



RADIO TEST REPORT

FCC ID : RSL-TQ7413R
Equipment : IEEE 802.11be tri-radio 2.4G/5G/6G Wireless AP
Brand Name : Allied Telesis
Model Name : AT-TQ7413[yyyyyy]
(Refer to section 1.1.5 of test report for detail information.)
Applicant : Allied Telesis K.K.
2nd. TOC Bldg.7-21-11 Nishi-Gotanda, Shinagawa-ku
Tokyo 141-0031 Japan
Manufacturer : Allied Telesis K.K.
2nd. TOC Bldg.7-21-11 Nishi-Gotanda, Shinagawa-ku
Tokyo 141-0031 Japan
Standard : 47 CFR FCC Part 15.247

The product was received on Nov. 05, 2025, and testing was started from Nov. 07, 2025 and completed on Mar. 04, 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

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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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
2.4G	Zigbee	3	1

Note:

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


1.1.2 Antenna Information

Ant.	RF Port	Brand Name	Model Name	Ant. Type	Connector	Gain (dBi)	Modes of Operation
1	1	WNC	95XPAD15.GDY	PIFA	I-PEX	Note 1	WLAN 2.4GHz (Radio 1)
2	2	WNC	95XPAD15.GEA	PIFA	I-PEX		WLAN 5GHz (Radio 2)
3	1	WNC	95XPAD15.GEB	PIFA	I-PEX		WLAN 6GHz (Radio 3)
4	2	WNC	95XPAD15.GEC	PIFA	I-PEX		Bluetooth, Zigbee (Radio 5)
5	1	WNC	95XPAD15.GDZ	PIFA	I-PEX		WLAN 2.4GHz WLAN 5GHz WLAN 6GHz (Radio 4)
6	1	WNC	95XPAD15.GED	PIFA	I-PEX		

Note 1:

Note 1.

Ant.	Antenna Gain (dBi)								
	WLAN 2.4GHz (Radio 1)		WLAN 5GHz (Radio 2)						
			UNII 1	UNII 2A	UNII 2C		UNII 3		
1	4.18		5.06	4.95		4.78		4.39	
2	4.96		5.28	5.01		4.78		4.86	
Ant.	WLAN 6GHz (Radio 3)								
	UNII 5		UNII 6		UNII 7		UNII 8		
	4.94		4.82		4.82		4.08		
4	5.91		5.91		5.91		5.99		
Ant.	Bluetooth, Zigbee (Radio 5)								
5	4.51								
Ant.	Scanning radio (Radio 4)								
	WLAN 2.4GHz	WLAN 5GHz				WLAN 6GHz			
		UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 5	UNII 6	UNII 7	UNII 8
6	3.93	5.33	4.78	5.64	4.70	5.61	5.61	5.61	5.61

Note 2: The above information was declared by Manufacturer.

Note 3: States antenna 5GHz and 6GHz transmission will be restricted per country's regulation.

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

Ex.

Directional Gain (NSS1) formula :

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

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

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

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

$$\log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / N_{ANT}]$$

Where ;

Radio 1

$$2.4G \ G1 = 4.18 \text{ dBi} ; G2 = 4.96 \text{ dBi} ; DG = 7.59 \text{ dBi}$$

Radio 2

$$5G \text{ UNII-1 } G1 = 5.06 \text{ dBi} ; G2 = 5.28 \text{ dBi} ; DG = 8.18 \text{ dBi}$$

$$5G \text{ UNII-2A } G1 = 4.95 \text{ dBi} ; G2 = 5.01 \text{ dBi} ; DG = 7.99 \text{ dBi}$$

$$5G \text{ UNII-2C } G1 = 4.78 \text{ dBi} ; G2 = 4.78 \text{ dBi} ; DG = 7.79 \text{ dBi}$$

$$5G \text{ UNII-3 } G1 = 4.39 \text{ dBi} ; G2 = 4.86 \text{ dBi} ; DG = 7.64 \text{ dBi}$$

Radio 3

$$6G \text{ UNII-5 } G1 = 4.94 \text{ dBi} ; G2 = 5.91 \text{ dBi} ; DG = 8.45 \text{ dBi}$$

$$6G \text{ UNII-6 } G1 = 4.82 \text{ dBi} ; G2 = 5.91 \text{ dBi} ; DG = 8.39 \text{ dBi}$$

$$6G \text{ UNII-7 } G1 = 4.82 \text{ dBi} ; G2 = 5.91 \text{ dBi} ; DG = 8.39 \text{ dBi}$$

$$6G \text{ UNII-8 } G1 = 4.08 \text{ dBi} ; G2 = 5.99 \text{ dBi} ; DG = 8.1 \text{ dBi}$$

Note 5: **For Radio 1:**

2.4GHz IEEE 802.11b/g/n/VHT/ax/be mode (2TX/2RX)

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

Port 1 and Port 2 could transmit/receive simultaneously.

For Radio 2:

5GHz IEEE 802.11a/n/ac/ax/be mode (2TX/2RX)

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

Port 1 and Port 2 could transmit/receive simultaneously.

For Radio 3:

6GHz IEEE 802.11ax/be mode (2TX/2RX)



Port 1 and Port 2 can be used as transmitting/receiving antenna.
Port 1 and Port 2 could transmit/receive simultaneously.

For Radio 4 (Scanning radio):**2.4GHz IEEE 802.11b/g/n/VHT/ax mode (1RX)****5GHz IEEE 802.11a/n/ac/ax mode (1RX)****6GHz IEEE 802.11ax mode (1RX)**

Only Port 1 can be used as receiving antenna.

For Radio 5:**Bluetooth and Zigbee mode (1TX/1RX)**

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

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz) 1/T
Zigbee	1	0	20.001m	10Hz (DC>=0.98)

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter / PoE			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	QSPR Ver 6.00.00225.1			

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Model Name	Description
AT-TQ7413[yyyyy] (where [y] can be A–Z, a–z, “-”, “/”, or blank. The characters in brackets are optional and used for marketing differentiation only, with no impact on safety-related construction or critical components.)	All the models are identical, the difference model served as marketing strategy.

Note 1: From the above models, model: AT-TQ7413-R was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

1.1.6 Table for Radio Function

Radio \ Function	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz	Bluetooth	Zigbee
1	V	-	-	-	-
2	-	V	-	-	-
3	-	-	V	-	-
4 (Scanning radio)	V	V	V	-	-
5	-	-	-	V	V

Note1: For WLAN 2.4GHz: The Radio 1 and Radio 4 (Scanning radio) can't operate at the same frequency simultaneously.

For WLAN 5GHz: The Radio2 and Radio 4 (Scanning radio) can't operate at the same frequency simultaneously.

For WLAN 6GHz: The Radio 3 and Radio 4 (Scanning radio) can't operate at the same frequency simultaneously.

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 662911 D01 v02r01
- ♦ 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	TH03-CB	Owen Hsu	19.6~21.1 / 63~67	Nov. 12, 2025~ Dec. 17, 2025
Radiated (below 1GHz Mode 1~4)	10CH01-CB	Allen Chung	21~22 / 56~57	Jan. 15, 2026
Radiated (below 1GHz Mode 5~6)			23~24 / 58~59	Mar. 04, 2026
Radiated (above 1GHz)	03CH02-CB	Lex Lee	22-23 / 61-63	Nov. 07, 2025~ Dec. 13, 2025
AC Conduction (Mode 1~4)	CO02-CB	Allen Chung	23~24 / 57~58	Jan. 20, 2026
AC Conduction (Mode 5~6)			23~24 / 55~56	Mar. 03, 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 Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.9 dB	Confidence levels of 95%
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%



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_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 2.4GHz+R5: Bluetooth+Adapter
2	EUT_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 2.4GHz+R5: Bluetooth+PoE
Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3~4 will follow this same test mode.	
3	EUT_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 2.4GHz+R5: Zigbee(TX)+PoE
4	EUT_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 2.4GHz+R5: Zigbee(RX)+PoE
Mode 2 has been evaluated to be the worst case among Mode 1~4, thus measurement for Mode 5~6 will follow this same test mode.	
5	EUT_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 5GHz+R5: Bluetooth+PoE
6	EUT_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 6GHz+R5: Bluetooth+PoE
For operating mode 2 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_R5



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
	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_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 2.4GHz+R5: Bluetooth +Adapter
2	EUT in Z axis_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 2.4GHz+R5: Bluetooth +PoE
Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3~4 will follow this same test mode.	
3	EUT in Z axis_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 2.4GHz+R5: Zigbee(TX) +PoE
4	EUT in Z axis_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 2.4GHz+R5: Zigbee(RX) +PoE
Mode 2 has been evaluated to be the worst case among Mode 1~4, thus measurement for Mode 5~6 will follow this same test mode.	
5	EUT in Z axis_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 5GHz+R5: Bluetooth +PoE
6	EUT in Z axis_R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R4: 6GHz+R5: Bluetooth +PoE
For operating mode 2 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
	After evaluating, and the worst case was found at Y axis, so it was selected to perform test and its test result was written in the report.
1	EUT in Y axis_R5



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R5: Bluetooth
2	R1: 2.4GHz+R2: 5GHz+R3: 6GHz+R5: Zigbee
Refer to Sporton Test Report No.: FA5N0729 for Co-location RF Exposure Evaluation.	

Note 1: R means Radio.

Note 2: The PoE is used for testing purpose; it will not be sold with the EUT

Power	Brand Name	Model Name
PoE	PHIHONG	POE60U-BTA

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

Bracket*1

2.5 Support Equipment

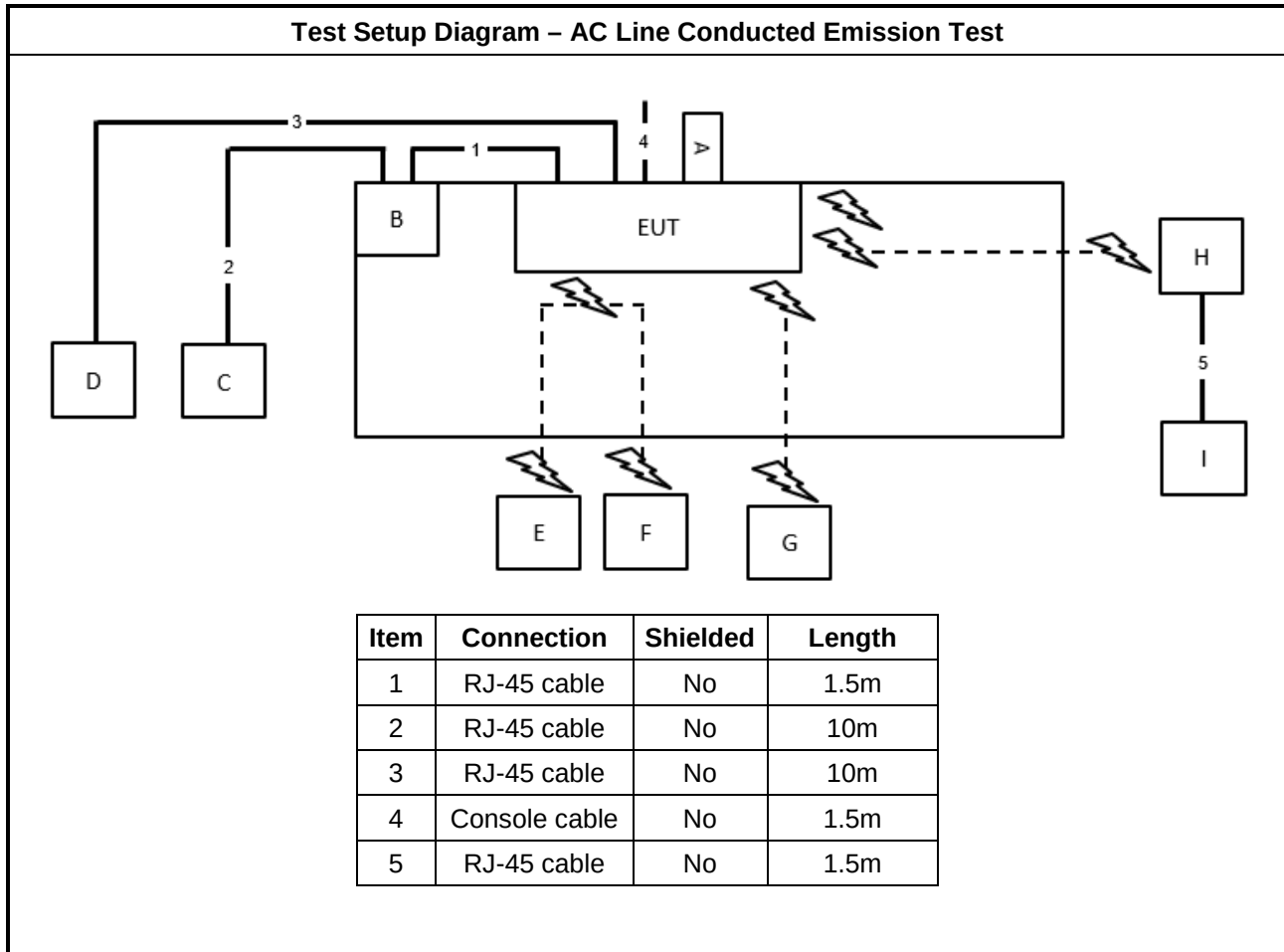
For AC Conduction and Radiated (below 1GHz):

