



RADIO TEST REPORT

FCC ID : UDX-600216020
Equipment : Cisco Wireless 9179F Series Wi-Fi 7 Access Point
Brand Name : CISCO
Model Name : CW9179F
Applicant : Cisco Systems, Inc.
170 West Tasman Drive, San Jose, CA 95134 USA
Manufacturer : Cisco Systems, Inc.
170 West Tasman Drive, San Jose, CA 95134 USA
Standard : 47 CFR FCC Part 15.247

The product was received on Nov. 29, 2024, and testing was started from Dec. 18, 2024 and completed on May 09, 2025. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

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History of this test report

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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	Data Referencing
3.3	15.247(b)	Maximum Conducted Output Power	PASS	Data Referencing
3.4	15.247(e)	Power Spectral Density	PASS	Data Referencing
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	Data Referencing
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Data Referencing

Data Referencing Statement:

This report references test data from the parent device (Original Sporton Report No.: FR4N2714-02AB, FCC ID: UDX-600216010).

The variant device (FCC ID: UDX-600216020) is electrically identical to the parent device for the portions of the circuitry corresponding to the data referencing.

The differences compared to the parent device are as follows:

1. Add Smart Cover-Secure and contact Weatherizes.
2. Change to outdoor by software.
3. Change the label location.
4. Disable UWB by software.

The details of spot-check testing are at the discretion of the applicant's engineering judgment. Accordingly, only the following items were spot-checked on the worst-case channel identified in the original report, and all results are included in this report:

1. Maximum Conducted Output Power
2. Power Spectral Density
3. Emissions in Non-restricted Frequency Bands
4. Emissions in Restricted Frequency Bands

The applicant takes full responsibility that the test data as referenced in FCC ID: UDX-600216010 represents compliance with the new FCC ID: UDX-600216020.

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:

1. 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.
2. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.

Reviewed by: Sam Chen

Report Producer: Sophia Shiung



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
2.4-2.4835GHz	Zigbee	3	1TX

Note:

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

**1.1.2 Antenna Information****<Internal Antenna>**

Ant.	Brand	Model Name	Antenna Type	Connector	Support
1	WNC	57XPAD15.LAU	Dipole	U.FL	Radio 1
2	WNC	57XPAD15.MAU	Dipole	U.FL	
3	WNC	57XPAD15.AAU	Dipole	U.FL	Radio 2
4	WNC	57XPAD15.BAU	Dipole	U.FL	
5	WNC	57XPAD15.CAU	Dipole	U.FL	
6	WNC	57XPAD15.DAU	Dipole	U.FL	
7	WNC	57XPAD15.HAU	Dipole	U.FL	Radio 3
8	WNC	57XPAD15.HAU	Dipole	U.FL	
9	WNC	57XPAD15.IAU	Dipole	U.FL	
10	WNC	57XPAD15.IAU	Dipole	U.FL	
11	WNC	57XPAD15.JAU	Dipole	U.FL	Radio 4
12	WNC	57XPAD15.JAU	Dipole	U.FL	
13	WNC	57XPAD15.KAU	Dipole	U.FL	
14	WNC	57XPAD15.KAU	Dipole	U.FL	
15	WNC	57XPAD15.EAU	Dipole	U.FL	Radio 5
16	WNC	57XPAD15.EAU	Dipole	U.FL	
17	WNC	57XPAD15.FAU	Dipole	U.FL	
18	WNC	57XPAD15.FAU	Dipole	U.FL	
19	WNC	57XPAD15.NAU	Loop	U.FL	Radio 6
20	WNC	57XPAD15.PAU	PIFA	U.FL	Radio 7
21	WNC	57XPAD15.0DG	PIFA	U.FL	
22	WNC	57XPAD15.OAU	Patch	U.FL	Radio 8
23	WNC	57XPAD15.OAU	Patch	U.FL	

Ant.	Port	Gain (dBi)					Support
		WLAN 2.4GHz	WLAN 5GHz		WLAN 6GHz		
			UNII 1~2A	UNII 2C~3	UNII 5	UNII 7	
1	1	3.7	4.9	6.1	5.0	5.8	Radio 1
2	2	5.1	4.5	5.2	5.5	6.4	
3	1	5.0	-	-	-	-	Radio 2
4	2	4.3	-	-	-	-	
5	3	5.1	-	-	-	-	
6	4	5.3	-	-	-	-	



Ant.	Port	Gain (dBi)					Support
		WLAN 5GHz					
		Mode	UNII 1	UNII 2A	UNII 2C	UNII 3	
7	3	Boresight	9.3	9.4	9.7	9.8	Radio 3
		Steering	9.4	9.4	10.0	10.0	
8	4	Boresight	10.3	10.3	10.6	10.2	
		Steering	10.2	10.2	10.6	10.3	
9	2	Boresight	9.6	9.9	10.3	9.9	
		Steering	9.9	9.8	10.3	10.1	
10	1	Boresight	10.4	10.6	10.7	10.4	
		Steering	10.3	10.7	10.6	10.4	

Ant.	Port	Gain (dBi)			Support
		WLAN 6GHz			
		Mode	UNII 5	UNII 7	
11	3	Narrow Beam	9.2	9.0	Radio 4
		Wide Beam	5.4	5.3	
12	4	Narrow Beam	9.2	8.7	
		Wide Beam	5.1	5.2	
13	2	Narrow Beam	10.0	9.8	
		Wide Beam	6.4	6.5	
14	1	Narrow Beam	9.8	10.1	
		Wide Beam	5.6	6.2	

Ant.	Port	Gain (dBi)						Support
		WLAN 5GHz			Bluetooth / Zigbee	UWB	GPS	
		Mode	UNII 1	UNII 2A				
15	2	Boresight	8.6	8.8	-	-	-	Radio 5
		Steering	8.5	9.0	-	-	-	
16	1	Boresight	9.4	9.4	-	-	-	
		Steering	9.4	9.4	-	-	-	
17	4	Boresight	8.7	9.3	-	-	-	
		Steering	8.8	9.2	-	-	-	
18	3	Boresight	8.5	9.0	-	-	-	
		Steering	8.5	9.0	-	-	-	
19	1	-	-	-	6.1	-	-	Radio 6
20	1	-	-	-	-	-	3.8	Radio 7
21	1	-	-	-	-	-	3.5	
22	2	-	-	-	-	8.2	-	Radio 8
23	1	-	-	-	-	8.6	-	


<External Antenna>

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Support
1	1~4	CISCO	AIR-ANT2588P4M-NS	(Panel) Dual-polarized directional	N-Female Bulkhead	Radio 2, Radio 5
2	1~4	CISCO	AIR-ANT2566D4M-R	(Patch) Dual-Band Polarization-Diverse Directional Array	RP-TNC (with coupling ring)	
3	1~4	CISCO	AIR-ANT2566D4M-RS	(Patch) Dual-Band Polarization-Diverse Directional Array	RP-TNC (with coupling ring)	
4	1~4	CISCO	AIR-ANT2566P4W-R	(Patch) 4-element dual-band MIMO	RP-TNC	
5	1~4	CISCO	AIR-ANT2566P4W-RS	(Patch) 4-element dual-band MIMO	RP-TNC	
6	1~4	CISCO	CW-ANT-T-D3-N	Dipole	RP-TNC	Radio 7
7	1	CISCO	CW-ANT-GPS1-M-00	OMNI	MMCX	

Ant.	Gain (dBi)					Support
	Pol	WLAN 2.4GHz				
		Peak Gain	Internal Cable Loss	External Cable Loss	Net Gain	
1	V-Pol*2	9.1	0.83	0.5	7.77	Radio 2
	H-Pol*2	7.1	0.83		5.77	
2~3	V-Pol*2	6	0.83	-	5.17	
	H-Pol*2	6	0.83	-	5.17	
4~5	V-Pol*4	6	0.83	-	5.17	
6	-	6	0.83	-	5.17	

Ant.	Gain (dBi)					Support
	Pol	WLAN 5GHz				
		Peak Gain	Internal Cable Loss	External Cable Loss	Net Gain	
1	V-Pol*2	9.6	1.29	0.8	7.51	Radio 5
	H-Pol*2	7.8	1.29		5.71	
2~3	V-Pol*2	6	1.29	-	4.71	
	H-Pol*2	6	1.29	-	4.71	
4~5	V-Pol*4	6	1.29	-	4.71	
6	-	7.5	1.29	-	6.21	

Ant.	Gain (dBi)	Support
	GPS	
7	5	Radio 7

Note 1: The Manufacturer declared that the internal Ant. 22~23 (Radio 8) will not function when the EUT is used.

Note 2: The above information was declared by manufacturer.

Note 3: For external Ant. 1~6:

For radiated measurement: The external Ant. 1, 5 and 6 with the highest antenna gain for each type were selected for testing.

For conducted measurement:

NonTXBF power: The external Ant. 1 with the highest antenna gain was selected for testing.

NonTXBF PSD / TXBF power & PSD:

2.4GHz: The external Ant. 4 with the highest antenna array gain was selected for testing.

5GHz: The external Ant. 6 with the highest antenna array gain was selected for testing.

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

Ex.

Directional Gain (NSS1) formula :

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

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

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

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

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

Where;

For nonTXBF power:

Radio	Mode		Max Gain (dBi)				DG (dBi)	Remark
			G1	G2	G3	G4		
2	2.4G External	2TX	7.77	5.77	-	-	7.77	Cross-Polarized Antenna
		4TX	7.77	5.77	7.77	5.77	7.77	
	2.4G Internal	2TX	5	4.3	-	-	5	
		4TX	5	4.3	5.1	5.3	5.3	
3	5G UNII 1 (Note 5)	2TX	10.4	9.9	-	-	10.4	
		4TX	10.4	9.9	9.4	10.3	10.4	
	5G UNII 1 (Boresight)	2TX	10.4	9.6	-	-	10.4	
		4TX	10.4	9.6	9.3	10.3	10.4	
	5G UNII 2A (Note 5)	2TX	10.7	9.9	-	-	10.7	
		4TX	10.7	9.9	9.4	10.3	10.7	
	5G UNII 2A (Boresight)	2TX	10.6	9.9	-	-	10.6	
		4TX	10.6	9.9	9.4	10.3	10.6	
	5G UNII 2C (Note 5)	2TX	10.7	10.3	-	-	10.7	
		4TX	10.7	10.3	10	10.6	10.7	
	5G UNII 2C (Boresight)	2TX	10.7	10.3	-	-	10.7	
		4TX	10.7	10.3	9.7	10.6	10.7	
	5G UNII 2C (Steering)	2TX	10.6	10.3	-	-	10.6	
		4TX	10.6	10.3	10	10.6	10.6	



Radio	Mode		Max Gain (dBi)				DG (dBi)	Remark
			G1	G2	G3	G4		
3	5G UNII 3 (Note 5)	2TX	10.4	10.1	-	-	10.4	Cross-Polarized Antenna
		4TX	10.4	10.1	10	10.3	10.4	
	5G UNII 3 (Boresight)	2TX	10.4	9.9	-	-	10.4	
		4TX	10.4	9.9	9.8	10.2	10.4	
	5G UNII 3 (Steering)	2TX	10.4	10.1	-	-	10.4	
		4TX	10.4	10.1	10	10.3	10.4	
4	6G UNII 5 (Narrow Beam)	2TX	9.8	10	-	-	10	
		4TX	9.8	10	9.2	9.2	10	
	6G UNII 5 (Wide Beam)	2TX	5.6	6.4	-	-	6.4	
		4TX	5.6	6.4	5.4	5.1	6.4	
	6G UNII 7 (Narrow Beam)	2TX	10.1	9.8	-	-	10.1	
		4TX	10.1	9.8	9	8.7	10.1	
	6G UNII 7 (Wide Beam)	2TX	6.2	6.5	-	-	6.5	
		4TX	6.2	6.5	5.3	5.2	6.5	
5	5G UNII 1~2A External	2TX	7.51	5.71	-	-	7.51	
		4TX	7.51	5.71	7.51	5.71	7.51	
	5G UNII 1 Internal (Note 5)	2TX	9.4	8.6	-	-	9.4	
		4TX	9.4	8.6	8.5	8.8	9.4	
	5G UNII 1 Internal (Boresight)	2TX	9.4	8.6	-	-	9.4	
		4TX	9.4	8.6	8.5	8.7	9.4	
	5G UNII 1 Internal (Steering)	2TX	9.4	8.5	-	-	9.4	
		4TX	9.4	8.5	8.5	8.8	9.4	
	5G UNII 2A Internal (Note 5)	2TX	9.4	9	-	-	9.4	
		4TX	9.4	9	9	9.3	9.4	
	5G UNII 2A Internal (Boresight)	2TX	9.4	8.8	-	-	9.4	
		4TX	9.4	8.8	9	9.3	9.4	
	5G UNII 2A Internal (Steering)	2TX	9.4	9	-	-	9.4	
		4TX	9.4	9	9	9.2	9.4	


For nonTXBF PSD / TXBF power & PSD:

Radio	Mode		Max Gain (dBi)				DG (dBi)	Remark
			G1	G2	G3	G4		
2	2.4G External	2TX	5.17	5.17	-	-	8.18	-
		4TX	5.17	5.17	5.17	5.17	11.19	
	2.4G Internal	2TX	5	4.3	-	-	5	Cross-Polarized Antenna
		4TX	5	4.3	5.1	5.3	7.95	
3	5G UNII 1 (Note 5)	2TX	10.4	9.9	-	-	10.4	
		4TX	10.4	9.9	9.4	10.3	13.02	
	5G UNII 1 (Boresight)	2TX	10.4	9.6	-	-	10.4	
		4TX	10.4	9.6	9.3	10.3	12.93	
	5G UNII 2A (Note 5)	2TX	10.7	9.9	-	-	10.7	
		4TX	10.7	9.9	9.4	10.3	13.11	
	5G UNII 2A (Boresight)	2TX	10.6	9.9	-	-	10.6	
		4TX	10.6	9.9	9.4	10.3	13.08	
	5G UNII 2C (Note 5)	2TX	10.7	10.3	-	-	10.7	
		4TX	10.7	10.3	10	10.6	13.42	
	5G UNII 2C (Boresight)	2TX	10.7	10.3	-	-	10.7	
		4TX	10.7	10.3	9.7	10.6	13.35	
	5G UNII 2C (Steering)	2TX	10.6	10.3	-	-	10.6	
		4TX	10.6	10.3	10	10.6	13.31	
	5G UNII 3 (Note 5)	2TX	10.4	10.1	-	-	10.4	
		4TX	10.4	10.1	10	10.3	13.21	
4	6G UNII 5 (Narrow Beam)	2TX	9.8	10	-	-	10	Cross-Polarized Antenna
		4TX	9.8	10	9.2	9.2	12.57	
	6G UNII 5 (Wide Beam)	2TX	5.6	6.4	-	-	6.4	
		4TX	5.6	6.4	5.4	5.1	8.66	
	6G UNII 7 (Narrow Beam)	2TX	10.1	9.8	-	-	10.1	
		4TX	10.1	9.8	9	8.7	12.45	
	6G UNII 7 (Wide Beam)	2TX	6.2	6.5	-	-	6.5	
		4TX	6.2	6.5	5.3	5.2	8.85	
5	5G UNII 1~2A External	2TX	6.21	6.21	-	-	9.22	-
		4TX	6.21	6.21	6.21	6.21	12.23	
	5G UNII 1 Internal (Note 5)	2TX	9.4	8.6	-	-	9.4	Cross-Polarized Antenna
		4TX	9.4	8.6	8.5	8.8	12.19	
	5G UNII 1 Internal (Boresight)	2TX	9.4	8.6	-	-	9.4	
		4TX	9.4	8.6	8.5	8.7	11.82	
	5G UNII 1 Internal (Steering)	2TX	9.4	8.5	-	-	9.4	
		4TX	9.4	8.5	8.5	8.8	11.82	



Radio	Mode		Max Gain (dBi)				DG (dBi)	Remark
			G1	G2	G3	G4		
5	5G UNII 2A Internal (Note 5)	2TX	9.4	9	-	-	9.4	Cross- Polarized Antenna
		4TX	9.4	9	9	9.3	12.19	
	5G UNII 2A Internal (Boresight)	2TX	9.4	8.8	-	-	9.4	
		4TX	9.4	8.8	9	9.3	12.14	
	5G UNII 2A Internal (Steering)	2TX	9.4	9	-	-	9.4	
		4TX	9.4	9	9	9.2	12.16	

Note 5: For RF Conducted: For internal Ant. 7~10 and Ant. 15~18, only the mode with higher antenna gain between Boresight mode and Steering mode was selected to record in this column and to perform all the test items, except for RF exposure tests.

Note 6: **<Radio 1>**

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax (1TX/2RX):

Only Port 1 can be used as transmitting antenna.

Both Port 1 and 2 can be used as receiving antenna.

Port 1~2 could receive simultaneously.

For 5GHz function:

For IEEE 802.11 a/n/ac/ax (1TX/2RX):

Only Port 1 can be used as transmitting antenna.

Both Port 1 and 2 can be used as receiving antenna.

Port 1~2 could receive simultaneously.

For 6GHz function:

For IEEE 802.11 ax (1TX/2RX):

Only Port 1 can be used as transmitting antenna.

Both Port 1 and 2 can be used as receiving antenna.

Port 1~2 could receive simultaneously.

<Radio 2>

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax/be (1TX, 2TX, 4TX/4RX):

1TX:

Only Port 1 can be used as transmitting antenna.

2TX:

Both Port 1 and 2 can be used as transmitting antenna.

Port 1~2 could transmit simultaneously.

4TX:

Port 1~4 can be used as transmitting antenna.

Port 1~4 could transmit simultaneously.

4RX:

Port 1~4 can be used as receiving antenna.

Port 1~4 could receive simultaneously.

**<Radio 3>****For 5GHz function:****For IEEE 802.11 a/n/ac/ax/be (1TX, 2TX, 4TX/4RX):****1TX:**

Only Port 1 can be used as transmitting antenna.

2TX:

Both Port 1 and 2 can be used as transmitting antenna.

Port 1~2 could transmit simultaneously.

4TX:

Port 1~4 can be used as transmitting antenna.

Port 1~4 could transmit simultaneously.

4RX:

Port 1~4 can be used as receiving antenna.

Port 1~4 could receive simultaneously.

<Radio 4>**For 6GHz function:****For IEEE 802.11 ax/be (1TX, 2TX, 4TX/4RX):****1TX:**

Only Port 1 can be used as transmitting antenna.

2TX:

Both Port 1 and 2 can be used as transmitting antenna.

Port 1~2 could transmit simultaneously.

4TX:

Port 1~4 can be used as transmitting antenna.

Port 1~4 could transmit simultaneously.

4RX:

Port 1~4 can be used as receiving antenna.

Port 1~4 could receive simultaneously.

<Radio 5>**For 5GHz function:****For IEEE 802.11 a/n/ac/ax/be (1TX, 2TX, 4TX/4RX):****1TX:**

Only Port 1 can be used as transmitting antenna.

2TX:

Both Port 1 and 2 can be used as transmitting antenna.

Port 1~2 could transmit simultaneously.

4TX:

Port 1~4 can be used as transmitting antenna.

Port 1~4 could transmit simultaneously.

4RX:

Port 1~4 can be used as receiving antenna.

Port 1~4 could receive simultaneously.

<Radio 6>**For Bluetooth function (1TX/1RX):**

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

For Zigbee function (1TX/1RX):

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

**<Radio 7>****For GPS function (1RX):**

The EUT supports the antenna with RX diversity functions.

