



RADIO TEST REPORT

FCC ID : TVE-251019
Equipment : Secured Wireless Access Point
Brand Name : FORTINET
Model Name : FortiAP 231KDxxxxxxxxx, FAP-231KDxxxxxxxxx,
FORTIAP-231KDxxxxxxxxx
(Please refer to section 1.1.5 for detailed information)
Applicant : Fortinet, Inc.
909 Kifer Road, Sunnyvale, CA 94086, USA
Manufacturer : Fortinet, Inc.
909 Kifer Road, Sunnyvale, CA 94086, USA
Standard : 47 CFR FCC Part 15.247

The product was received on Apr. 01, 2026, and testing was started from Apr. 09, 2026 and completed on Jul. 17, 2026. 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 C63.10-2020 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

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TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A10_9 Ver1.3



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/manufacture 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: Muse Chan

1 General Description

1.1 Information

1.1.1 RF General Information

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

Band	Mode	BWch (MHz)	Nant
2400-2483.5	Zigbee	3	1

Note:

- ♦ Zigbee uses a O-QPSK (250kbps) modulation.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port				Brand	Model Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz	Bluetooth / Zigbee					
1	1	1	-	-	Grand-Tek	2034G00000390	Dipole	MHF I	Note
2	2	2	-	-	Grand-Tek	2034G00000400	Dipole	MHF I	
3	-	-	1	-	Grand-Tek	203CG00000190	Dipole	MHF I	
4	-	-	2	-	Grand-Tek	203CG00000200	Dipole	MHF I	
5	-	-	-	1	Grand-Tek	2039G00000100	PIFA	MHF I	

Note 1:

Antenna Gain (dBi)										
Ant.	WLAN 2.4GHz		WLAN 5GHz							
			5150 MHz		5350 MHz		5500 MHz		5850 MHz	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	6.0	5.5	5.6	5.3	5.2	5.2	5.3	5.1	5.4	5.2
2	6.0	5.5	5.6	5.5	5.4	5.3	5.4	5.3	6.0	5.6

Antenna Gain (dBi)				
Ant.	WLAN 6GHz		Bluetooth / Zigbee	
	Max	Min	Max	Min
3	6.3	5.3	-	-
4	6.2	5.0	-	-
5	-	-	5.2	4.2

Note 2: The above information was declared by manufacturer.

Note 3: 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 $N_{ANT} \leq 4$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left[\sum_{k=1}^{N_{ANT}} g_{j,k} \right]^2}{N_{ANT}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left[\sum_{k=1}^{N_{ANT}} g_{j,k} \right]^2}{N_{ANT}} \right]$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left[\sum_{k=1}^{N_{ANT}} g_{j,k} \right]^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left[\sum_{k=1}^{N_{ANT}} g_{j,k} \right]^2}{N_{ANT}} \right]$$

$$NSS1(g1,1) = 10^{G1/20} ; NSS1(g1,2) = 10^{G2/20} ; NSS1(g1,3) = 10^{G3/20} ; NSS1(g1,4) = 10^{G4/20}$$

$$g_{j,k} = (NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2$$

$$DG = 10 \log[(NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2 / N_{ANT}] \Rightarrow 10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / N_{ANT}]$$

$$2.4G \ G1= 6 \text{ dBi} ; G2= 6 \text{ dBi} ; DG= 9.01\text{dBi}$$

$$5G \text{ UNII-1} \ G1= 5.6 \text{ dBi} ; G2= 5.6 \text{ dBi} ; DG= 8.61\text{dBi}$$

$$5G \text{ UNII-2A} \ G1= 5.2 \text{ dBi} ; G2= 5.4 \text{ dBi} ; DG= 8.31\text{dBi}$$

$$5G \text{ UNII-2C} \ G1= 5.3 \text{ dBi} ; G2= 5.4 \text{ dBi} ; DG= 8.36\text{dBi}$$

$$5G \text{ UNII-3} \ G1= 5.4 \text{ dBi} ; G2= 6 \text{ dBi} ; DG= 8.72\text{dBi}$$

For 2.4GHz function

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

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

Port 1~2 could transmit/receive simultaneously.

For 5GHz function:

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

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

Port 1~2 could transmit/receive simultaneously.

For 6GHz function:

For IEEE 802.11 a/ax/be (2TX/2RX):

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

Port 1~2 could transmit/receive simultaneously.

For Bluetooth/Zigbee function (1TX/1RX):

Only Port 1 can be used as transmitting antenna.

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
Zigbee_Nss 1	0.457	3.4	914.062u	2k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter or PoE		
Function	☒ Point-to-multipoint	☐ Point-to-point	
Test Software Version	For RF Conducted: DOS [ver 6.1.7601] For Radiated: QSPR [ver 6.00.00234.1]		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

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

Model Name	Description	Remark
FortiAP 231KDxxxxxxxxx	All the models are identical, the difference model served as marketing strategy.	Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only.
FAP-231KDxxxxxxxxx		
FORTIAP-231KDxxxxxxxxx		

Note 1: From the above models, model: FAP-231KD was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.



1.2 Applicable Standards

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

- ♦ 47 CFR FCC Part 15.247
- ♦ ANSI C63.10-2020

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

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

1.3 Testing Location Information

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

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH02-CB	Chris Li	22.3~23.1 / 61~65	May 06, 2026~ May 27, 2026
Radiated Below 1GHz	10CH01-CB	Stim Sung	22~23 / 57~58	Jul. 14, 2026
Radiated Above 1GHz	03CH01-CB	Sean Ku	24.1~24.9 / 58~59	Apr. 09, 2026~ Jul. 17, 2026
AC Conduction	CO01-CB	Joe Chu	22~23 / 56~57	May 29, 2026



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 Date: Date Before May 28, 2026

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	2.5 dB	Confidence levels of 95%
Output Power Measurement	1.3 dB	Confidence levels of 95%
Power Density Measurement	2.0 dB	Confidence levels of 95%
Bandwidth Measurement	1.0 %	Confidence levels of 95%

Test Date: Date After May 27, 2026

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.8 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.5 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.5 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.3 dB	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode
Zigbee
2405MHz
2440MHz
2475MHz
2480MHz

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 + WLAN 2.4GHz, 5GHz, 6GHz + Bluetooth + Adapter
2	EUT + WLAN 2.4GHz, 5GHz, 6GHz + Zigbee + Adapter
Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	EUT + WLAN 2.4GHz, 5GHz, 6GHz + Bluetooth + PoE
For operating mode 3 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
	1. The EUT was paired with a Wall mount bracket for X and Z axis testing, while the Y axis can be paired with either a Wall mount bracket or a Desktop Stand. After evaluation, the choice of bracket did not affect the test results; therefore, the Y axis was tested using the Desktop Stand. 2. After evaluating, and the worst case was found at Z axis, so it was selected to perform test and its test result was written in the report.
1	EUT in Z axis + WLAN 2.4GHz, 5GHz, 6GHz + Bluetooth + Adapter
2	EUT in Z axis + WLAN 2.4GHz, 5GHz, 6GHz + Zigbee + Adapter
Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	EUT in Z axis + WLAN 2.4GHz, 5GHz, 6GHz + Bluetooth + PoE
For operating mode 3 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
	Wall mount bracket for X and Z axis testing, while the Y axis can be paired with either a Wall mount bracket or a Desktop Stand. After evaluating, and the worst case was found as below.
1	EUT in Y axis with Desktop Stand

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz + WLAN 6GHz + Bluetooth
2	WLAN 2.4GHz + WLAN 5GHz + WLAN 6GHz + Zigbee
Refer to Sporton Test Report No.: FA633125 for Co-location RF Exposure Evaluation.	

Note 1: The PoE and Adapter are for measurement only, would not be marketed.

PoE and Adapter information as below:

Power	Brand	Model
Adapter	APD	WA-48A12R
PoE	Microsemi	PD-9501-10GC/AC

Note 2: The console port is not accessible to end users; it is used by professional installers per the manufacturer's definition.



2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories
Desktop Stand*1
Wall mount bracket*1
Bottom Cap*1

2.5 Support Equipment

For AC Conduction and Radiated (below 1GHz):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PoE	Microsemi	PD-9501-10GC/AC	N/A
B	LAN PoE/5G PC	ASUS	S300TA	TX2-RTL8821CE
C	2.4G NB	Lenovo	X260	N/A
D	5G NB	Lenovo	X260	N/A
E	6G NB	DELL	E6230	N/A
F	6G module	INTEL	BE200	PD9BE200NG
G	Wireless Connectivity Tester	R&S	CMW270	N/A

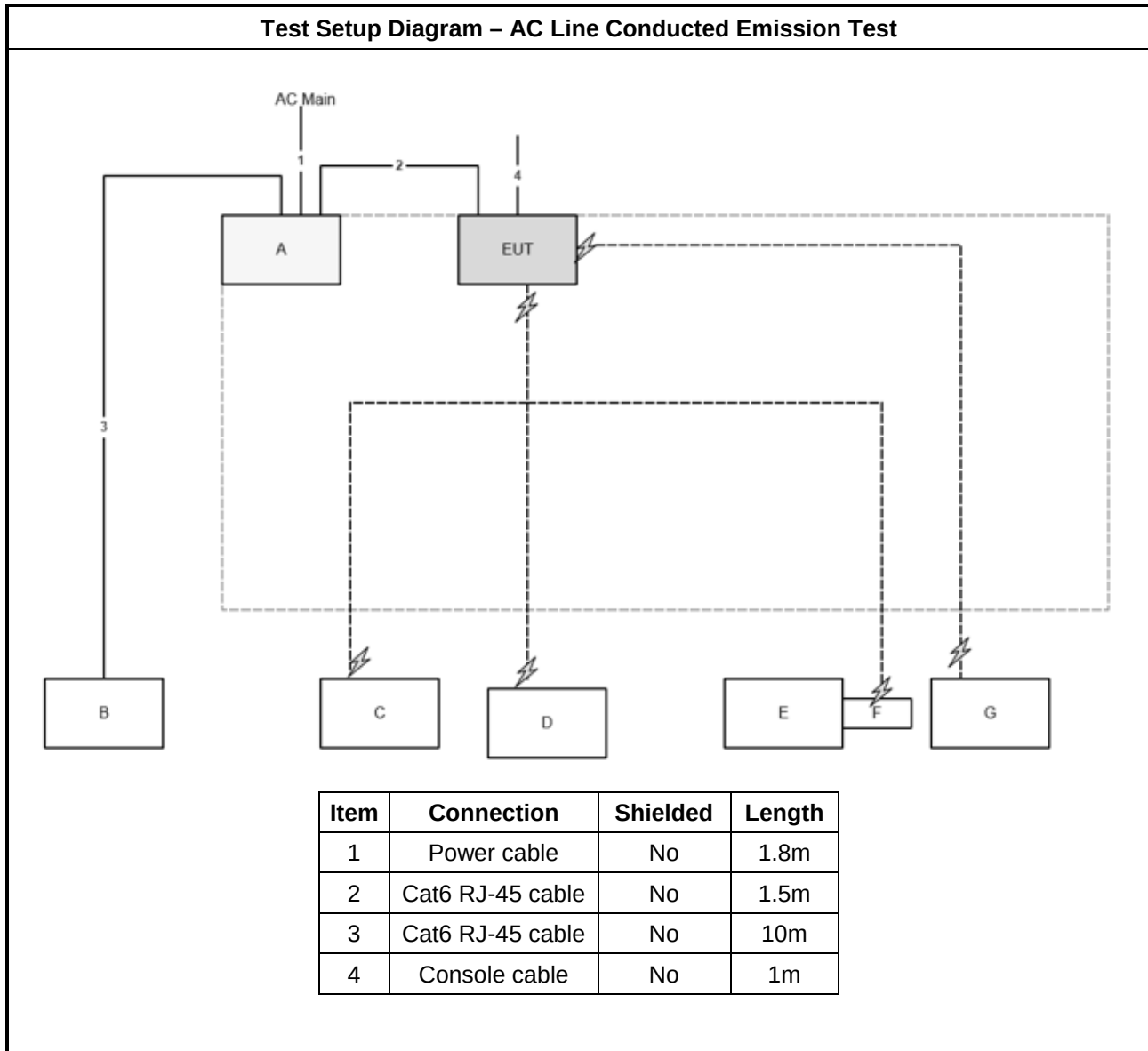
For Radiated (above 1GHz):