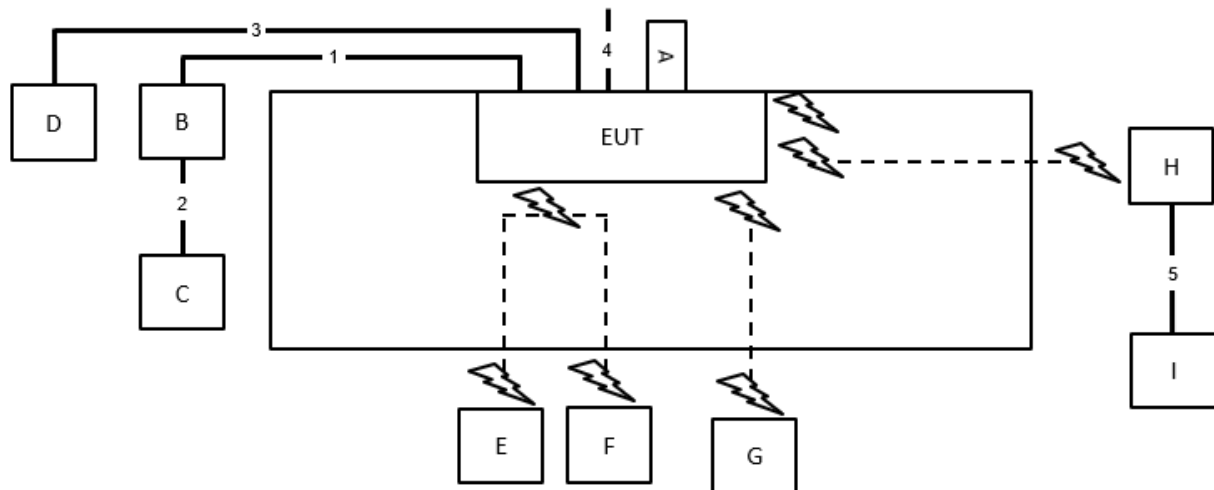
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Flash disk2.0	Tcell	Push	N/A
B	PoE	PHIHONG	POE60U-BTA	N/A
C	PoE 2 PC	ASUS	S300TA	TX2-RTL8821CE
D	PoE 1 PC	ASUS	S300TA	TX2-RTL8821CE
E	2.4G NB	Lenovo	X260	N/A
F	5G NB	Lenovo	X260	N/A
G	Smart phone	Redmi	M1810F6LH	2AFZZ-RMSF6LG
H	6G Device	Allied Telesis	AT-TQ7413-R	RSL-TQ7413R
I	6G Device NB	Lenovo	X260	N/A

For Radiated (above 1GHz) and RF Conducted:

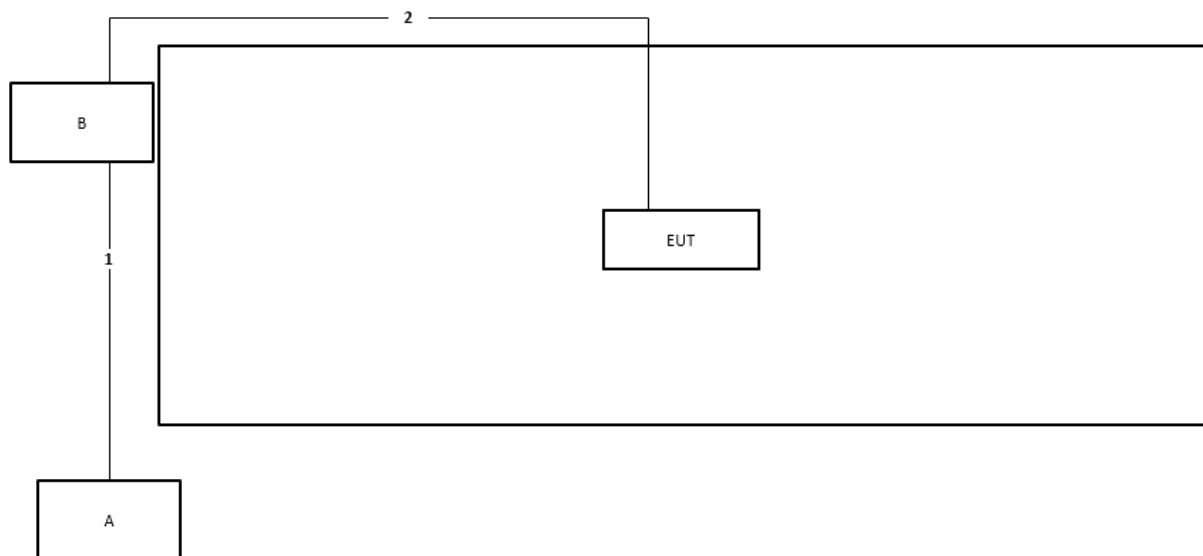
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	LENOVO	L440	N/A
B	PoE	PHIHONG	POE60U-BTA	N/A

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	RJ-45 cable	No	10m
4	Console cable	No	1.5m
5	RJ-45 cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz


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



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

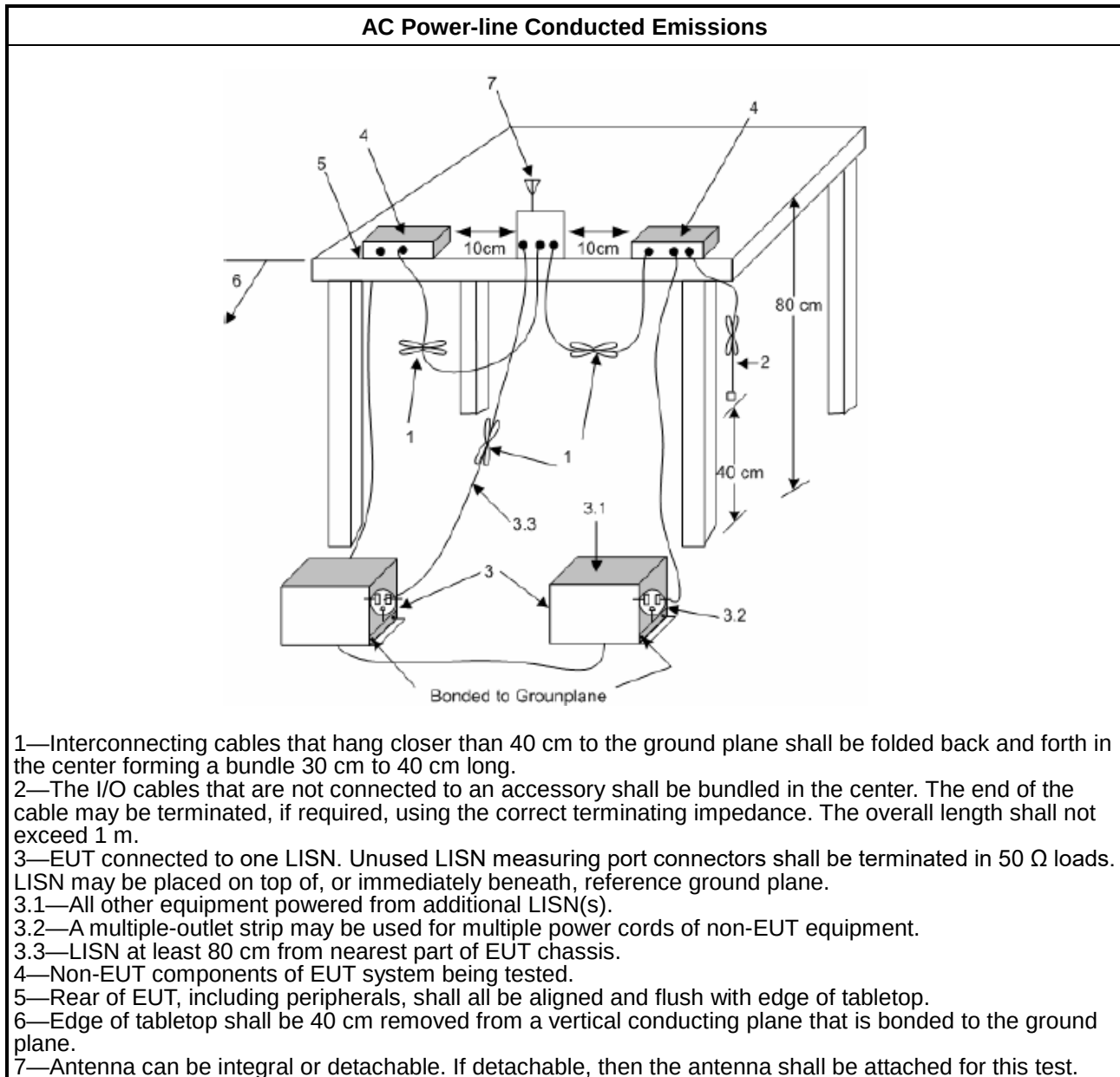
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2020, 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.

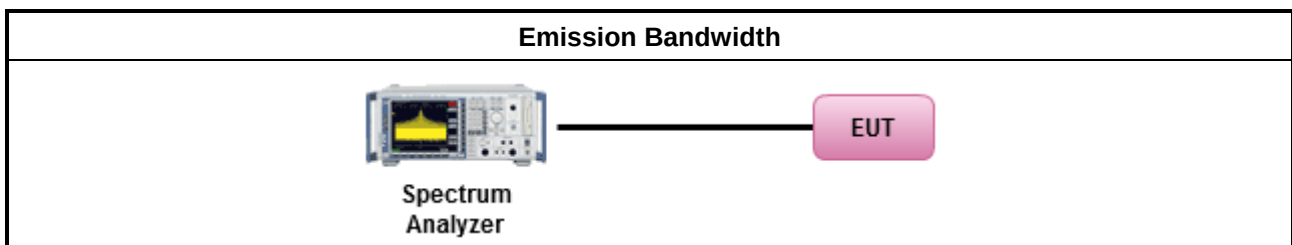
3.2.2 Measuring Instruments

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.	

