



RADIO TEST REPORT

FCC ID : TLZ-XM646

Equipment : IEEE 802.11 a/b/g/n/ac/ax Wireless LAN 1T1R and BLE/802.15.4 Solution Family 12 x 12 LGA Module

Brand Name : AzureWave

Model Name : AW-XM646G-SUR,AW-XM646G-USB,AW-XM646F-SUR,AW-XM646F-USB,AW-XM646C-SUR,AW-XM646C-USB,AW-XM646B-SUR,AW-XM646B-USB

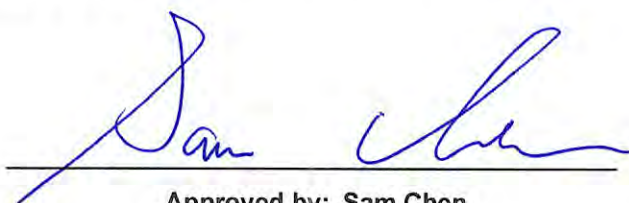
Applicant : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231

Manufacturer : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231

Standard : 47 CFR FCC Part 15.247

The product was received on Feb. 21, 2025, and testing was started from Mar. 21, 2025 and completed on Apr. 07, 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

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: Wendy Pan



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	Thread	3	1

Note:

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

**1.1.2 Antenna Information**

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
						WLAN 2.4GHz, Bluetooth and Thread	WLAN 5GHz
1	1	ARISTOTLE	RFA-27-JP326MHF4C198	PIFA Antenna	I-PEX	3.5	5

Note 2: The above information was declared by manufacturer.

Note 3: **For 2.4GHz function:**

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

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

For 5GHz function:

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

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

For Bluetooth/Thread function (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
Thread_Nss 1	1	0	100.003m	10Hz (DC>=0.98)

Note:

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

**1.1.4 EUT Operational Condition**

EUT Power Type	From host system		
Function	<input checked="" type="checkbox"/> Point-to-multipoint	<input type="checkbox"/> Point-to-point	
Test Software Version	labtool 2.0.0.22		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

The difference for each model is shown as below:

EUT	Model Name	WLAN 2.4G	WLAN 5G	Bluetooth	802.15.4	Interface
1	AW-XM646G-SUR	V	V	V	V	SUR
2	AW-XM646G-USB	V	V	V	V	USB
-	AW-XM646F-SUR	V	V	V	X	SUR
-	AW-XM646F-USB	V	V	V	X	USB
-	AW-XM646C-SUR	V	X	V	V	SUR
-	AW-XM646C-USB	V	X	V	V	USB
-	AW-XM646B-SUR	V	X	V	X	SUR
-	AW-XM646B-USB	V	X	V	X	USB
Description						
In addition to the differences mentioned above, there are differences in marketing strategy.						

Note 1: From the above EUT, EUT 1 and 2 were selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.



1.2 Applicable Standards

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

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

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	TH01-CB	Mason Chen	21.2~22.6 / 58~61	Mar. 24, 2025~ Mar. 29, 2025
Radiated below 1GHz	03CH06-CB	Eason Chen	21.9~23.1 / 60~62	Mar. 21, 2025~ Mar. 29, 2025
Radiated above 1GHz	03CH03-CB	Eason Chen	21.6~23.1 / 58~62	Mar. 21, 2025~ Mar. 29, 2025
	03CH01-CB	Eason Chen	21.3~22.3 / 58~61	Mar. 21, 2025~ Mar. 29, 2025
AC Conduction	CO02-CB	Joe Chu	23~24 / 50~51	Apr. 07, 2025



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 ($k=2$))

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	Power Setting
Thread_3MHz_Nss1_1TX	-
2405MHz	6
2440MHz	6
2475MHz	6
2480MHz	0

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	CTX
1	EUT 1 + Bluetooth
2	EUT 2 + Bluetooth
Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 ~ 5 will follow this same test mode.	
3	EUT 1 + WLAN 2.4GHz
4	EUT 1 + Thread
5	EUT 1 + WLAN 5GHz
For operating mode 4 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains
The EUT was performed at EUT 1 and EUT 2 for Radiated emission above 1GHz test, and the worst case was found as EUT 1. Thus, the measurement will follow this same test configuration.	
1	EUT 1

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
	The EUT was performed at X axis, Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found as below. Thus, the measurement will follow this same test configuration.
1	EUT 1 in X axis + WLAN 2.4GHz
2	EUT 2 in X axis + WLAN 2.4GHz
Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 ~ 5 will follow this same test mode.	
3	EUT 1 in X axis + Bluetooth
4	EUT 1 in Z axis + WLAN 5GHz
5	EUT 1 in Z axis + Thread
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
	<ol style="list-style-type: none"> The EUT was performed at X axis, Y axis and Z axis position the worst case was found as below. Thus, the measurement will follow this same test configuration. The EUT 1 and EUT 2 performed the testing, and the worst case was found in EUT 1. Thus, the measurement will follow this same test configuration.
1	EUT 1 in Z axis

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	Bluetooth + WLAN 2.4GHz
2	Bluetooth + WLAN 5GHz
Refer to Sporton Test Report No.: FA521124 for Co-location RF Exposure Evaluation.	



2.3 EUT Operation during Test

For Normal Link:

During the test, the EUT operation to normal function.

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

N/A

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	EUT Fixture	Azurewave	2460-i4	N/A
B	Thread Fixture	Azurewave	3510	N/A
C	NB	DELL	E6430	N/A
D	Earphone	e-Power	GT02	N/A
E	Mouse	acer	MOBVUO	N/A
F	NB	DELL	E6430	N/A
G	USB HUB	INTOPIC	HB-16	N/A

For RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Thread Fixture	AzureWave	3510	N/A
C	EUT Fixture	Azurewave	2460-i4	N/A