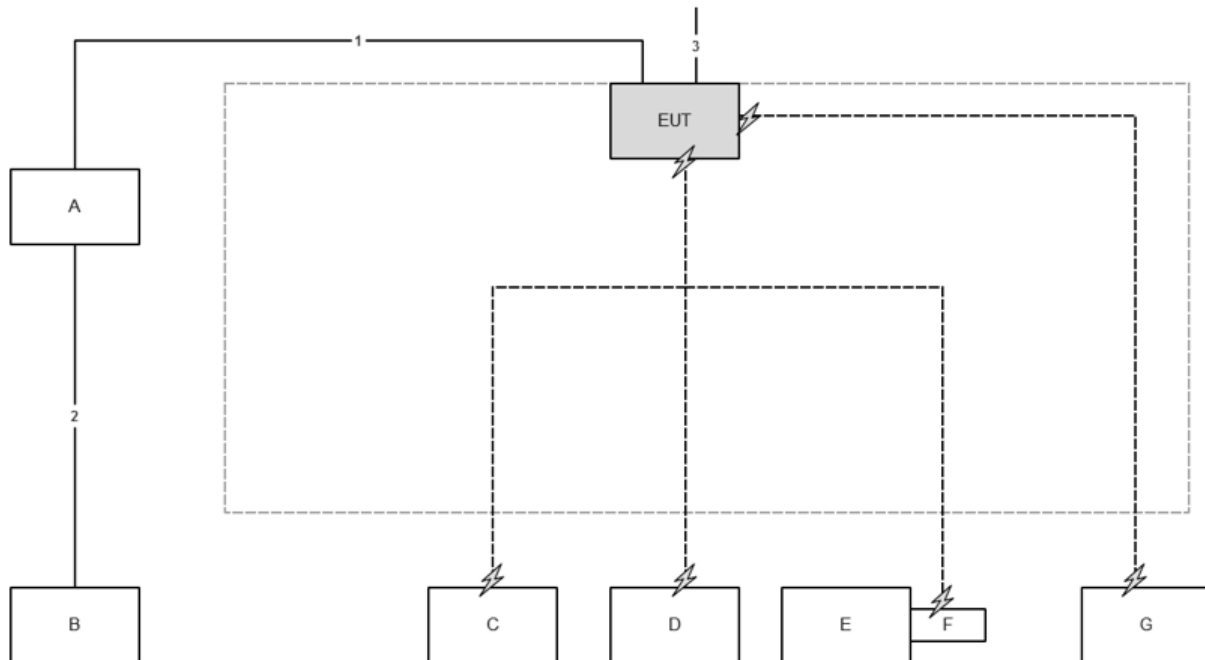
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	Adapter	APD	WA-48A12R	N/A

For RF Conducted:

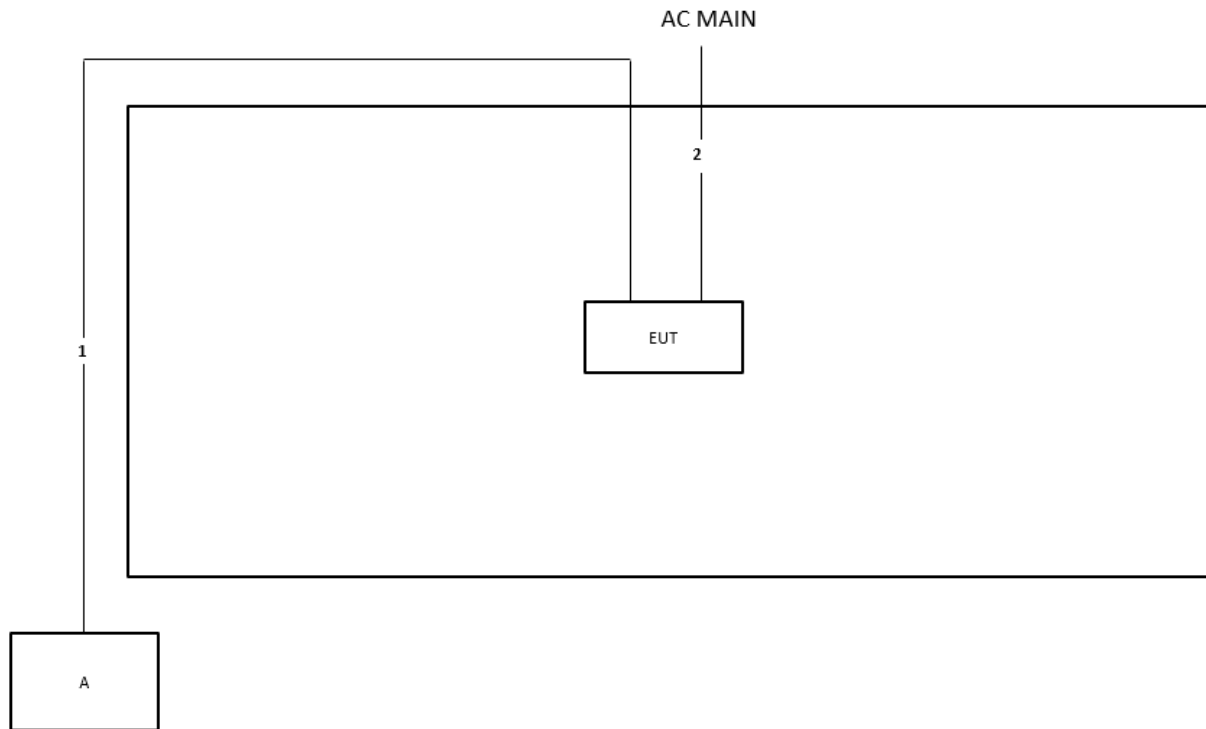
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	Lenovo	L440	N/A
B	Adapter	APD	WA-48A12R	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


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

Test Setup Diagram - Radiated Test > 1GHz


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

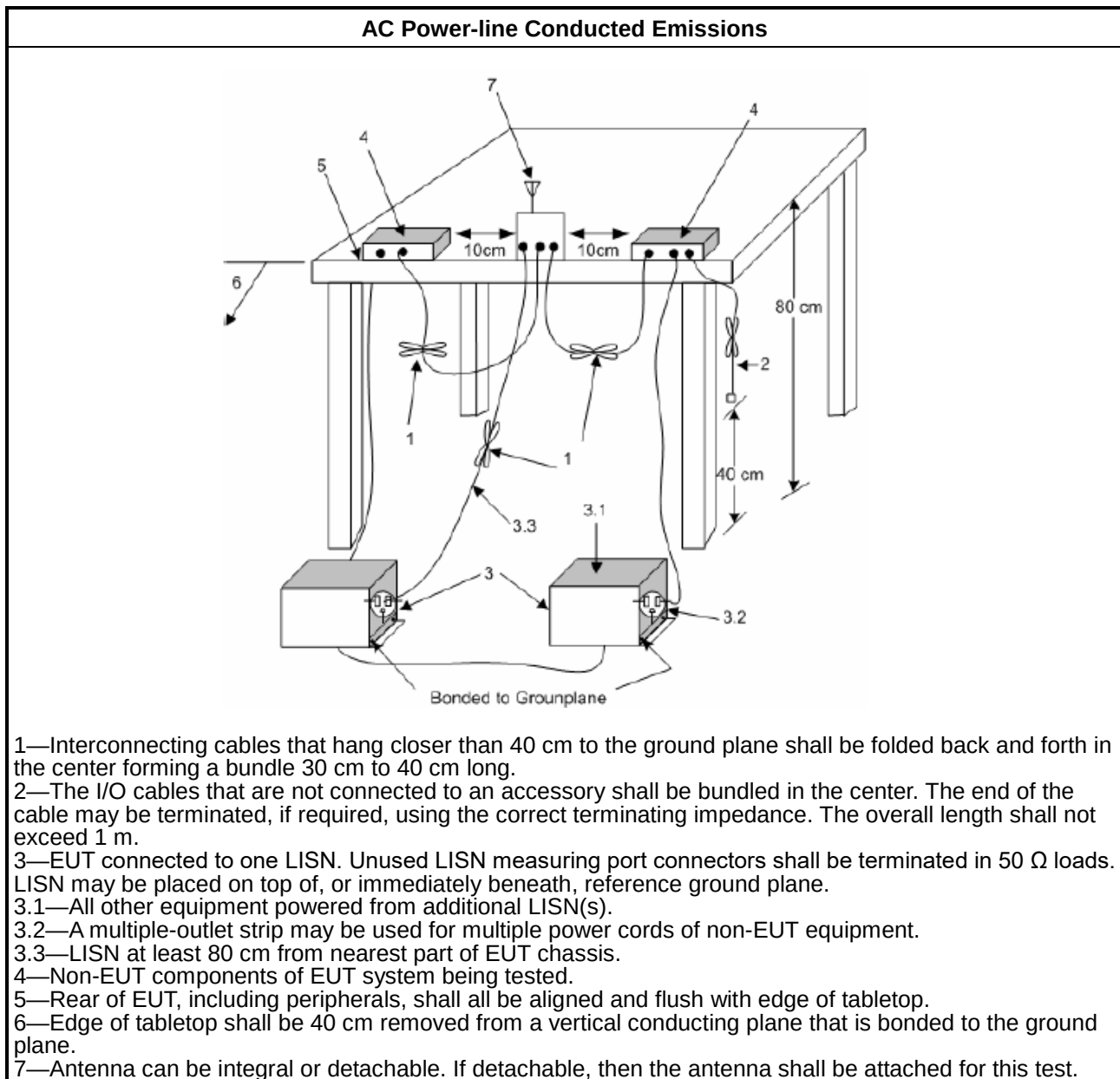
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2020, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup



3.1.5 Measurement Results Calculation

The measured Level is calculated using:

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

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
6 dB bandwidth $\geq$ 500 kHz.

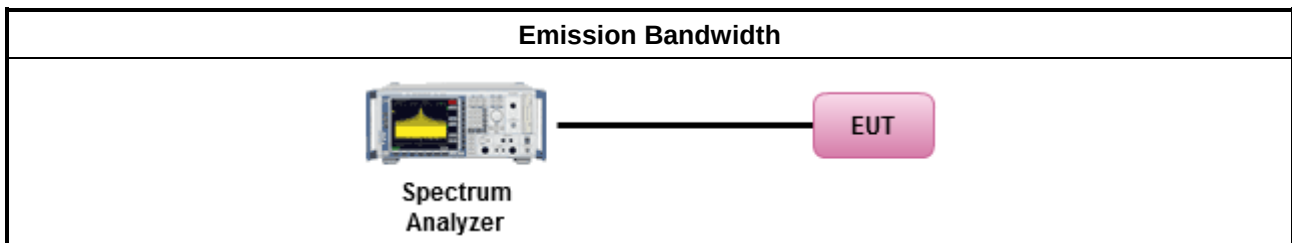
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
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



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.	