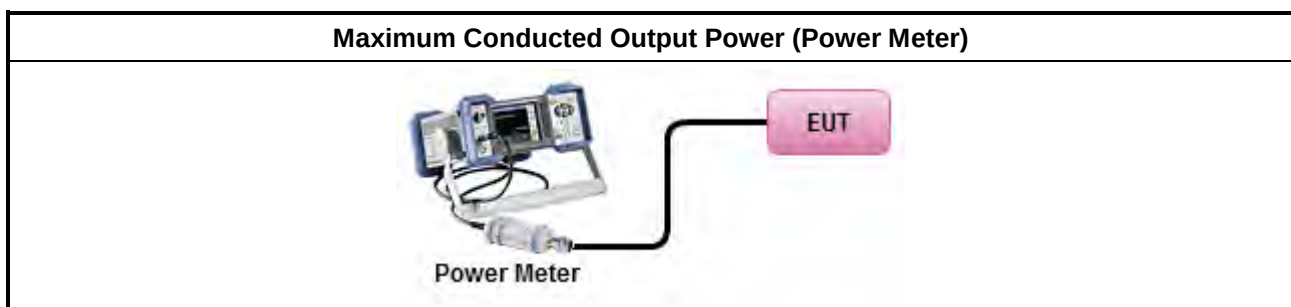
3.3.2 Measuring Instruments

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

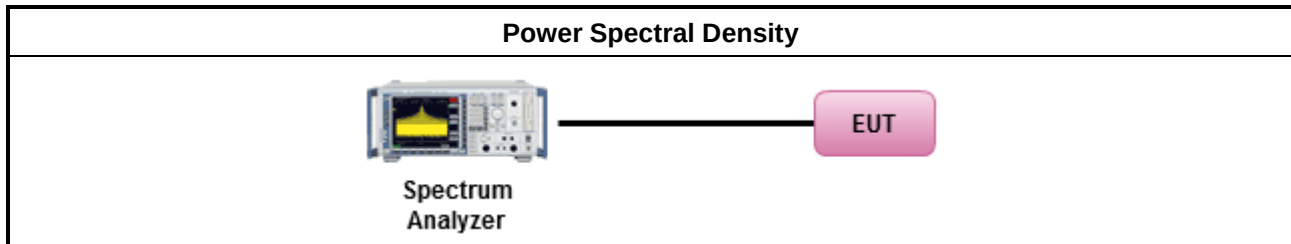
3.4.2 Measuring Instruments

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.	

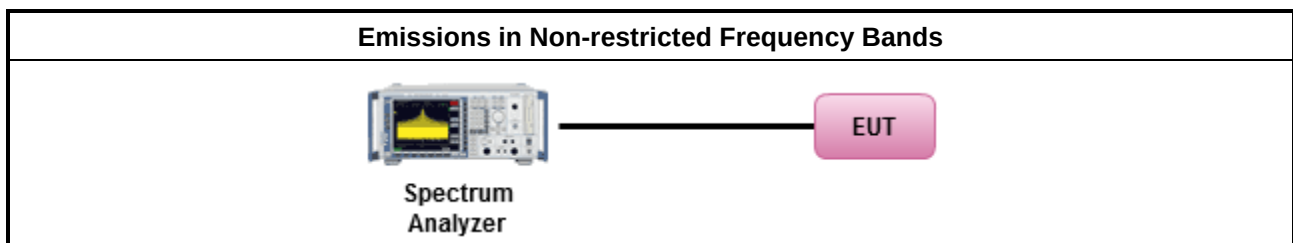
3.5.2 Measuring Instruments

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.

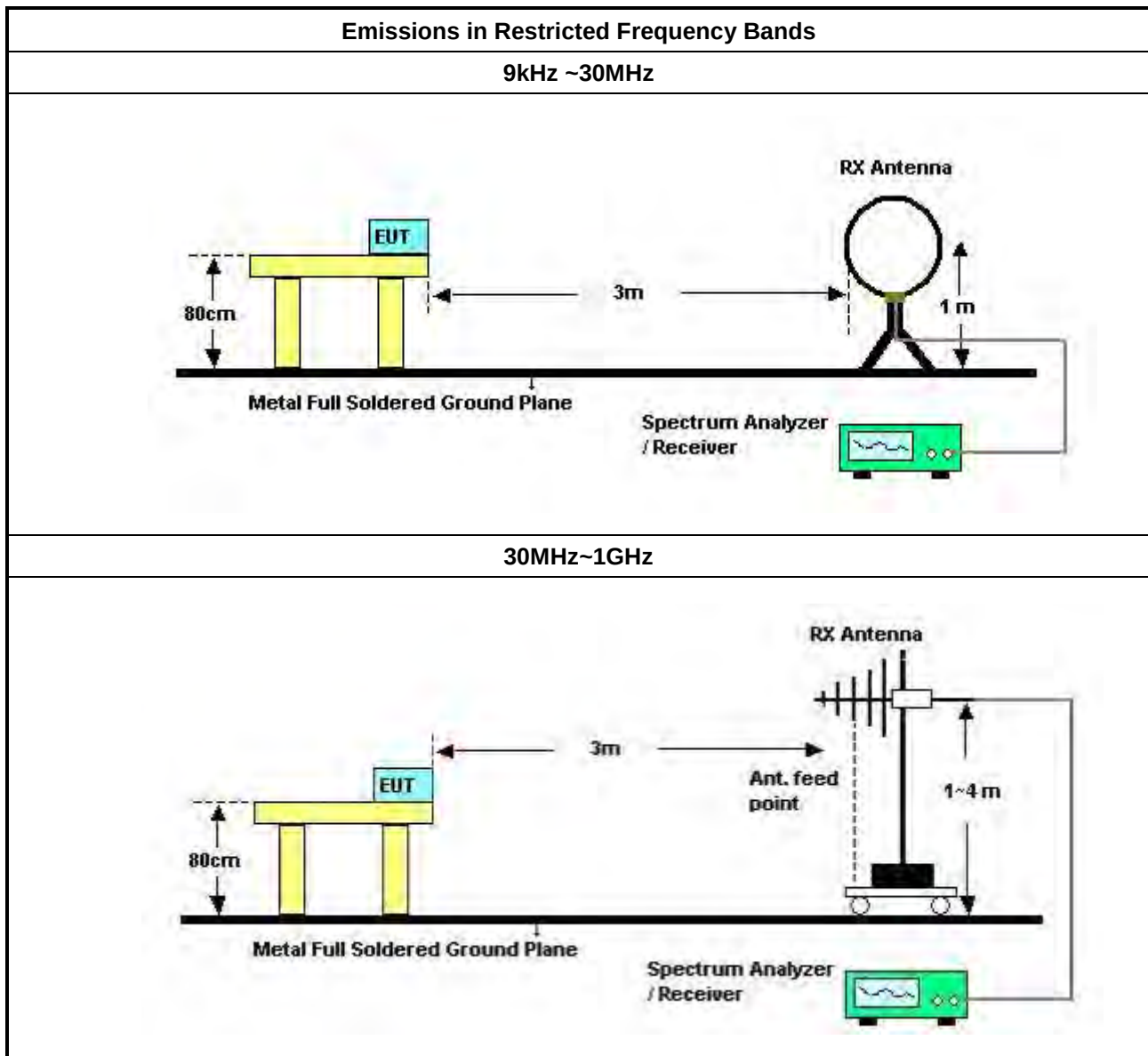
3.6.2 Measuring Instruments

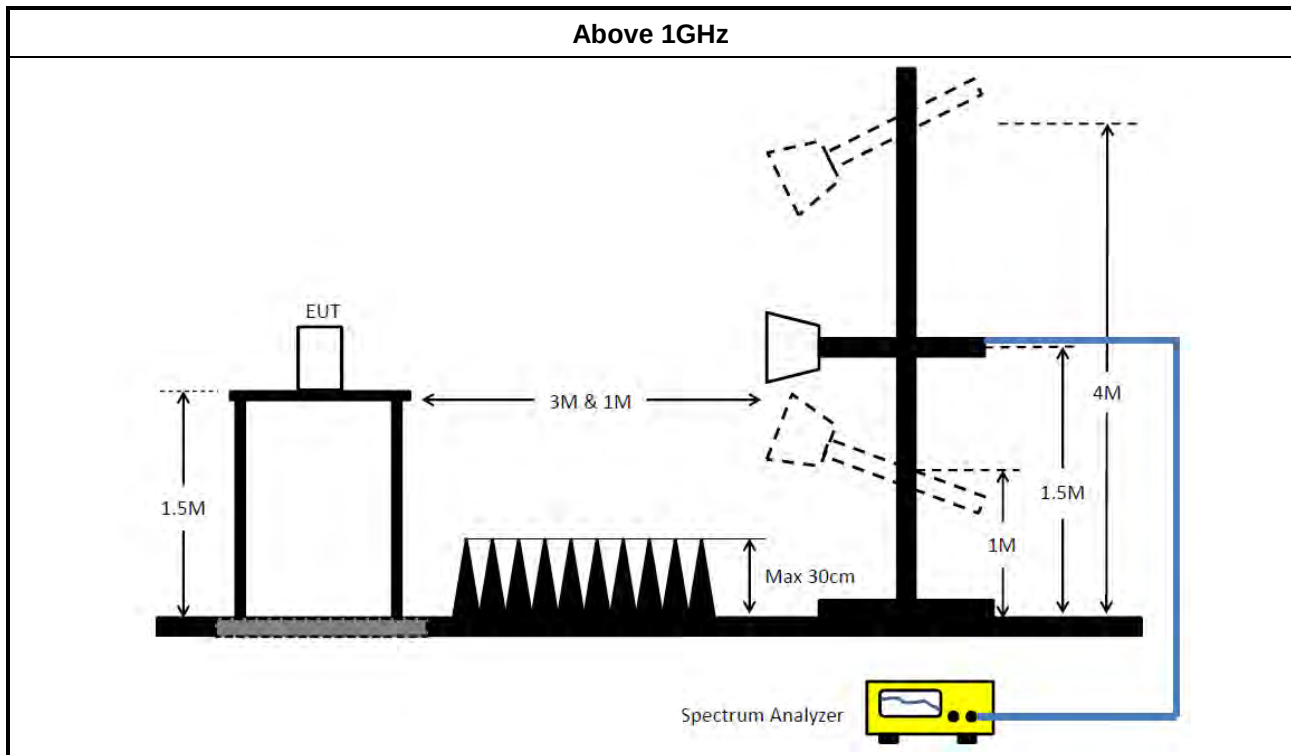
Refer a test equipment and calibration data table in this test report.

**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
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Apr. 29, 2025	Apr. 28, 2026	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Feb. 06, 2025	Feb. 05, 2026	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Jan. 29, 2026	Jan. 28, 2027	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 14, 2025	May 13, 2026	Conduction (CO02-CB)
COND Cable	Woken	Cable	CO02	0.15MHz ~ 30MHz	Sep.14, 2025	Sep.13, 2026	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Sep.14, 2025	Sep.13, 2026	Conduction (CO02-CB)
Test Software	SPORTON	SENSE-EMI	V5.11	150kHz-30MHz	N.C.R.	N.C.R.	Conduction (CO02-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. 08, 2025	Mar. 07, 2026	Radiation (10CH01-CB)
Amplifier	Agilent	8447D	2944A10784	9kHz ~ 1.3GHz	Mar. 08, 2025	Mar. 07, 2026	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)
High Cable	TITAN	T318E	High cable01	30MHz ~ 18GHz	Feb. 04, 2025	Feb. 03, 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	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 23, 2025	Mar. 22, 2026	Radiation (03CH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 15, 2025	Apr. 14, 2026	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Oct. 07, 2025	Oct. 06, 2026	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jun. 28, 2025	Jun. 27, 2026	Radiation (03CH02-CB)
Pre-Amplifier	SGH	SGH1840	20230109-3	18~40GHz	Feb. 21, 2025	Feb. 20, 2026	Radiation (03CH02-CB)
Signal Analyzer	R&S	FSV3044	101536	10kHz ~ 44GHz	Aug. 20, 2025	Aug. 19, 2026	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Jun. 19, 2025	Jun. 18, 2026	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Jun. 19, 2025	Jun. 18, 2026	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Apr. 30, 2025	Apr. 29, 2026	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE-15247_DTS	V5.11.27	2.4GHz-2.4835GHz	N.C.R.	N.C.R.	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Jan. 02, 2025	Jan. 01, 2026	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Sep. 12, 2025	Sep. 11, 2026	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Sep. 12, 2025	Sep. 11, 2026	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-11	30MHz ~18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-12	30MHz ~18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-13	30MHz ~18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz ~18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz ~18 GHz	Sep. 30, 2025	Sep. 29, 2026	Conducted (TH03-CB)
Switch	SPTCB	SP-SWI	SWI-03	1~18GHz	Sep. 20, 2025	Sep. 19, 2026	Conducted (TH03-CB)
Test Software	SPORTON	SENSE-15247_DTS	V5.11.27	2.4GHz-2.4835GHz	N.C.R.	N.C.R.	Conducted (TH03-CB)

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

NCR means Non-Calibration required.