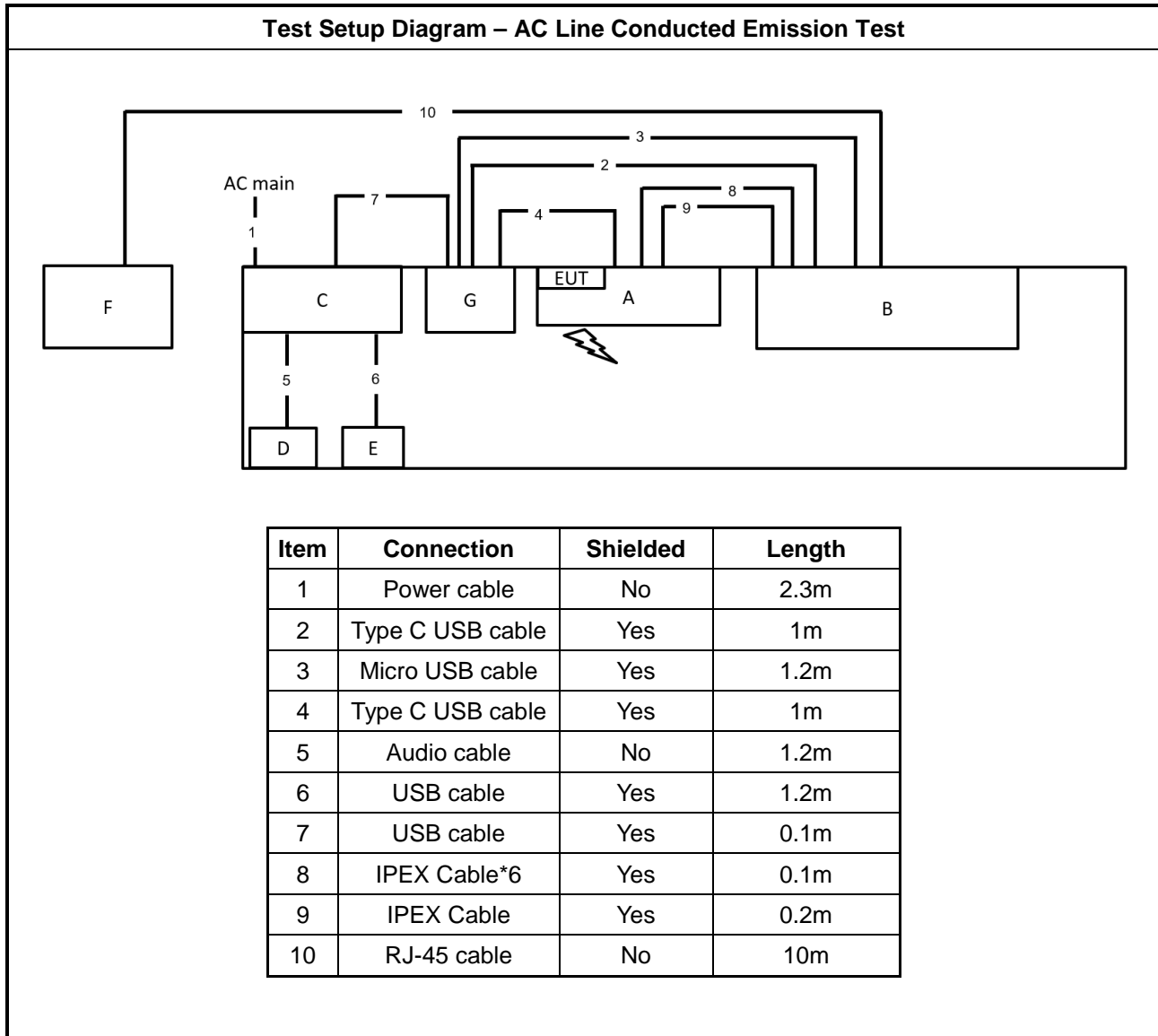
**For Radiated below 1GHz:**

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	WLAN/Bluetooth Fixture	AzureWave	2460-i6	N/A
C	EUT Fixture	Azurewave	2460-i4	N/A

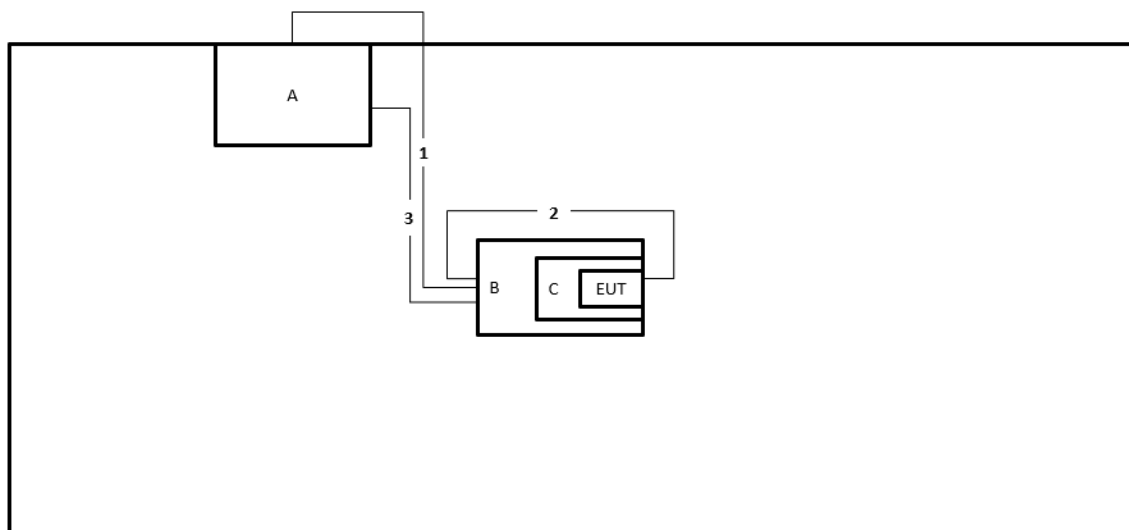
For Radiated above 1GHz:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Thread Fixture	AzureWave	3510	N/A
C	EUT Fixture	AzureWave	2646-i4	N/A
D	Notebook	DELL	E4300	N/A