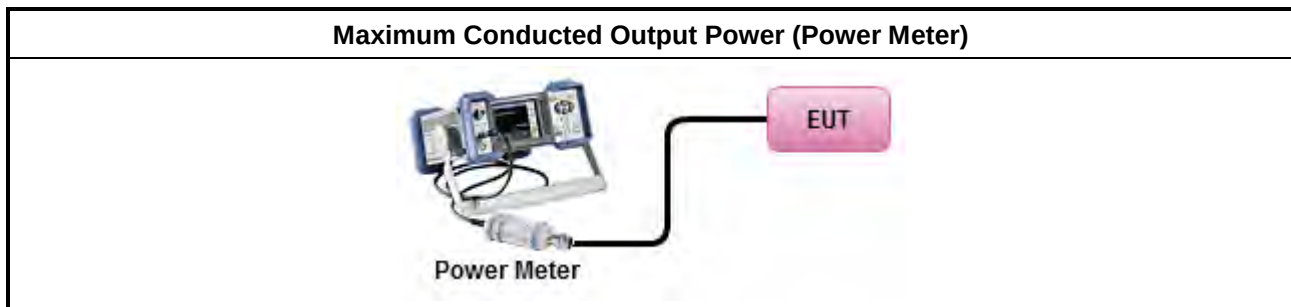
3.3.2 Measuring Instruments

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: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

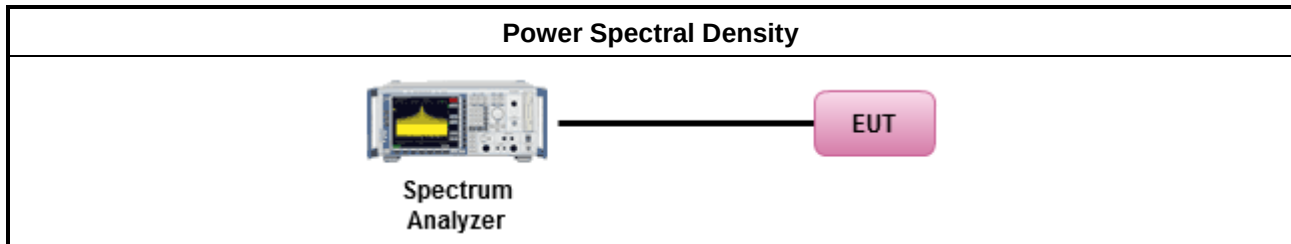
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

3.4.4 Test Setup



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.	

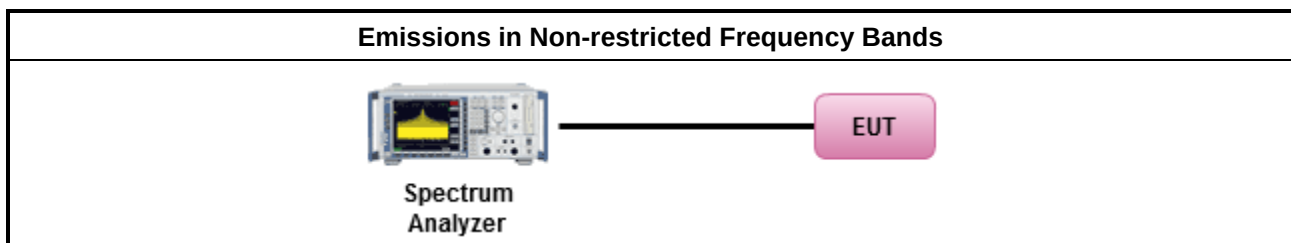
3.5.2 Measuring Instruments

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



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E



3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.6.2 Measuring Instruments

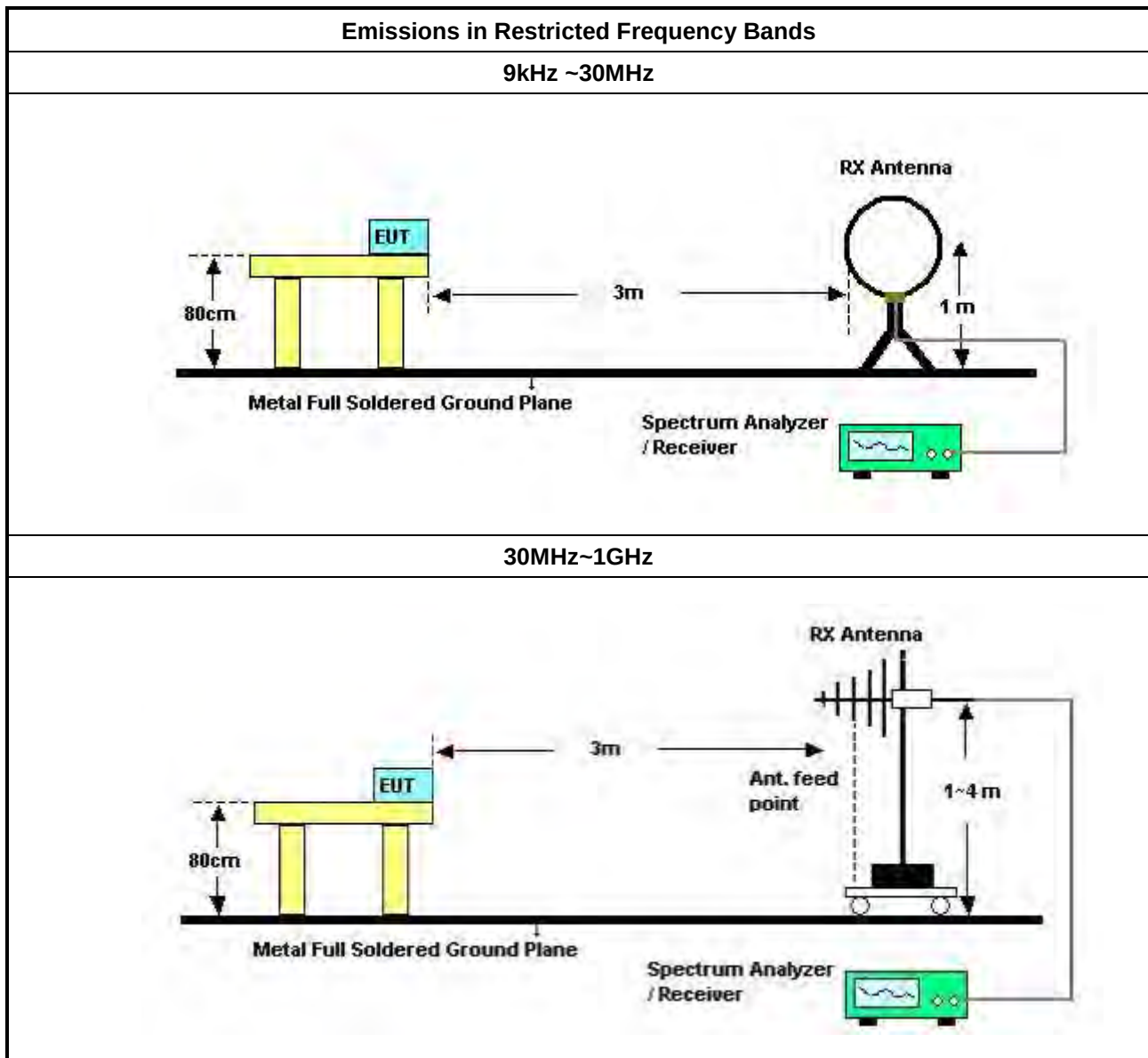
Refer a test equipment and calibration data table in this test report.

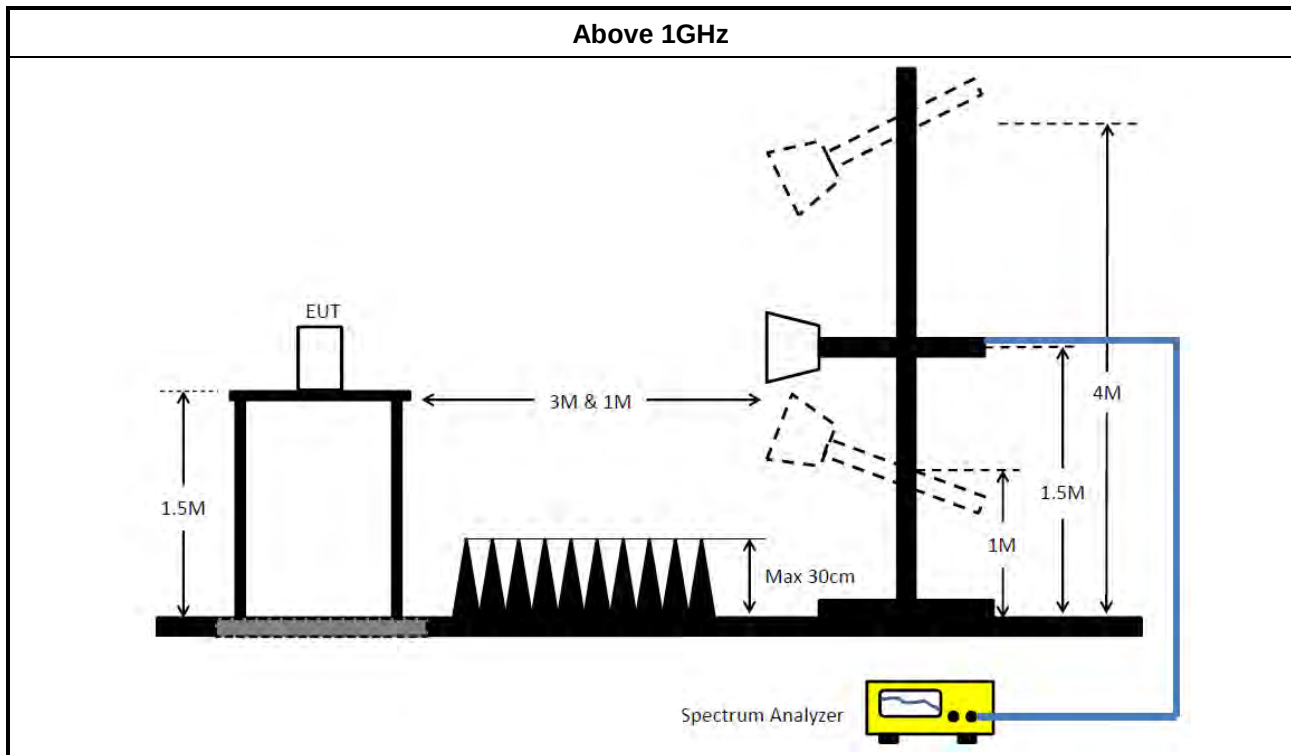


3.6.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle $\geq 98\%$).
	☐ 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 $\geq 1/T$).
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, 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





3.6.5 Measurement Results Calculation

The measured Level is calculated using:

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

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 12, 2026	Mar. 11, 2027	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Feb. 04, 2026	Feb. 03, 2027	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 10, 2026	Apr. 09, 2027	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Sep. 14, 2025	Sep. 13, 2026	Conduction (CO01-CB)
COND Cable	Woken	Cable	CO01	9kHz ~ 30MHz	Sep. 14, 2025	Sep. 13, 2026	Conduction (CO01-CB)
Test Software	SPORTON	SENSE-EMI	V5.11	150kHz-30MHz	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30MHz	Oct. 20, 2025	Oct. 19, 2026	Radiation (10CH01-CB)
10m Semi Anechoic Chamber NSA	TDK	SAC-10M	10CH01-CB	30MHz~1GHz 10m,3m	Jan. 14, 2026	Jan. 13, 2027	Radiation (10CH01-CB)
Amplifier	Agilent	8447D	2944A10783	9kHz ~ 1.3GHz	Mar. 07, 2026	Mar. 06, 2027	Radiation (10CH01-CB)
Amplifier	Agilent	8447D	2944A10784	9kHz ~ 1.3GHz	Mar. 07, 2026	Mar. 06, 2027	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-01	25MHz ~ 1GHz	Oct. 14, 2025	Oct. 13, 2026	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-02	25MHz ~ 1GHz	Oct. 14, 2025	Oct. 13, 2026	Radiation (10CH01-CB)
EMI Test Receiver	Rohde&Schwarz	ESR7	103076	9 kHz ~ 7GHz	Aug. 27, 2025	Aug. 26, 2026	Radiation (10CH01-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Sep. 03, 2025	Sep. 02, 2026	Radiation (10CH01-CB)
Bilog Ant & 6dB Attenuator	SCHWARZBECK & EMCI	VULB 9168 & N-6-06	1469 & AT-N06021	30MHz ~ 1GHz	Jan. 08, 2026	Jan. 07, 2027	Radiation (10CH01-CB)
Amplifier	EM	EM101	060703	10MHz ~ 1GHz	Oct. 15, 2025	Oct. 14, 2026	Radiation (10CH01-CB)
Test Software	SPORTON	SENSE-EMI	V5.11	30MHz-40GHz	N.C.R.	N.C.R.	Radiation (10CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 03, 2025	May 02, 2026	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 02, 2026	May 01, 2027	Radiation (03CH01-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1370	1GHz~18GHz	Aug. 22, 2025	Aug. 21, 2026	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Oct. 07, 2025	Oct. 06, 2026	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 16, 2025	May 15, 2026	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 15, 2026	May 14, 2027	Radiation (03CH01-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 21, 2025	Nov. 20, 2026	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV3044	101437	10kHz ~ 44GHz	Dec. 12, 2025	Dec. 11, 2026	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Sep. 25, 2025	Sep. 24, 2026	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Jan. 26, 2026	Jan. 25, 2027	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Feb. 11, 2026	Feb. 10, 2027	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE-1524 7_DTS	V5.11.27	2.4GHz-2.4835GHz	N.C.R.	N.C.R.	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV3044	101321	9kHz ~ 44GHz	Jul. 01, 2025	Jun. 30, 2026	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Oct. 28, 2025	Oct. 27, 2026	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Oct. 28, 2025	Oct. 27, 2026	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH02-CB)
Switch	SPTCB	SP-SWI	SWI-02	1–18 GHz	Sep. 20, 2025	Sep. 19, 2026	Conducted (TH02-CB)
Test Software	SPORTON	SENSE-1524 7_DTS	V5.11.27	2.4GHz-2.4835GHz	N.C.R.	N.C.R.	Conducted (TH02-CB)

Note: Calibration Interval of instruments listed above is one year.
NCR means Non-Calibration required.