Internal Ant. 20~21 and external Ant. 7 can be used as receiving antenna, but only one of them will be used at one time.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
Zigbee_Nss 1	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From PoE		
Function	<input checked="" type="checkbox"/> Point-to-multipoint	<input type="checkbox"/> Point-to-point	
Test Software Version	DOS[10.0.19045.4780]		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Equipment Name	Model Name	BW of 5G Mode (MHz)	Radio 3	SW	Frequencies supported by 320MHz (MHz)
Cisco Wireless 9179F Series Wi-Fi 7 Access Point	CW9179F	20/40/80/160	UNII 1~3/ UNII 2C~3	Cisco	Not Support
		20/40/80	UNII 2C~3	Meraki	6105

Note: The above information was declared by manufacturer.

1.1.6 Table for EUT Support Function

Function	Supports Band
AP	2.4GHz, 5GHz UNII 1~3, 6GHz UNII 5&7, Bluetooth, Zigbee and GPS
Mesh	6GHz UNII 5&7

Note 1: Form above table list, only AP mode was tested and recorded in this report.

Note 2: The above information was declared by manufacturer.

1.1.7 Table for Radio Function

Function Radio (R)	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz	Bluetooth	Zigbee	UWB	GPS
R1 (Scanning Radio)	✓	✓ (UNII 1~3)	✓	-	-	-	-
R2	✓	-	-	-	-	-	-
R3	-	✓ (Note 1) (Full band: UNII 1~3) (High band: UNII 2C~3)	-	-	-	-	-
R4	-	-	✓	-	-	-	-
R5	-	✓ (Low band: UNII 1~2A)	-	-	-	-	-
R6	-	-	-	✓	✓	-	-
R7	-	-	-	-	-	-	✓
R8	-	-	-	-	-	Unable to use	-

Note 1: For R3, the full band mode supports Boresight mode only, and the high band mode supports both Boresight mode and Steering mode.

Note 2: For WLAN 2.4GHz, R1 and R2 can't operate at the same frequency simultaneously.

For WLAN 5GHz, R1, R3 and R5 can't operate at the same frequency simultaneously.

For WLAN 6GHz, R1 and R4 can't operate at the same frequency simultaneously.

Note 3: The above information was declared by manufacturer.



1.2 Applicable Standards

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

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

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

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

1.3 Testing Location Information

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

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Ederson Huang	23.2~24.9 / 61~64	Dec. 18, 2024~ Jan. 24, 2025
Radiated < 1GHz	03CH05-CB	Jackson Peng	21.9~22.4 / 60~62	Feb. 19, 2025~ Feb. 25, 2025
Radiated > 1GHz	03CH06-CB	Jackson Peng	22.5~22.9 / 58~60	Feb. 06, 2025~ Feb. 08, 2025
AC Conduction	CO01-CB	Tim Chen	19~20 / 62~63	Apr. 25, 2025
Spot Check	TH03-CB	Ederson Huang	21.9~22.8 / 57~62	Apr. 24, 2025~ May 09, 2025

Note: The tested sample for AC Conduction and Spot Check tests was received on Dec. 18, 2024.

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)	3.8 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.0 dB	Confidence levels of 95%
Conducted Emission	3.1 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.1 dB	Confidence levels of 95%
Bandwidth Measurement	2.1 %	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. The EUT performed the testing on "LAN 0" and "LAN 1" ports. The "LAN 1" port generated the worst case. Consequently, the measurement will follow this same test mode.							
	2. The EUT performed the testing with PoE 1~8. The "PoE 4" generated the worst case. Consequently, the measurement will follow this same test mode.							
	3. The EUT performed the testing with 2.4GHz, 5GHz and 6GHz in Radio 1. The 2.4GHz in Radio 1 generated the worst case. Consequently, the measurement will follow this same test mode.							
	4. The EUT performed the testing with Bluetooth and Zigbee in Radio 6. The Bluetooth in Radio 6 generated the worst case. Consequently, the measurement will follow this same test mode.							
	5. The EUT performed the testing with Internal Ant. 20, Internal Ant. 21 and External Ant. 7 for GPS function. The Internal Ant. 20 for GPS function generated the worst case. Consequently, the measurement will follow this same test mode.							
	6. The EUT performed the testing with Boresight mode and Steering mode in Radio 3. The Boresight mode in Radio 3 generated the worst case. Consequently, the measurement will follow this same test mode.							
	7. The EUT performed the testing with Narrow Beam mode and Wide Beam mode in Radio 4. The Narrow Beam mode in Radio 4 generated the worst case. Consequently, the measurement will follow this same test mode.							
	8. The EUT performed the testing with Internal Ant. (Boresight mode and Steering mode), External Ant. 1, External Ant. 5 and External Ant. 6 for Radio 5. The mode that Radio 5 is not functioning generated the worst case. Consequently, the measurement will follow this same test mode.							
	9. The EUT performed the testing with Internal Ant., External Ant. 1, External Ant. 5 and External Ant. 6 for Radio 2. The Internal Ant. for Radio 2 generated the worst case. Consequently, the measurement will follow this same test mode.							
	R1 (2.4GHz/ 5GHz/6GHz)	R2 (2.4GHz)	R3 (5GHz)	R4 (6GHz)	R5 (5GHz)	R6 (BT/ Zigbee)	R7 (GPS)	PoE
1	2.4GHz	Internal Ant.	Boresight	Narrow Beam	N/A	BT	Internal Ant. 20	1 (Test LAN 0)

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							
Operating Mode	1	EUT_R6: Zigbee						



The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX After evaluating, EUT in Y axis was the worst case, so the measurement will follow this same test configuration.
1	EUT in Y axis_R1: 2.4GHz + PoE 1
2	EUT in Y axis_R1: 2.4GHz + PoE 2
3	EUT in Y axis_R1: 2.4GHz + PoE 3
4	EUT in Y axis_R1: 2.4GHz + PoE 4
5	EUT in Y axis_R1: 2.4GHz + PoE 5
6	EUT in Y axis_R1: 2.4GHz + PoE 6
7	EUT in Y axis_R1: 2.4GHz + PoE 7
8	EUT in Y axis_R1: 2.4GHz + PoE 8
Mode 4 has been evaluated to be the worst case among Mode 1~8, so the measurement for Mode 9~25 will follow this same test mode.	
9	EUT in Y axis_R1: 5GHz + PoE 4
10	EUT in Y axis_R1: 6GHz + PoE 4
11	EUT in Y axis_R2: 2.4GHz (Internal Ant.) + PoE 4
12	EUT in Y axis_R3: 5GHz (Boresight) + PoE 4
13	EUT in Y axis_R4: 6GHz (Narrow Beam) + PoE 4
14	EUT in Y axis_R5: 5GHz (Internal Ant. - Boresight) + PoE 4
15	EUT in Y axis_R6: Bluetooth + PoE 4
16	EUT in Y axis_R6: Zigbee + PoE 4
17	EUT in Y axis_R3: 5GHz (Steering) + PoE 4
18	EUT in Y axis_R4: 6GHz (Wide Beam) + PoE 4
19	EUT in Y axis_R5: 5GHz (Internal Ant. - Steering) + PoE 4
20	EUT in Y axis_R2: 2.4GHz (External Ant. 1) + PoE 4
21	EUT in Y axis_R2: 2.4GHz (External Ant. 5) + PoE 4
22	EUT in Y axis_R2: 2.4GHz (External Ant. 6) + PoE 4
23	EUT in Y axis_R5: 5GHz (External Ant. 1) + PoE 4
24	EUT in Y axis_R5: 5GHz (External Ant. 5) + PoE 4
25	EUT in Y axis_R5: 5GHz (External Ant. 6) + PoE 4



For operating, mode 13 is the worst case and it was recorded in this test report.

Operating Mode > 1GHz	CTX (Cabinet)
	After evaluating, EUT in Y axis was the worst case, so the measurement will follow this same test configuration.
1	EUT in Y axis_R6: Zigbee

The Worst Case Mode for Following Conformance Tests

Tests Item	Emissions in Restricted Frequency Bands	
Test Condition	Conducted measurement at transmit chains	
Operating Mode > 1GHz	CTX (Harmonic & Bandedge)	
	1	EUT_R6: Zigbee



The Worst Case Mode for Following Conformance Tests								
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation							
Operating Mode	R1 (2.4GHz/5GHz/ 6GHz)	R2 (2.4GHz)	R3 (5GHz UNII 1~3/ 5GHz UNII 2C~3)	R4 (6GHz)	R5 (5GHz)	R6 (BT/Zigbee)		
1	2.4GHz	Internal Ant.	Full band: UNII 1~3 (Boresight)	Narrow Beam	N/A	BT		
2	5GHz							
3	6GHz							
4	2.4GHz					Zigbee		
5	5GHz							
6	6GHz							
7	2.4GHz		High band: UNII 2C~3 (Steering)	Wide Beam	Internal Ant. (Steering)	BT		
8	5GHz							
9	6GHz							
10	2.4GHz					Zigbee		
11	5GHz							
12	6GHz							
13	2.4GHz	External Ant.	High band: UNII 2C~3 (Boresight)	Narrow Beam	External Ant.	BT		
14	5GHz							
15	6GHz							
16	2.4GHz					Zigbee		
17	5GHz							
18	6GHz							
19	2.4GHz	Internal Ant.					Internal Ant. (Boresight)	BT
20	5GHz							
21	6GHz							
22	2.4GHz							Zigbee
23	5GHz							
24	6GHz							
Refer to Sporton Test Report No.: FA4N2715-01 for Co-location RF Exposure Evaluation.								

Refer to Sporton Test Report No.: FA4N2715-01 for Co-location RF Exposure Evaluation.

Note: The PoEs were for measurement only and would not be marketed. Their information is shown as below:

Equipment	Brand	Model Name
PoE 1	Microsemi	PD-9001GR/AT/AC
PoE 2	PHIHONG	POE29U-1AT(PL)
PoE 3	DELTA	ADH-65AR B
PoE 4	PHIHONG	POEA33U-1ATE
PoE 5	PHIHONG	POE60U-1BT-X



Equipment	Brand	Model Name
PoE 6	PHIHONG	POE60U-BTA(X66M-R)
PoE 7	PHIHONG	POE60U-BTA(X664-R)
PoE 8	DELTA	ADH-65AR P

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link Mode:

During the test, the EUT operation to normal function.

2.4 Accessories

Solar shield*1 (Optional)

Bracket*1 (Optional)

Bay cover*1

Rubber gland*1



2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PoE 4 (1)	PHIHONG	POEA33U-1ATE	N/A
B	2.4G NB	DELL	E6400	N/A
C	5G NB	DELL	E6400	N/A
D	6G module	MTK	MT7927	N/A
E	6G NB	DELL	E6400	N/A
F	GPS Simulator	WELNAVIGATE	GS-100	N/A
G	LAN1 PC	ASUS	S300TA	TX2-RTL8821CE
H	PoE 4 (2)	PHIHONG	POEA33U-1ATE	N/A
I	LAN0 PC	ASUS	S300TA	TX2-RTL8821CE
J	Smart phone	REDMI	M1810F6LH	2AFZZ-RMSF6LG

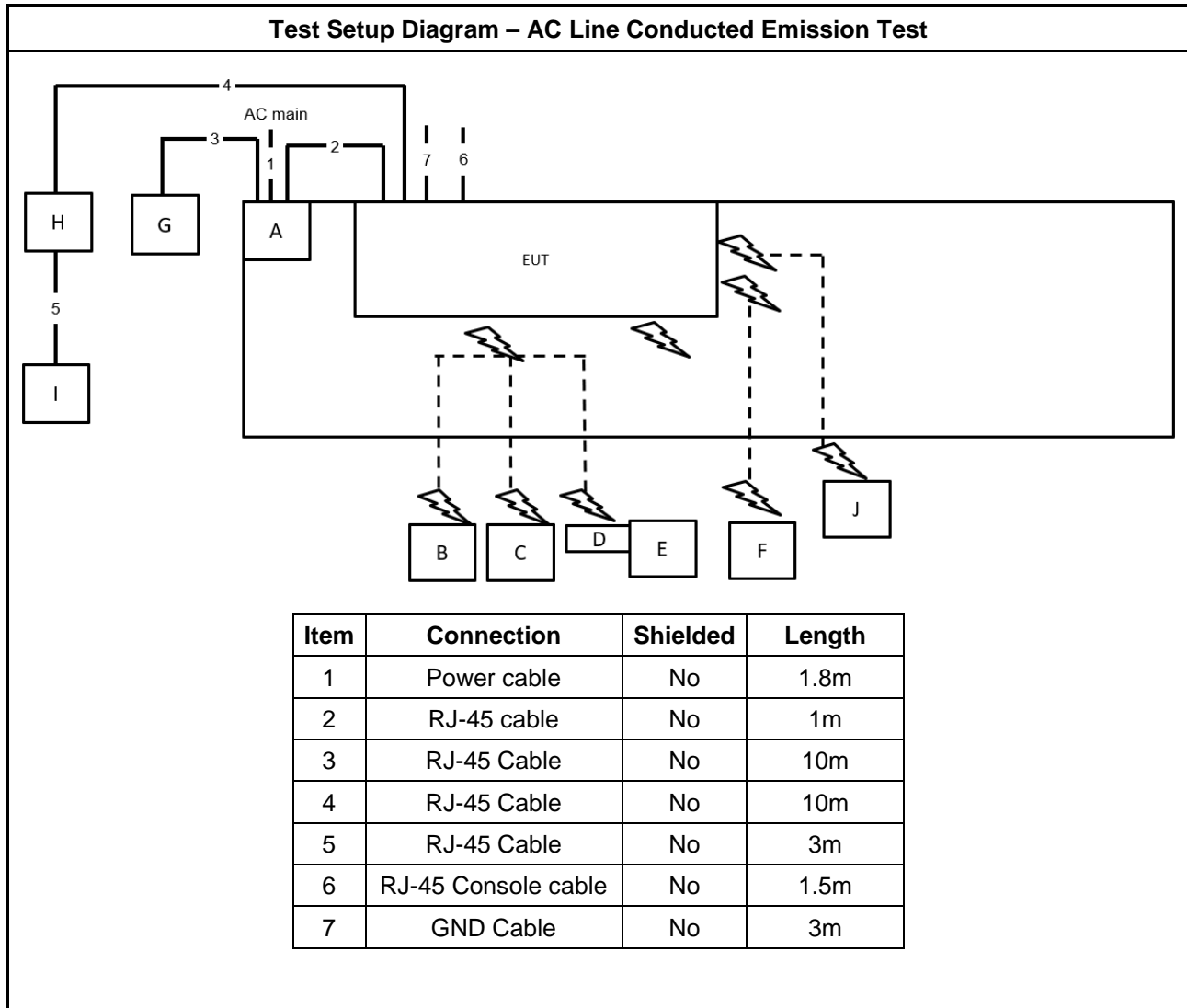
For Radiated:

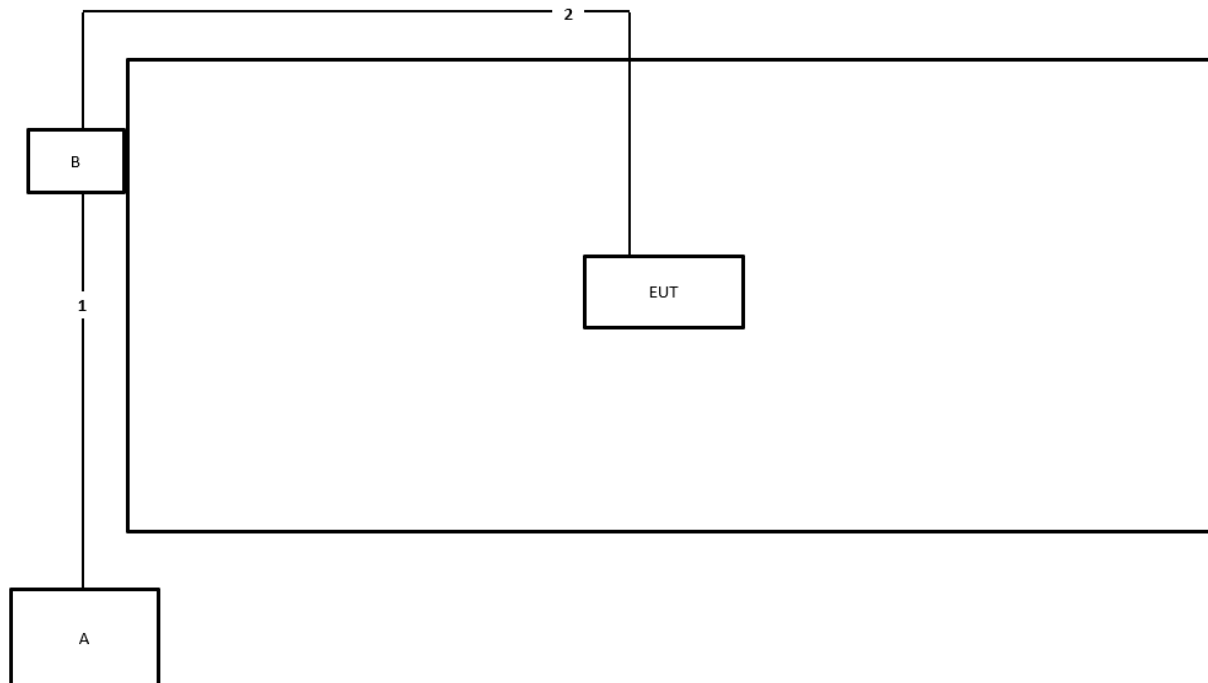
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	PoE 4	PHIHONG	POEA33U-1ATE	N/A

For RF Conducted and Spot Check:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	PoE 4	PHIHONG	POEA33U-1ATE	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test


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

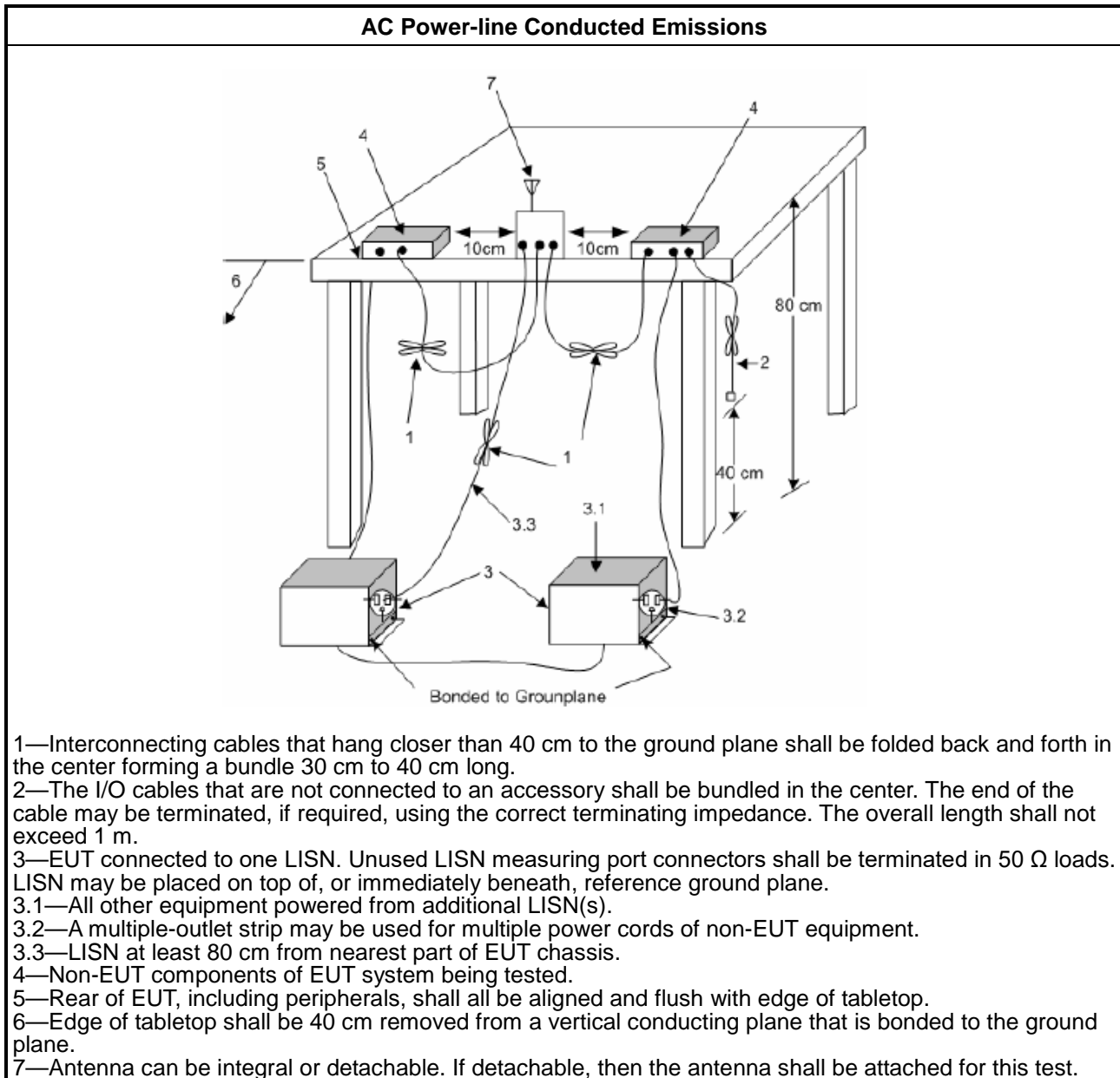
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, 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:
<ul style="list-style-type: none"> 6 dB bandwidth \geq 500 kHz.