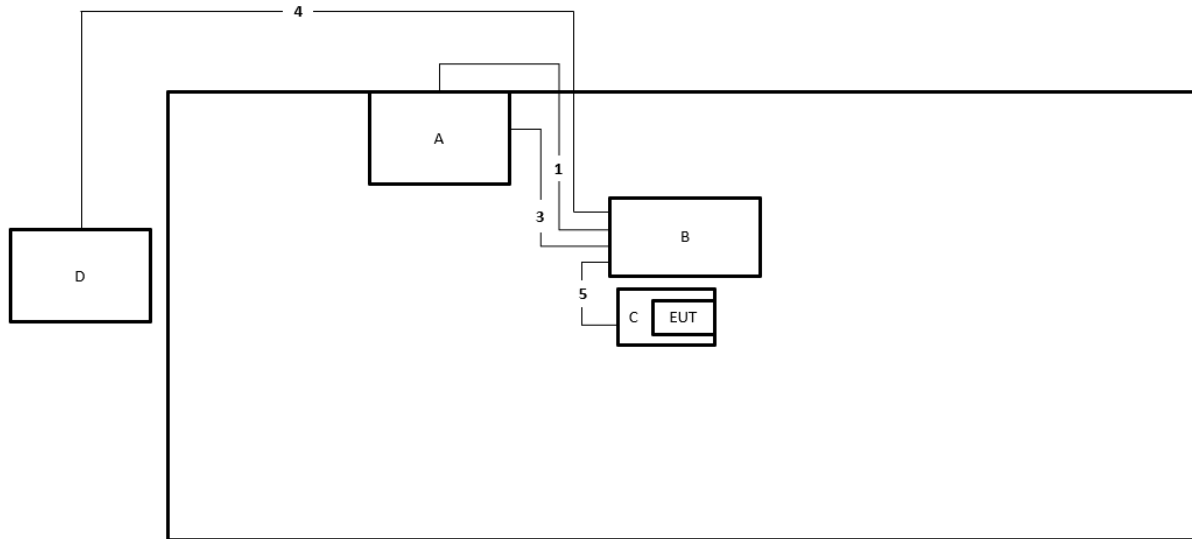
2.6 Test Setup Diagram



Test Setup Diagram - Radiated < 1GHz Test



Item	Connection	Shielded	Length
1	RJ-45 cable	No	1m
2	Type-C USB cable	Yes	1m
3	Type-C USB cable	Yes	1m

Test Setup Diagram - Radiated > 1GHz Test


Item	Connection	Shielded	Length
1	Micro USB cable	Yes	1m
2	Type-C USB cable	Yes	1m
3	Type-C USB cable	Yes	1m
4	RJ-45 cable	No	10m
5	IPEX Cable*6	Yes	0.1m



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.		

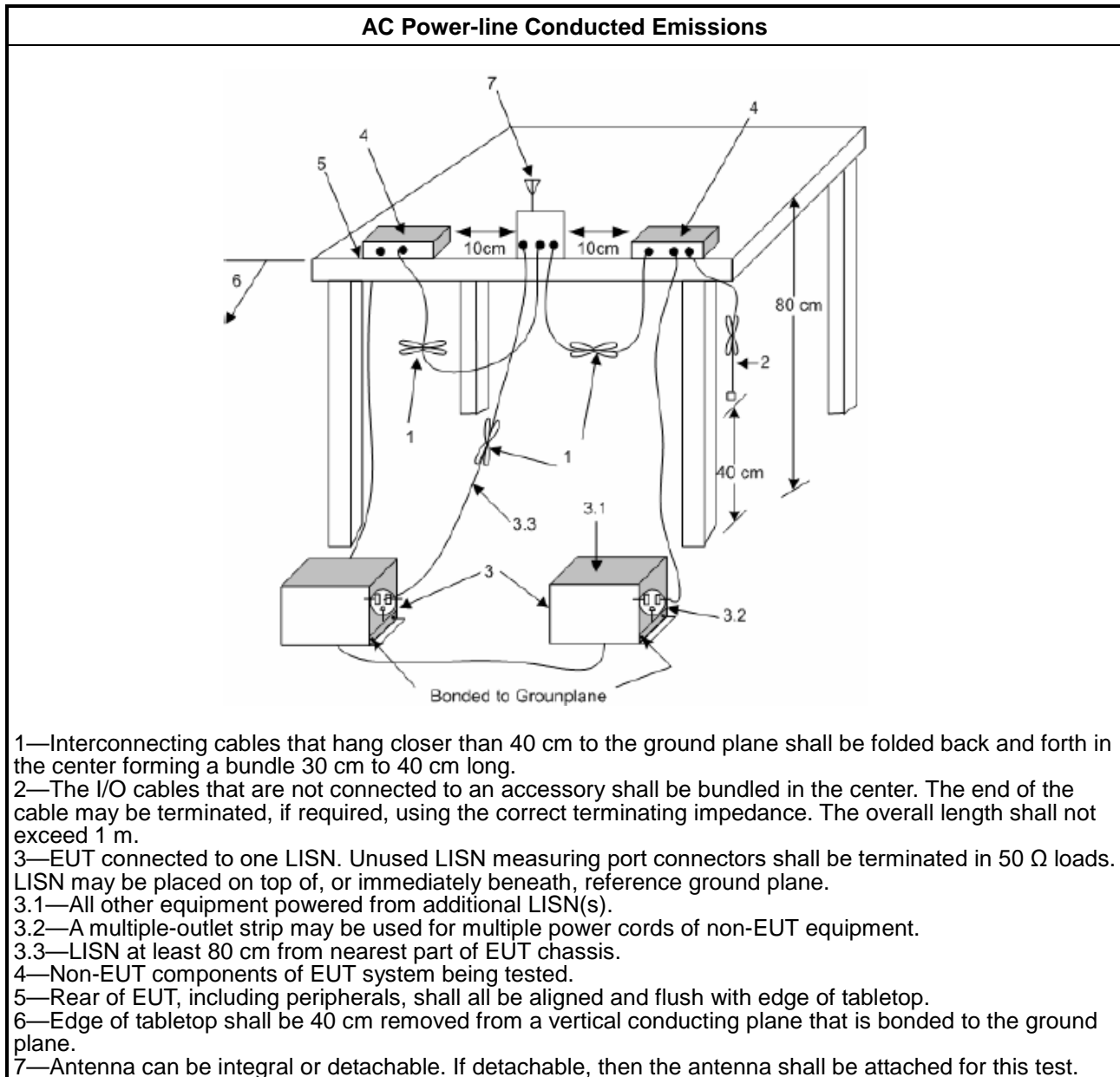
3.1.2 Measuring Instruments

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:

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

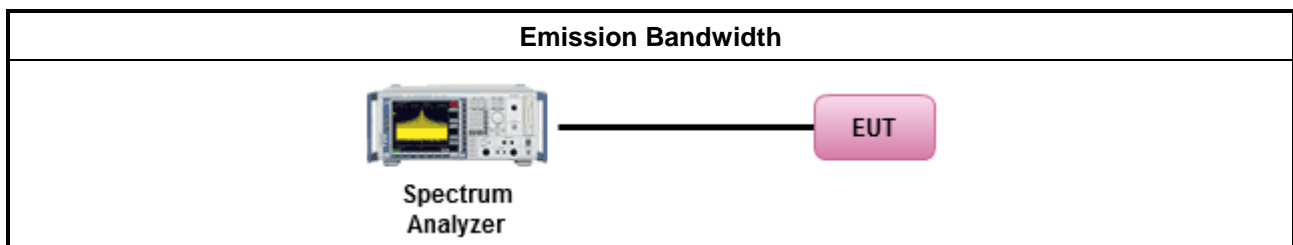
3.2.2 Measuring Instruments

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.	