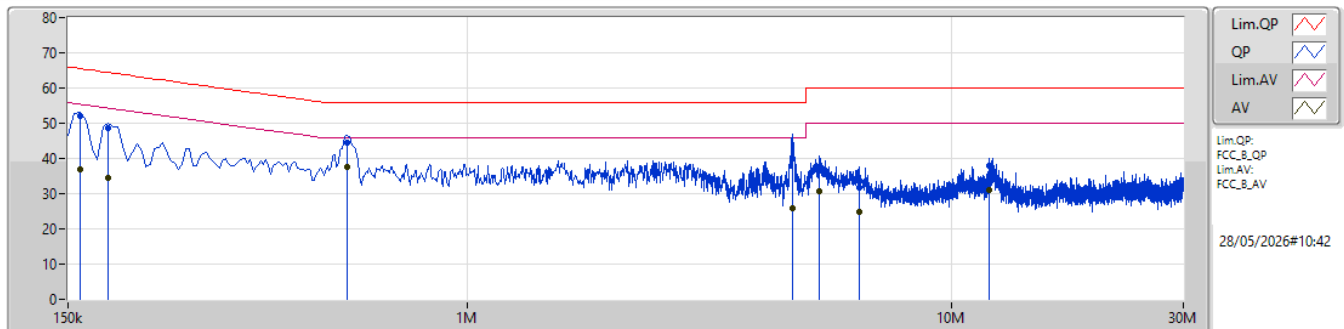
Conducted Emissions at Powerline

Appendix A

Summary

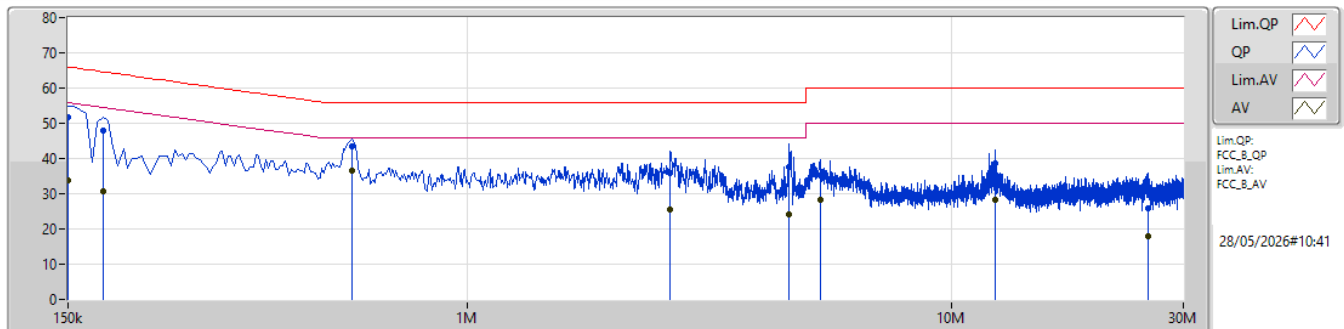
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 3	Pass	AV	564k	37.68	46.00	-8.32	Line

Mode 3



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	159k	52.22	65.52	-13.30	10.02	Line	-	42.20	0.08	0.09	9.85						
AV	159k	36.94	55.52	-18.58	10.02	Line	-	26.92	0.08	0.09	9.85						
QP	181.5k	48.74	64.41	-15.67	9.95	Line	-	38.79	0.08	0.07	9.80						
AV	181.5k	34.46	54.41	-19.95	9.95	Line	-	24.51	0.08	0.07	9.80						
QP	564k	44.62	56.00	-11.38	10.12	Line	-	34.50	0.09	0.13	9.90						
AV	564k	37.68	46.00	-8.32	10.12	Line	"Worst"	27.56	0.09	0.13	9.90						
QP	4.691M	40.14	56.00	-15.86	10.15	Line	-	29.99	0.17	0.16	9.82						
AV	4.691M	25.92	46.00	-20.08	10.15	Line	-	15.77	0.17	0.16	9.82						
QP	5.321M	37.56	60.00	-22.44	10.23	Line	-	27.33	0.18	0.18	9.87						
AV	5.321M	30.79	50.00	-19.21	10.23	Line	-	20.56	0.18	0.18	9.87						
QP	6.423M	31.63	60.00	-28.37	10.35	Line	-	21.28	0.20	0.21	9.94						
AV	6.423M	25.00	50.00	-25.00	10.35	Line	-	14.65	0.20	0.21	9.94						
QP	11.931M	38.03	60.00	-21.97	10.77	Line	-	27.26	0.25	0.31	10.21						
AV	11.931M	31.04	50.00	-18.96	10.77	Line	-	20.27	0.25	0.31	10.21						

Mode 3



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	150k	51.76	66.00	-14.24	10.04	Neutral	-	41.72	0.06	0.10	9.88						
AV	150k	33.75	56.00	-22.25	10.04	Neutral	-	23.71	0.06	0.10	9.88						
QP	177k	47.87	64.62	-16.75	9.95	Neutral	-	37.92	0.06	0.08	9.81						
AV	177k	30.70	54.62	-23.92	9.95	Neutral	-	20.75	0.06	0.08	9.81						
QP	577.5k	43.58	56.00	-12.42	10.09	Neutral	-	33.49	0.06	0.13	9.90						
AV	577.5k	36.68	46.00	-9.32	10.09	Neutral	"Worst"	26.59	0.06	0.13	9.90						
QP	2.625M	35.80	56.00	-20.20	9.99	Neutral	-	25.81	0.10	0.14	9.75						
AV	2.625M	25.60	46.00	-20.40	9.99	Neutral	-	15.61	0.10	0.14	9.75						
QP	4.614M	37.73	56.00	-18.27	10.10	Neutral	-	27.63	0.13	0.16	9.81						
AV	4.614M	24.19	46.00	-21.81	10.10	Neutral	-	14.09	0.13	0.16	9.81						
QP	5.339M	35.03	60.00	-24.97	10.20	Neutral	-	24.83	0.15	0.18	9.87						
AV	5.339M	28.16	50.00	-21.84	10.20	Neutral	-	17.96	0.15	0.18	9.87						
QP	12.278M	38.75	60.00	-21.25	10.77	Neutral	-	27.98	0.22	0.32	10.23						
AV	12.278M	28.13	50.00	-21.87	10.77	Neutral	-	17.36	0.22	0.32	10.23						
QP	25.445M	25.91	60.00	-34.09	11.04	Neutral	-	14.87	0.32	0.42	10.30						
AV	25.445M	17.80	50.00	-32.20	11.04	Neutral	-	6.76	0.32	0.42	10.30						

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
Zigbee	1.613M	2.25M	2M25G1D	990k	2.171M

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

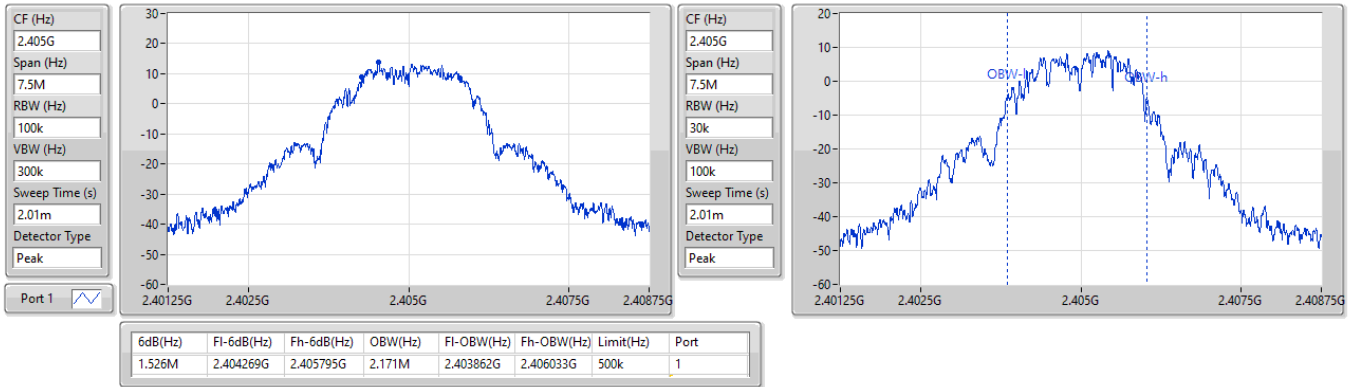
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
Zigbee	-	-	-	-
2405MHz	Pass	500k	1.526M	2.171M
2440MHz	Pass	500k	1.613M	2.194M
2480MHz	Pass	500k	990k	2.25M

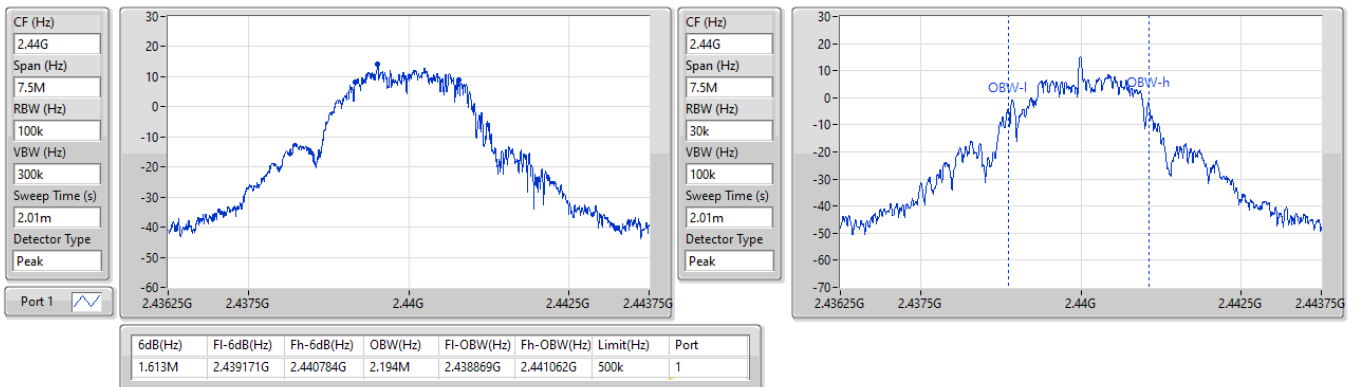
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_Zigbee
EBW
2405MHz

07/05/2026


2.4-2.4835GHz_Zigbee
EBW
2440MHz

07/05/2026

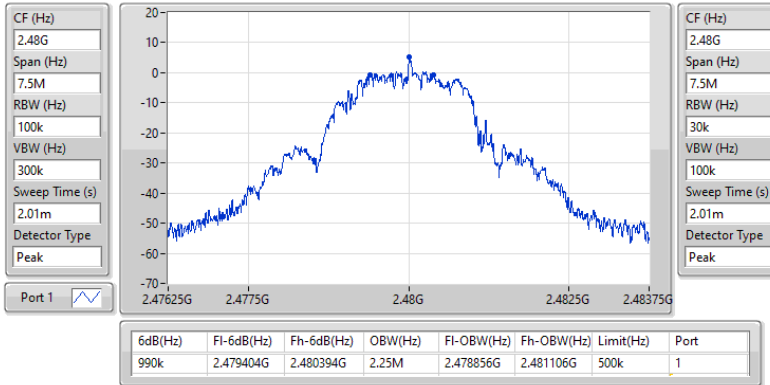


2.4-2.4835GHz_Zigbee

EBW

2480MHz

07/05/2026





Average Power

Appendix C

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Zigbee	18.27	0.06714



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
Zigbee	-	-	-	-	-
2405MHz	Pass	5.20	18.27	18.27	30.00
2440MHz	Pass	5.20	18.09	18.09	30.00
2475MHz	Pass	5.20	17.56	17.56	30.00
2480MHz	Pass	5.20	5.88	5.88	30.00

DG = Directional Gain; Port X = Port X output power;
Inf = There's no restriction for the limit.