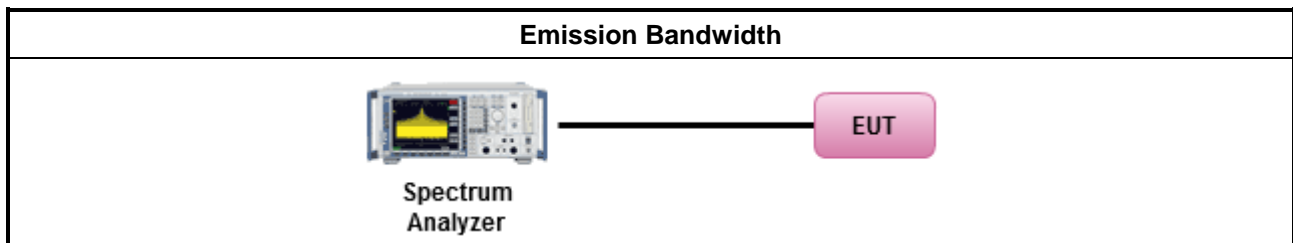
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
<ul style="list-style-type: none"> For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
<input type="checkbox"/> 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

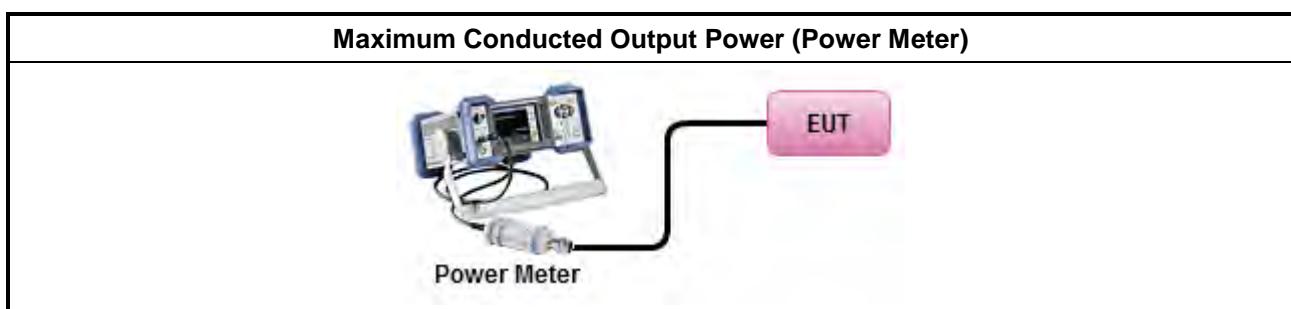
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
▪ Maximum Peak Conducted Output Power	
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW \geq EBW method).
	<input type="checkbox"/> 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 $\geq 98\%$ or external video / power trigger]
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
	<input type="checkbox"/> 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
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
	<input type="checkbox"/> 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)
	<input type="checkbox"/> 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).
	<input checked="" type="checkbox"/> 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).

<ul style="list-style-type: none"> For conducted measurement. 	
	<ul style="list-style-type: none"> 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.
	<ul style="list-style-type: none"> 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

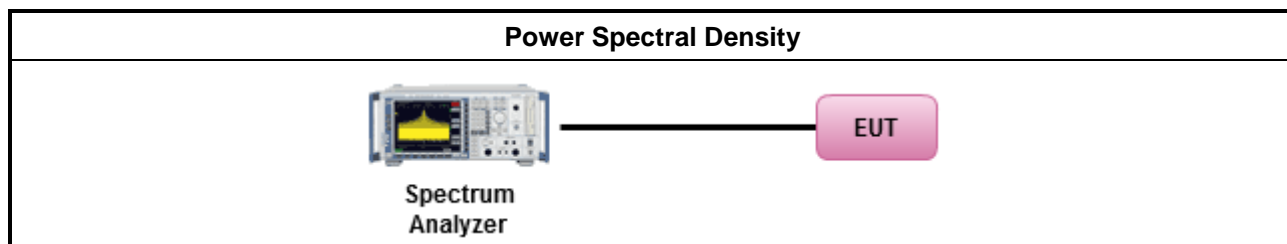
3.4.2 Measuring Instruments

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).	
<input checked="" type="checkbox"/>	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:	
<input type="checkbox"/>	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.
<input type="checkbox"/>	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,
<input type="checkbox"/>	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
<p>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.</p> <p>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.</p>	

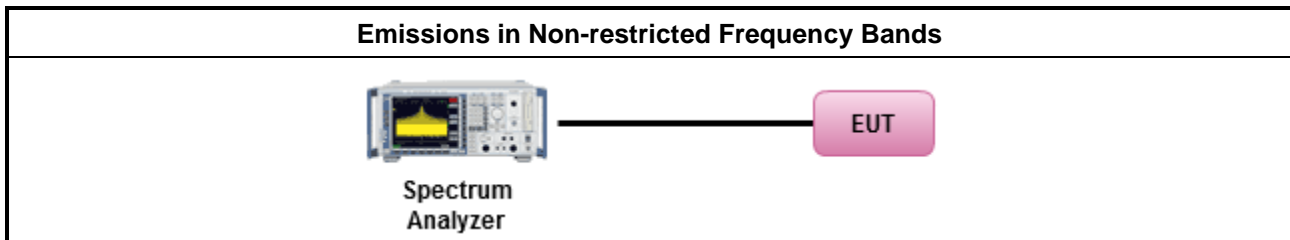
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
<ul style="list-style-type: none"> 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.

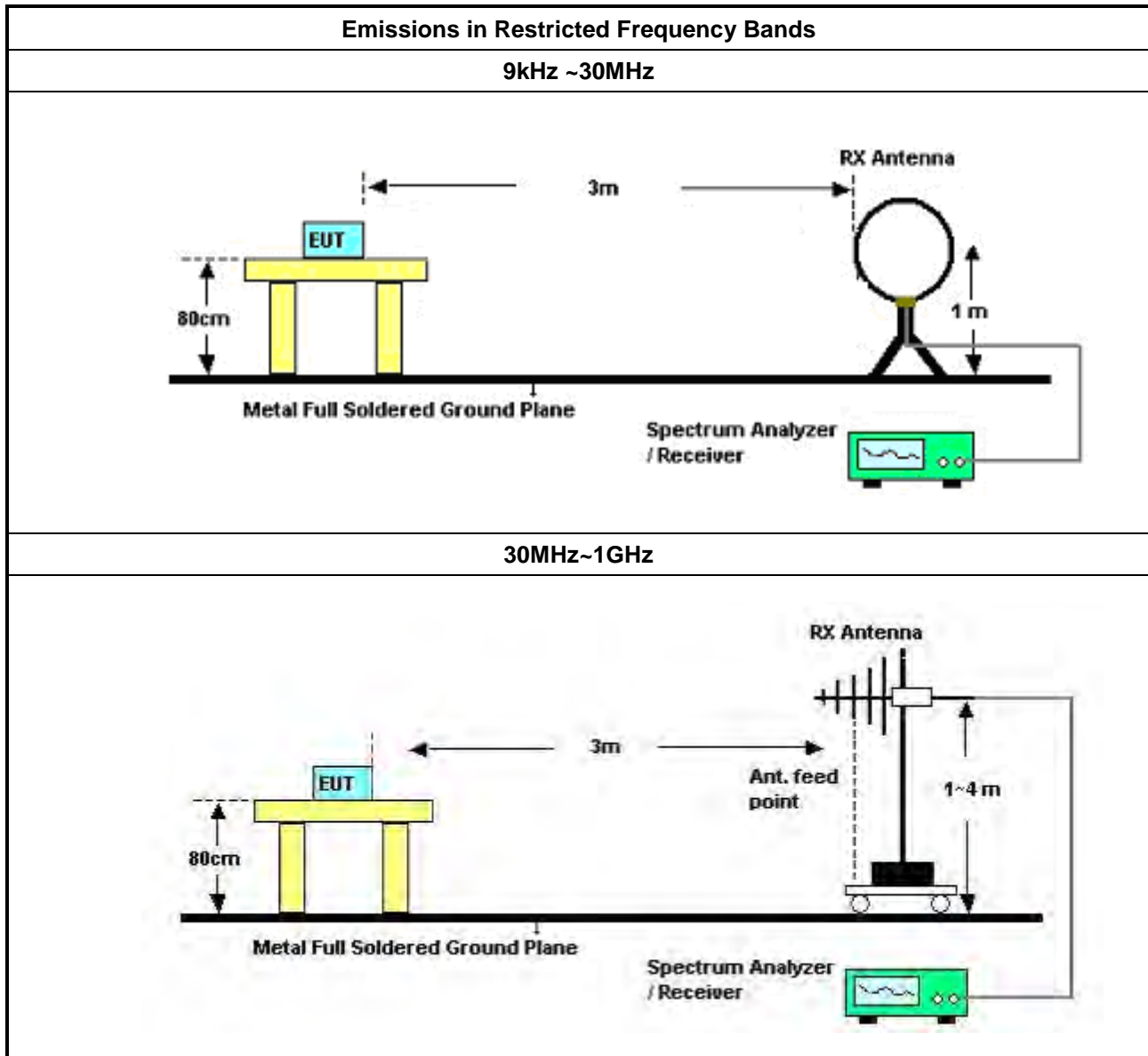
**3.6.3 Test Procedures**

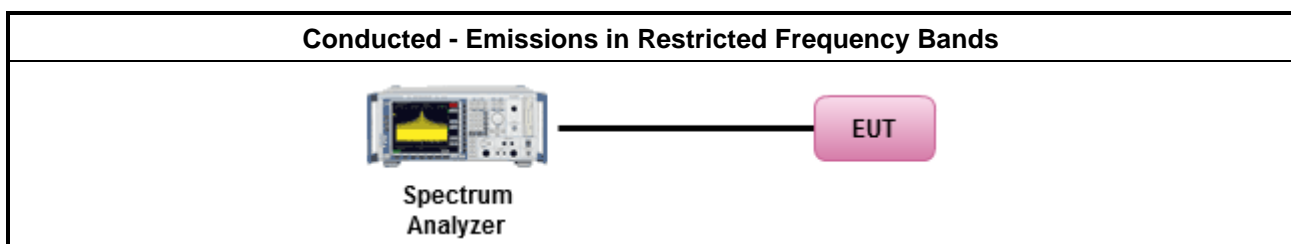
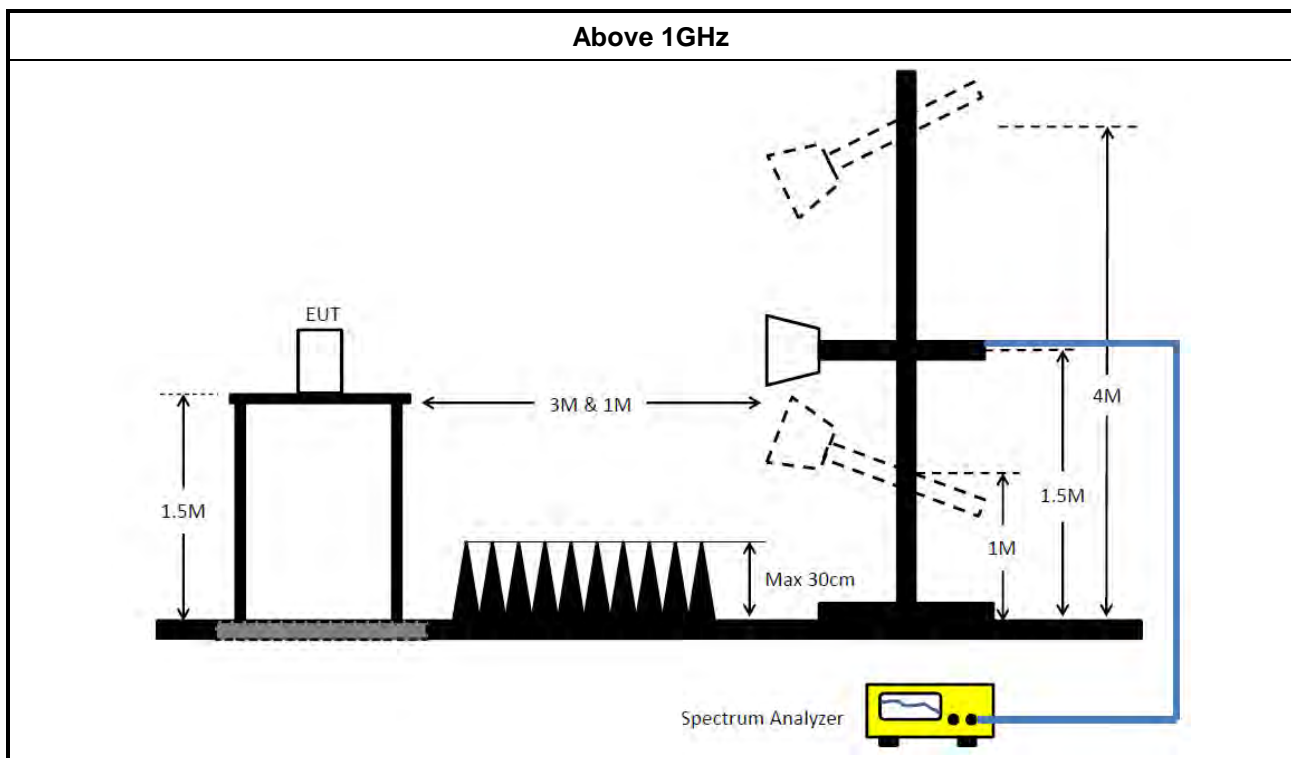
Test Method	
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle $\geq 98\%$).
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW $\geq 1/T$).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	<input checked="" type="checkbox"/> 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.



Test Method	
	▪ For conducted and cabinet radiation measurement, refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.2.
	▪ For conducted unwanted emissions into non-restricted bands (relative emission limits). Devices with multiple transmit chains: Refer as FCC KDB 662911, when testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding 10 log(N) if the measurements are made relative to the in-band emissions on the individual outputs.
	▪ 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. 06, 2025	Mar. 05, 2026	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Feb. 18, 2025	Feb. 17, 2026	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Feb. 06, 2025	Feb. 05, 2026	Conduction (CO01-CB)
Pulse Limiter	Rohde& Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Oct. 16, 2024	Oct. 15, 2025	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 16, 2024	Oct. 15, 2025	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. 16, 2024	Oct. 15, 2025	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 01, 2024	Jul. 31, 2025	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 23, 2024	Mar. 22, 2025	Radiation (03CH05-CB)
Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	May 02, 2024	May 01, 2025	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Apr. 17, 2024	Apr. 16, 2025	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESR7	102172	9kHz ~ 7GHz	Oct. 21, 2024	Oct. 20, 2025	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE-EMI	V5.11.8	30MHz-40GHz	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Oct. 08, 2024	Oct. 07, 2025	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1292	1GHz~18GHz	Jul. 29, 2024	Jul. 28, 2025	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 23, 2024	Sep. 22, 2025	Radiation (03CH06-CB)
Pre-Amplifier	EMCI	EMC12630SE	980383	1GHz ~ 18GHz	Jul. 31, 2024	Jul. 30, 2025	Radiation (03CH06-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 25, 2024	Nov. 24, 2025	Radiation (03CH06-CB)
Signal analyzer	R&S	FSV3044	101667	9kHz~44GHz	Aug. 20, 2024	Aug. 19, 2025	Radiation (03CH06-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-05+68	1GHz~18GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE-15247_FS	V5.11.23	2.4GHz-2.4835GHz	N.C.R.	N.C.R.	Radiation (03CH06-CB)
Signal Analyzer	R&S	FSV40	101903	9kHz ~ 40GHz	Jun. 11, 2024	Jun. 10, 2025	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Sep. 06, 2024	Sep. 05, 2025	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Sep. 06, 2024	Sep. 05, 2025	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-11	30MHz ~18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-12	30MHz ~18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-13	30MHz ~18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz ~18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz ~18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH03-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH03-CB)
Switch	SPTCB	SP-SWI	SWI-03	1~18GHz	Oct. 02, 2024	Oct. 01, 2025	Conducted (TH03-CB)
Test Software	SPORTON	SENSE-15247_FS	V5.11.23	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.