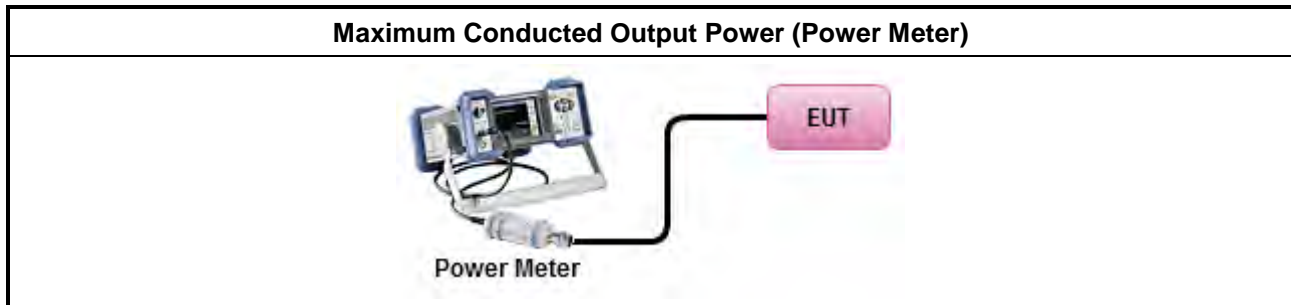
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> 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 ≥ 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).
<ul style="list-style-type: none"> Maximum Conducted Output Power 	
	[duty cycle ≥ 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

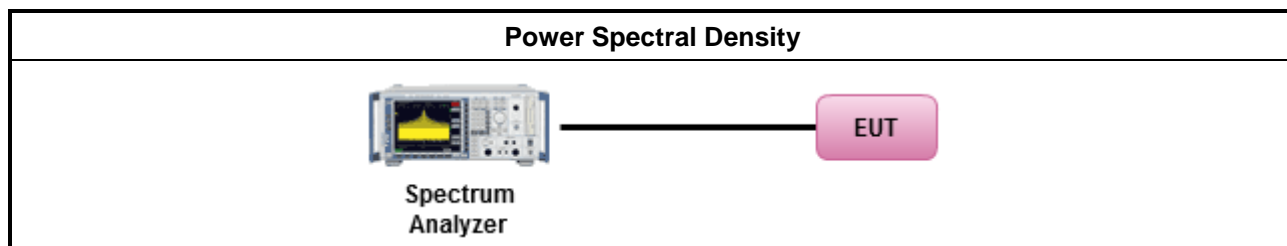
3.4.2 Measuring Instruments

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>	

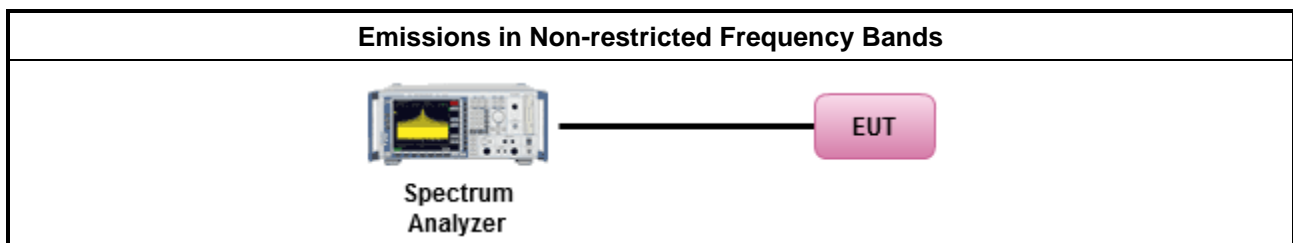
3.5.2 Measuring Instruments

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.