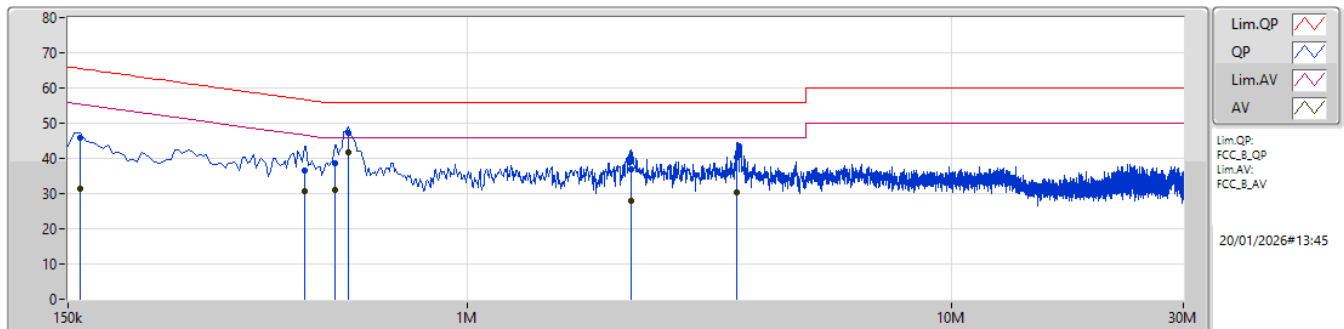
Conducted Emissions at Powerline

Appendix A

Summary

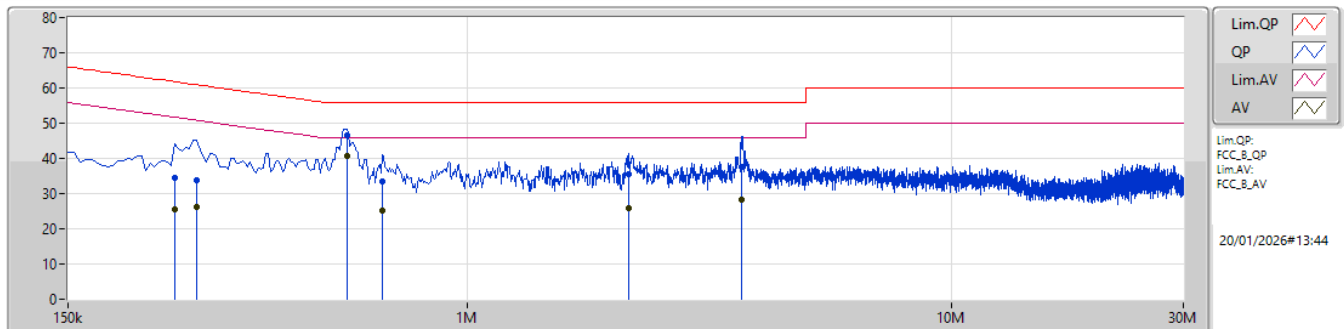
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 2	Pass	AV	568.5k	41.65	46.00	-4.35	Line

Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	159k	45.82	65.52	-19.70	10.39	Line	-	35.43	0.06	0.26	10.07						
AV	159k	31.53	55.52	-23.99	10.39	Line	-	21.14	0.06	0.26	10.07						
QP	460.5k	36.43	56.69	-20.26	10.43	Line	-	26.00	0.06	0.27	10.10						
AV	460.5k	30.81	46.69	-15.88	10.43	Line	-	20.38	0.06	0.27	10.10						
QP	532.5k	38.56	56.00	-17.44	10.43	Line	-	28.13	0.06	0.27	10.10						
AV	532.5k	30.95	46.00	-15.05	10.43	Line	-	20.52	0.06	0.27	10.10						
QP	568.5k	47.18	56.00	-8.82	10.43	Line	-	36.75	0.06	0.26	10.11						
AV	568.5k	41.65	46.00	-4.35	10.43	Line	"Worst"	31.22	0.06	0.26	10.11						
QP	2.175M	37.06	56.00	-18.94	10.34	Line	-	26.72	0.09	0.26	9.99						
AV	2.175M	27.92	46.00	-18.08	10.34	Line	-	17.58	0.09	0.26	9.99						
QP	3.597M	40.24	56.00	-15.76	10.38	Line	-	29.86	0.12	0.28	9.98						
AV	3.597M	30.50	46.00	-15.50	10.38	Line	-	20.12	0.12	0.28	9.98						

Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	249k	34.37	61.79	-27.42	10.31	Neutral	-	24.06	0.07	0.23	10.01						
AV	249k	25.63	51.79	-26.16	10.31	Neutral	-	15.32	0.07	0.23	10.01						
QP	276k	33.96	60.93	-26.97	10.34	Neutral	-	23.62	0.07	0.24	10.03						
AV	276k	26.19	50.93	-24.74	10.34	Neutral	-	15.85	0.07	0.24	10.03						
QP	564k	46.40	56.00	-9.60	10.44	Neutral	-	35.96	0.07	0.27	10.10						
AV	564k	40.85	46.00	-5.15	10.44	Neutral	"Worst"	30.41	0.07	0.27	10.10						
QP	667.5k	33.32	56.00	-22.68	10.45	Neutral	-	22.87	0.08	0.26	10.11						
AV	667.5k	25.30	46.00	-20.70	10.45	Neutral	-	14.85	0.08	0.26	10.11						
QP	2.148M	35.38	56.00	-20.62	10.35	Neutral	-	25.03	0.10	0.26	9.99						
AV	2.148M	25.96	46.00	-20.04	10.35	Neutral	-	15.61	0.10	0.26	9.99						
QP	3.683M	37.59	56.00	-18.41	10.39	Neutral	-	27.20	0.13	0.28	9.98						
AV	3.683M	28.31	46.00	-17.69	10.39	Neutral	-	17.92	0.13	0.28	9.98						

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
Zigbee	1.815M	2.253M	2M25G1D	1.628M	2.23M

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	1.628M	2.23M
2440MHz	Pass	500k	1.74M	2.234M
2480MHz	Pass	500k	1.815M	2.253M

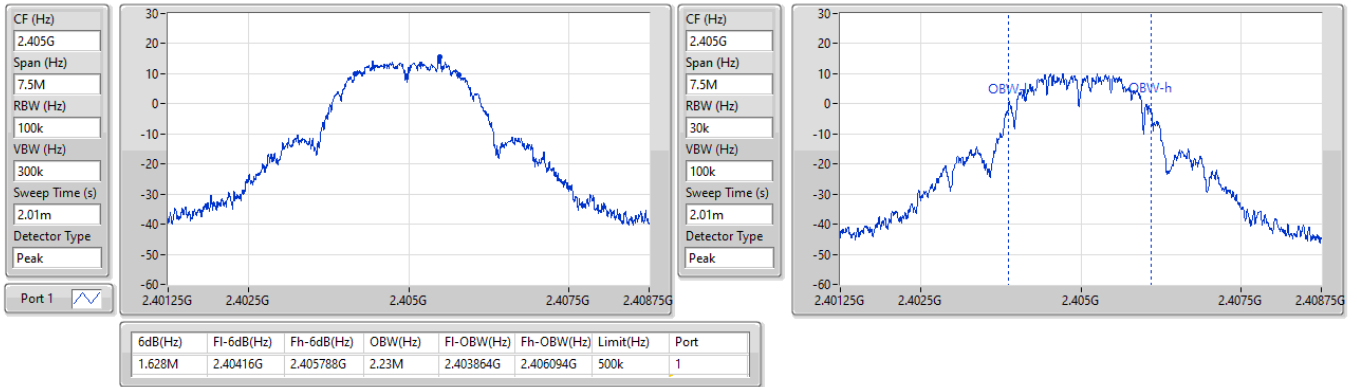
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_Zigbee

EBW

2405MHz

22/11/2025

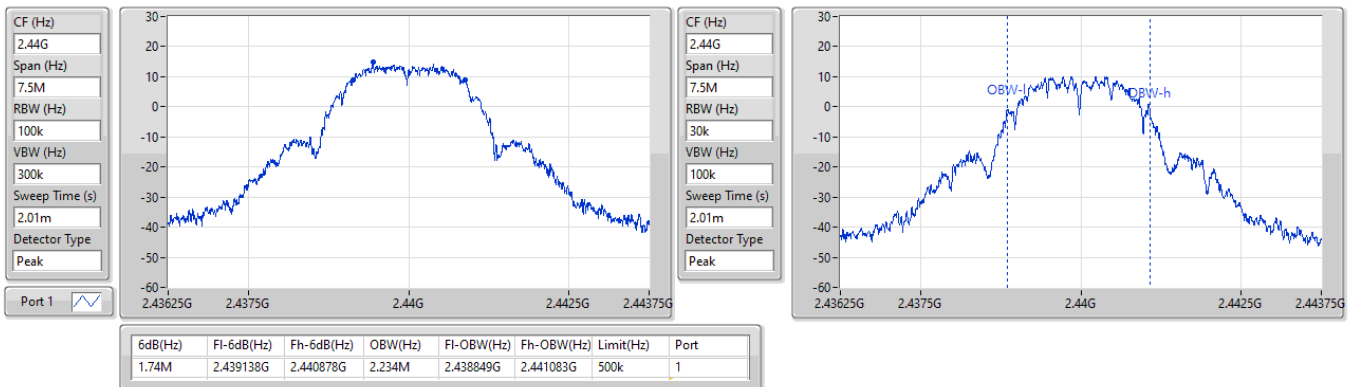


2.4-2.4835GHz_Zigbee

EBW

2440MHz

22/11/2025

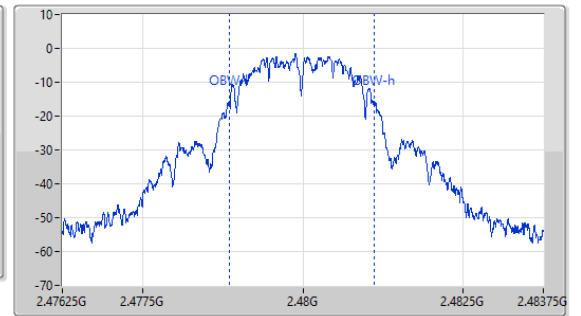
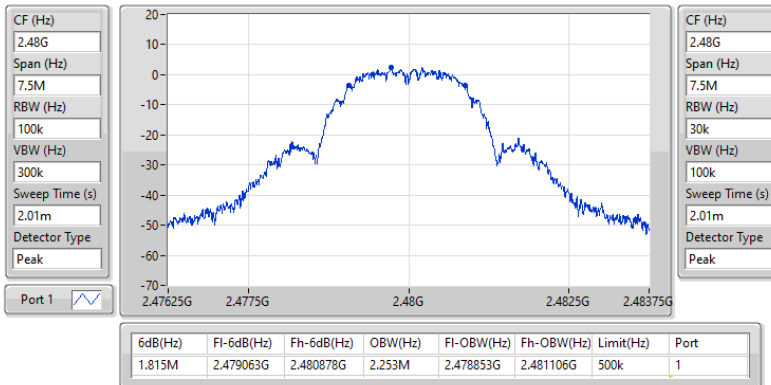