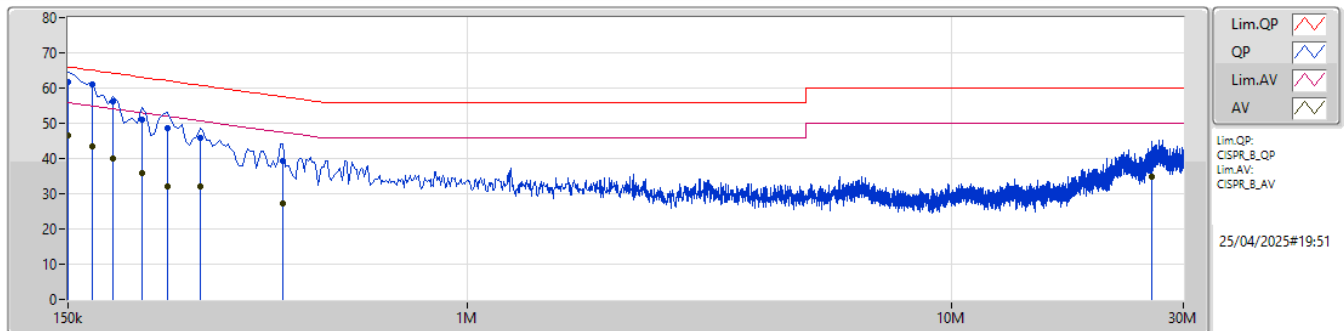
Conducted Emissions at Powerline
(Variant Device / FCC ID: UDX-600216020)

Appendix A

Summary

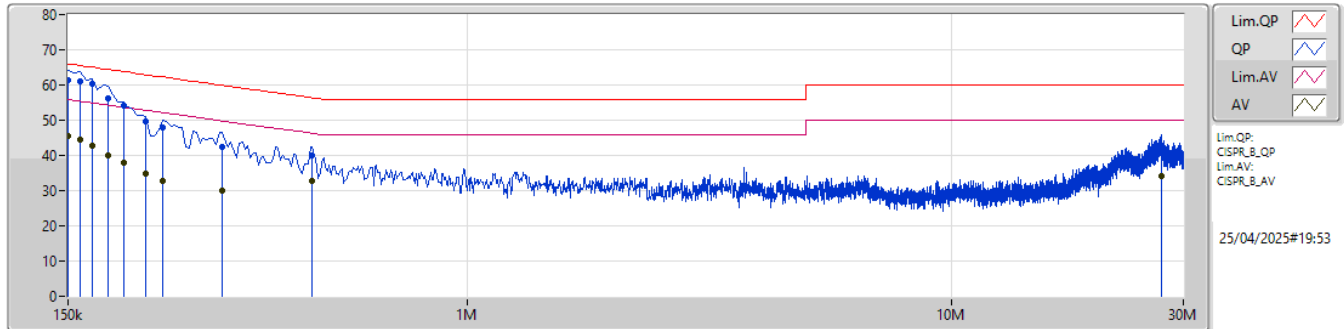
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	168k	60.94	65.06	-4.12	Line

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	150k	61.79	66.00	-4.21	10.03	Line	-	51.76	0.04	0.08	9.91						
AV	150k	46.59	56.00	-9.41	10.03	Line	-	36.56	0.04	0.08	9.91						
QP	168k	60.94	65.06	-4.12	10.05	Line	"Worst"	50.89	0.04	0.08	9.93						
AV	168k	43.32	55.06	-11.74	10.05	Line	-	33.27	0.04	0.08	9.93						
QP	186k	56.15	64.20	-8.05	10.05	Line	-	46.10	0.04	0.07	9.94						
AV	186k	40.15	54.20	-14.05	10.05	Line	-	30.10	0.04	0.07	9.94						
QP	213k	51.10	63.09	-11.99	10.07	Line	-	41.03	0.04	0.07	9.96						
AV	213k	35.81	53.09	-17.28	10.07	Line	-	25.74	0.04	0.07	9.96						
QP	240k	48.50	62.10	-13.60	10.10	Line	-	38.40	0.04	0.08	9.98						
AV	240k	32.22	52.10	-19.88	10.10	Line	-	22.12	0.04	0.08	9.98						
QP	280.5k	45.87	60.80	-14.93	10.12	Line	-	35.75	0.04	0.08	10.00						
AV	280.5k	31.95	50.80	-18.85	10.12	Line	-	21.83	0.04	0.08	10.00						
QP	415.5k	39.16	57.53	-18.37	10.20	Line	-	28.96	0.04	0.10	10.06						
AV	415.5k	27.26	47.53	-20.27	10.20	Line	-	17.06	0.04	0.10	10.06						
QP	25.89M	40.76	60.00	-19.24	10.65	Line	-	30.11	0.38	0.31	9.96						
AV	25.89M	34.69	50.00	-15.31	10.65	Line	-	24.04	0.38	0.31	9.96						

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	150k	61.31	66.00	-4.69	10.03	Neutral	-	51.28	0.04	0.08	9.91						
AV	150k	45.61	56.00	-10.39	10.03	Neutral	-	35.58	0.04	0.08	9.91						
QP	159k	61.16	65.52	-4.36	10.04	Neutral	"Worst"	51.12	0.04	0.08	9.92						
AV	159k	44.63	55.52	-10.89	10.04	Neutral	-	34.59	0.04	0.08	9.92						
QP	168k	60.20	65.06	-4.86	10.05	Neutral	-	50.15	0.04	0.08	9.93						
AV	168k	42.88	55.06	-12.18	10.05	Neutral	-	32.83	0.04	0.08	9.93						
QP	181.5k	56.19	64.41	-8.22	10.05	Neutral	-	46.14	0.04	0.07	9.94						
AV	181.5k	39.84	54.41	-14.57	10.05	Neutral	-	29.79	0.04	0.07	9.94						
QP	195k	54.06	63.82	-9.76	10.06	Neutral	-	44.00	0.04	0.07	9.95						
AV	195k	37.90	53.82	-15.92	10.06	Neutral	-	27.84	0.04	0.07	9.95						
QP	217.5k	49.64	62.92	-13.28	10.07	Neutral	-	39.57	0.04	0.07	9.96						
AV	217.5k	34.97	52.92	-17.95	10.07	Neutral	-	24.90	0.04	0.07	9.96						
QP	235.5k	48.10	62.25	-14.15	10.10	Neutral	-	38.00	0.04	0.08	9.98						
AV	235.5k	32.75	52.25	-19.50	10.10	Neutral	-	22.65	0.04	0.08	9.98						
QP	312k	42.56	59.92	-17.36	10.15	Neutral	-	32.41	0.04	0.09	10.02						
AV	312k	29.90	49.92	-20.02	10.15	Neutral	-	19.75	0.04	0.09	10.02						
QP	478.5k	39.91	56.36	-16.45	10.22	Neutral	-	29.69	0.04	0.10	10.08						
AV	478.5k	32.88	46.36	-13.48	10.22	Neutral	-	22.66	0.04	0.10	10.08						
QP	26.966M	40.87	60.00	-19.13	10.72	Neutral	-	30.15	0.44	0.32	9.96						
AV	26.966M	34.09	50.00	-15.91	10.72	Neutral	-	23.37	0.44	0.32	9.96						



Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
Zigbee	1.856M	2.243M	2M24G1D	1.706M	2.228M

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	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
Zigbee	-	-	-	-
2405MHz	Pass	500k	1.856M	2.239M
2440MHz	Pass	500k	1.706M	2.243M
2480MHz	Pass	500k	1.763M	2.228M

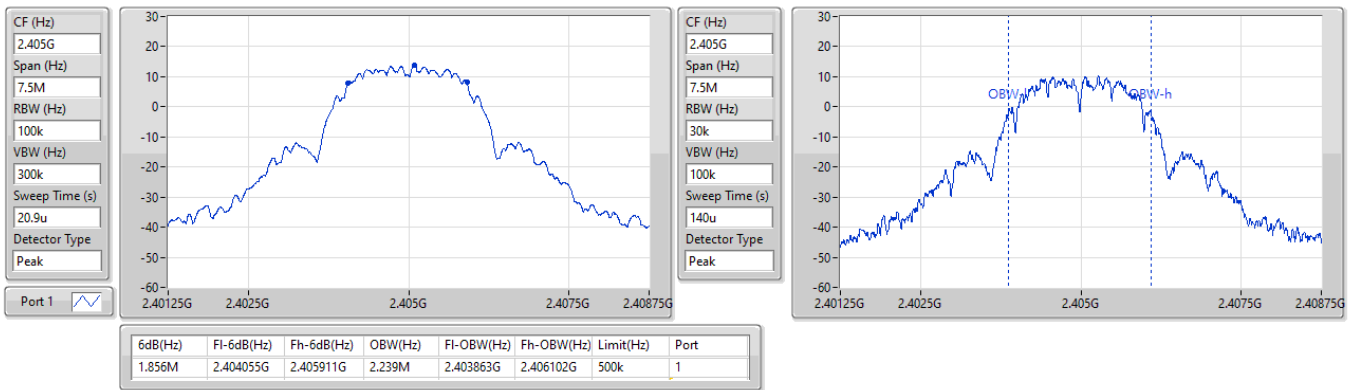
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_Zigbee

EBW

2405MHz

28/12/2024

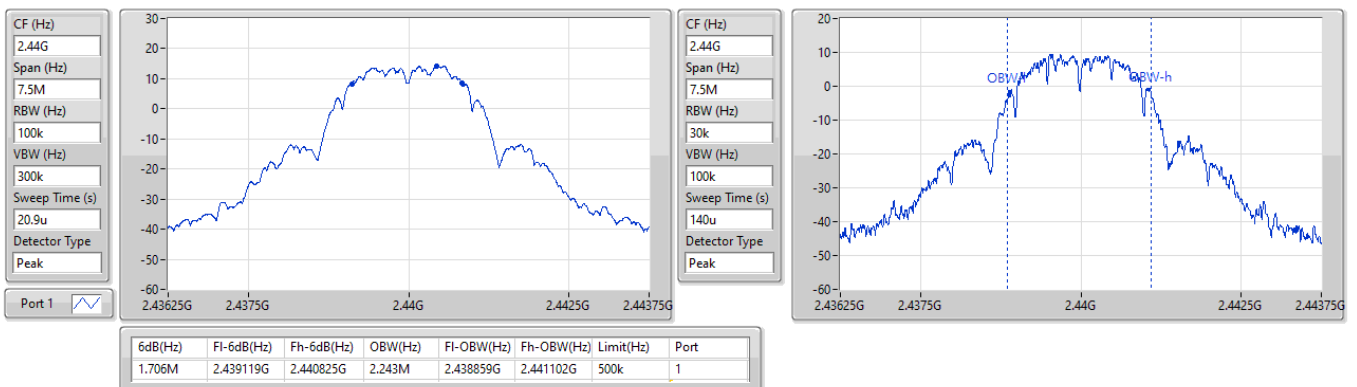


2.4-2.4835GHz_Zigbee

EBW

2440MHz

28/12/2024

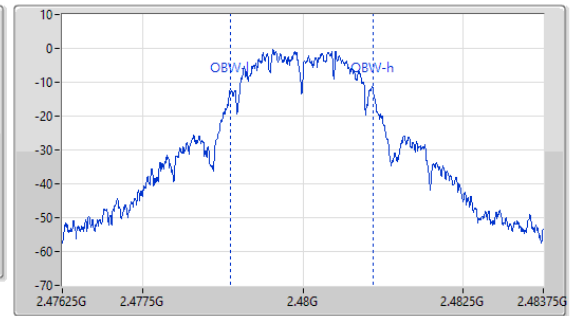
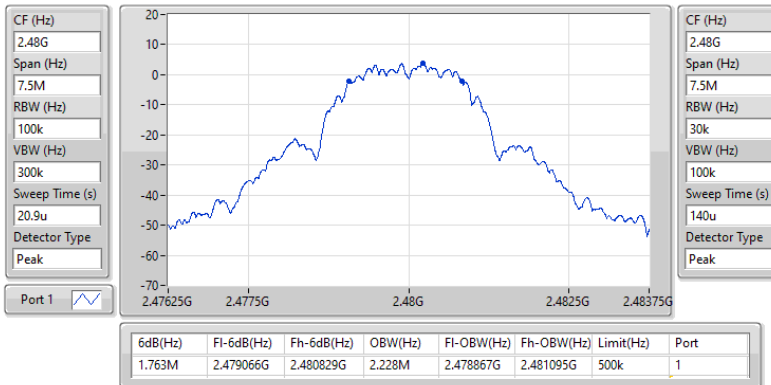


2.4-2.4835GHz_Zigbee

EBW

2480MHz

28/12/2024





Average Power
(Parent Device / FCC ID: UDX-600216010)

Appendix C

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Zigbee	19.47	0.08851



Average Power
(Parent Device / FCC ID: UDX-600216010)

Appendix C

Result

Mode	Result	DG	Port 1	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)
Zigbee	-	-	-	-	-
2405MHz	Pass	6.10	19.47	19.47	29.90
2440MHz	Pass	6.10	19.19	19.19	29.90
2475MHz	Pass	6.10	19.13	19.13	29.90
2480MHz	Pass	6.10	7.71	7.71	29.90

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	4.06

RBW = 3kHz;



PSD
(Parent Device / FCC ID: UDX-600216010)

Appendix D

Result

Mode	Result	DG	Port 1	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
Zigbee	-	-	-	-	-
2405MHz	Pass	6.10	2.58	2.58	7.90
2440MHz	Pass	6.10	4.06	4.06	7.90
2480MHz	Pass	6.10	-9.00	-9.00	7.90

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.

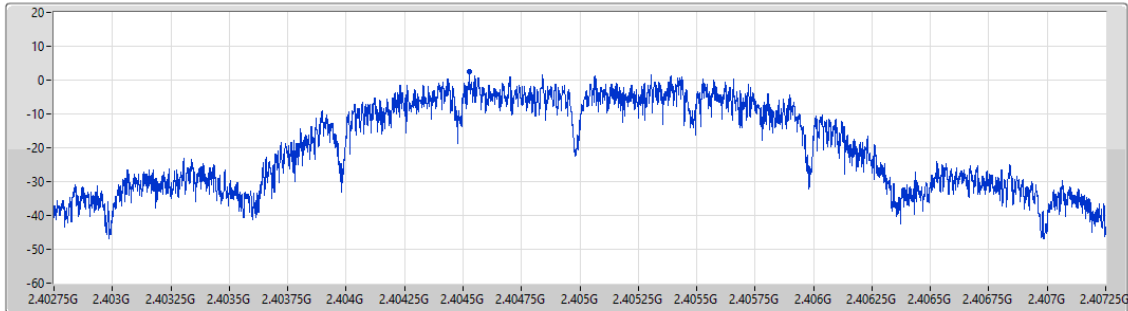
2.4-2.4835GHz_Zigbee

PSD

2405MHz

28/12/2024

CF (Hz)
2.405G
Span (Hz)
4.5M
RBW (Hz)
3k
VBW (Hz)
10k
Sweep Time (s)
1.4m
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.58	2.58	2.58

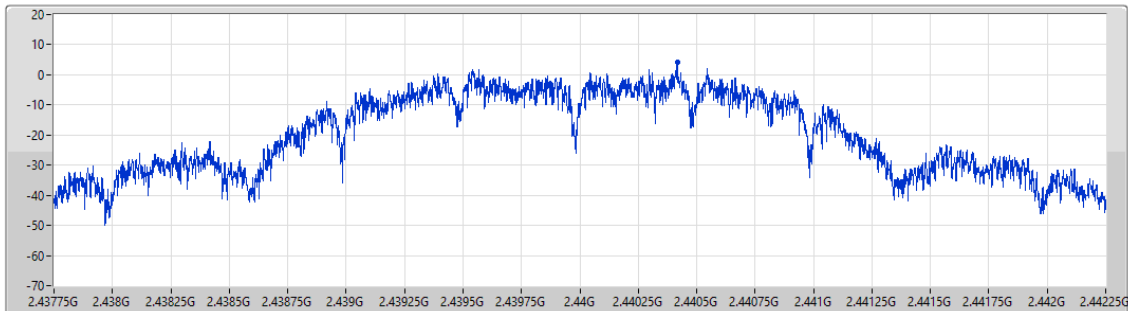
2.4-2.4835GHz_Zigbee

PSD

2440MHz

28/12/2024

CF (Hz)
2.44G
Span (Hz)
4.5M
RBW (Hz)
3k
VBW (Hz)
10k
Sweep Time (s)
1.4m
Detector Type
Peak



Port 1

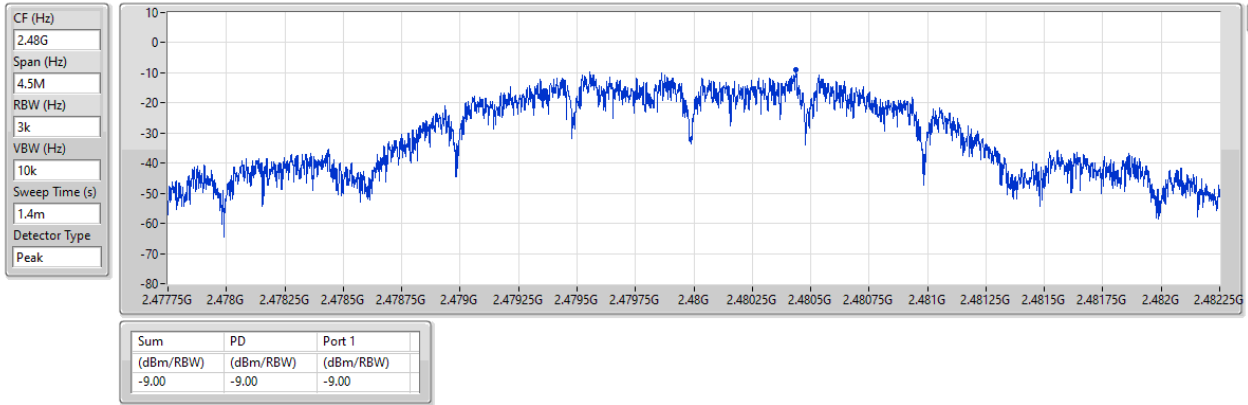
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.06	4.06	4.06

2.4-2.4835GHz_Zigbee

PSD

2480MHz

17/01/2025





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	2.40468G	15.81	-14.19	2.394G	-54.07	2.39999G	-35.73	2.4G	-36.99	7.21108G	-41.29	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	2.40468G	15.81	-14.19	2.394G	-54.07	2.39999G	-35.73	2.4G	-36.99	7.21108G	-41.29	1
2440MHz	Pass	2.40468G	15.81	-14.19	2.39164G	-59.19	2.39892G	-53.98	2.4G	-57.76	21.86541G	-52.00	1
2480MHz	Pass	2.40468G	15.81	-14.19	1.81482G	-59.70	2.39731G	-56.19	2.4G	-63.09	21.65719G	-50.70	1