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
Zigbee	3.09

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Zigbee	-	-	-	-	-
2405MHz	Pass	5.20	3.09	3.09	8.00
2440MHz	Pass	5.20	2.15	2.15	8.00
2480MHz	Pass	5.20	-9.62	-9.62	8.00

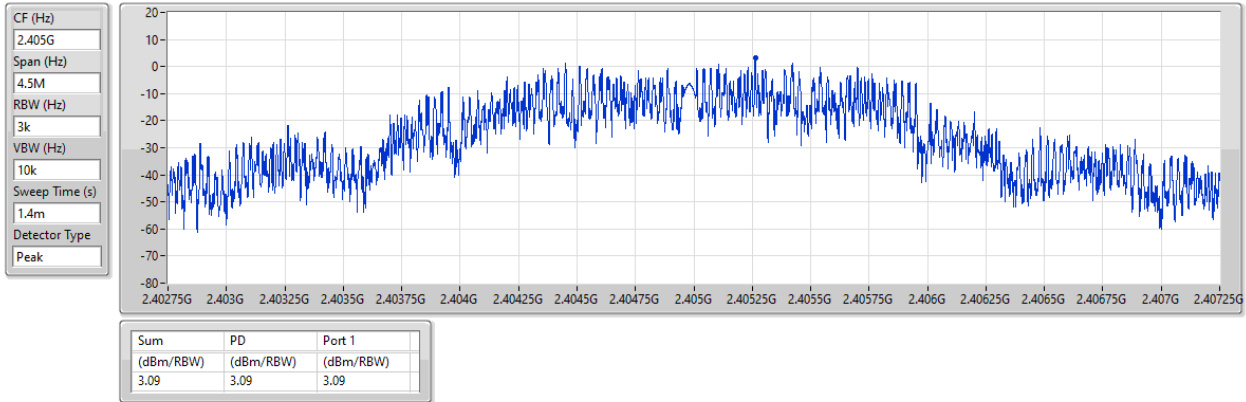
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;
Inf = There's no restriction for the limit.

2.4-2.4835GHz_Zigbee

PSD

2405MHz

06/05/2026

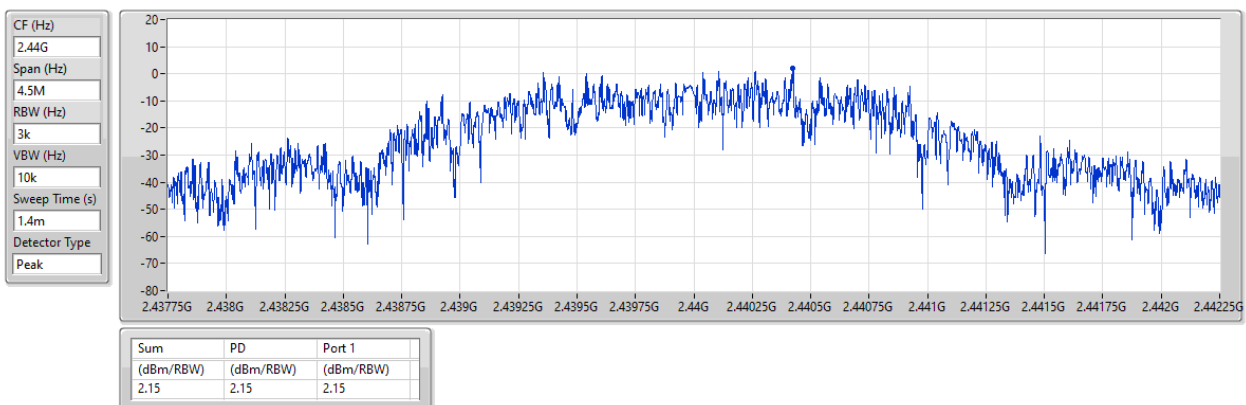


2.4-2.4835GHz_Zigbee

PSD

2440MHz

06/05/2026

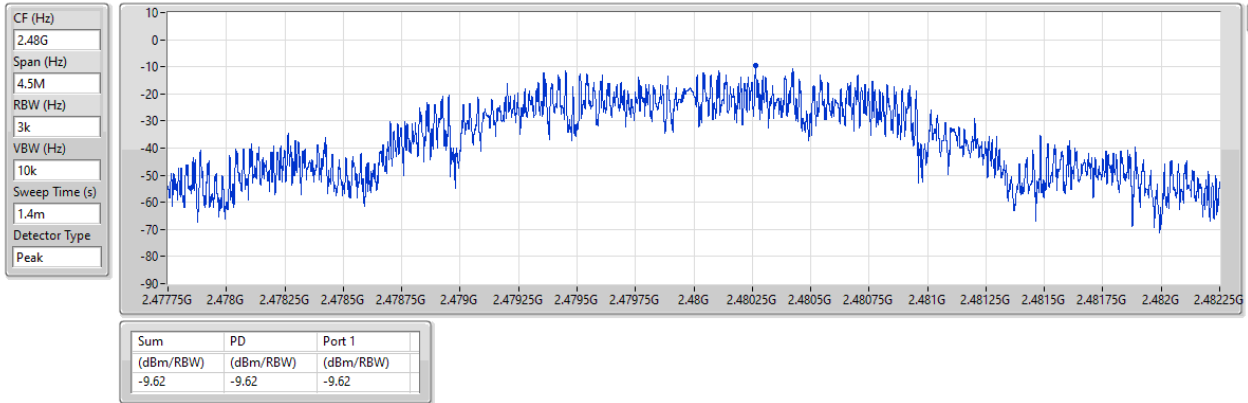


2.4-2.4835GHz_Zigbee

PSD

2480MHz

06/05/2026





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)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	2.40484G	16.94	-13.06	1.75808G	-52.51	2.39959G	-40.14	2.4G	-42.16	21.96952G	-45.49	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)	Port
Zigbee	-	-	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	2.40484G	16.94	-13.06	1.75808G	-52.51	2.39959G	-40.14	2.4G	-42.16	21.96952G	-45.49	1
2440MHz	Pass	2.40484G	16.94	-13.06	2.17651G	-53.04	2.39411G	-53.35	2.4G	-55.56	21.99203G	-45.26	1
2480MHz	Pass	2.40484G	16.94	-13.06	32.36M	-52.43	2.39802G	-53.50	2.4G	-55.46	21.51931G	-45.01	1