2.4-2.4835GHz_Zigbee

EBW

2480MHz

22/11/2025





Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Zigbee	19.52	0.08954



Average Power

Appendix C

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
Zigbee	-	-	-	-	-
2405MHz	Pass	4.51	19.48	19.48	30.00
2440MHz	Pass	4.51	19.52	19.52	30.00
2475MHz	Pass	4.51	19.11	19.11	30.00
2480MHz	Pass	4.51	7.43	7.43	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	3.66

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Zigbee	-	-	-	-	-
2405MHz	Pass	4.51	3.66	3.66	8.00
2440MHz	Pass	4.51	3.14	3.14	8.00
2480MHz	Pass	4.51	-8.88	-8.88	8.00

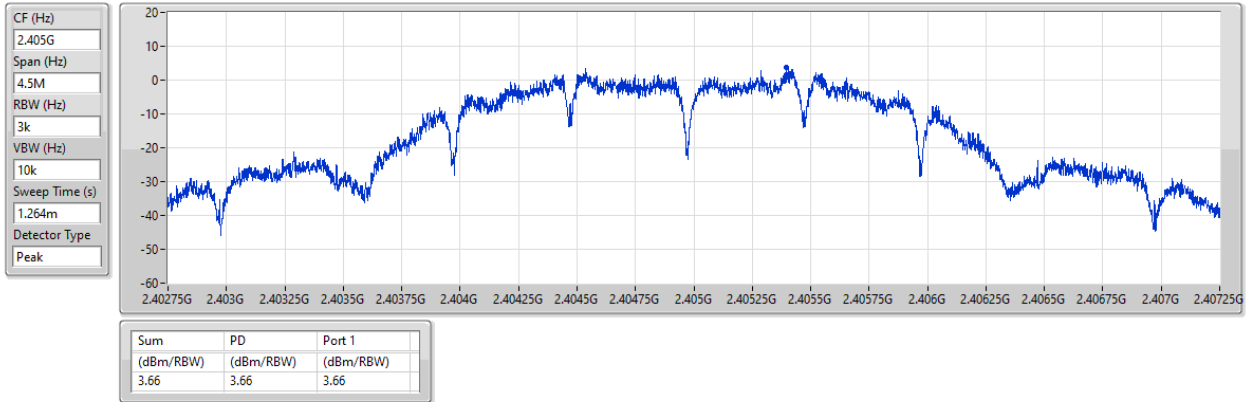
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;
Inf = There's no restriction for the limit.

2.4-2.4835GHz_Zigbee

PSD

2405MHz

22/11/2025

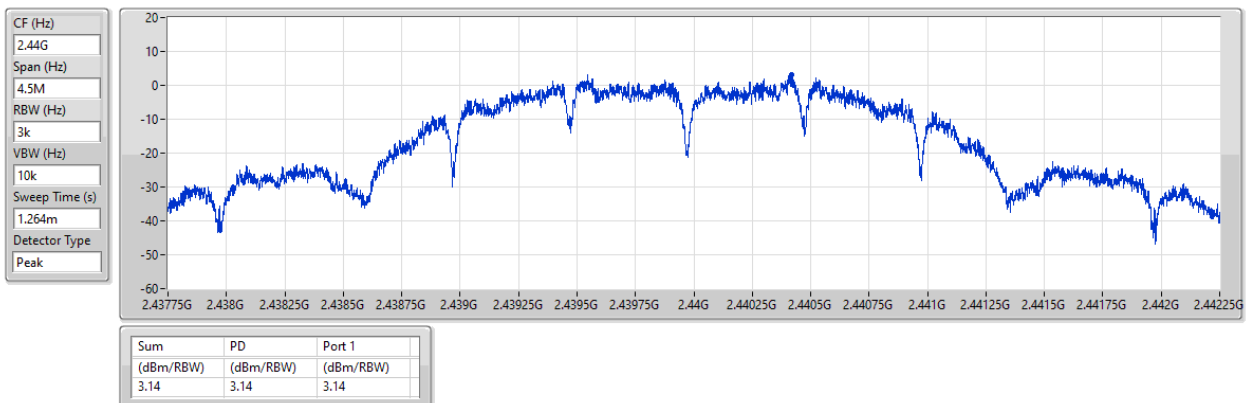


2.4-2.4835GHz_Zigbee

PSD

2440MHz

22/11/2025

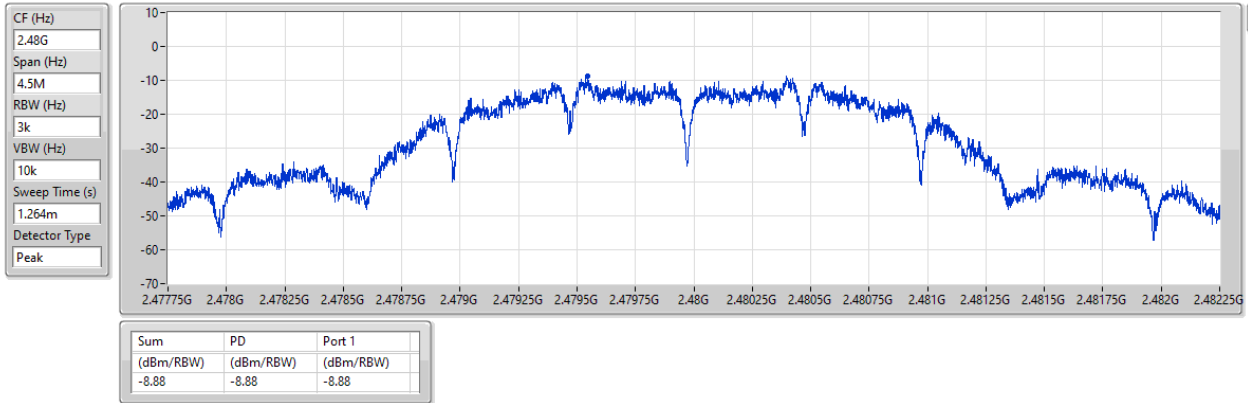


2.4-2.4835GHz_Zigbee

PSD

2480MHz

22/11/2025





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	2.44025G	15.80	-14.20	2.394G	-52.48	2.39981G	-37.98	2.4G	-39.33	24.60044G	-43.83	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	2.44025G	15.80	-14.20	2.394G	-52.48	2.39981G	-37.98	2.4G	-39.33	24.60044G	-43.83	1
2440MHz	Pass	2.44025G	15.80	-14.20	764.02M	-52.61	2.39456G	-51.62	2.4G	-54.37	21.94983G	-44.14	1
2480MHz	Pass	2.44025G	15.80	-14.20	2.12687G	-52.64	2.39705G	-51.50	2.4G	-54.12	15.18824G	-42.18	1

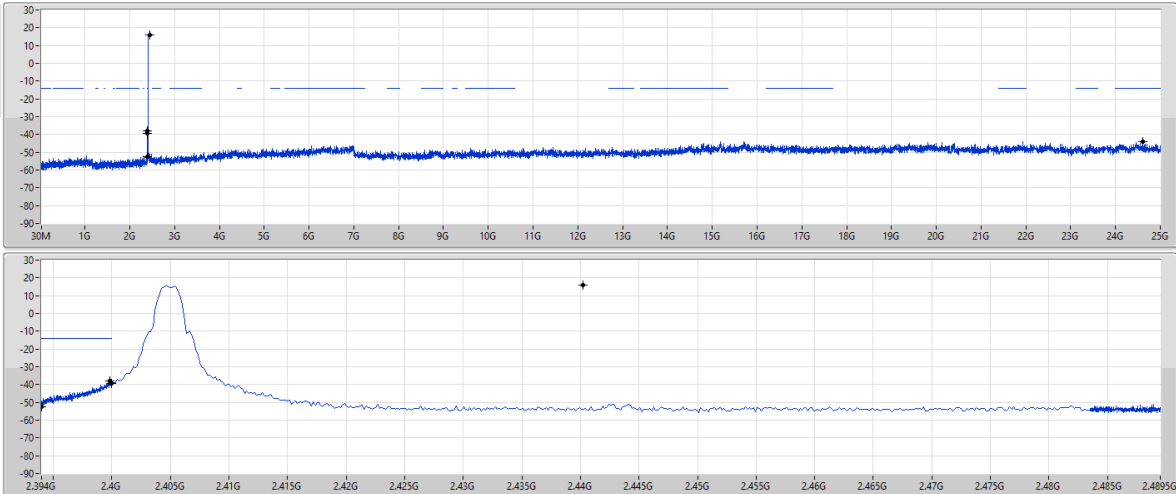
2.4-2.4835GHz Zigbee

CSEndB

2405MHz

22/11/2025

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



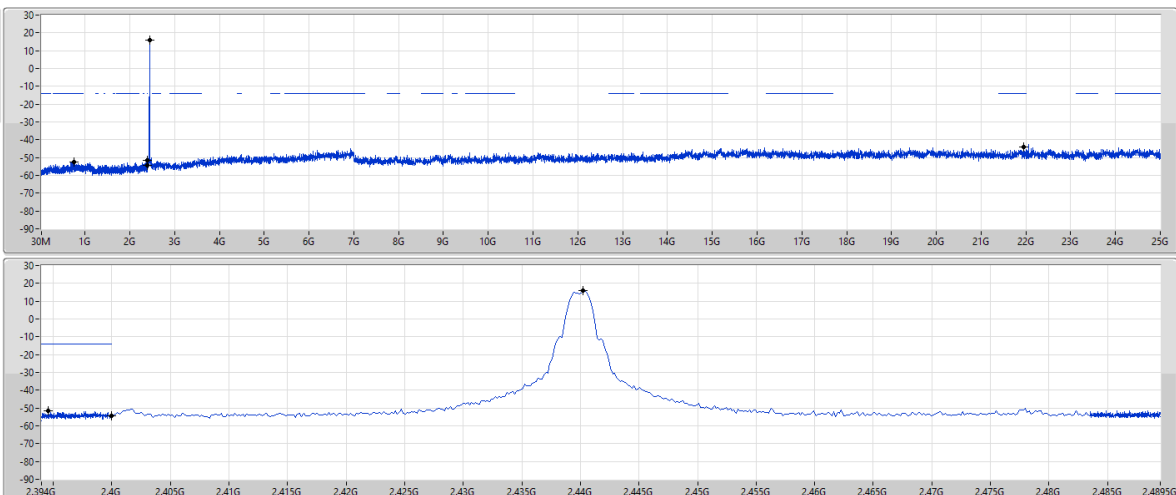
2.4-2.4835GHz Zigbee

CSEndB

2440MHz

22/11/2025

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



2.4-2.4835GHz_Zigbee

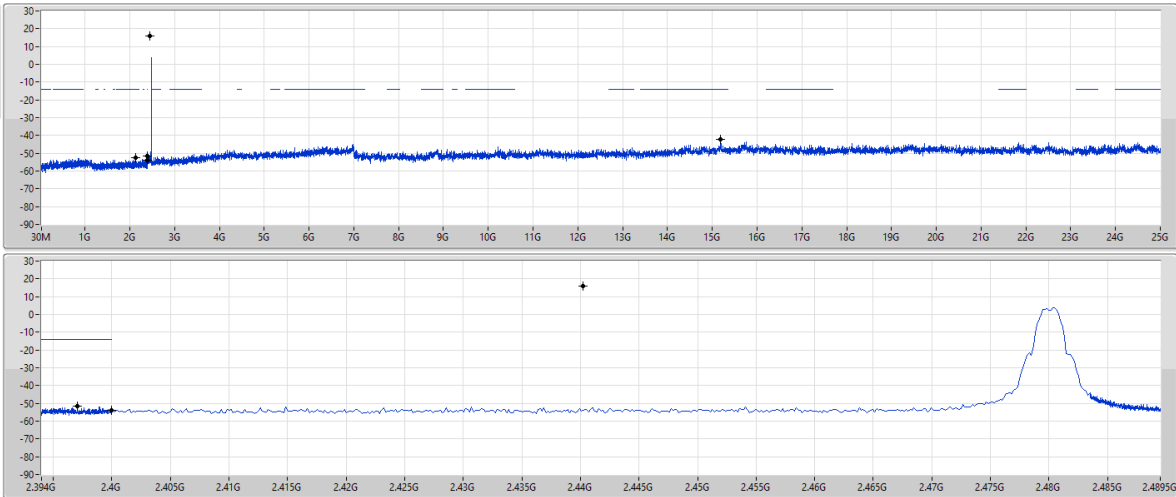
CSEndB

2480MHz

22/11/2025

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
2.44025G	15.80	-14.20	2.12687G	-52.64	2.39705G	-51.50	2.4G	-54.12	15.18824G	-42.18	1