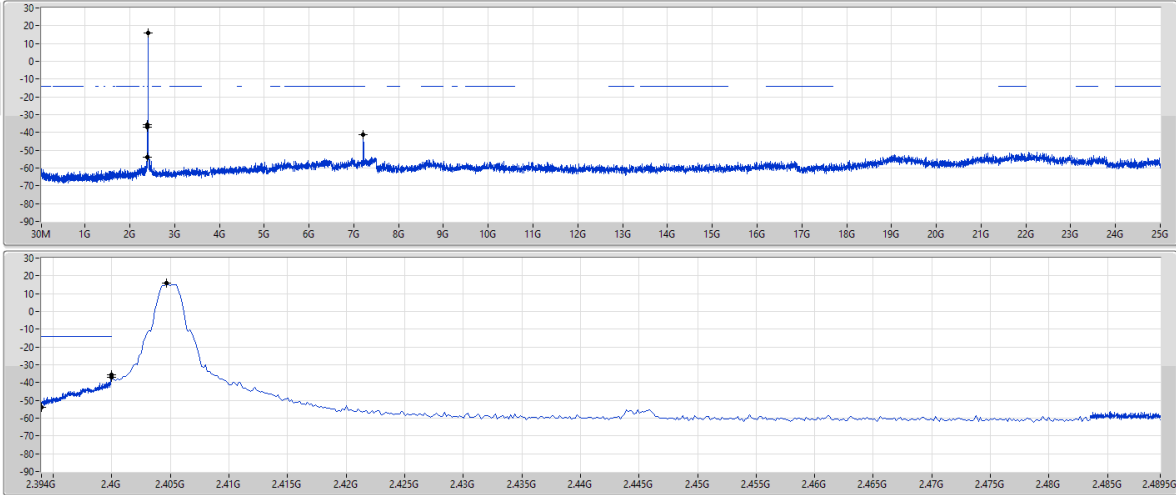
2.4-2.4835GHz Zigbee

CSEndB

2405MHz

28/12/2024

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



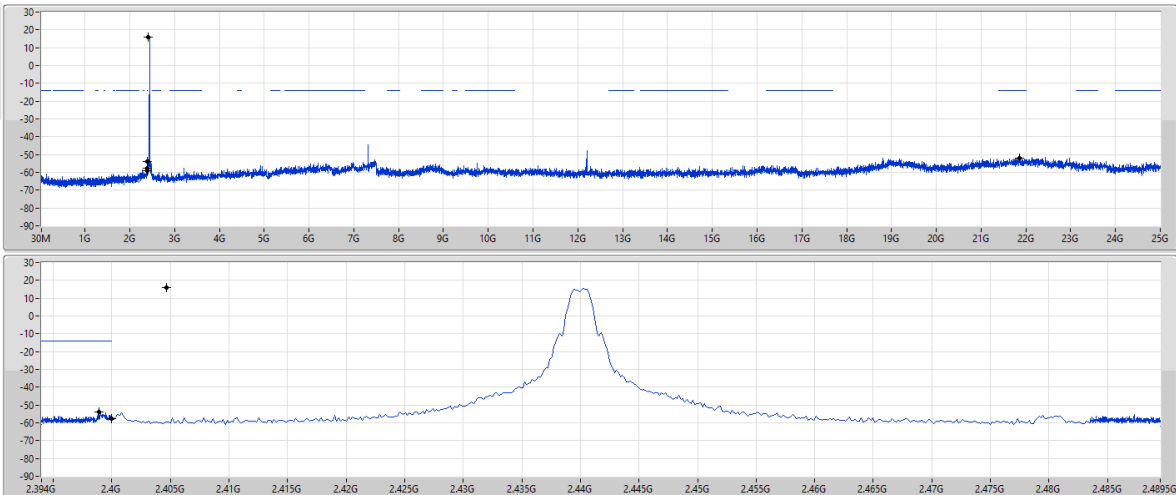
2.4-2.4835GHz Zigbee

CSEndB

2440MHz

28/12/2024

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



2.4-2.4835GHz_Zigbee

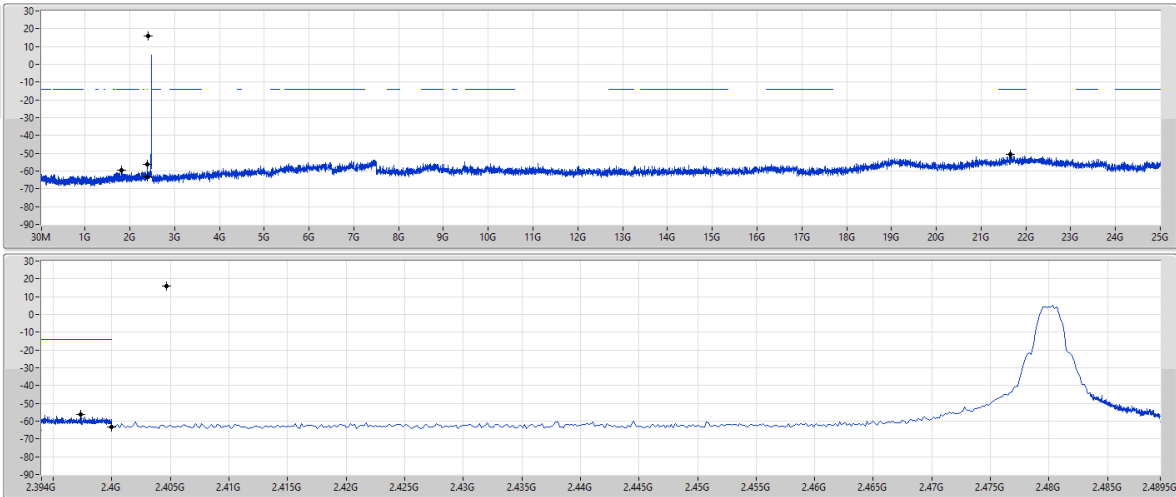
CSEndB

2480MHz

28/12/2024

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
2.40468G	15.81	-14.19	1.81482G	-59.70	2.39731G	-56.19	2.4G	-63.09	21.65719G	-50.70	1



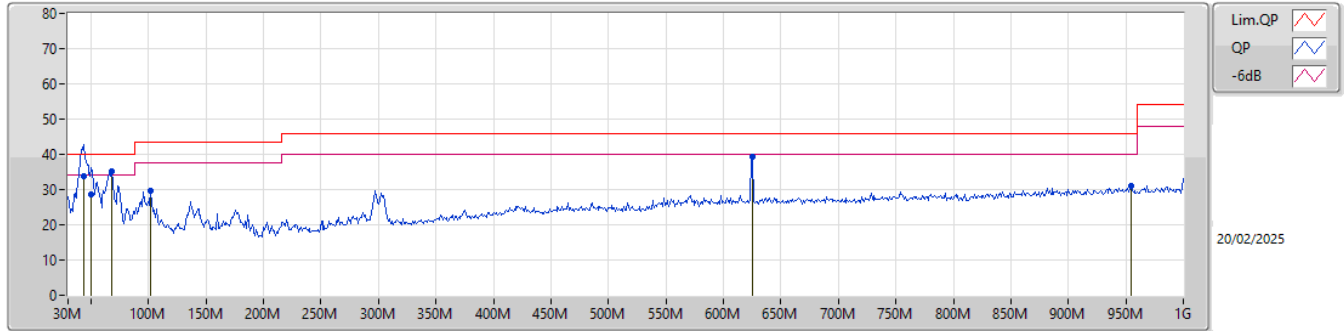
Radiated Emissions below 1GHz
(Parent Device / FCC ID: UDX-600216010)

Appendix F.1

Summary

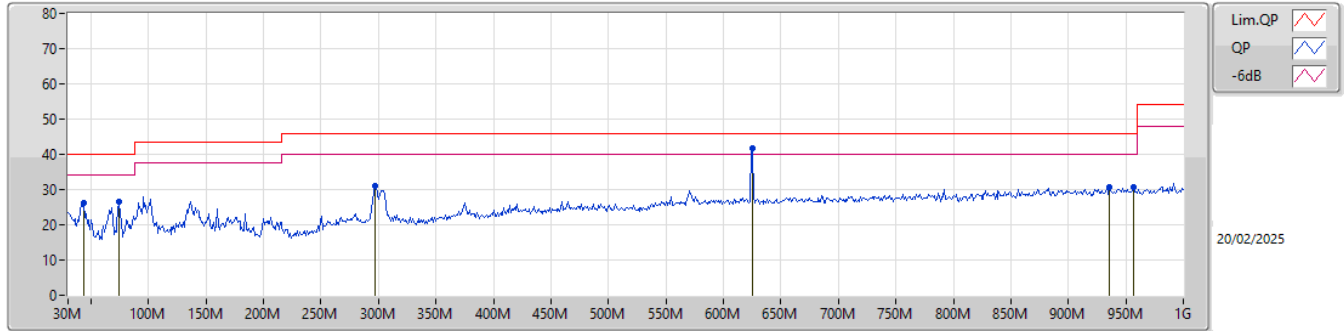
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 13	Pass	PK	625.58M	41.76	46.00	-4.24	Horizontal

Mode 13



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)		
QP	43.58M	33.73	40.00	-6.27	-13.39	3	Vertical	357	1.00	-	47.12	17.10	1.10	31.59		
QP	50.37M	28.46	40.00	-11.54	-16.22	3	Vertical	353	1.00	-	44.68	14.25	1.16	31.63		
PK	67.83M	35.24	40.00	-4.76	-17.88	3	Vertical	12	1.50	"Worst"	53.12	12.51	1.30	31.69		
PK	101.78M	29.53	43.50	-13.97	-13.16	3	Vertical	186	1.00	-	42.69	17.04	1.54	31.74		
PK	625.58M	39.34	46.00	-6.66	-3.79	3	Vertical	86	1.00	-	43.13	24.64	3.85	32.28		
PK	954.41M	31.13	46.00	-14.87	-0.83	3	Vertical	357	1.50	-	31.96	26.68	4.80	32.31		

Mode 13



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)		
PK	43.58M	26.31	40.00	-13.69	-13.39	3	Horizontal	212	1.50	-	39.70	17.10	1.10	31.59		
PK	74.62M	26.49	40.00	-13.51	-17.59	3	Horizontal	115	1.50	-	44.08	12.76	1.36	31.71		
PK	296.75M	31.09	46.00	-14.91	-10.14	3	Horizontal	167	1.00	-	41.23	19.08	2.62	31.84		
PK	625.58M	41.76	46.00	-4.24	-3.79	3	Horizontal	131	1.50	"Worst"	45.55	24.64	3.85	32.28		
PK	935.98M	30.54	46.00	-15.46	-1.15	3	Horizontal	281	1.00	-	31.69	26.42	4.75	32.32		
PK	956.35M	30.81	46.00	-15.19	-0.78	3	Horizontal	318	1.50	-	31.59	26.72	4.81	32.31		



CSE_Harmonic (1~3GHz)
(Parent Device / FCC ID: UDX-600216010)

Appendix F.2

Summary

Mode	Result	F-Start	F-Stop	Type	Freq	DG	P1	Psum	EIRP	Limit	Margin
		(Hz)	(Hz)		(Hz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	1G	3G	AV	2.366G	6.10	-49.52	-49.52	-43.42	-41.20	-2.22

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX



CSE_Harmonic (1~3GHz)
(Parent Device / FCC ID: UDX-600216010)

Appendix F.2

Result

Mode	Result	F-Start	F-Stop	Type	Freq	DG	P1	Psum	EIRP	Limit	Margin
		(Hz)	(Hz)		(Hz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	1G	3G	AV	2.366G	6.10	-49.52	-49.52	-43.42	-41.20	-2.22
2405MHz	Pass	1G	3G	AV	2.5G	6.10	-64.18	-64.18	-58.08	-41.20	-16.88
2405MHz	Pass	1G	3G	PK	2.366G	6.10	-41.45	-41.45	-35.35	-21.20	-14.15
2405MHz	Pass	1G	3G	PK	2.5G	6.10	-53.97	-53.97	-47.87	-21.20	-26.67
2440MHz	Pass	1G	3G	AV	2.36G	6.10	-56.51	-56.51	-50.41	-41.20	-9.21
2440MHz	Pass	1G	3G	AV	2.5G	6.10	-62.90	-62.90	-56.80	-41.20	-15.60
2440MHz	Pass	1G	3G	PK	2.328G	6.10	-46.46	-46.46	-40.36	-21.20	-19.16
2440MHz	Pass	1G	3G	PK	2.5G	6.10	-55.10	-55.10	-49.00	-21.20	-27.80
2480MHz	Pass	1G	3G	AV	2.354G	6.10	-66.64	-66.64	-60.54	-41.20	-19.34
2480MHz	Pass	1G	3G	AV	2.5G	6.10	-68.84	-68.84	-62.74	-41.20	-21.54
2480MHz	Pass	1G	3G	PK	2.252G	6.10	-56.91	-56.91	-50.81	-21.20	-29.61
2480MHz	Pass	1G	3G	PK	2.358G	6.10	-57.35	-57.35	-51.25	-21.20	-30.05
2480MHz	Pass	1G	3G	PK	2.5G	6.10	-59.96	-59.96	-53.86	-21.20	-32.66

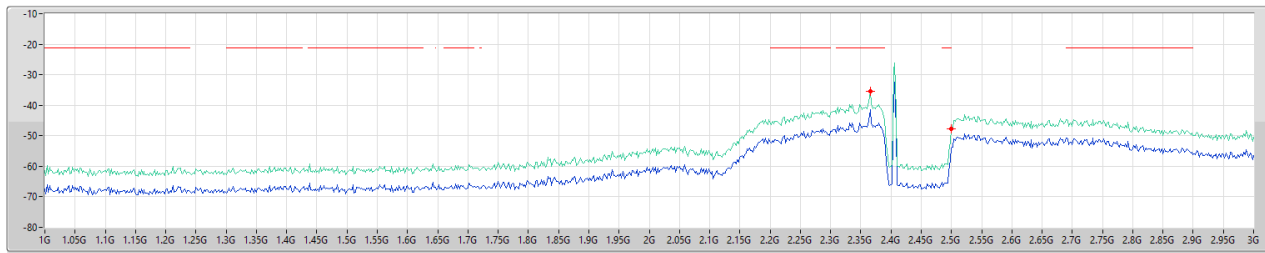
DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX

2.4-2.4835GHz_Zigbee

CSE Other [PK]

2405MHz

17/01/2025



Limit.PK
EIRP.PK
Port 1

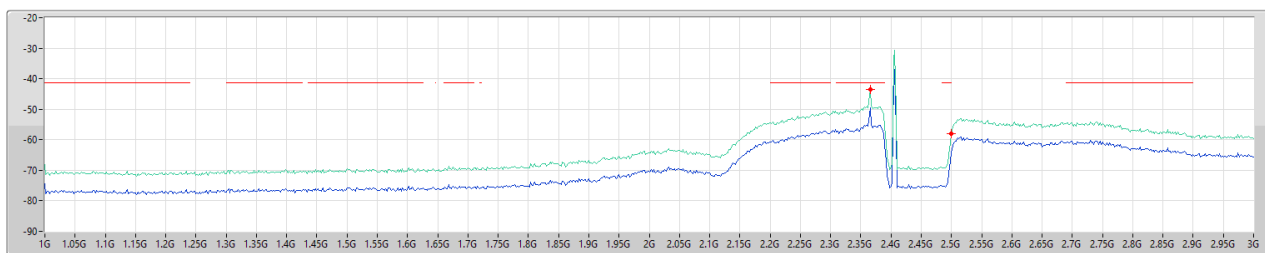
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
1G	3G	1M	PK	2.366G	-35.35	-21.20	-14.15	6.10	0.00	-41.45	-41.45
1G	3G	1M	PK	2.5G	-47.87	-21.20	-26.67	6.10	0.00	-53.97	-53.97

2.4-2.4835GHz_Zigbee

CSE Other [AV]

2405MHz

17/01/2025



Limit.AV
EIRP.AV
Port 1

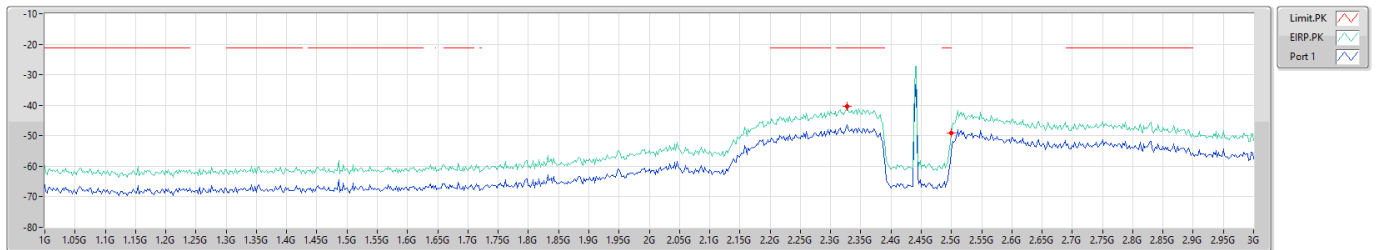
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
1G	3G	1M	AV	2.366G	-43.42	-41.20	-2.22	6.10	0.00	-49.52	-49.52
1G	3G	1M	AV	2.5G	-58.08	-41.20	-16.88	6.10	0.00	-64.18	-64.18

2.4-2.4835GHz Zigbee

CSE Other [PK]

2440MHz

17/01/2025



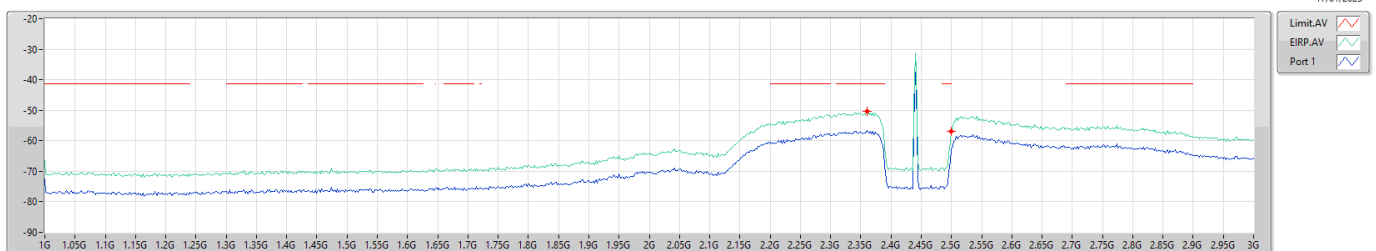
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
1G	3G	1M	PK	2.328G	-40.36	-21.20	-19.16	6.10	0.00	-46.46	-46.46
1G	3G	1M	PK	2.5G	-49.00	-21.20	-27.80	6.10	0.00	-55.10	-55.10

2.4-2.4835GHz Zigbee

CSE Other [AV]

2440MHz

17/01/2025



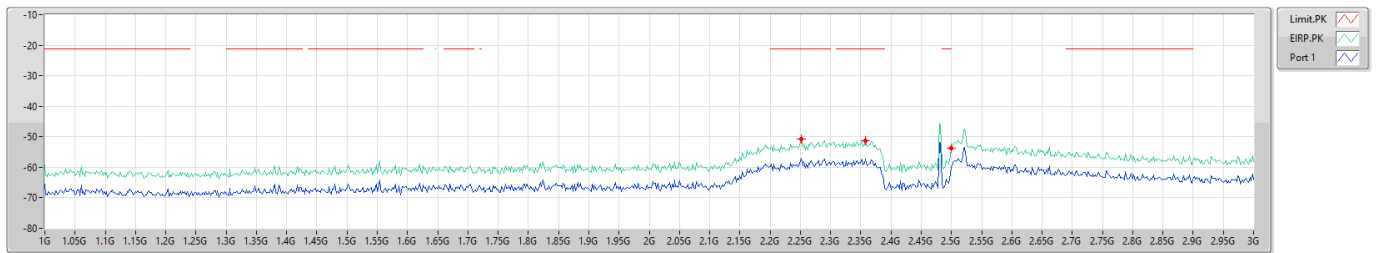
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
1G	3G	1M	AV	2.36G	-50.41	-41.20	-9.21	6.10	0.00	-56.51	-56.51
1G	3G	1M	AV	2.5G	-56.80	-41.20	-15.60	6.10	0.00	-62.90	-62.90

2.4-2.4835GHz Zigbee

CSE Other [PK]

2480MHz

17/01/2025



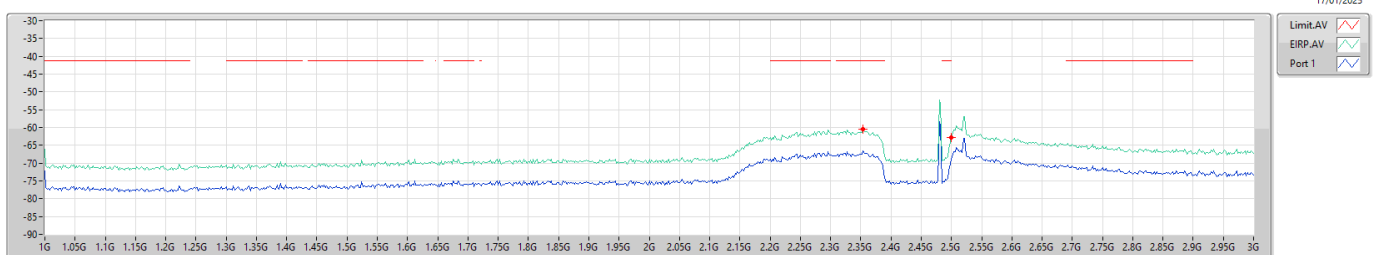
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	Ref1(dB)	Psum(dBm)	P1(dBm)
1G	3G	1M	PK	2.252G	-50.81	-21.20	-29.61	6.10	0.00	-56.91	-56.91
1G	3G	1M	PK	2.350G	-51.25	-21.20	-30.05	6.10	0.00	-57.35	-57.35
1G	3G	1M	PK	2.5G	-53.86	-21.20	-32.66	6.10	0.00	-59.96	-59.96