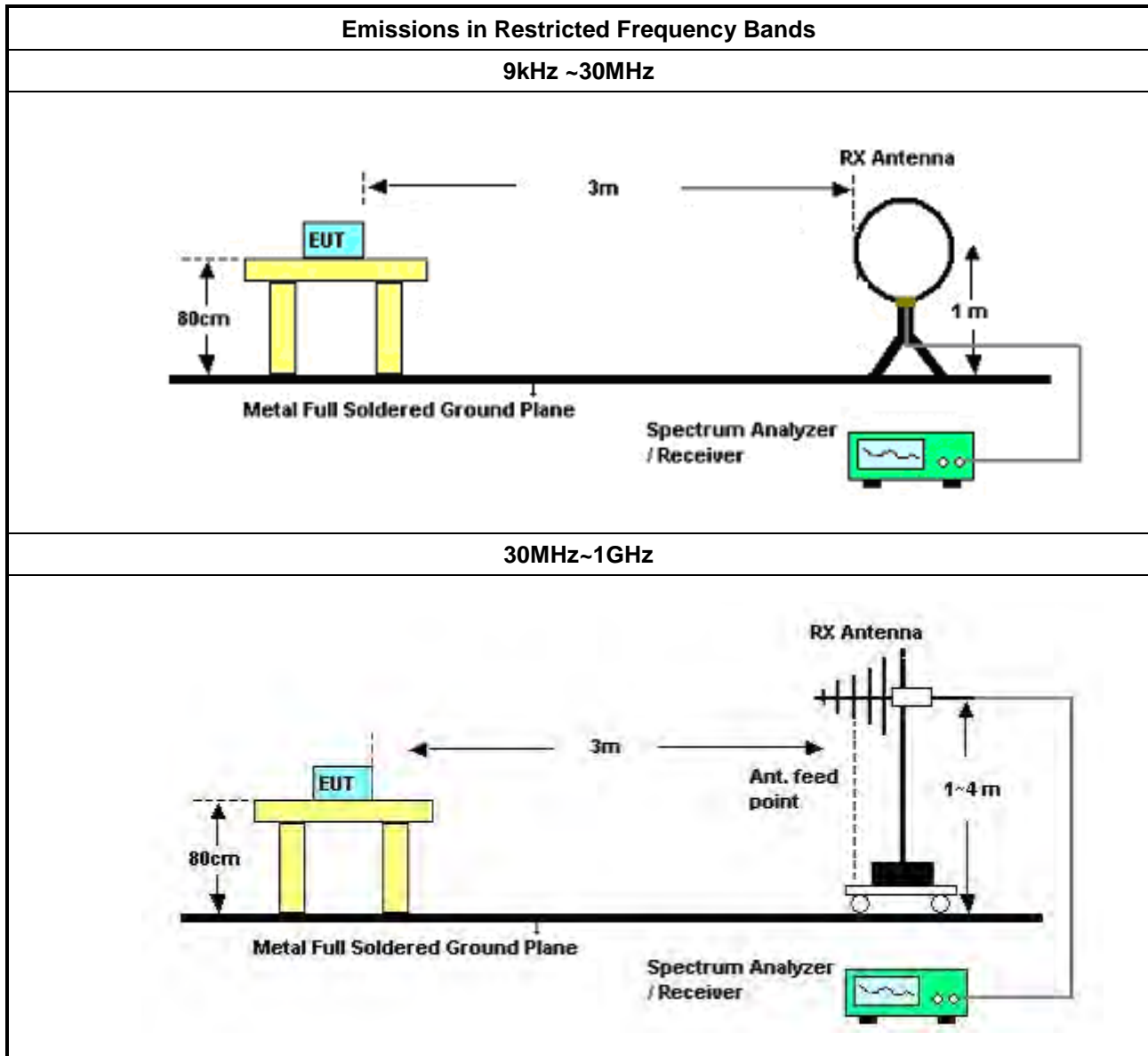
3.6.2 Measuring Instruments

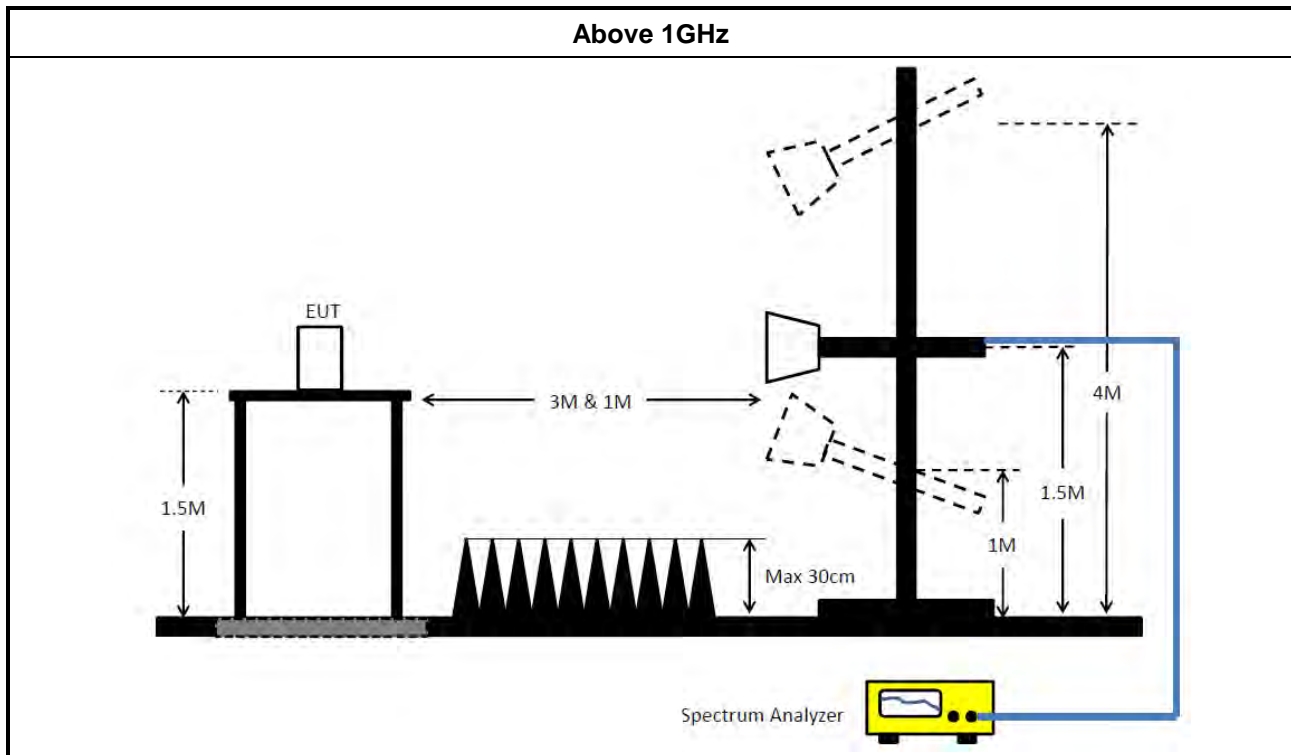
Refer a test equipment and calibration data table in this test report.

**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.

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. 15, 2024	Apr. 14, 2025	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Feb. 06, 2025	Feb. 05, 2026	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 15, 2024	May 14, 2025	Conduction (CO02-CB)
COND Cable	Woken	Cable	02	0.15MHz ~ 30MHz	Oct. 16, 2024	Oct. 15, 2025	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Oct. 16, 2024	Oct. 15, 2025	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. 16, 2024	Oct. 15, 2025	Radiation (03CH06-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH06-CB	30 MHz ~ 1 GHz	Aug. 02, 2024	Aug. 01, 2025	Radiation (03CH06-CB)
Bilog Antenna with 6 dB attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37878 & AT-N0606	20MHz ~ 2GHz	Jul. 29, 2024	Jul. 28, 2025	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Nov. 02, 2024	Nov. 01, 2025	Radiation (03CH06-CB)
Signal analyzer	R&S	FSV3044	101667	9kHz~44GHz	Aug. 20, 2024	Aug. 19, 2025	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESR7	102172	9kHz ~ 7GHz	Oct. 21, 2024	Oct. 20, 2025	Radiation (03CH06-CB)
RF Cable-low	Woken	RG402	Low Cable-05+68	30MHz~1GHz	Oct. 24, 2024	Oct. 23, 2025	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE-EMI	V5.11.8	30MHz-40GHz	N.C.R.	N.C.R.	Radiation (03CH06-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH03-CB	1GHz ~18GHz 3m	May 03, 2024	May 02, 2025	Radiation (03CH03-CB)
Horn Antenna	ETS-Lindgren	3115	6821	750MHz~18GHz	Feb. 20, 2025	Feb. 19, 2026	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 23, 2024	Sep. 22, 2025	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Jun. 29, 2024	Jun. 28, 2025	Radiation (03CH03-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 25, 2024	Nov. 24, 2025	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 11, 2024	Jun. 10, 2025	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+29	1GHz ~ 18GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH03-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-29	1GHz ~ 18GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE-15247_DTS	V5.11.23	2.4GHz-2.4835G Hz	N.C.R.	N.C.R.	Radiation (03CH03-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 04, 2024	May 03, 2025	Radiation (03CH01-CB)
Horn Antenna	ETS-Lindgren	3115	00143147	750MHz~18GHz	Oct. 18, 2024	Oct. 17, 2025	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 23, 2024	Sep. 22, 2025	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 17, 2024	May 16, 2025	Radiation (03CH01-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 25, 2024	Nov. 24, 2025	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV3044	101437	10kHz ~ 44GHz	Dec. 12, 2024	Dec. 11, 2025	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE-15247_DTS	V5.11.23	2.4GHz-2.4835G Hz	N.C.R.	N.C.R.	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 27, 2024	May 26, 2025	Conducted (TH01-CB)
Switch	SPTCB	SP-SWI	SWI-01	1~18 GHz	Oct. 02, 2024	Oct. 01, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Mar. 01, 2024	Feb. 28, 2025	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	MY45100745	50MHz~18GHz	Jul. 12, 2024	Jul. 11, 2025	Conducted (TH01-CB)