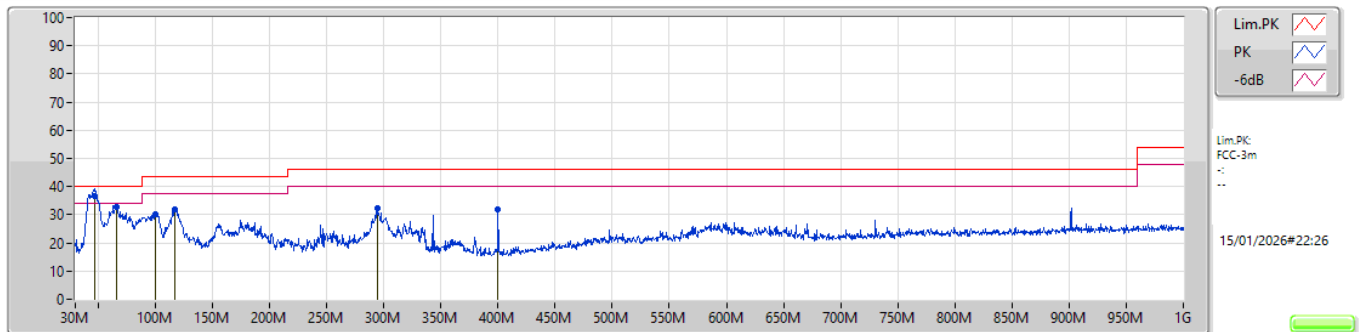
Radiated Emissions below 1GHz

Appendix F.1

Summary

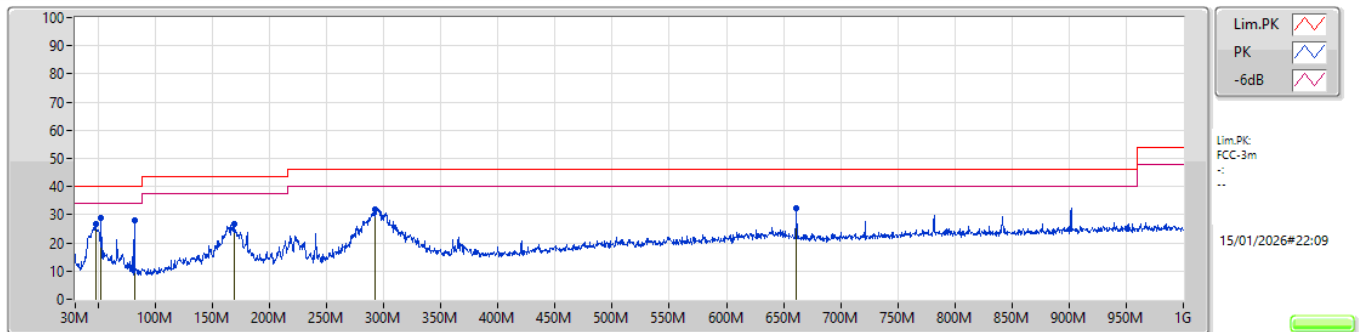
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	PK	46.49M	36.58	40.00	-3.42	Vertical

Mode 2



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	46.49M	36.58	40.00	-3.42	-34.12	3	Vertical	260	1.00	"Worst"	70.70	19.50	0.26	53.88		
PK	65.89M	32.88	40.00	-7.12	-35.12	3	Vertical	182	2.00	-	68.00	18.11	0.77	54.00		
PK	100.33M	30.18	43.50	-13.32	-37.95	3	Vertical	199	2.00	-	68.13	14.77	0.88	53.60		
PK	116.82M	31.77	43.50	-11.73	-35.96	3	Vertical	79	1.00	-	67.73	16.53	1.24	53.73		
PK	294.33M	32.50	46.00	-13.50	-32.42	3	Vertical	66	1.00	-	64.92	19.11	2.13	53.66		
PK	400.06M	31.84	46.00	-14.16	-29.70	3	Vertical	121	1.00	-	61.54	21.64	2.50	53.84		

Mode 2



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	47.95M	26.55	40.00	-13.45	-34.12	3	Horizontal	169	3.00	-	60.67	19.58	0.30	54.00		
PK	52.8M	29.03	40.00	-10.97	-34.17	3	Horizontal	58	1.00	"Worst"	63.20	19.53	0.39	54.09		
PK	81.9M	28.15	40.00	-11.85	-39.12	3	Horizontal	77	1.00	-	67.27	14.24	0.52	53.88		
PK	169.2M	26.59	43.50	-16.91	-33.34	3	Horizontal	63	2.00	-	59.93	18.75	1.50	53.59		
PK	292.39M	32.01	46.00	-13.99	-32.48	3	Horizontal	244	2.00	-	64.49	19.05	2.12	53.65		
PK	661.47M	32.43	46.00	-13.57	-22.83	3	Horizontal	39	1.00	-	55.26	26.31	3.64	52.78		

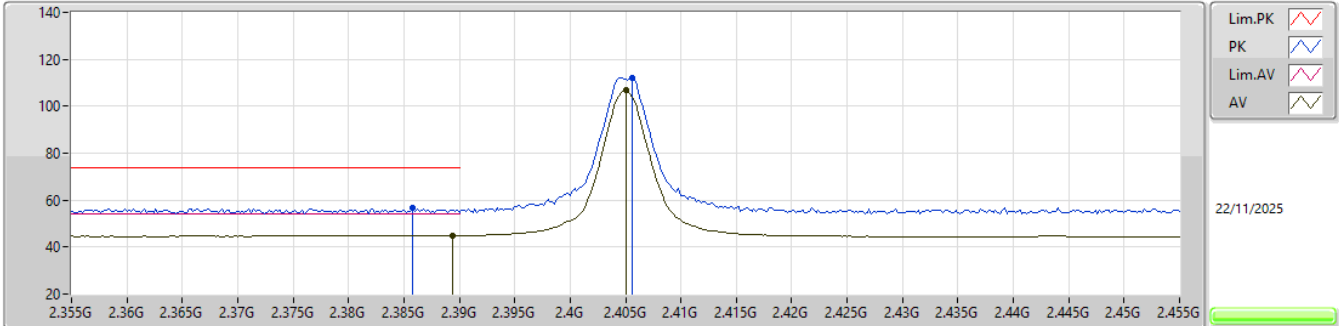


Summary

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	53.90	54.00	-0.10	3	Horizontal	57	2.74	-

2.4-2.4835GHz_Zigbee

2405MHz_TX

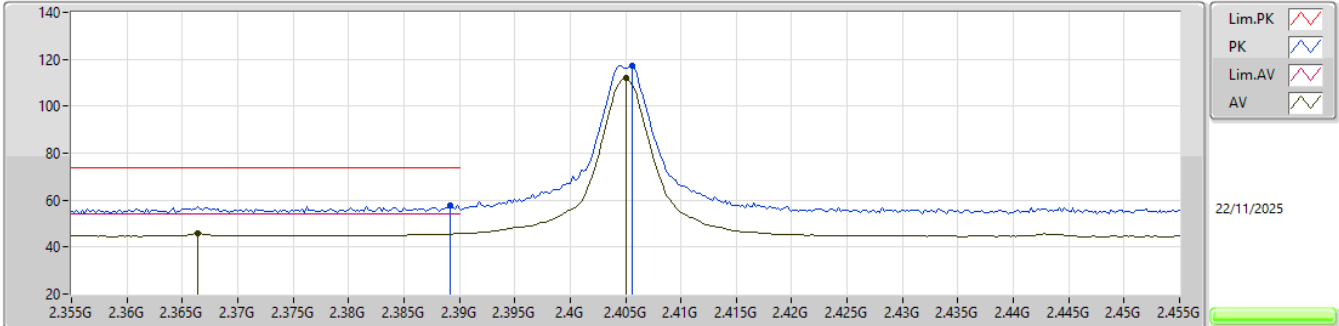


EUT_Y_1TX
Setting 20
02-D-G-5

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	2.3858G	56.54	74.00	-17.46	23.68	3	Vertical	333	3.00	-	28.50	4.36	-				
AV	2.3894G	44.93	54.00	-9.07	12.07	3	Vertical	333	3.00	-	28.50	4.36	-				
PK	2.4056G	112.10	Inf	-Inf	79.32	3	Vertical	333	3.00	-	28.40	4.38	-				
AV	2.405G	107.11	Inf	-Inf	74.33	3	Vertical	333	3.00	-	28.40	4.38	-				

2.4-2.4835GHz_Zigbee

2405MHz_TX

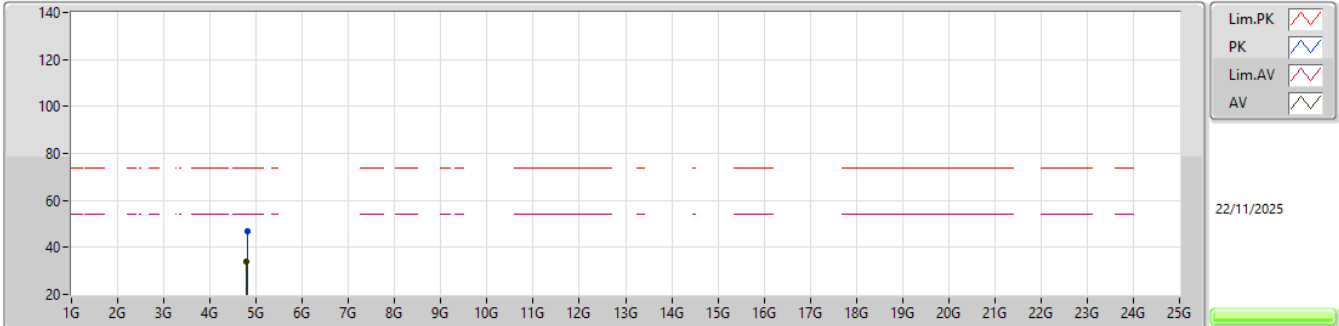


EUT_Y_1TX
Setting 20
02-D-G-5

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	2.3892G	57.73	74.00	-16.27	24.87	3	Horizontal	295	2.70	-	28.50	4.36	-				
AV	2.3664G	45.76	54.00	-8.24	13.05	3	Horizontal	295	2.70	-	28.36	4.35	-				
PK	2.4056G	117.13	Inf	-Inf	84.35	3	Horizontal	295	2.70	-	28.40	4.38	-				
AV	2.405G	112.17	Inf	-Inf	79.39	3	Horizontal	295	2.70	-	28.40	4.38	-				