2.4-2.4835GHz Zigbee

CSE Other [AV]

2480MHz

17/01/2025



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	Ref1(dB)	Psum(dBm)	P1(dBm)
1G	3G	1M	AV	2.354G	-60.54	-41.20	-19.34	6.10	0.00	-66.64	-66.64
1G	3G	1M	AV	2.5G	-62.74	-41.20	-21.54	6.10	0.00	-68.84	-68.84



Summary

Mode	Result	F-Start	F-Stop	Type	Freq	DG	P1	Psum	EIRP	Limit	Margin
		(Hz)	(Hz)		(Hz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	3G	25G	AV	3.3355G	6.10	-62.76	-62.76	-56.66	-41.20	-15.46

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX



CSE_Harmonic (3~25GHz)
(Parent Device / FCC ID: UDX-600216010)

Appendix F.3

Result

Mode	Result	F-Start	F-Stop	Type	Freq	DG	P1	Psum	EIRP	Limit	Margin
		(Hz)	(Hz)		(Hz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	3G	25G	AV	3.33825G	6.10	-64.73	-64.73	-58.63	-41.20	-17.43
2405MHz	Pass	3G	25G	AV	4.8095G	6.10	-76.94	-76.94	-70.84	-41.20	-29.64
2405MHz	Pass	3G	25G	PK	3.33275G	6.10	-57.02	-57.02	-50.92	-21.20	-29.72
2405MHz	Pass	3G	25G	PK	4.8095G	6.10	-70.13	-70.13	-64.03	-21.20	-42.83
2440MHz	Pass	3G	25G	AV	3.3355G	6.10	-62.76	-62.76	-56.66	-41.20	-15.46
2440MHz	Pass	3G	25G	AV	4.87825G	6.10	-74.90	-74.90	-68.80	-41.20	-27.60
2440MHz	Pass	3G	25G	PK	3.3355G	6.10	-54.14	-54.14	-48.04	-21.20	-26.84
2440MHz	Pass	3G	25G	PK	4.87825G	6.10	-68.60	-68.60	-62.50	-21.20	-41.30
2480MHz	Pass	3G	25G	AV	3.3355G	6.10	-75.96	-75.96	-69.86	-41.20	-28.66
2480MHz	Pass	3G	25G	AV	4.958G	6.10	-83.72	-83.72	-77.62	-41.20	-36.42
2480MHz	Pass	3G	25G	PK	3.3355G	6.10	-68.25	-68.25	-62.15	-21.20	-40.95
2480MHz	Pass	3G	25G	PK	4.9635G	6.10	-76.39	-76.39	-70.29	-21.20	-49.09

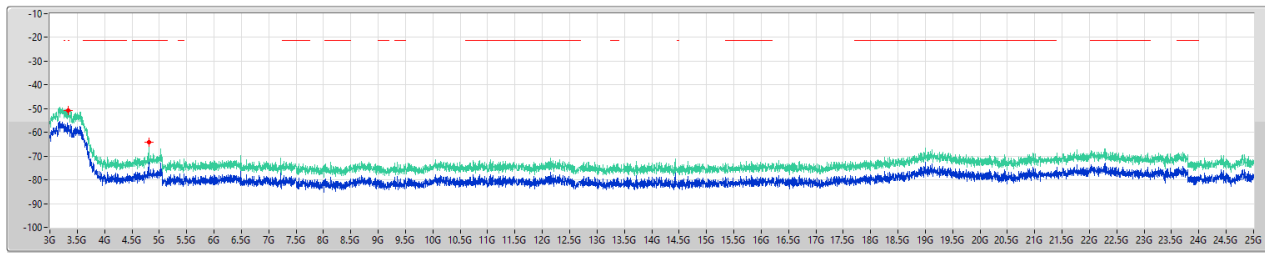
DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX

2.4-2.4835GHz_Zigbee

CSE [PK]

2405MHz

17/01/2025



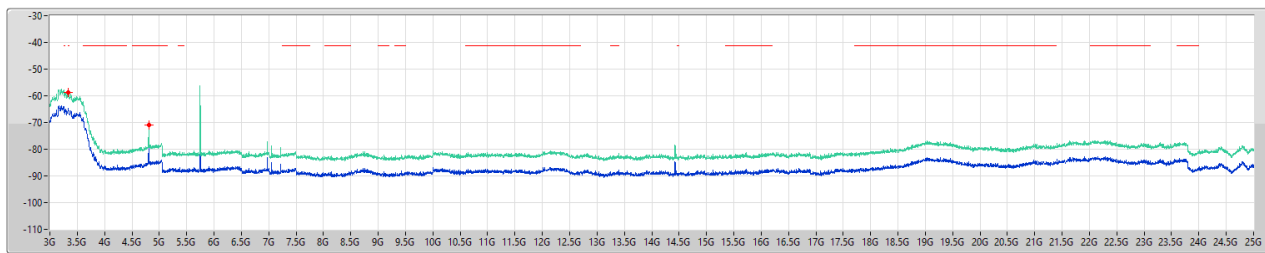
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	Ref(dB)	Psum(dBm)	P1(dBm)
3G	25G	1M	PK	3.33275G	-50.92	-21.20	-29.72	6.10	0.00	-57.02	-57.02
3G	25G	1M	PK	4.8095G	-64.03	-21.20	-42.83	6.10	0.00	-70.13	-70.13

2.4-2.4835GHz_Zigbee

CSE [AV]

2405MHz

17/01/2025



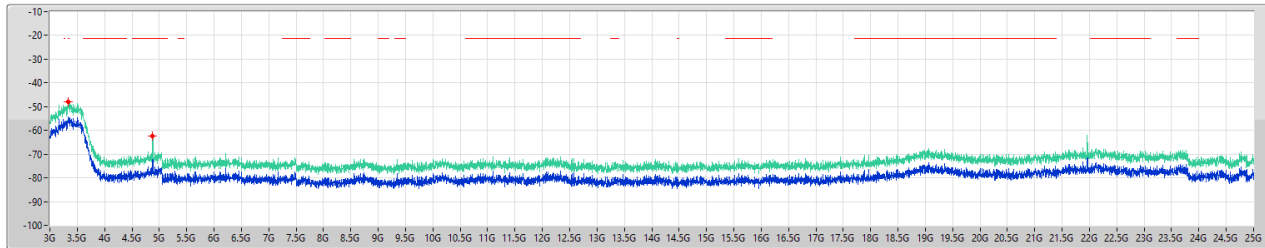
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3G	25G	1M	AV	3.33825G	-58.63	-41.20	-17.43	6.10	0.00	-64.73	-64.73
3G	25G	1M	AV	4.8095G	-70.84	-41.20	-29.64	6.10	0.00	-76.94	-76.94

2.4-2.4835GHz Zigbee

CSE [PK]

2440MHz

17/01/2025



Limit:PK
ERP:PK
Port 1

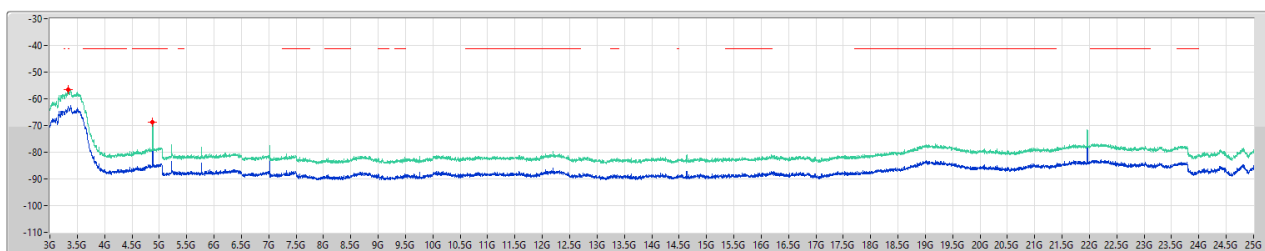
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3G	25G	1M	PK	3.3555G	-48.04	-21.20	-26.84	6.10	0.00	-54.14	-54.14
3G	25G	1M	PK	4.87825G	-62.50	-21.20	-41.30	6.10	0.00	-68.60	-68.60

2.4-2.4835GHz Zigbee

CSE [AV]

2440MHz

17/01/2025



Limit:AV
ERP:AV
Port 1

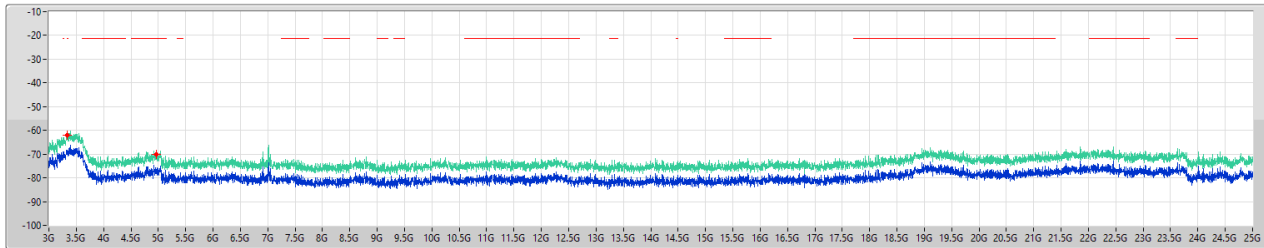
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3G	25G	1M	AV	3.3555G	-56.66	-41.20	-15.46	6.10	0.00	-62.76	-62.76
3G	25G	1M	AV	4.87825G	-68.80	-41.20	-27.60	6.10	0.00	-74.90	-74.90

2.4-2.4835GHz Zigbee

CSE [PK]

2480MHz

17/01/2025



Limit:PK
EIRP:PK
Port 1

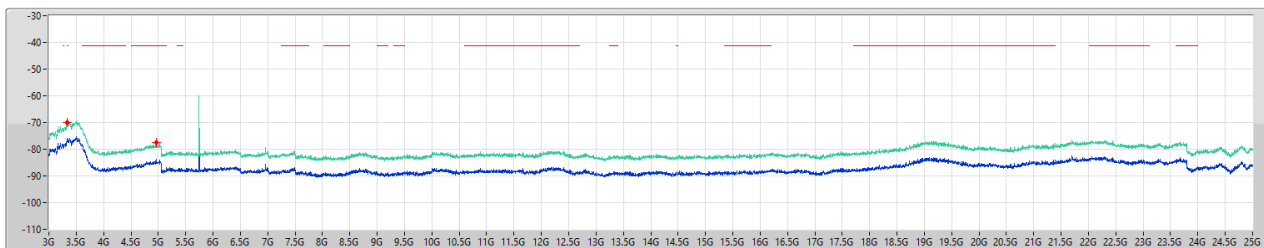
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	Ref(dB)	Psum(dBm)	P1(dBm)
3G	25G	1M	PK	3.3355G	-62.15	-21.20	-40.95	6.10	0.00	-68.25	-68.25
3G	25G	1M	PK	4.9635G	-70.29	-21.20	-49.09	6.10	0.00	-76.39	-76.39

2.4-2.4835GHz Zigbee

CSE [AV]

2480MHz

17/01/2025



Limit:AV
EIRP:AV
Port 1

F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	Ref(dB)	Psum(dBm)	P1(dBm)
3G	25G	1M	AV	3.3355G	-69.86	-41.20	-28.66	6.10	0.00	-75.96	-75.96
3G	25G	1M	AV	4.958G	-77.62	-41.20	-36.42	6.10	0.00	-83.72	-83.72



Summary

Mode	Result	F-Start	F-Stop	Type	Freq	DG	P1	Psum	EIRP	Limit	Margin
		(Hz)	(Hz)		(Hz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	2.394G	2.4895G	AV	2.48358G	6.10	-48.14	-48.14	-42.04	-41.20	-0.84

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX



Result

Mode	Result	F-Start	F-Stop	Type	Freq	DG	P1	Psum	EIRP	Limit	Margin
		(Hz)	(Hz)		(Hz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	2.394G	2.4895G	AV	2.48874G	6.10	-54.12	-54.12	-48.02	-41.20	-6.82
2405MHz	Pass	2.394G	2.4895G	PK	2.48511G	6.10	-41.43	-41.43	-35.33	-21.20	-14.13
2440MHz	Pass	2.394G	2.4895G	AV	2.48434G	6.10	-53.79	-53.79	-47.69	-41.20	-6.49
2440MHz	Pass	2.394G	2.4895G	PK	2.48444G	6.10	-40.21	-40.21	-34.11	-21.20	-12.91
2475MHz	Pass	2.394G	2.4895G	AV	2.48358G	6.10	-49.03	-49.03	-42.93	-41.20	-1.73
2475MHz	Pass	2.394G	2.4895G	PK	2.48406G	6.10	-36.54	-36.54	-30.44	-21.20	-9.24
2480MHz	Pass	2.394G	2.4895G	AV	2.48358G	6.10	-48.14	-48.14	-42.04	-41.20	-0.84
2480MHz	Pass	2.394G	2.4895G	PK	2.48377G	6.10	-36.58	-36.58	-30.48	-21.20	-9.28

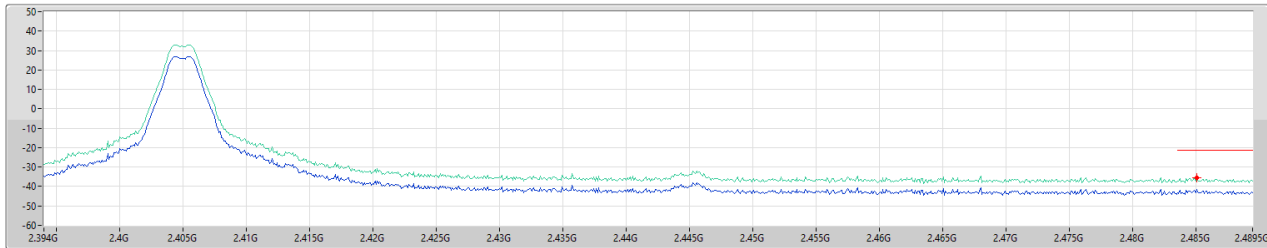
DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX

2.4-2.4835GHz_Zigbee

CSE Bandedge [PK]

2405MHz

17/01/2025



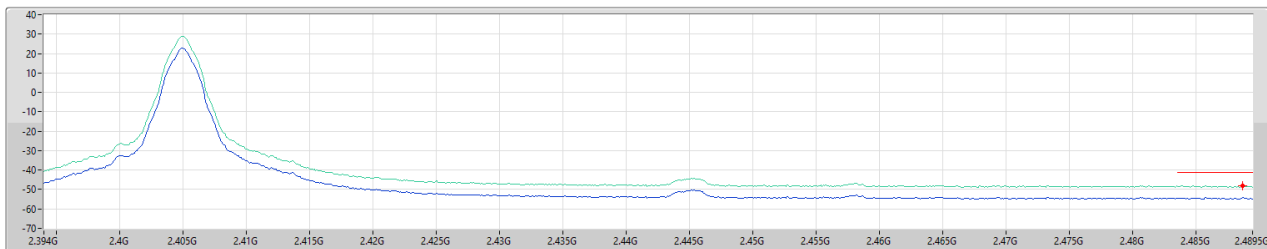
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
2.394G	2.4895G	1M	PK	2.48511G	-35.33	-21.20	-14.13	6.10	0.00	-41.43	-41.43

2.4-2.4835GHz_Zigbee

CSE Bandedge [AV]

2405MHz

17/01/2025



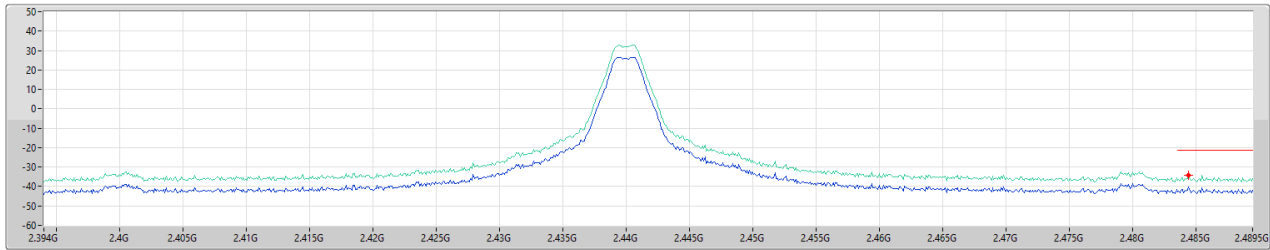
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
2.394G	2.4895G	1M	AV	2.48874G	-48.02	-41.20	-6.82	6.10	0.00	-54.12	-54.12

2.4-2.4835GHz Zigbee

CSE Bandedge [PK]

2440MHz

17/01/2025



Limit.PK
EIRP.PK
Port 1

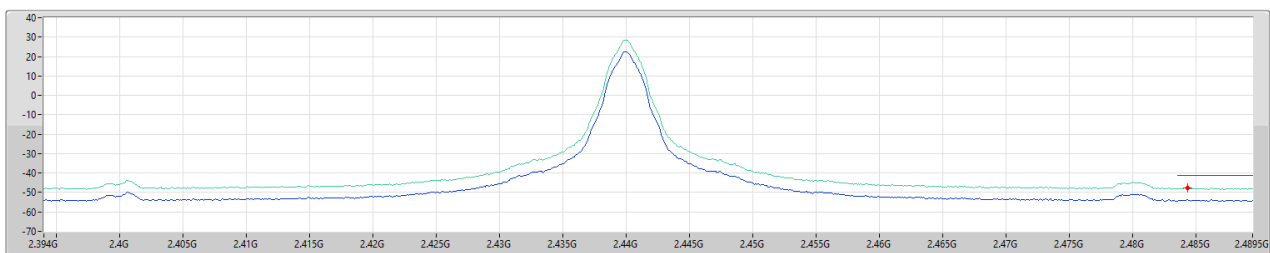
F.Start(Hz)	F.Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psun(dBm)	P1(dBm)
2.394G	2.4895G	1M	PK	2.48444G	-34.11	-21.20	-12.91	6.10	0.00	-40.21	-40.21

2.4-2.4835GHz Zigbee

CSE Bandedge [AV]

2440MHz

17/01/2025



Limit.AV
EIRP.AV
Port 1

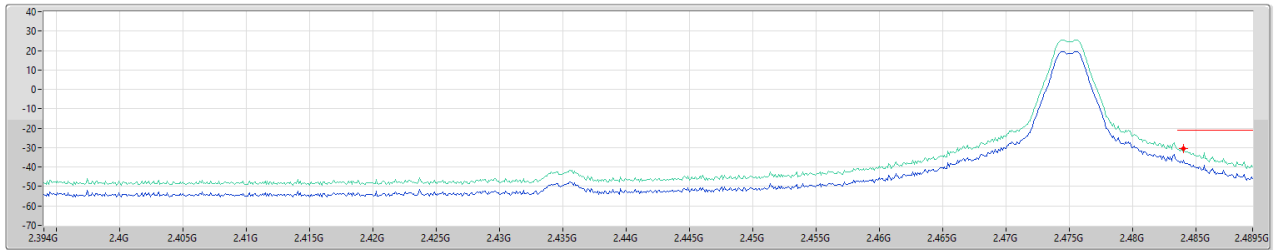
F.Start(Hz)	F.Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psun(dBm)	P1(dBm)
2.394G	2.4895G	1M	AV	2.48434G	-47.69	-41.20	-6.49	6.10	0.00	-53.79	-53.79

2.4-2.4835GHz Zigbee

CSE Bandedge [PK]

