64	-
AV	2.48G	97.12	Inf	-Inf	65.40	3	Horizontal	56	1.80	-	28.08	3.64	-
PK	2.48352G	59.07	74.00	-14.93	27.33	3	Horizontal	56	1.80	-	28.10	3.64	-
AV	2.4835G	48.30	54.00	-5.70	16.56	3	Horizontal	56	1.80	-	28.10	3.64	-

2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX

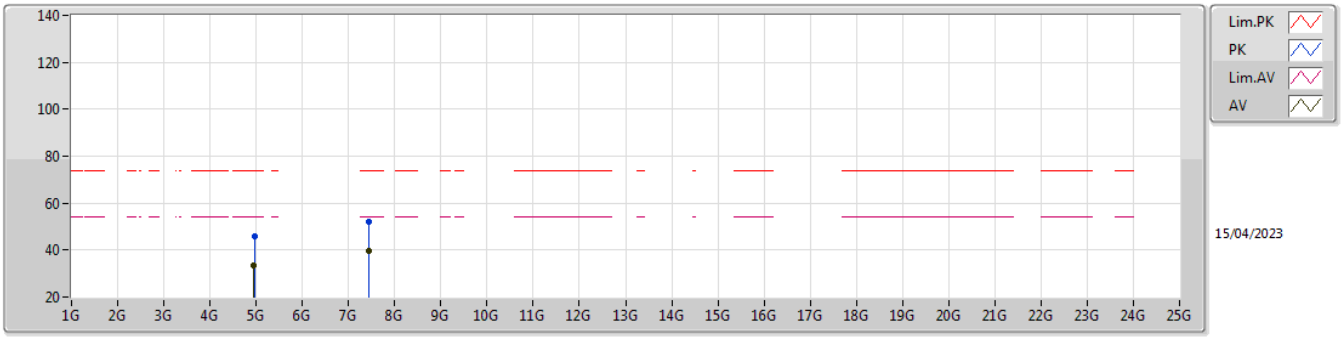


EUT Y_1TX
Setting 50
01-D-R-6

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	4.95364G	46.61	74.00	-27.39	40.61	3	Vertical	308	1.06	-	33.01	5.85	32.86
AV	4.94632G	33.46	54.00	-20.54	27.47	3	Vertical	308	1.06	-	33.00	5.85	32.86
PK	7.4427G	53.21	74.00	-20.79	41.74	3	Vertical	198	1.53	-	37.50	7.22	33.25
AV	7.44702G	39.55	54.00	-14.45	28.08	3	Vertical	198	1.53	-	37.50	7.22	33.25

2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX



EUT Y_1TX
Setting 50
01-D-R-6

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	4.971176G	45.71	74.00	-28.29	39.66	3	Horizontal	284	2.19	-	33.04	5.87	32.86
AV	4.95286G	33.37	54.00	-20.63	27.37	3	Horizontal	284	2.19	-	33.01	5.85	32.86
PK	7.4445G	52.13	74.00	-21.87	40.66	3	Horizontal	297	1.66	-	37.50	7.22	33.25
AV	7.45278G	39.85	54.00	-14.15	28.38	3	Horizontal	297	1.66	-	37.50	7.23	33.26