2.4-2.4835GHz_Zigbee

2405MHz_TX

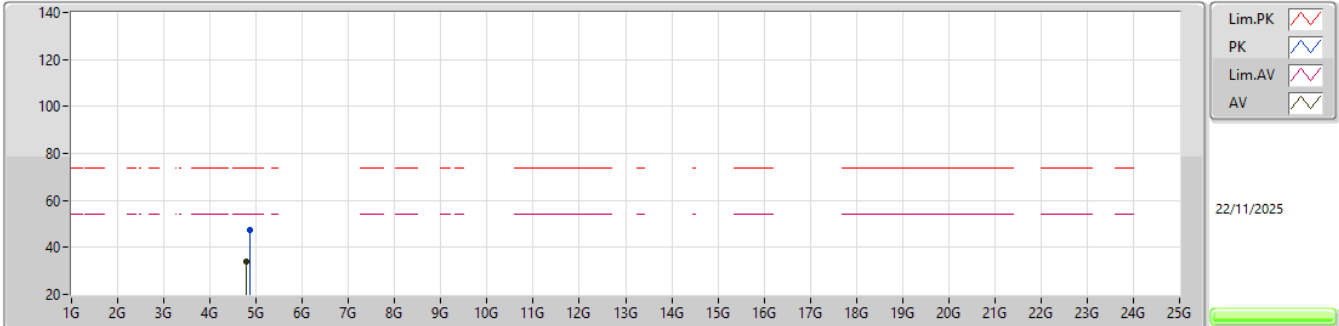


EUT_Y_1TX
Setting 20
02-D-G-5

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	4.8036G	47.01	74.00	-26.99	36.85	3	Vertical	181	2.71	-	32.91	7.39	30.14			
AV	4.7882G	33.86	54.00	-20.14	23.74	3	Vertical	181	2.71	-	32.88	7.38	30.14			

2.4-2.4835GHz_Zigbee

2405MHz_TX

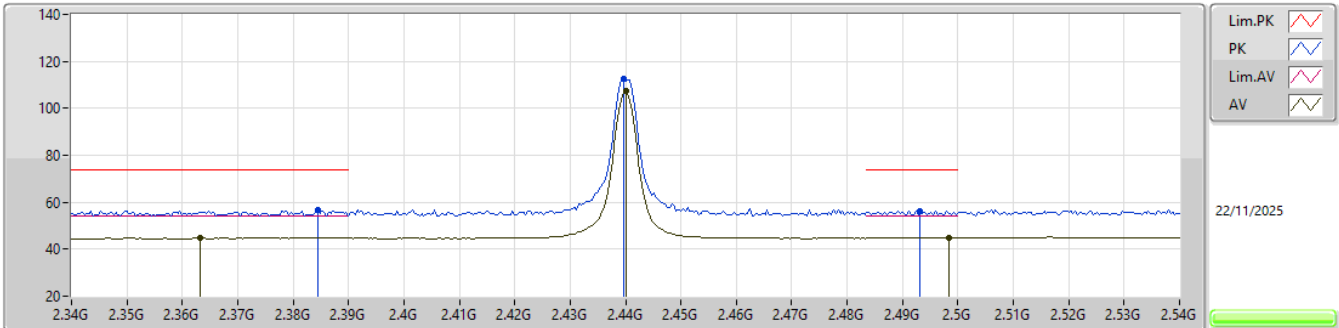


EUT_Y_1TX
Setting 20
02-D-G-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA			
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)			
PK	4.855G	47.44	74.00	-26.56	37.10	3	Horizontal	96	2.97	-	33.02	7.43	30.11			
AV	4.7776G	33.85	54.00	-20.15	23.78	3	Horizontal	96	2.97	-	32.86	7.36	30.15			

2.4-2.4835GHz_Zigbee

2440MHz_TX

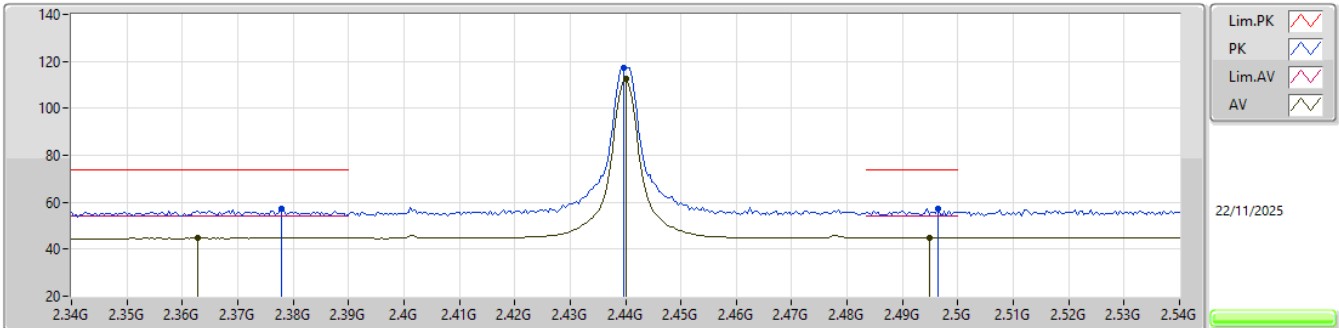


EUT_Y_1TX
Setting 20
02-D-G-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA				
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)				
PK	2.3844G	56.98	74.00	-17.02	24.12	3	Vertical	341	1.00	-	28.50	4.36	-				
AV	2.3632G	44.77	54.00	-9.23	12.09	3	Vertical	341	1.00	-	28.33	4.35	-				
PK	2.4396G	112.42	Inf	-Inf	79.60	3	Vertical	341	1.00	-	28.40	4.42	-				
AV	2.44G	107.34	Inf	-Inf	74.52	3	Vertical	341	1.00	-	28.40	4.42	-				
PK	2.4932G	56.28	74.00	-17.72	23.25	3	Vertical	341	1.00	-	28.53	4.50	-				
AV	2.4984G	44.79	54.00	-9.21	11.71	3	Vertical	341	1.00	-	28.58	4.50	-				

2.4-2.4835GHz_Zigbee

2440MHz_TX

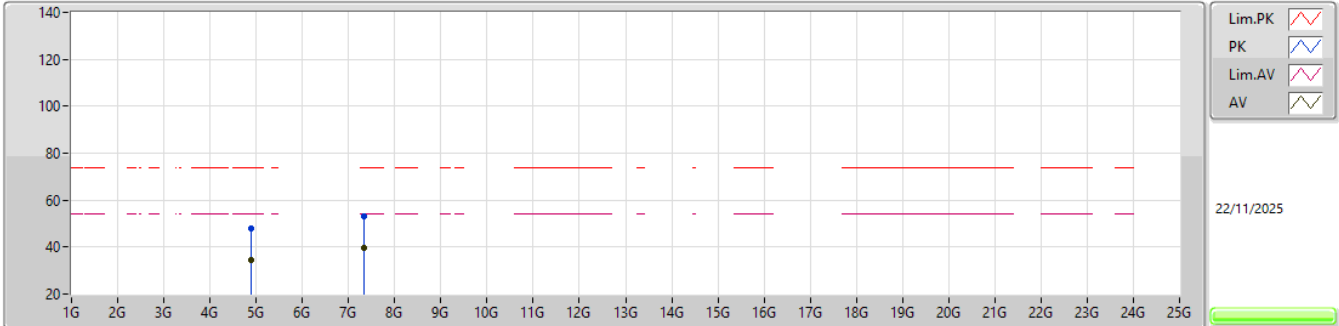


EUT_Y_1TX
Setting 20
02-D-G-5

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	2.378G	57.21	74.00	-16.79	24.37	3	Horizontal	42	2.56	-	28.48	4.36	-				
AV	2.3628G	44.96	54.00	-9.04	12.28	3	Horizontal	42	2.56	-	28.33	4.35	-				
PK	2.4396G	117.48	Inf	-Inf	84.66	3	Horizontal	42	2.56	-	28.40	4.42	-				
AV	2.44G	112.43	Inf	-Inf	79.61	3	Horizontal	42	2.56	-	28.40	4.42	-				
PK	2.4964G	57.27	74.00	-16.73	24.21	3	Horizontal	42	2.56	-	28.56	4.50	-				
AV	2.4948G	44.77	54.00	-9.23	11.72	3	Horizontal	42	2.56	-	28.55	4.50	-				

2.4-2.4835GHz_Zigbee

2440MHz_TX

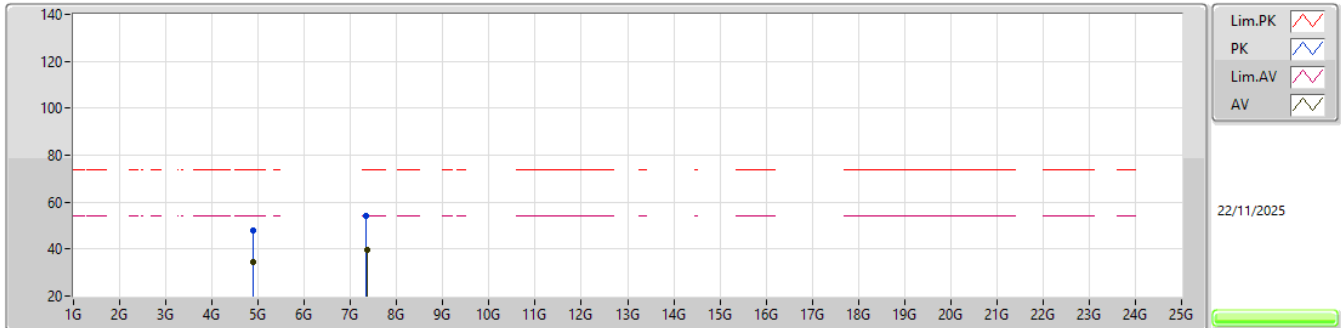


EUT_Y_1TX
Setting 20
02-D-G-5

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	4.8814G	47.71	74.00	-26.29	37.22	3	Vertical	205	2.45	-	33.13	7.46	30.10				
AV	4.8812G	34.38	54.00	-19.62	23.91	3	Vertical	205	2.45	-	33.12	7.45	30.10				
PK	7.3316G	52.91	74.00	-21.09	38.22	3	Vertical	314	1.25	-	36.56	9.02	30.89				
AV	7.348G	39.83	54.00	-14.17	25.10	3	Vertical	314	1.25	-	36.60	9.02	30.89				

2.4-2.4835GHz_Zigbee

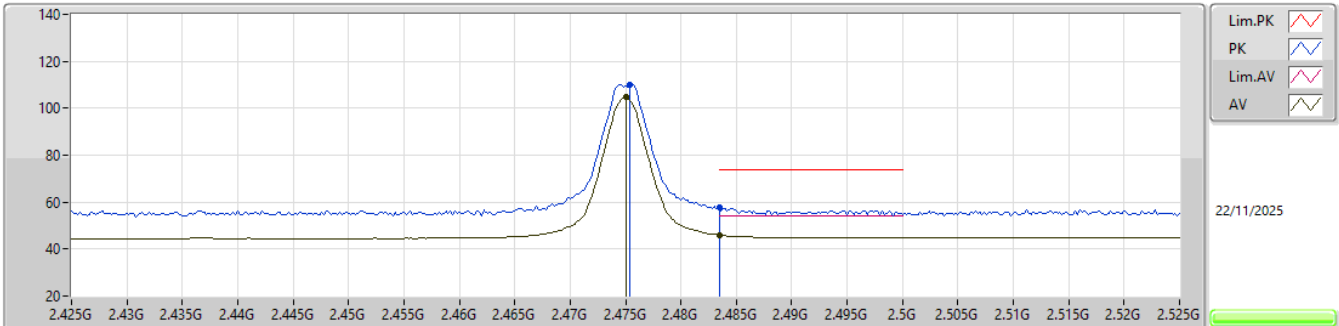
2440MHz_TX


EUT_Y_1TX
Setting 20
02-D-G-5

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	4.8912G	48.03	74.00	-25.97	37.51	3	Horizontal	0	1.80	-	33.16	7.46	30.10				
AV	4.8808G	34.60	54.00	-19.40	24.13	3	Horizontal	0	1.80	-	33.12	7.45	30.10				
PK	7.3464G	54.00	74.00	-20.00	39.28	3	Horizontal	304	1.05	-	36.59	9.02	30.89				
AV	7.3544G	39.80	54.00	-14.20	25.06	3	Horizontal	304	1.05	-	36.61	9.02	30.89				