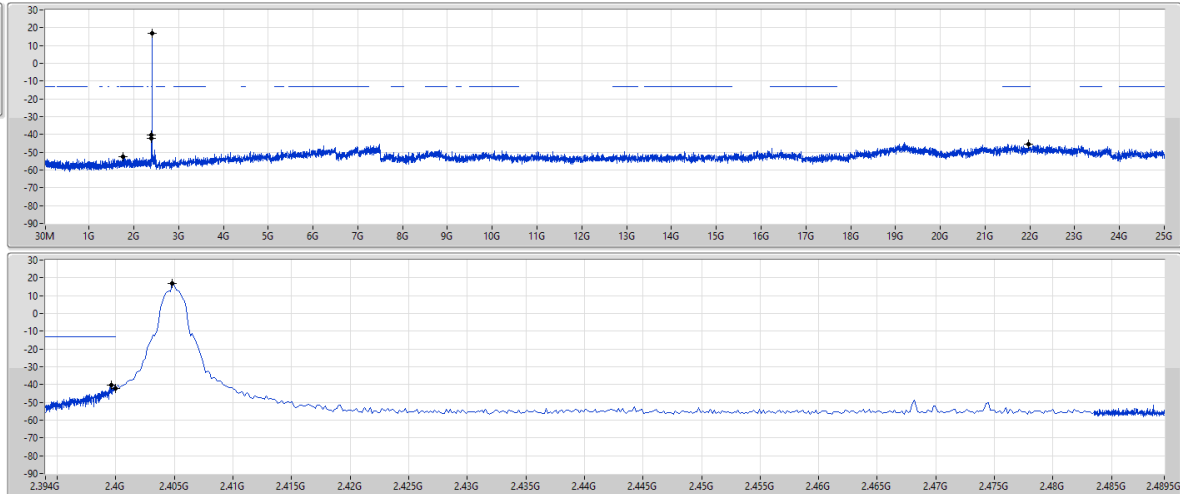
2.4-2.4835GHz Zigbee

CSEndB

2405MHz

06/05/2026

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak



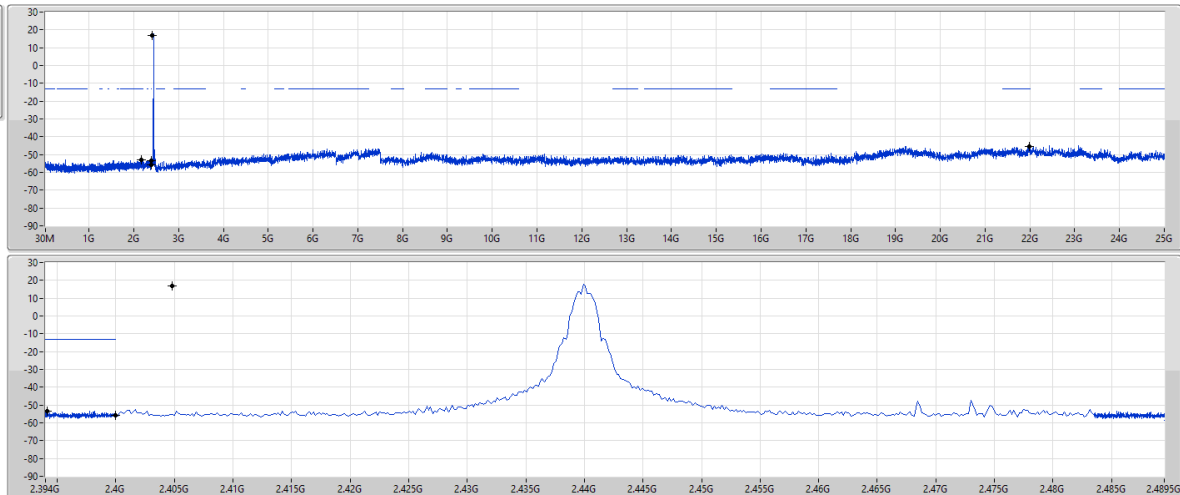
2.4-2.4835GHz Zigbee

CSEndB

2440MHz

06/05/2026

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak



2.4-2.4835GHz_Zigbee

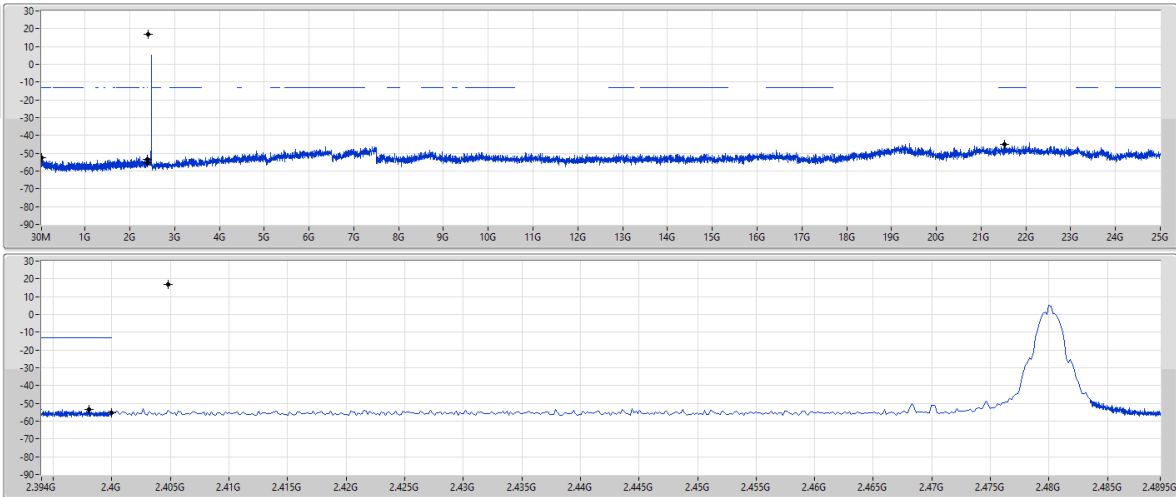
CSEndB

2480MHz

06/05/2026

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40484G	16.94	-13.06	32.36M	-52.43	2.39802G	-53.50	2.4G	-55.46	21.51931G	-45.01	1



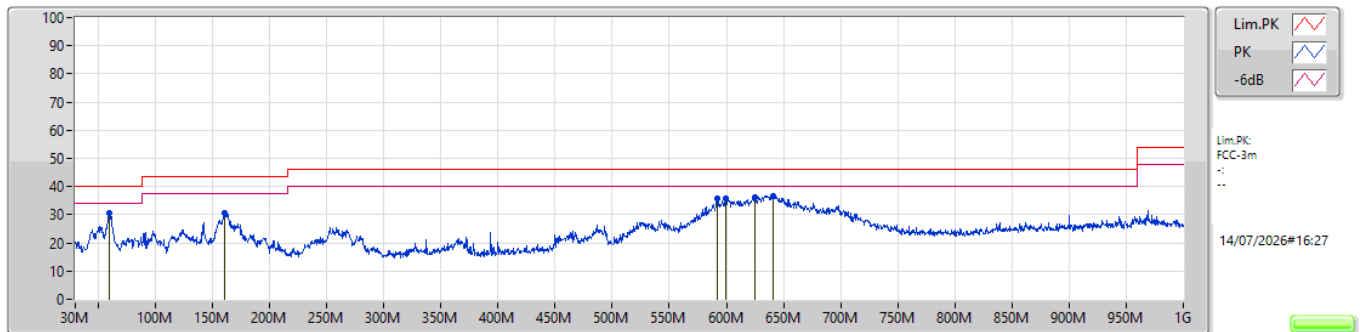
Radiated Emissions below 1GHz

Appendix F.1

Summary

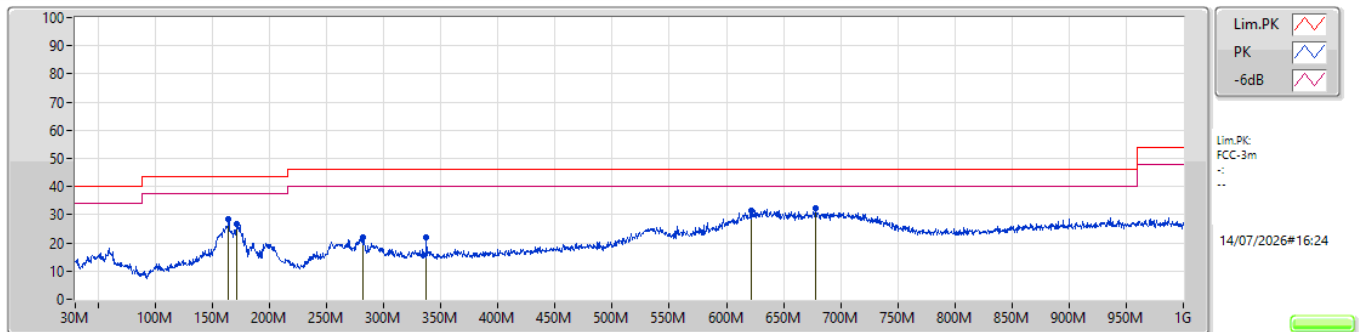
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 3	Pass	PK	641.1M	36.84	46.00	-9.16	Vertical

Mode 3



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)		
PK	59.59M	30.80	40.00	-9.20	-34.56	3	Vertical	130	1.00	-	65.36	18.91	0.49	53.96		
PK	160.47M	30.47	43.50	-13.03	-33.07	3	Vertical	155	1.00	-	63.54	19.11	1.48	53.66		
PK	591.63M	35.68	46.00	-10.32	-24.17	3	Vertical	241	1.00	-	59.85	25.45	3.36	52.98		
PK	599.88M	35.68	46.00	-10.32	-23.92	3	Vertical	173	2.00	-	59.60	25.62	3.42	52.96		
PK	625.1M	36.38	46.00	-9.62	-23.37	3	Vertical	92	2.00	-	59.75	26.00	3.53	52.90		
PK	641.1M	36.84	46.00	-9.16	-23.05	3	Vertical	180	1.00	"Worst"	59.89	26.21	3.60	52.86		

Mode 3



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)		
PK	164.35M	28.37	43.50	-15.13	-33.06	3	Horizontal	43	2.00	-	61.43	19.08	1.49	53.63		
PK	171.62M	26.59	43.50	-16.91	-33.43	3	Horizontal	141	1.00	-	60.02	18.63	1.51	53.57		
PK	281.72M	21.77	46.00	-24.23	-32.73	3	Horizontal	256	1.00	-	54.50	18.84	2.06	53.63		
PK	337.49M	22.15	46.00	-23.85	-31.41	3	Horizontal	86	1.00	-	53.56	20.18	2.28	53.87		
PK	622.19M	31.53	46.00	-14.47	-23.42	3	Horizontal	199	1.00	-	54.95	25.97	3.52	52.91		
PK	678.45M	32.17	46.00	-13.83	-22.60	3	Horizontal	134	1.00	"Worst"	54.77	26.45	3.65	52.70		

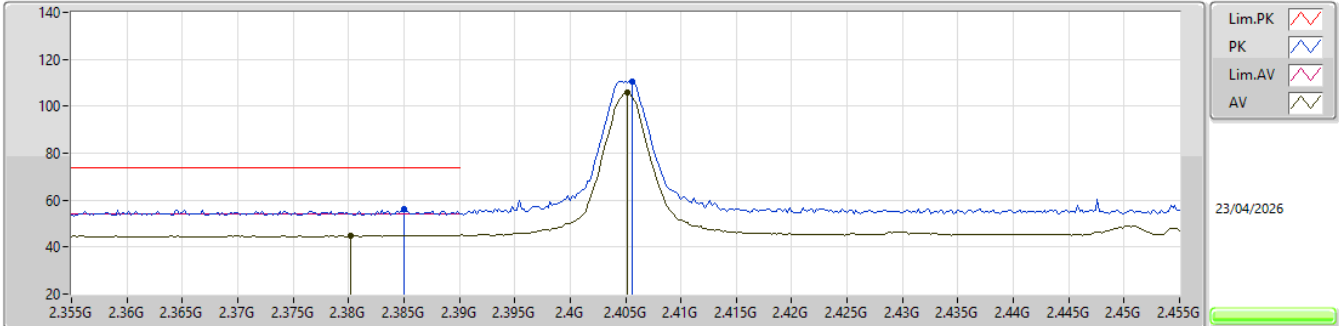


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	AV	2.4835G	52.65	54.00	-1.35	3	Horizontal	331	3.00	-

2.4-2.4835GHz_Zigbee

2405MHz_TX

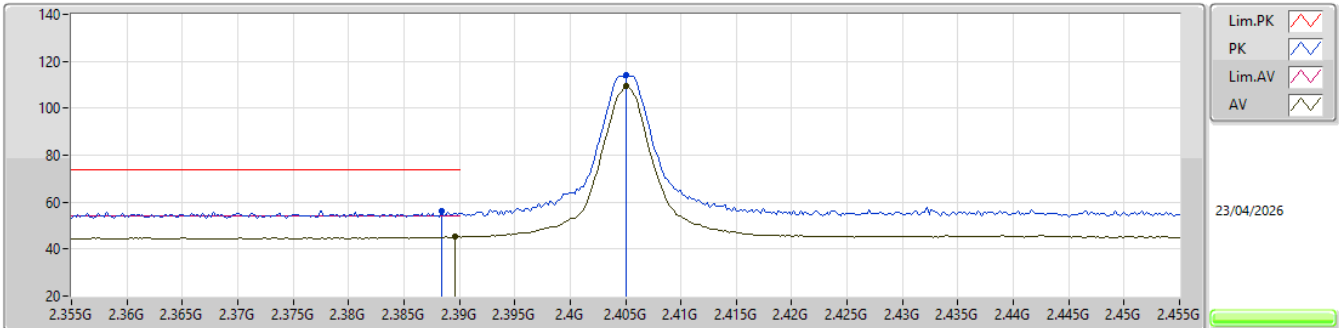


EUT_Y_1TX
Setting 200
01-E-I-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	2.385G	55.95	74.00	-18.05	23.26	3	Vertical	2	1.79	-	27.35	5.34	-				
AV	2.3802G	45.03	54.00	-8.97	12.40	3	Vertical	2	1.79	-	27.30	5.33	-				
PK	2.4056G	110.65	Inf	-Inf	77.77	3	Vertical	2	1.79	-	27.50	5.38	-				
AV	2.4052G	105.95	Inf	-Inf	73.07	3	Vertical	2	1.79	-	27.50	5.38	-				

2.4-2.4835GHz_Zigbee

2405MHz_TX

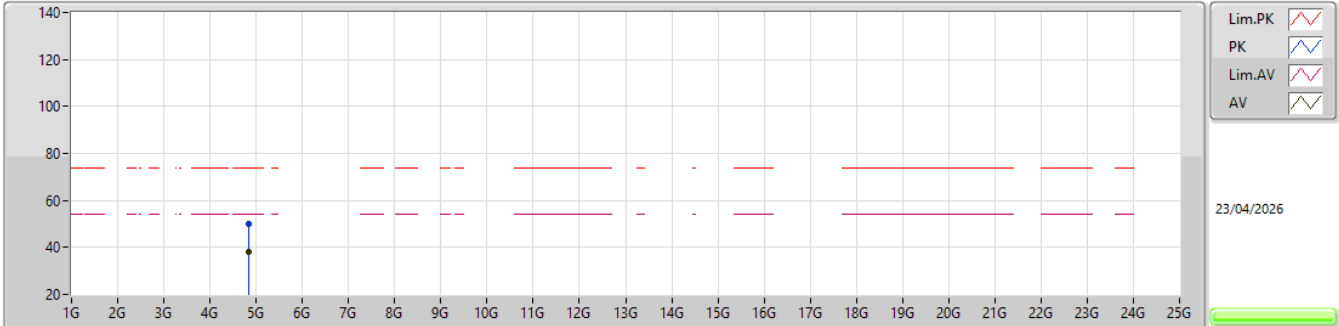


EUT Y_1TX
Setting 200
01-E-I-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	2.3884G	56.18	74.00	-17.82	23.45	3	Horizontal	310	1.80	-	27.38	5.35	-				
AV	2.3896G	45.19	54.00	-8.81	12.44	3	Horizontal	310	1.80	-	27.40	5.35	-				
PK	2.405G	113.98	Inf	-Inf	81.10	3	Horizontal	310	1.80	-	27.50	5.38	-				
AV	2.405G	109.61	Inf	-Inf	76.73	3	Horizontal	310	1.80	-	27.50	5.38	-				