RADIO TEST REPORT

Report No. : FR521124AB

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Test Software	SPORTON	SENSE-15247_DTS	V5.11.23	2.4GHz-2.4835G Hz	N.C.R.	N.C.R.	Conducted (TH01-CB)

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

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



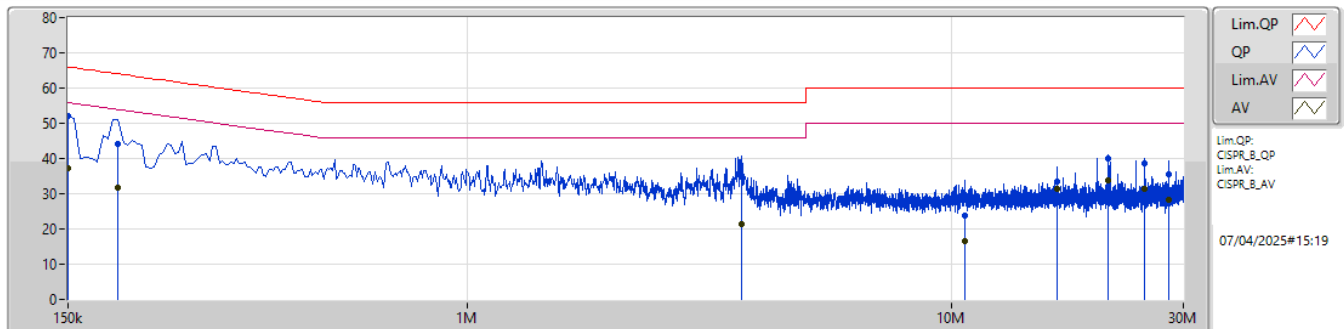
Conducted Emissions at Powerline

Appendix A

Summary

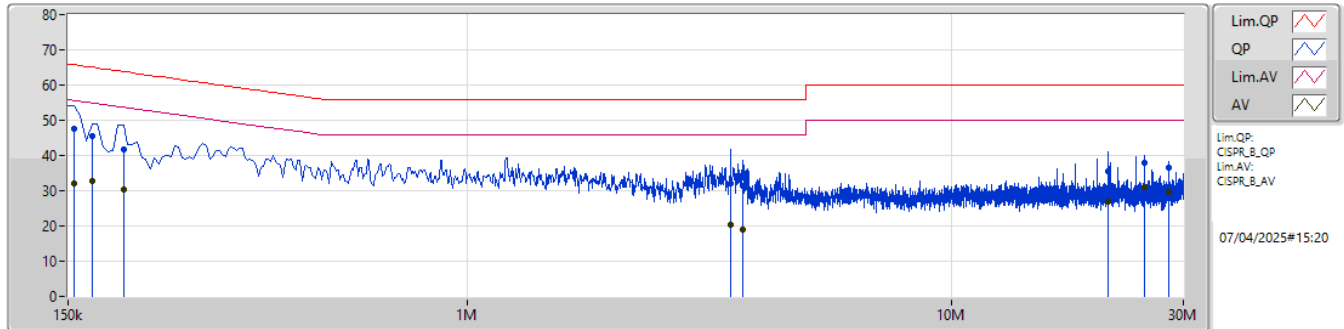
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 4	Pass	QP	150k	51.99	66.00	-14.01	Line

Mode 4



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	150k	51.99	66.00	-14.01	10.15	Line	"Worst"	41.84	0.05	0.08	10.02						
AV	150k	37.35	56.00	-18.65	10.15	Line	-	27.20	0.05	0.08	10.02						
QP	190.5k	44.01	64.01	-20.00	10.14	Line	-	33.87	0.05	0.07	10.02						
AV	190.5k	31.64	54.01	-22.37	10.14	Line	-	21.50	0.05	0.07	10.02						
QP	3.683M	34.81	56.00	-21.19	10.32	Line	-	24.49	0.12	0.15	10.05						
AV	3.683M	21.49	46.00	-24.51	10.32	Line	-	11.17	0.12	0.15	10.05						
QP	10.649M	23.63	60.00	-36.37	10.43	Line	-	13.20	0.26	0.16	10.01						
AV	10.649M	16.38	50.00	-33.62	10.43	Line	-	5.95	0.26	0.16	10.01						
QP	16.467M	33.50	60.00	-26.50	10.63	Line	-	22.87	0.35	0.26	10.02						
AV	16.467M	31.47	50.00	-18.53	10.63	Line	-	20.84	0.35	0.26	10.02						
QP	20.949M	39.99	60.00	-20.01	10.75	Line	-	29.24	0.41	0.33	10.01						
AV	20.949M	33.84	50.00	-16.16	10.75	Line	-	23.09	0.41	0.33	10.01						
QP	24.941M	38.45	60.00	-21.55	10.84	Line	-	27.61	0.50	0.31	10.03						
AV	24.941M	31.38	50.00	-18.62	10.84	Line	-	20.54	0.50	0.31	10.03						
QP	27.933M	35.60	60.00	-24.40	10.95	Line	-	24.65	0.56	0.32	10.07						
AV	27.933M	28.34	50.00	-21.66	10.95	Line	-	17.39	0.56	0.32	10.07						