2.4-2.4835GHz_Zigbee

2475MHz_TX

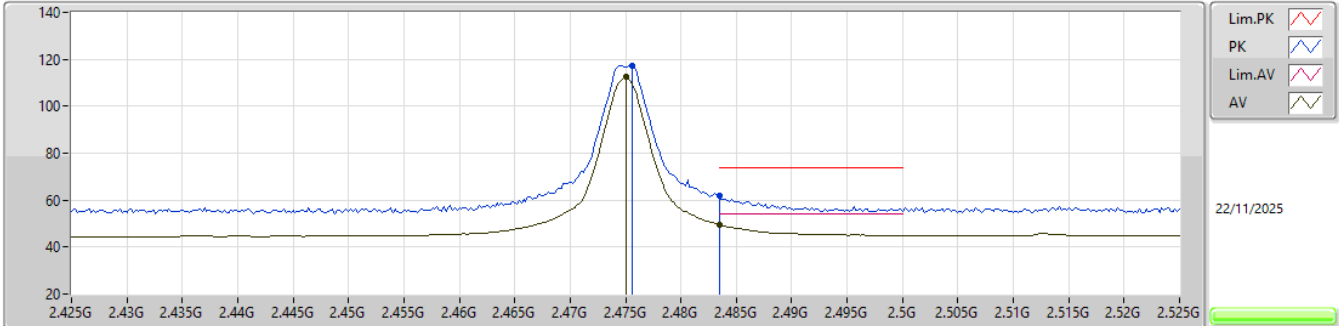


EUT_Y_1TX
Setting 20
02-D-G-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA				
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)				
PK	2.4754G	109.96	Inf	-Inf	77.09	3	Vertical	276	1.78	-	28.40	4.47	-				
AV	2.475G	105.05	Inf	-Inf	72.18	3	Vertical	276	1.78	-	28.40	4.47	-				
PK	2.4835G	57.56	74.00	-16.44	24.64	3	Vertical	276	1.78	-	28.44	4.48	-				
AV	2.4835G	46.00	54.00	-8.00	13.08	3	Vertical	276	1.78	-	28.44	4.48	-				

2.4-2.4835GHz_Zigbee

2475MHz_TX

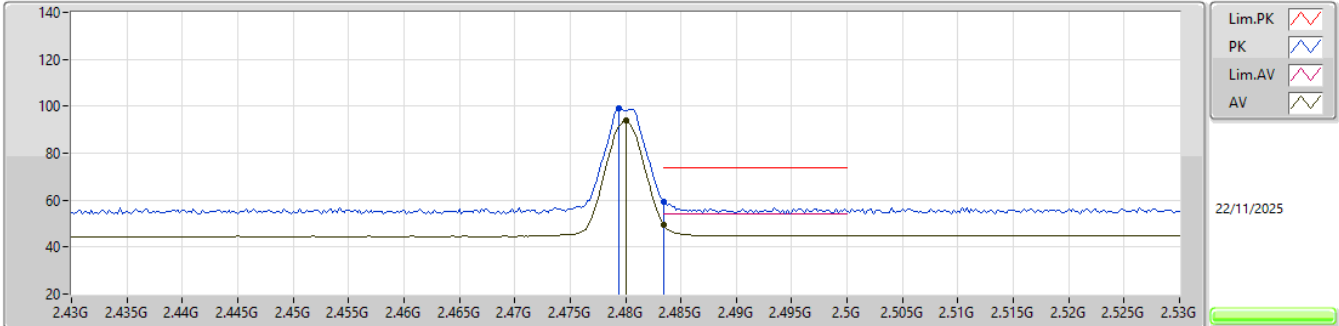


EUT_Y_1TX
Setting 20
02-D-G-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA				
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)				
PK	2.4756G	117.40	Inf	-Inf	84.53	3	Horizontal	55	2.71	-	28.40	4.47	-				
AV	2.475G	112.36	Inf	-Inf	79.49	3	Horizontal	55	2.71	-	28.40	4.47	-				
PK	2.4835G	61.87	74.00	-12.13	28.95	3	Horizontal	55	2.71	-	28.44	4.48	-				
AV	2.4835G	49.74	54.00	-4.26	16.82	3	Horizontal	55	2.71	-	28.44	4.48	-				

2.4-2.4835GHz_Zigbee

2480MHz_TX

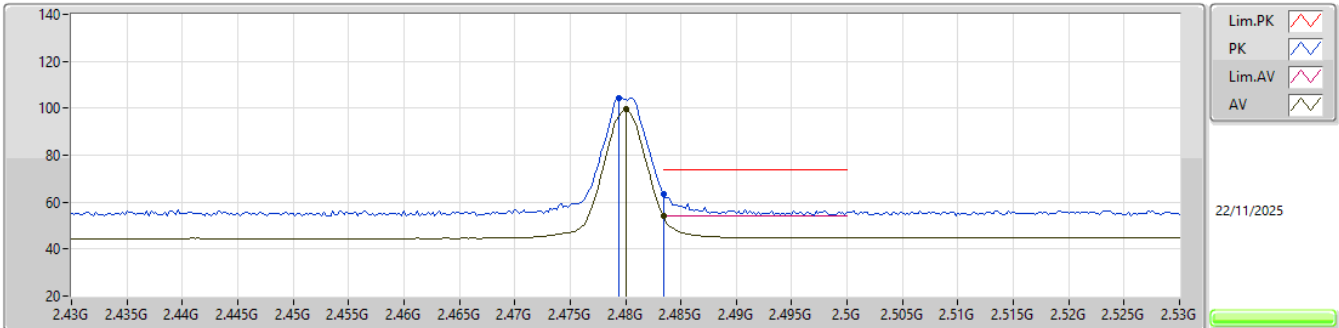


EUT_Y_1TX
Setting 8
02-D-G-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA					
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)					
PK	2.4794G	98.88	Inf	-Inf	66.00	3	Vertical	31	2.30	-	28.40	4.48	-					
AV	2.48G	93.85	Inf	-Inf	60.97	3	Vertical	31	2.30	-	28.40	4.48	-					
PK	2.4835G	59.08	74.00	-14.92	26.16	3	Vertical	31	2.30	-	28.44	4.48	-					
AV	2.4835G	49.59	54.00	-4.41	16.67	3	Vertical	31	2.30	-	28.44	4.48	-					

2.4-2.4835GHz_Zigbee

2480MHz_TX

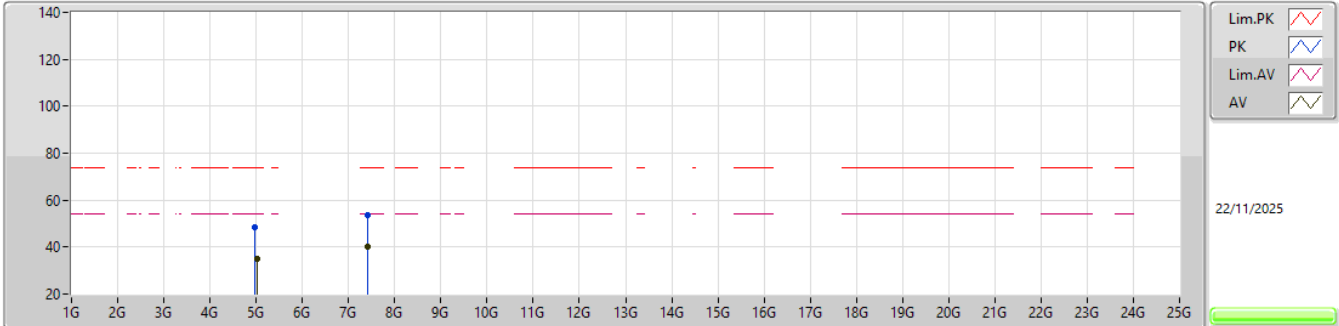


EUT_Y_1TX
Setting 8
02-D-G-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA				
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)				
PK	2.4794G	104.41	Inf	-Inf	71.53	3	Horizontal	57	2.74	-	28.40	4.48	-				
AV	2.48G	99.51	Inf	-Inf	66.63	3	Horizontal	57	2.74	-	28.40	4.48	-				
PK	2.4835G	63.58	74.00	-10.42	30.66	3	Horizontal	57	2.74	-	28.44	4.48	-				
AV	2.4835G	53.90	54.00	-0.10	20.98	3	Horizontal	57	2.74	-	28.44	4.48	-				

2.4-2.4835GHz_Zigbee

2480MHz_TX

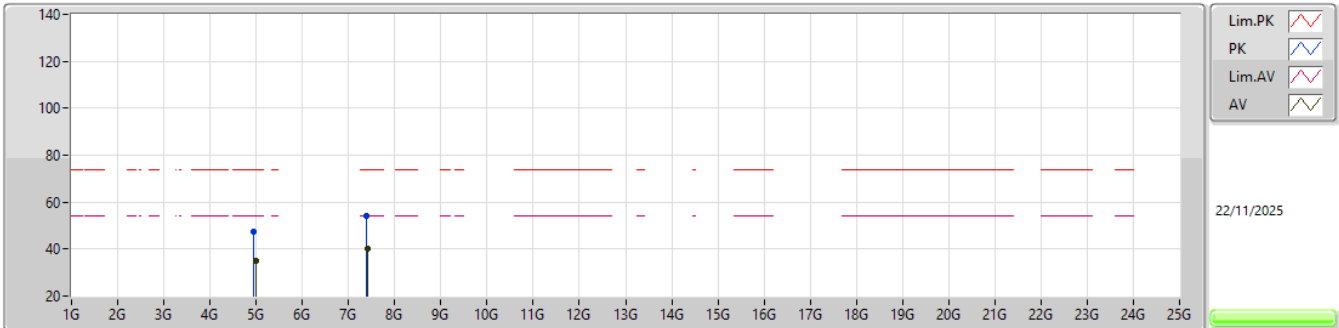


EUT_Y_1TX
Setting 8
02-D-G-5

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	4.9592G	48.42	74.00	-25.58	37.65	3	Vertical	151	1.95	-	33.32	7.52	30.07				
AV	5.0098G	35.03	54.00	-18.97	24.14	3	Vertical	151	1.95	-	33.40	7.55	30.06				
PK	7.4194G	53.72	74.00	-20.28	38.87	3	Vertical	82	1.27	-	36.70	9.04	30.89				
AV	7.4132G	40.36	54.00	-13.64	25.51	3	Vertical	82	1.27	-	36.70	9.04	30.89				

2.4-2.4835GHz_Zigbee

2480MHz_TX



EUT_Y_1TX
Setting 8
02-D-G-5

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	4.9352G	47.62	74.00	-26.38	36.93	3	Horizontal	100	1.86	-	33.27	7.50	30.08			
AV	5.0072G	34.97	54.00	-19.03	24.07	3	Horizontal	100	1.86	-	33.40	7.55	30.05			
PK	7.3976G	53.90	74.00	-20.10	39.06	3	Horizontal	164	1.52	-	36.70	9.03	30.89			
AV	7.416G	40.43	54.00	-13.57	25.58	3	Horizontal	164	1.52	-	36.70	9.04	30.89			