2.4-2.4835GHz_Zigbee

2405MHz_TX

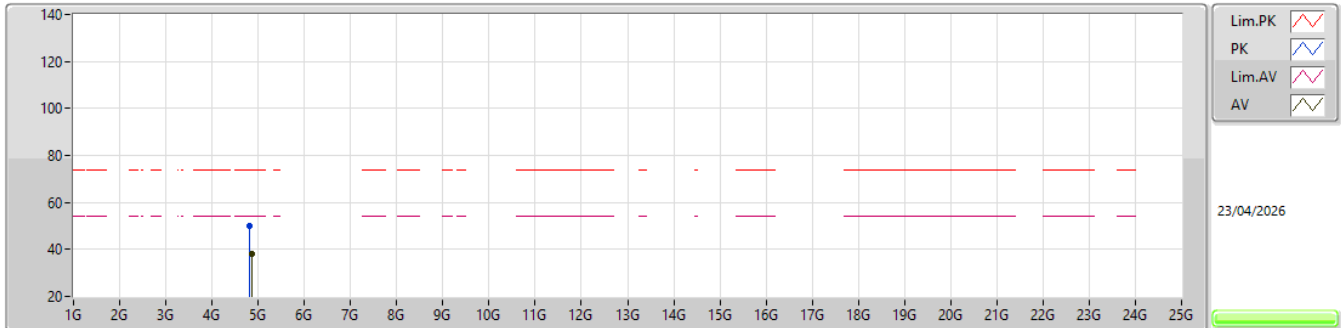


EUT_V_1TX
Setting 200
01-E-I-1

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	4.8428G	49.98	74.00	-24.02	40.68	3	Vertical	199	1.09	-	32.56	9.31	32.57			
AV	4.8508G	38.00	54.00	-16.00	28.64	3	Vertical	199	1.09	-	32.60	9.33	32.57			

2.4-2.4835GHz_Zigbee

2405MHz_TX

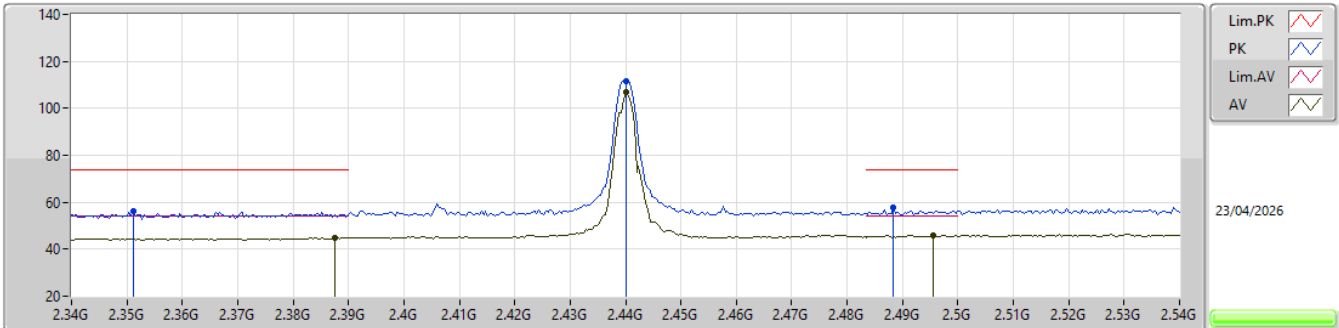


EUT_V_1TX
Setting 200
01-E-I-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.8234G	50.23	74.00	-23.77	41.09	3	Horizontal	358	2.86	-	32.44	9.27	32.57			
AV	4.8516G	38.17	54.00	-15.83	28.81	3	Horizontal	358	2.86	-	32.60	9.33	32.57			

2.4-2.4835GHz_Zigbee

2440MHz_TX

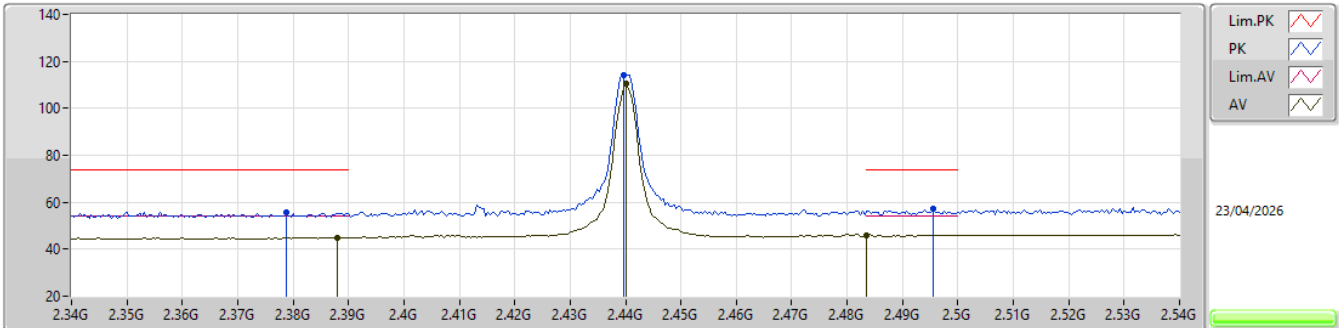


EUT_Y_1TX
Setting 200
01-E-I-1

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	2.3512G	56.06	74.00	-17.94	23.39	3	Vertical	326	1.80	-	27.40	5.27	-				
AV	2.3876G	44.97	54.00	-9.03	12.25	3	Vertical	326	1.80	-	27.38	5.34	-				
PK	2.44G	111.45	Inf	-Inf	78.44	3	Vertical	326	1.80	-	27.60	5.41	-				
AV	2.44G	106.84	Inf	-Inf	73.83	3	Vertical	326	1.80	-	27.60	5.41	-				
PK	2.4884G	57.62	74.00	-16.38	24.18	3	Vertical	326	1.80	-	27.98	5.46	-				
AV	2.4956G	45.94	54.00	-8.06	12.47	3	Vertical	326	1.80	-	28.00	5.47	-				

2.4-2.4835GHz_Zigbee

2440MHz_TX

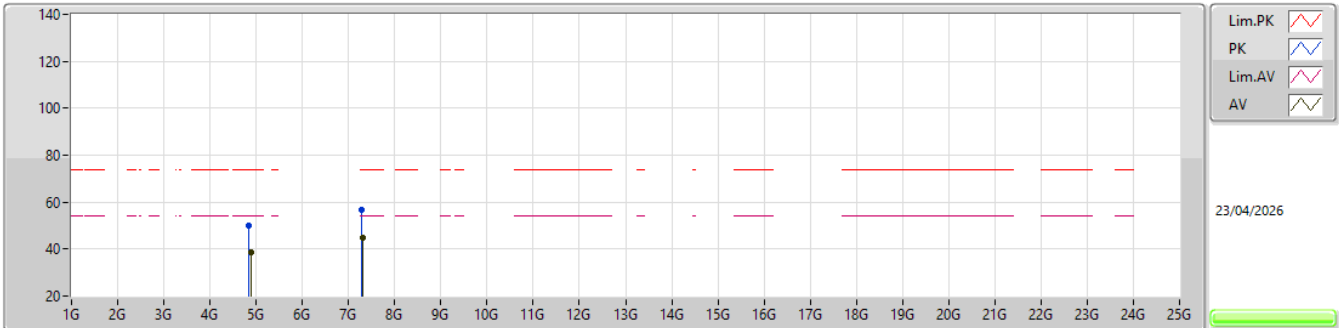


EUT_Y_1TX
Setting 200
01-E-I-1

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	2.3788G	55.84	74.00	-18.16	23.21	3	Horizontal	318	1.80	-	27.30	5.33	-				
AV	2.388G	44.93	54.00	-9.07	12.21	3	Horizontal	318	1.80	-	27.38	5.34	-				
PK	2.4396G	114.34	Inf	-Inf	81.33	3	Horizontal	318	1.80	-	27.60	5.41	-				
AV	2.44G	110.33	Inf	-Inf	77.32	3	Horizontal	318	1.80	-	27.60	5.41	-				
PK	2.4956G	57.04	74.00	-16.96	23.57	3	Horizontal	318	1.80	-	28.00	5.47	-				
AV	2.4835G	46.04	54.00	-7.96	12.64	3	Horizontal	318	1.80	-	27.94	5.46	-				

2.4-2.4835GHz_Zigbee

2440MHz_TX

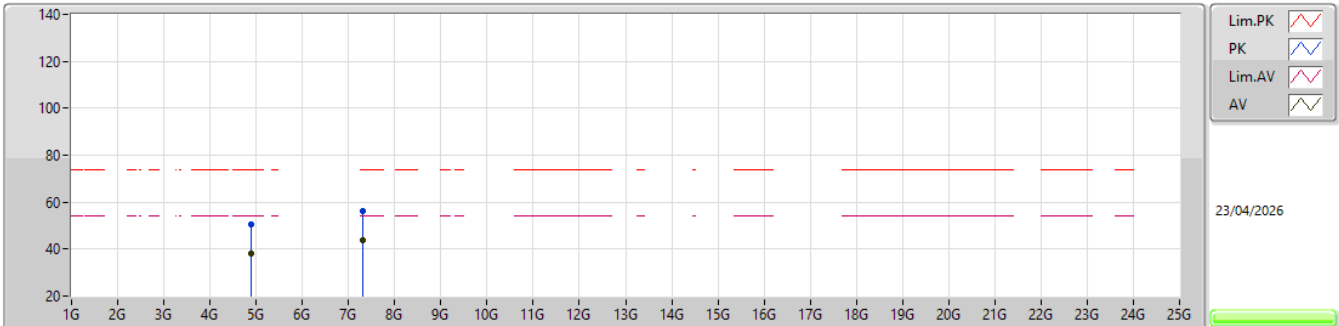


EUT_Y_1TX
Setting 200
01-E-I-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	4.838G	50.12	74.00	-23.88	40.86	3	Vertical	177	2.27	-	32.53	9.30	32.57				
AV	4.8932G	38.50	54.00	-15.50	28.97	3	Vertical	177	2.27	-	32.69	9.42	32.58				
PK	7.2746G	56.51	74.00	-17.49	40.45	3	Vertical	58	2.73	-	37.05	11.66	32.65				
AV	7.3024G	44.79	54.00	-9.21	28.73	3	Vertical	58	2.73	-	36.99	11.71	32.64				

2.4-2.4835GHz_Zigbee

2440MHz_TX

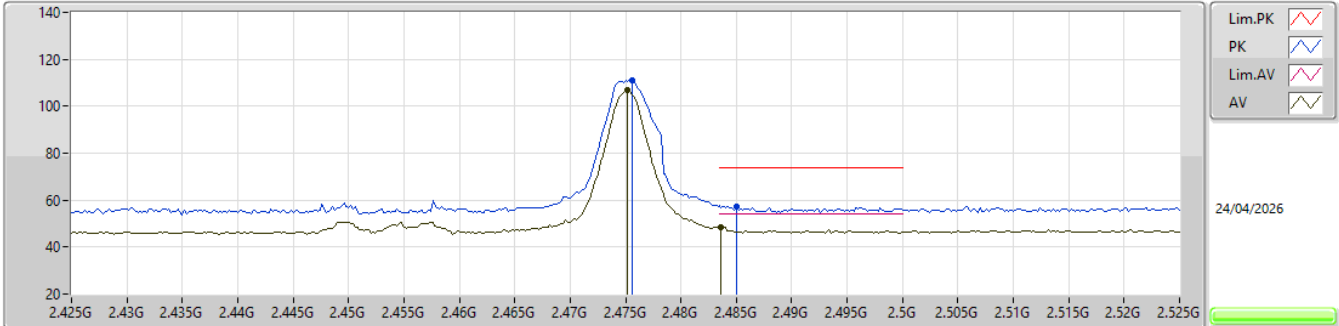


EUT_Y_1TX
Setting 200
01-E-I-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	4.8812G	50.77	74.00	-23.23	41.30	3	Horizontal	323	1.84	-	32.66	9.39	32.58				
AV	4.8806G	38.17	54.00	-15.83	28.70	3	Horizontal	323	1.84	-	32.66	9.39	32.58				
PK	7.30572G	55.97	74.00	-18.03	39.90	3	Horizontal	353	2.55	-	36.98	11.72	32.63				
AV	7.30806G	43.99	54.00	-10.01	27.93	3	Horizontal	353	2.55	-	36.97	11.72	32.63				