Mode 4



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	154.5k	47.46	65.75	-18.29	10.15	Neutral	"Worst"	37.31	0.05	0.08	10.02						
AV	154.5k	32.14	55.75	-23.61	10.15	Neutral	-	21.99	0.05	0.08	10.02						
QP	168k	45.39	65.06	-19.67	10.15	Neutral	-	35.24	0.05	0.08	10.02						
AV	168k	32.65	55.06	-22.41	10.15	Neutral	-	22.50	0.05	0.08	10.02						
QP	195k	41.87	63.82	-21.95	10.14	Neutral	-	31.73	0.05	0.07	10.02						
AV	195k	30.37	53.82	-23.45	10.14	Neutral	-	20.23	0.05	0.07	10.02						
QP	3.494M	32.05	56.00	-23.95	10.30	Neutral	-	21.75	0.10	0.15	10.05						
AV	3.494M	20.27	46.00	-25.73	10.30	Neutral	-	9.97	0.10	0.15	10.05						
QP	3.71M	31.47	56.00	-24.53	10.31	Neutral	-	21.16	0.11	0.15	10.05						
AV	3.71M	18.83	46.00	-27.17	10.31	Neutral	-	8.52	0.11	0.15	10.05						
QP	20.954M	35.68	60.00	-24.32	10.61	Neutral	-	25.07	0.27	0.33	10.01						
AV	20.954M	27.01	50.00	-22.99	10.61	Neutral	-	16.40	0.27	0.33	10.01						
QP	24.941M	38.10	60.00	-21.90	10.64	Neutral	-	27.46	0.30	0.31	10.03						
AV	24.941M	30.92	50.00	-19.08	10.64	Neutral	-	20.28	0.30	0.31	10.03						
QP	27.933M	36.38	60.00	-23.62	10.71	Neutral	-	25.67	0.32	0.32	10.07						
AV	27.933M	29.66	50.00	-20.34	10.71	Neutral	-	18.95	0.32	0.32	10.07						

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
Thread_3MHz_Nss1_1TX	1.613M	2.396M	2M40G1D	1.605M	2.253M

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

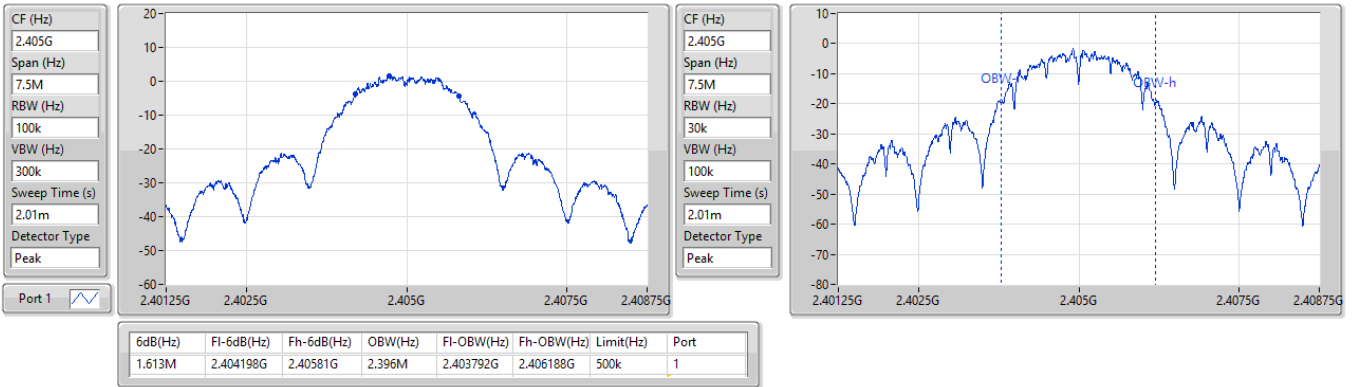
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
Thread_3MHz_Nss1_1TX	-	-	-	-
2405MHz	Pass	500k	1.613M	2.396M
2440MHz	Pass	500k	1.613M	2.382M
2480MHz	Pass	500k	1.605M	2.253M

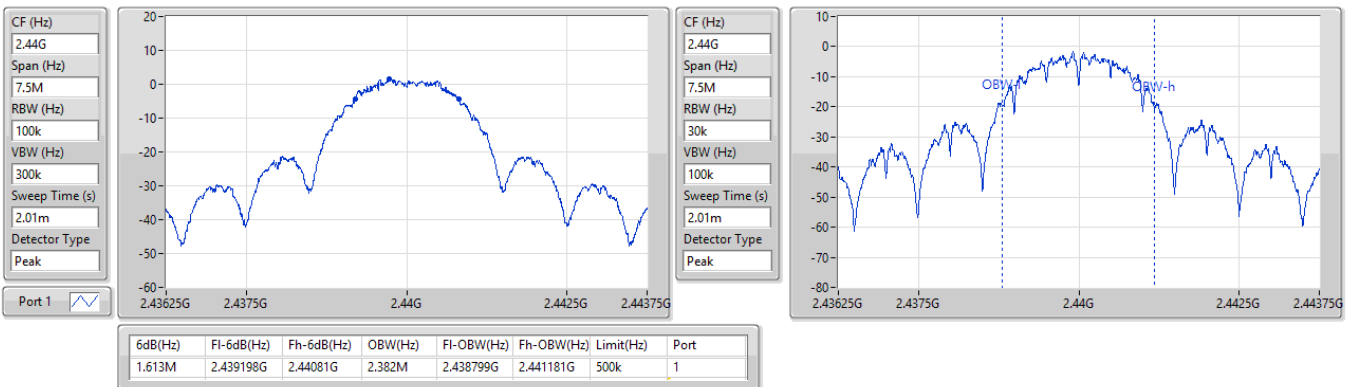
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX
EBW
2405MHz

27/03/2025


2.4-2.4835GHz_Thread_3MHz_Nss1_1TX
EBW
2440MHz

27/03/2025

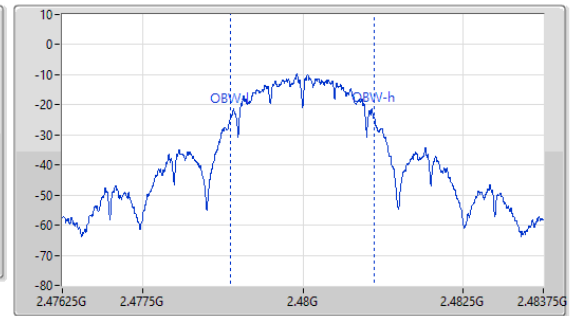
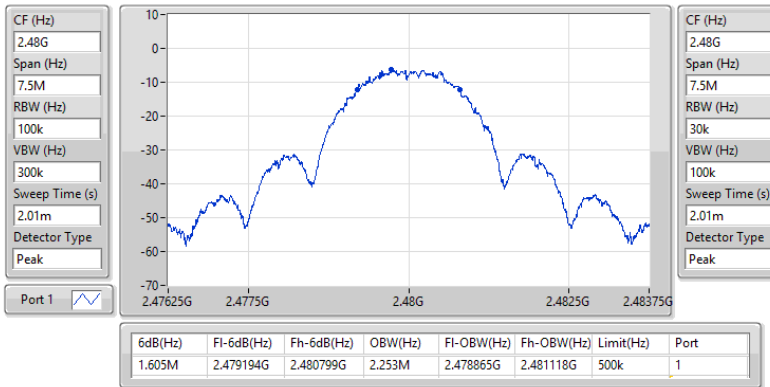