2475MHz

17/01/2025



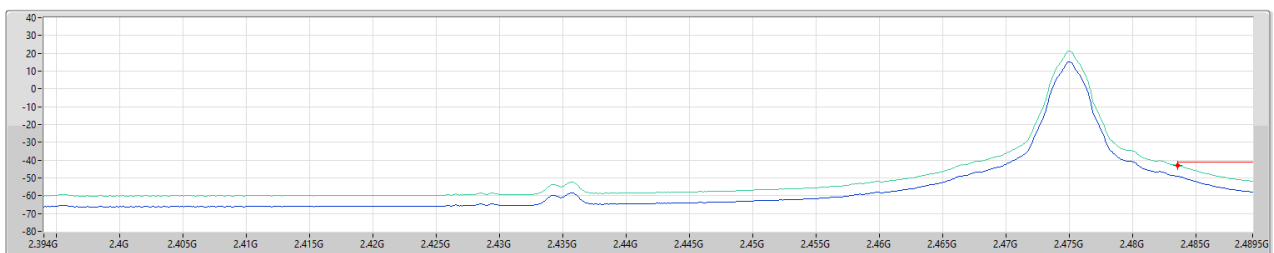
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psun(dBm)	P1(dBm)
2.394G	2.4895G	1M	PK	2.48406G	-30.44	-21.20	-9.24	6.10	0.00	-36.54	-36.54

2.4-2.4835GHz Zigbee

CSE Bandedge [AV]

2475MHz

17/01/2025

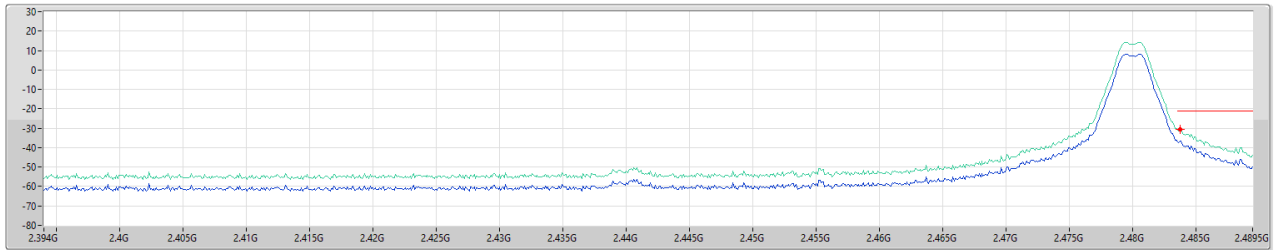


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psun(dBm)	P1(dBm)
2.394G	2.4895G	1M	AV	2.48358G	-42.93	-41.20	-1.73	6.10	0.00	-49.03	-49.03

2.4-2.4835GHz Zigbee

CSE Bandedge [PK]

2480MHz

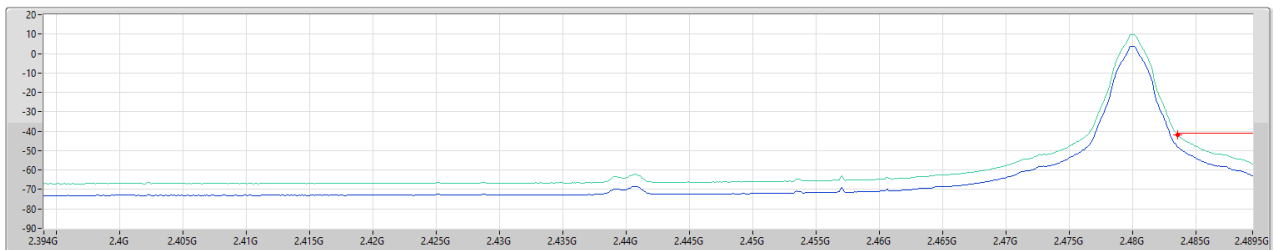


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
2.394G	2.4895G	1M	PK	2.48377G	-30.48	-21.20	-9.28	6.10	0.00	-36.58	-36.58

2.4-2.4835GHz Zigbee

CSE Bandedge [AV]

2480MHz



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
2.394G	2.4895G	1M	AV	2.48358G	-42.04	-41.20	-0.84	6.10	0.00	-48.14	-48.14



RSE TX above 1GHz (Cabinet)
(Parent Device / FCC ID: UDX-600216010)

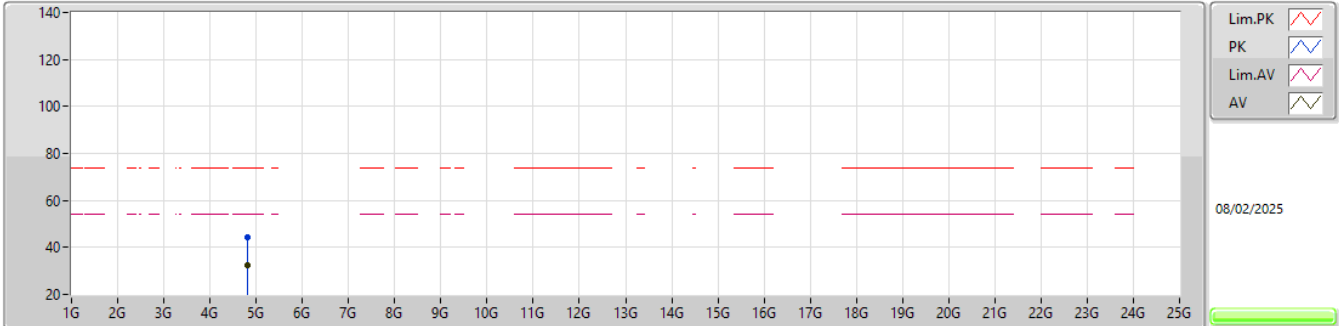
Appendix F.5

Summary

Mode	Result	Type	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	AV	4.80736G	32.36	54.00	-21.64	3	Horizontal	110	2.88	-

2.4-2.4835GHz_Zigbee

2405MHz_TX

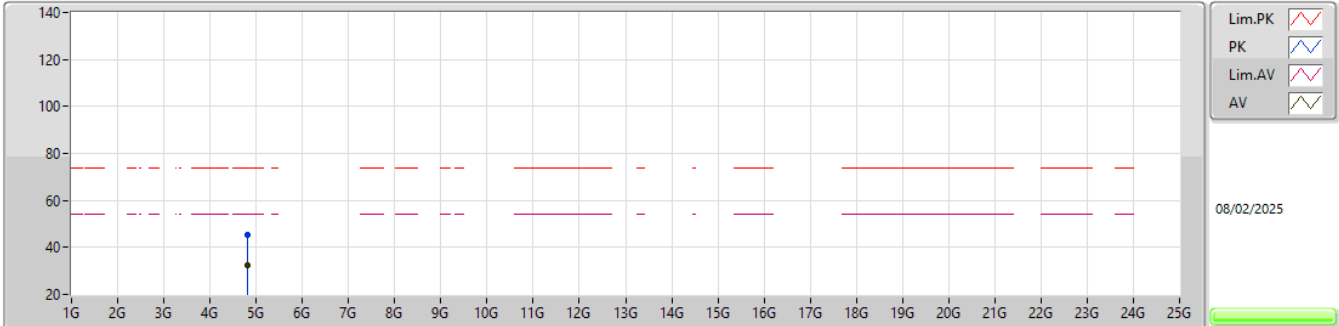


EUT_Y_1TX
 Setting 20
 06-I-G-5

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	4.80592G	44.55	74.00	-29.45	40.57	3	Vertical	20	2.74	-	31.39	6.55	33.96			
AV	4.80784G	32.35	54.00	-21.65	28.38	3	Vertical	20	2.74	-	31.38	6.55	33.96			

2.4-2.4835GHz_Zigbee

2405MHz_TX



EUT_Y_1TX
 Setting 20
 06-I-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	4.80902G	45.41	74.00	-28.59	41.44	3	Horizontal	110	2.88	-	31.38	6.55	33.96			
AV	4.80736G	32.36	54.00	-21.64	28.38	3	Horizontal	110	2.88	-	31.39	6.55	33.96			

For 47 CFR FCC Part 15, Subpart C (Section 15.247) – DTS

Test Items	Mode (MHz)	Reference Worst-Case (R_{dB})	Variant Test (V_{dB})	dB Difference (d_{dB})	Spot-Check Parameters	Pass Criterion ($d_{dB} < d_{dBmax}(M_{dB})$)
CSE Bandedge	Radio 6 Zigbee 2480MHz	-42.04	-42.17	-0.13	CdB=-41.20 dBm MdB= CdB-RdB =0.84 ddBmax(MdB)=3.04	Pass
CSE Harmonic	Radio 6 Zigbee 2480MHz	-60.54	-66.57	-6.03	CdB=-41.20 dBm MdB= CdB-RdB =19.34 ddBmax(MdB)=3.97	Pass
Conducted Power	Radio 6 Zigbee 2480MHz	7.71	7.68	-0.03	CdB=29.90 dBm MdB= CdB-RdB =22.19 ddBmax(MdB)=4.11	Pass
PSD	Radio 6 Zigbee 2480MHz	-9.00	-9.26	-0.26	CdB=7.90 dBm/3kHz MdB= CdB-RdB =16.9 ddBmax(MdB)=3.85	Pass
CSE out of band emission	Radio 6 Zigbee 2480MHz	-50.70	-54.01	-3.31	CdB=-14.19 dBm MdB= CdB-RdB =36.51 ddBmax(MdB)=4.83	Pass

Compared Test Result
Maximum Conducted Output Power / Power Spectral Density

Parent Device											
Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	DG (dBi)	PSD (dBm)	PSD Limit (dBm)
Radio 6	-	-	-	-	-	-	-	-	-	-	-
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	6.10	7.71	-	-	-	7.71	29.90	6.10	-9.00	7.90

Variant Device											
Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	DG (dBi)	PSD (dBm)	PSD Limit (dBm)
Radio 6	-	-	-	-	-	-	-	-	-	-	-
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	6.10	7.68	-	-	-	7.68	29.90	6.10	-9.26	7.90

Power Spectral Density

Zigbee

Parent Device

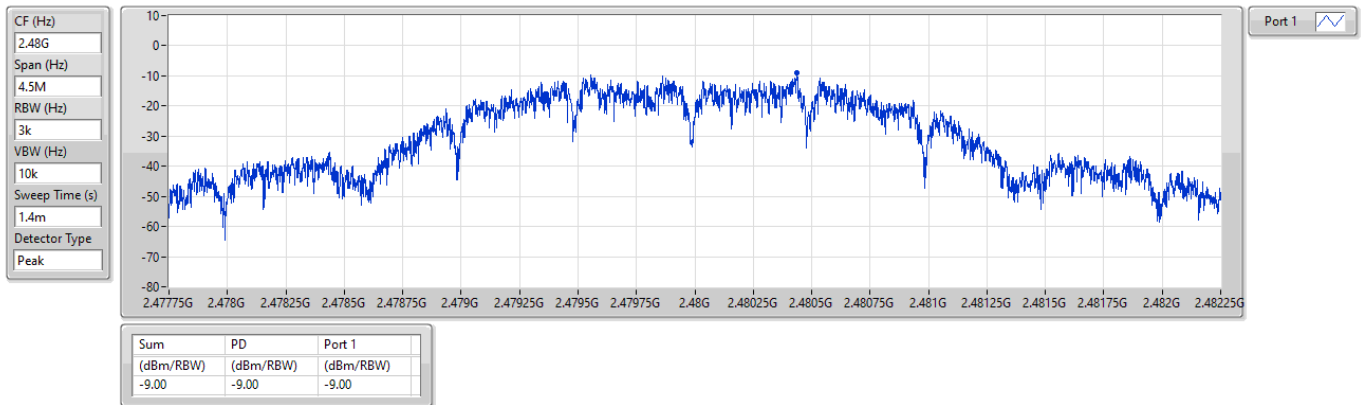
Mode	Result	DG	Port 1	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
Zigbee	-	-	-	-	-
2480MHz	Pass	6.10	-9.00	-9.00	7.90

2.4-2.4835GHz Zigbee

PSD

2480MHz

17/01/2025



Variant Device

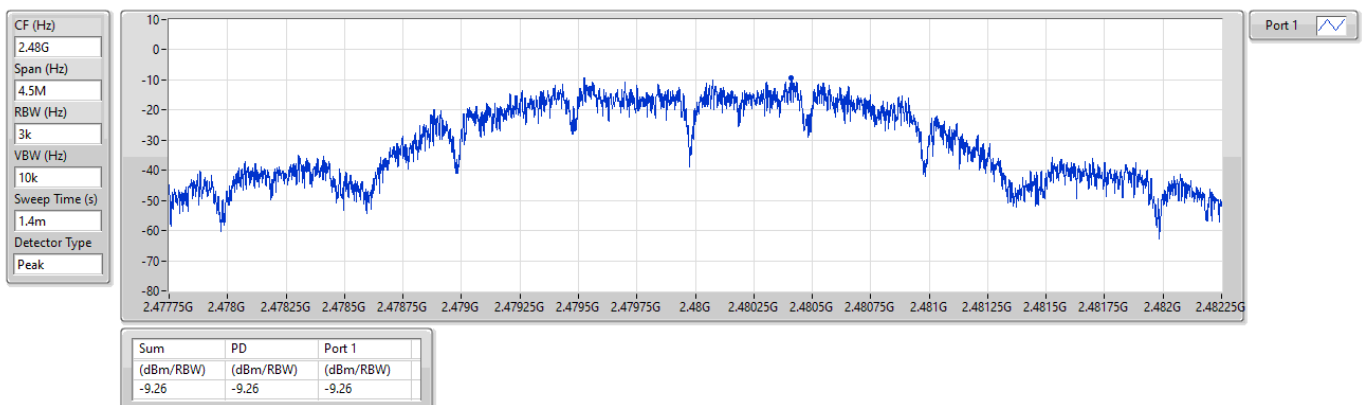
Mode	Result	DG	Port 1	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
Zigbee	-	-	-	-	-
2480MHz	Pass	6.10	-9.26	-9.26	7.90

2.4-2.4835GHz Zigbee

PSD

2480MHz

26/04/2025



Emissions in Restricted Bands

Zigbee

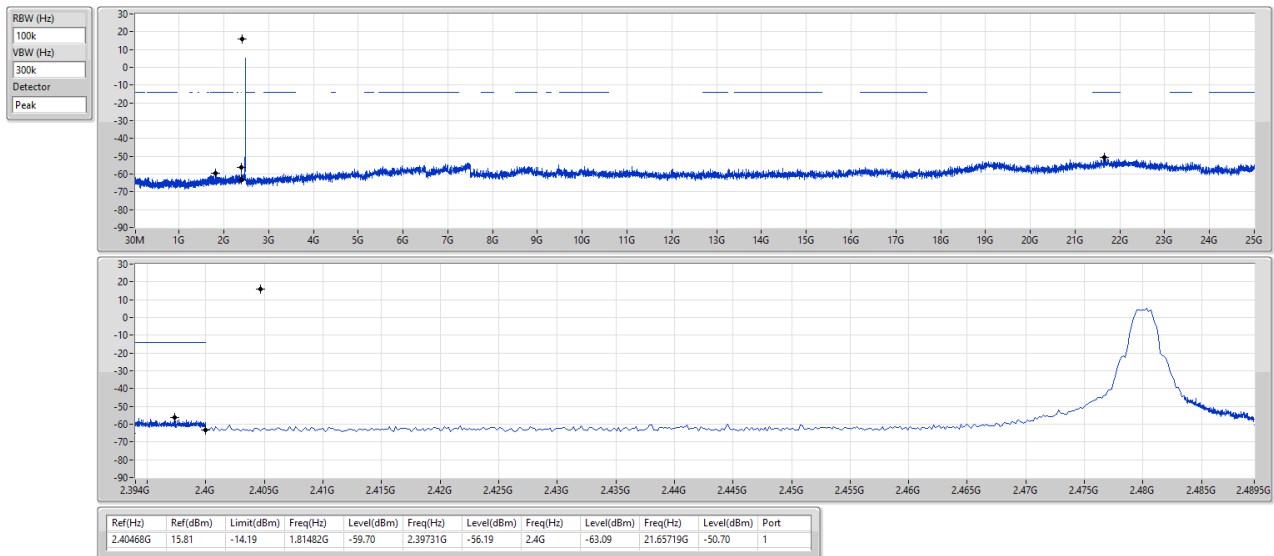
Parent Device

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
Zigbee	-	-	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	2.40468G	15.81	-14.19	1.81482G	-59.70	2.39731G	-56.19	2.4G	-63.09	21.65719G	-50.70	1

2.4-2.4835GHz_Zigbee

CSEndB

2480MHz



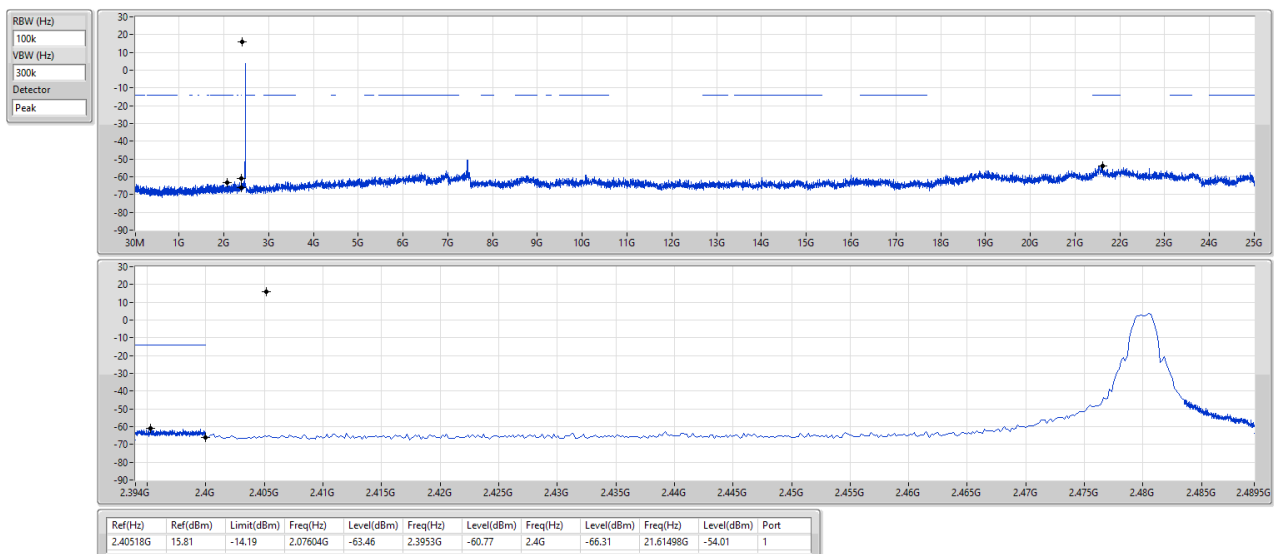
Variant Device

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
Zigbee	-	-	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	2.40518G	15.81	-14.19	2.07604G	-63.46	2.3953G	-60.77	2.4G	-66.31	21.61498G	-54.01	1