2.4-2.4835GHz_Zigbee

2475MHz_TX

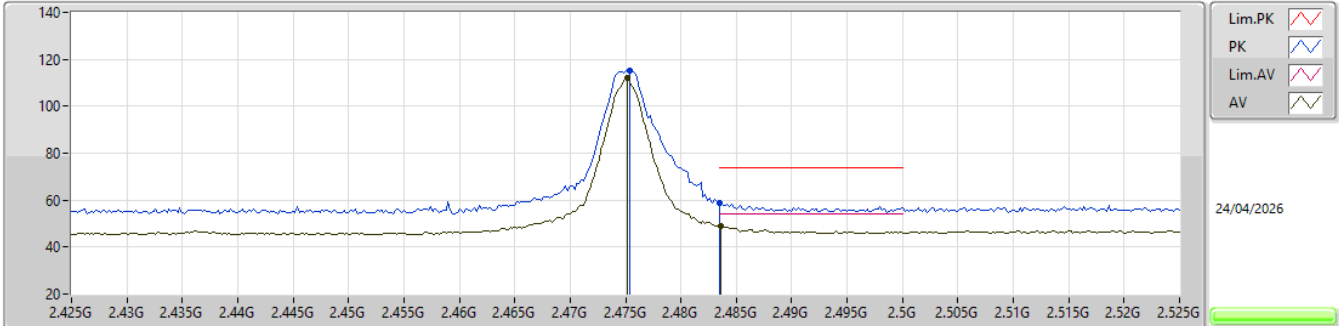


EUT_Y_4TX
Setting 200
01-E-I-1

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA					
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)					
PK	2.4756G	110.91	Inf	-Inf	77.60	3	Vertical	5	1.79	-	27.86	5.45	-					
AV	2.4752G	106.68	Inf	-Inf	73.38	3	Vertical	5	1.79	-	27.85	5.45	-					
PK	2.485G	57.35	74.00	-16.65	23.94	3	Vertical	5	1.79	-	27.95	5.46	-					
AV	2.4836G	48.37	54.00	-5.63	14.97	3	Vertical	5	1.79	-	27.94	5.46	-					

2.4-2.4835GHz_Zigbee

2475MHz_TX

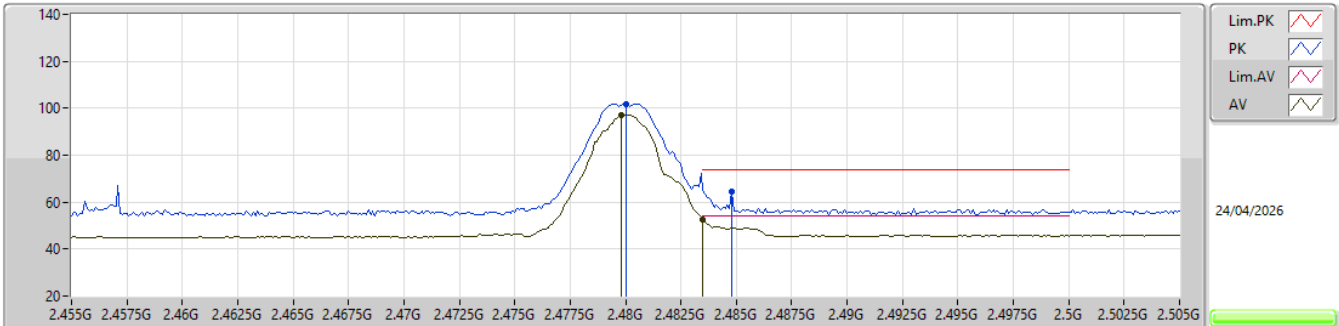


EUT_Y_4TX
Setting 200
01-E-I-1

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	2.4754G	115.23	Inf	-Inf	81.93	3	Horizontal	324	2.68	-	27.85	5.45	-					
AV	2.4752G	112.09	Inf	-Inf	78.79	3	Horizontal	324	2.68	-	27.85	5.45	-					
PK	2.4835G	58.84	74.00	-15.16	25.44	3	Horizontal	324	2.68	-	27.94	5.46	-					
AV	2.4836G	48.74	54.00	-5.26	15.34	3	Horizontal	324	2.68	-	27.94	5.46	-					

2.4-2.4835GHz_Zigbee

2480MHz_TX

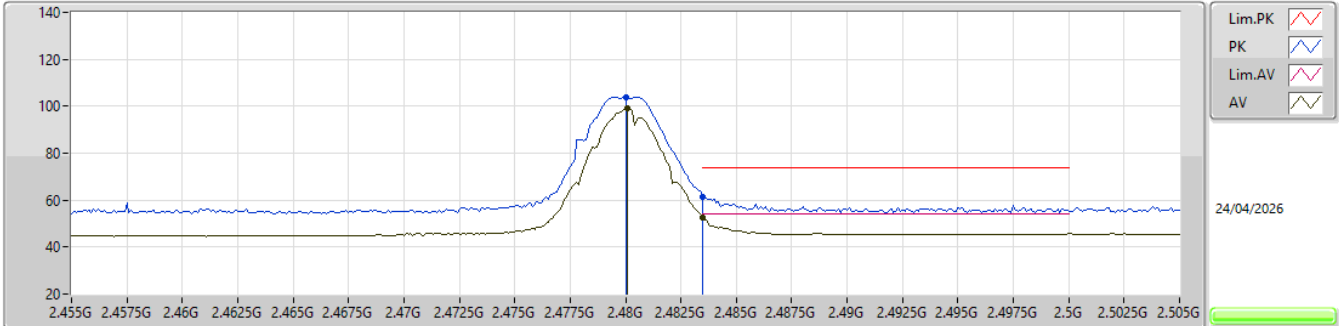


EUT_Y_1TX
Setting 80
01-E-I-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	2.48G	101.81	Inf	-Inf	68.46	3	Vertical	9	1.80	-	27.90	5.45	-				
AV	2.4798G	97.29	Inf	-Inf	63.94	3	Vertical	9	1.80	-	27.90	5.45	-				
PK	2.4848G	64.45	74.00	-9.55	31.04	3	Vertical	9	1.80	-	27.95	5.46	-				
AV	2.4835G	52.41	54.00	-1.59	19.02	3	Vertical	9	1.80	-	27.93	5.46	-				

2.4-2.4835GHz_Zigbee

2480MHz_TX

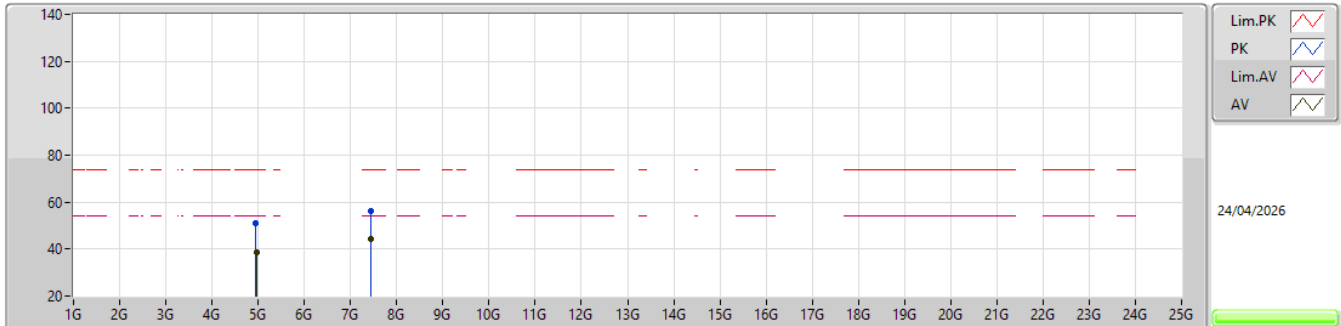


EUT_Y_1TX
Setting 80
01-E-I-1

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	104.02	Inf	-Inf	70.67	3	Horizontal	331	3.00	-	27.90	5.45	-					
AV	2.4801G	99.05	Inf	-Inf	65.70	3	Horizontal	331	3.00	-	27.90	5.45	-					
PK	2.4835G	61.51	74.00	-12.49	28.11	3	Horizontal	331	3.00	-	27.94	5.46	-					
AV	2.4835G	52.65	54.00	-1.35	19.26	3	Horizontal	331	3.00	-	27.93	5.46	-					

2.4-2.4835GHz_Zigbee

2480MHz_TX

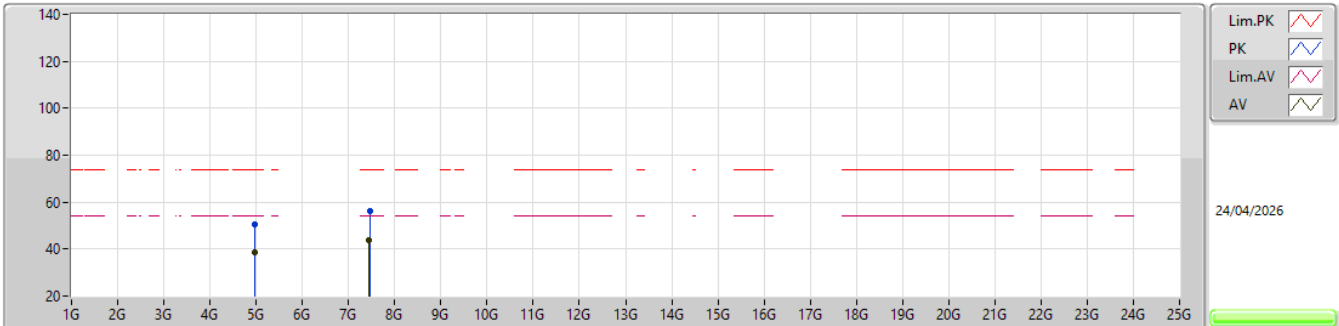


EUT_Y_1TX
Setting 80
01-E-I-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	4.95082G	51.18	74.00	-22.82	41.22	3	Vertical	250	1.96	-	33.00	9.54	32.58				
AV	4.96726G	38.68	54.00	-15.32	28.66	3	Vertical	250	1.96	-	33.03	9.57	32.58				
PK	7.43634G	56.30	74.00	-17.70	40.58	3	Vertical	135	2.61	-	36.40	11.90	32.58				
AV	7.43376G	44.27	54.00	-9.73	28.56	3	Vertical	135	2.61	-	36.40	11.90	32.59				

2.4-2.4835GHz_Zigbee

2480MHz_TX



EUT_Y_1TX
Setting 80
01-E-I-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	4.96576G	50.39	74.00	-23.61	40.37	3	Horizontal	129	2.34	-	33.03	9.57	32.58				
AV	4.95664G	38.64	54.00	-15.36	28.66	3	Horizontal	129	2.34	-	33.01	9.55	32.58				
PK	7.45464G	56.25	74.00	-17.75	40.54	3	Horizontal	127	2.35	-	36.39	11.90	32.58				
AV	7.4274G	44.02	54.00	-9.98	28.31	3	Horizontal	127	2.35	-	36.40	11.90	32.59				