2.4-2.4835GHz_Zigbee

CSEndB

2480MHz



Emissions in Non-Restricted Bands

Harmonic (1~3GHz): Zigbee

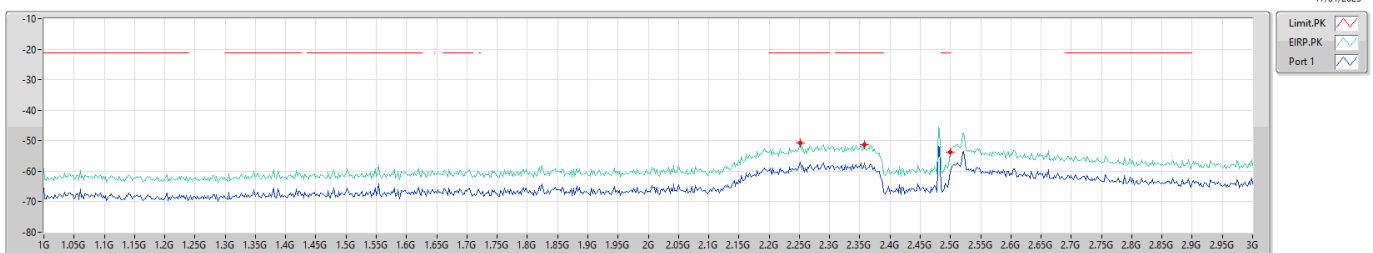
Parent Device

Mode	Result	F-Start	F-Stop	Type	Freq	DG	P1	Psum	EIRP	Limit	Margin
		(Hz)	(Hz)		(Hz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	1G	3G	AV	2.354G	6.10	-66.64	-66.64	-60.54	-41.20	-19.34
2480MHz	Pass	1G	3G	AV	2.5G	6.10	-68.84	-68.84	-62.74	-41.20	-21.54
2480MHz	Pass	1G	3G	PK	2.252G	6.10	-56.91	-56.91	-50.81	-21.20	-29.61
2480MHz	Pass	1G	3G	PK	2.358G	6.10	-57.35	-57.35	-51.25	-21.20	-30.05
2480MHz	Pass	1G	3G	PK	2.5G	6.10	-59.96	-59.96	-53.86	-21.20	-32.66

2.4-2.4835GHz_Zigbee

CSE Other [PK]

2480MHz

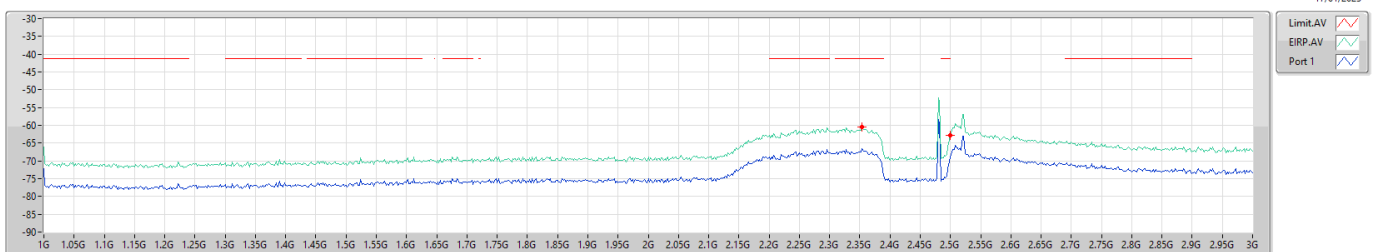


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dBi)	Ref(dB)	Psum(dBm)	P1(dBm)
1G	3G	1M	PK	2.252G	-50.81	-21.20	-29.61	6.10	0.00	-56.91	-56.91
1G	3G	1M	PK	2.358G	-51.25	-21.20	-30.05	6.10	0.00	-57.35	-57.35
1G	3G	1M	PK	2.5G	-53.86	-21.20	-32.66	6.10	0.00	-59.96	-59.96

2.4-2.4835GHz_Zigbee

CSE Other [AV]

2480MHz



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dBi)	Ref(dB)	Psum(dBm)	P1(dBm)
1G	3G	1M	AV	2.354G	-60.54	-41.20	-19.34	6.10	0.00	-66.64	-66.64
1G	3G	1M	AV	2.5G	-62.74	-41.20	-21.54	6.10	0.00	-68.84	-68.84

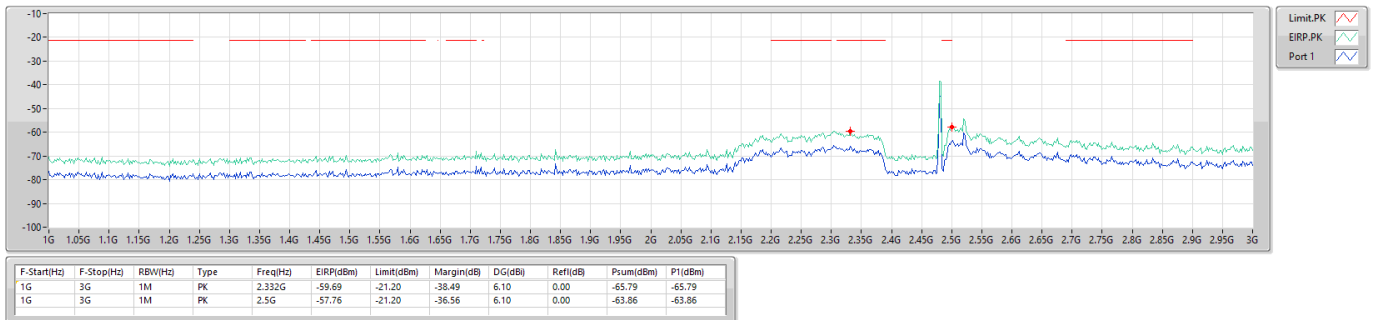
Variant Device

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	P1 (dBm)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	1G	3G	AV	2.3G	6.10	-75.64	-75.64	-69.54	-41.20	-28.34
2480MHz	Pass	1G	3G	AV	2.496G	6.10	-72.67	-72.67	-66.57	-41.20	-25.37
2480MHz	Pass	1G	3G	PK	2.332G	6.10	-65.79	-65.79	-59.69	-21.20	-38.49
2480MHz	Pass	1G	3G	PK	2.5G	6.10	-63.86	-63.86	-57.76	-21.20	-36.56

2.4-2.4835GHz Zigbee

CSE Other [PK]

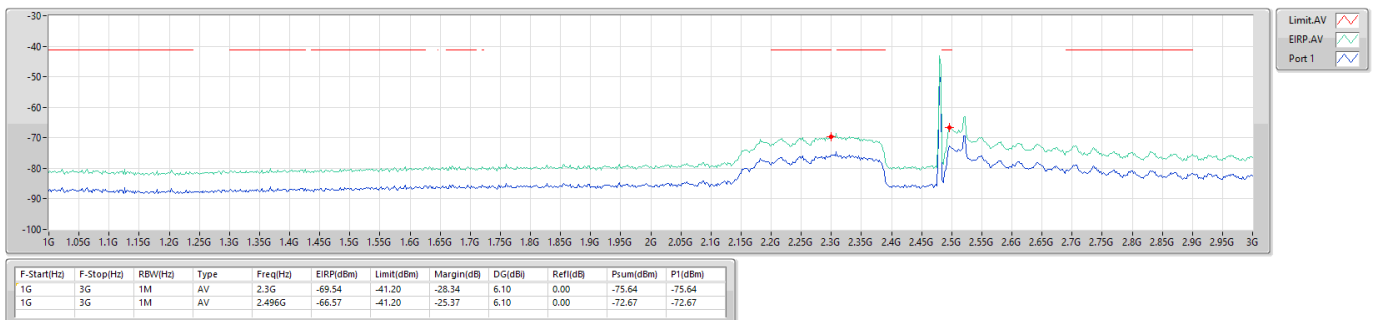
2480MHz



2.4-2.4835GHz Zigbee

CSE Other [AV]

2480MHz



Harmonic (3~25GHz): Zigbee

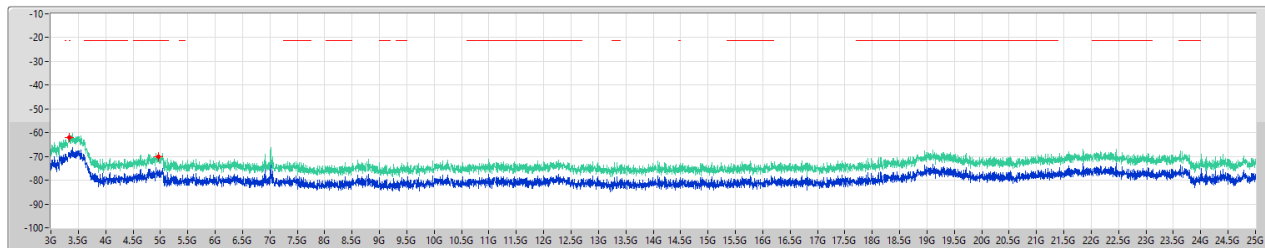
Parent Device

Mode	Result	F-Start	F-Stop	Type	Freq	DG	P1	Psum	EIRP	Limit	Margin
		(Hz)	(Hz)		(Hz)	(dB)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	3G	25G	AV	3.3355G	6.10	-75.96	-75.96	-69.86	-41.20	-28.66
2480MHz	Pass	3G	25G	AV	4.958G	6.10	-83.72	-83.72	-77.62	-41.20	-36.42
2480MHz	Pass	3G	25G	PK	3.3355G	6.10	-68.25	-68.25	-62.15	-21.20	-40.95
2480MHz	Pass	3G	25G	PK	4.9635G	6.10	-76.39	-76.39	-70.29	-21.20	-49.09

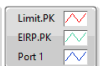
2.4-2.4835GHz_Zigbee

CSE [PK]

2480MHz



17/01/2025

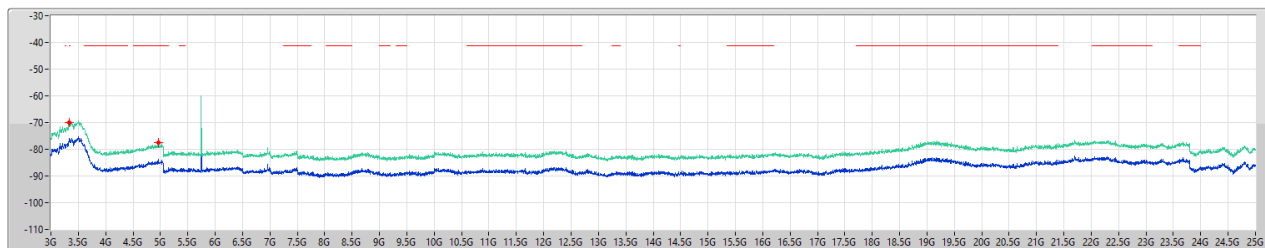


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
3G	25G	1M	PK	3.3355G	-62.15	-21.20	-40.95	6.10	0.00	-68.25	-68.25
3G	25G	1M	PK	4.9635G	-70.29	-21.20	-49.09	6.10	0.00	-76.39	-76.39

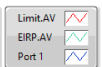
2.4-2.4835GHz_Zigbee

CSE [AV]

2480MHz



17/01/2025



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	RefI(dB)	Psum(dBm)	P1(dBm)
3G	25G	1M	AV	3.3355G	-69.86	-41.20	-28.66	6.10	0.00	-75.96	-75.96
3G	25G	1M	AV	4.958G	-77.62	-41.20	-36.42	6.10	0.00	-83.72	-83.72

Variant Device

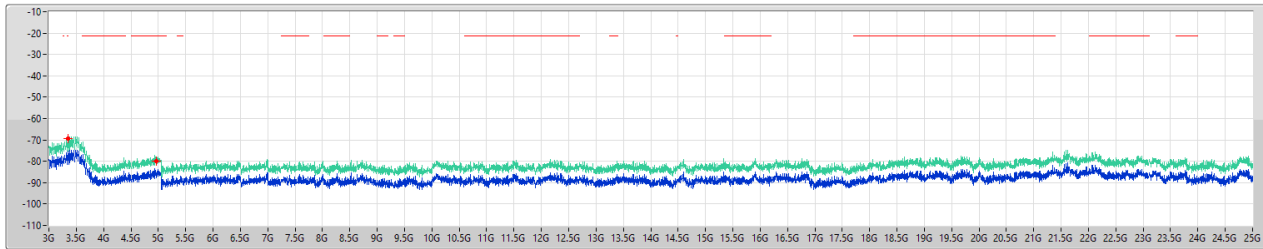
Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dB)	P1 (dBm)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	3G	25G	AV	3.35475G	6.10	-83.57	-83.57	-77.47	-41.20	-36.27
2480MHz	Pass	3G	25G	AV	4.958G	6.10	-92.48	-92.48	-86.38	-41.20	-45.18
2480MHz	Pass	3G	25G	PK	3.35475G	6.10	-75.35	-75.35	-69.25	-21.20	-48.05
2480MHz	Pass	3G	25G	PK	4.96075G	6.10	-85.93	-85.93	-79.83	-21.20	-58.63

2.4-2.4835GHz Zigbee

CSE [PK]

2480MHz

26/04/2025



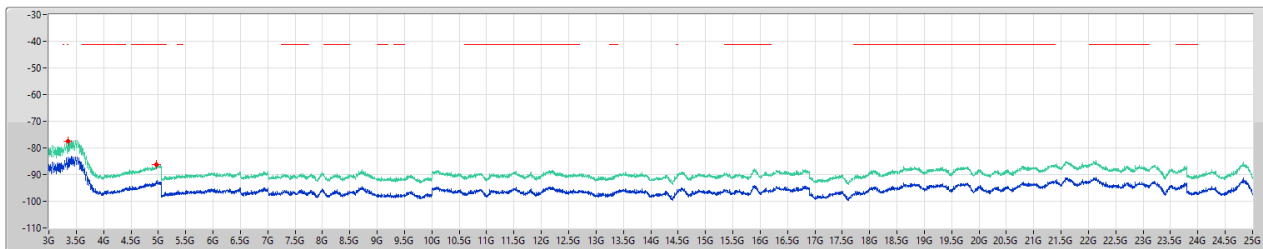
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	Ref(dB)	Psum(dBm)	P1(dBm)
3G	25G	1M	PK	3.35475G	-69.25	-21.20	-48.05	6.10	0.00	-75.35	-75.35
3G	25G	1M	PK	4.96075G	-79.83	-21.20	-58.63	6.10	0.00	-85.93	-85.93

2.4-2.4835GHz Zigbee

CSE [AV]

2480MHz

26/04/2025



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	EIRP(dBm)	Limit(dBm)	Margin(dB)	DG(dB)	Ref(dB)	Psum(dBm)	P1(dBm)
3G	25G	1M	AV	3.35475G	-77.47	-41.20	-36.27	6.10	0.00	-83.57	-83.57
3G	25G	1M	AV	4.958G	-86.38	-41.20	-45.18	6.10	0.00	-92.48	-92.48

Bandedge: Zigbee

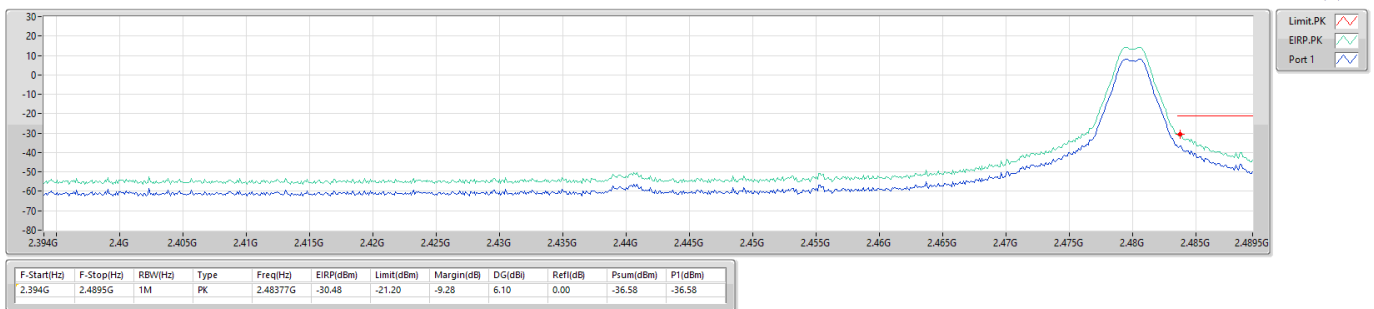
Parent Device

Mode	Result	F-Start	F-Stop	Type	Freq	DG	P1	Psum	EIRP	Limit	Margin
		(Hz)	(Hz)		(Hz)	(dB)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	2.394G	2.4895G	AV	2.48358G	6.10	-48.14	-48.14	-42.04	-41.20	-0.84
2480MHz	Pass	2.394G	2.4895G	PK	2.48377G	6.10	-36.58	-36.58	-30.48	-21.20	-9.28

2.4-2.4835GHz_Zigbee

CSE Bandedge [PK]

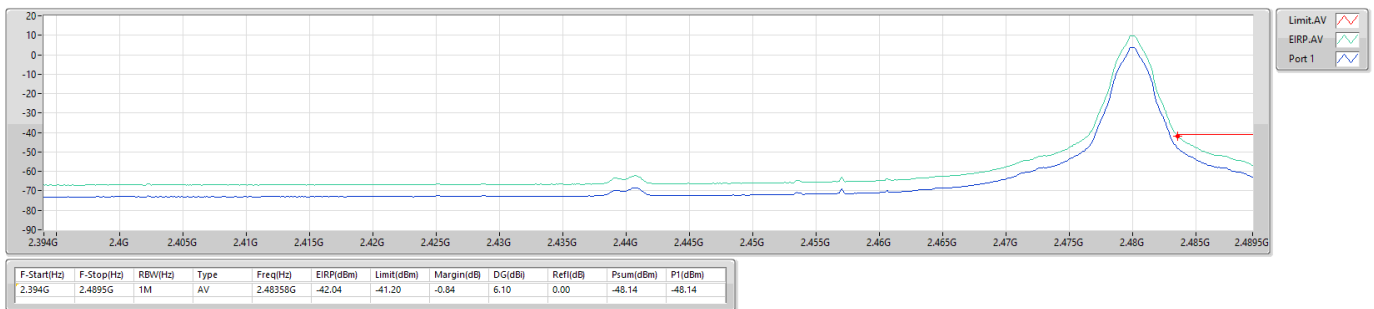
2480MHz



2.4-2.4835GHz_Zigbee

CSE Bandedge [AV]

2480MHz



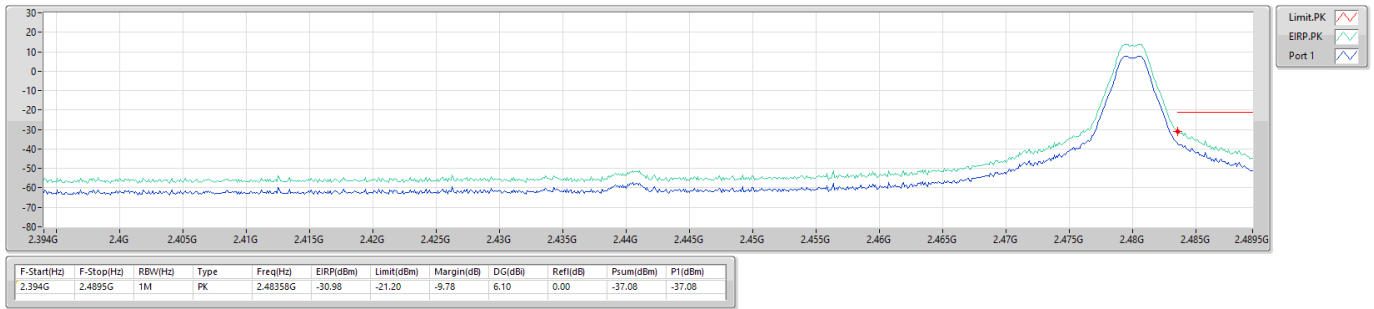
Variant Device

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	P1 (dBm)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	2.394G	2.4895G	AV	2.48358G	6.10	-48.27	-48.27	-42.17	-41.20	-0.97
2480MHz	Pass	2.394G	2.4895G	PK	2.48358G	6.10	-37.08	-37.08	-30.98	-21.20	-9.78

2.4-2.4835GHz Zigbee

CSE Bandedge [PK]

2480MHz



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