2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

EBW

2480MHz

27/03/2025





Average Power

Appendix C

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Thread_3MHz_Nss1_1TX	5.63	0.00366



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
Thread_3MHz_Nss1_1TX	-	-	-	-	-
2405MHz	Pass	3.50	5.54	5.54	30.00
2440MHz	Pass	3.50	5.63	5.63	30.00
2475MHz	Pass	3.50	5.59	5.59	30.00
2480MHz	Pass	3.50	-2.27	-2.27	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	-
Thread_3MHz_Nss1_1TX	-10.13

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Thread_3MHz_Nss1_1TX	-	-	-	-	-
2405MHz	Pass	3.50	-10.39	-10.39	8.00
2440MHz	Pass	3.50	-10.13	-10.13	8.00
2480MHz	Pass	3.50	-18.14	-18.14	8.00

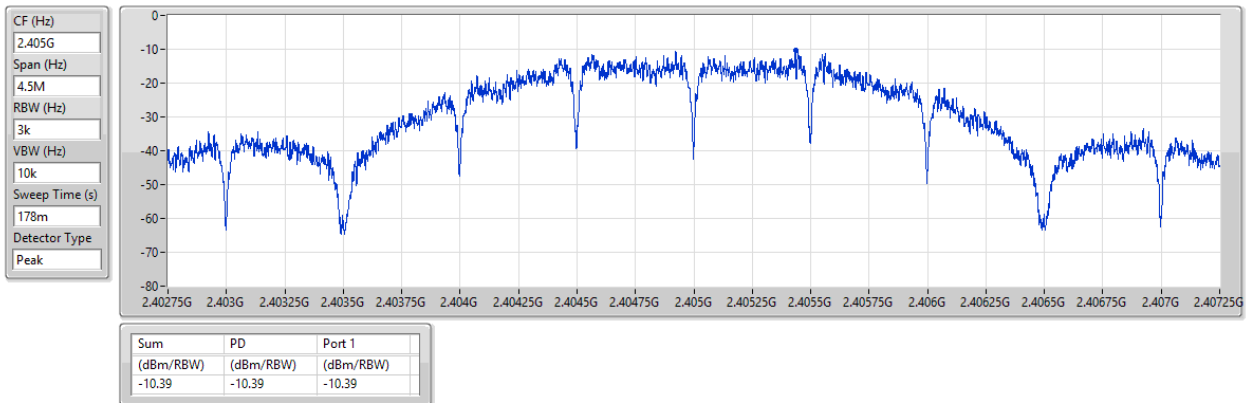
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;
Inf = There's no restriction for the limit.

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

PSD

2405MHz

27/03/2025

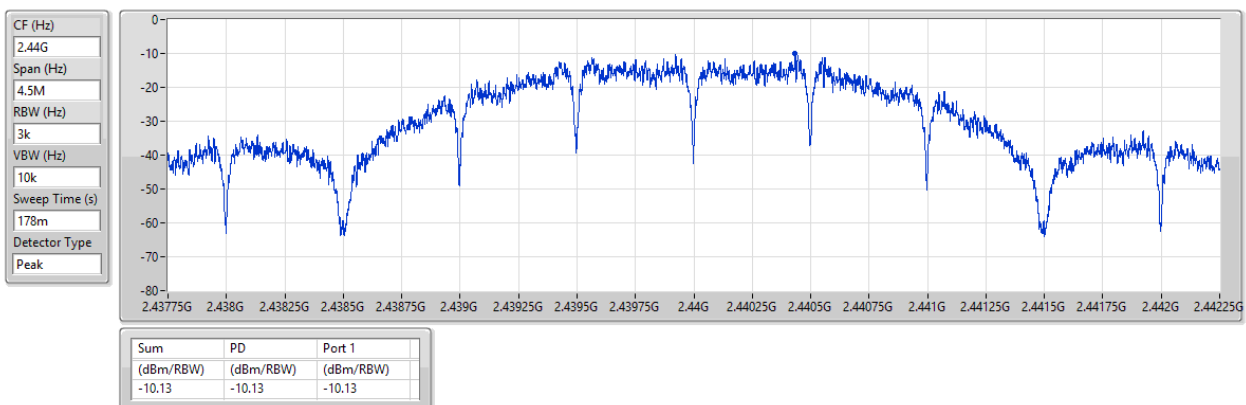


2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

PSD

2440MHz

27/03/2025

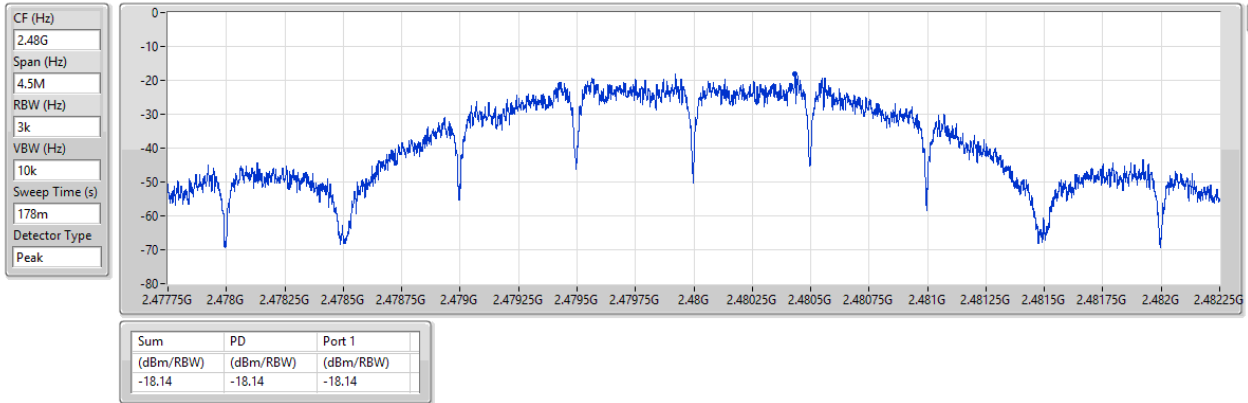


2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

PSD

2480MHz

27/03/2025





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	-	-	-	-	-	-	-	-	-	-	-	-	-
Thread_3MHz_Nss1_1TX	Pass	2.43975G	1.68	-28.32	2.1836G	-54.52	2.39995G	-40.12	2.4G	-39.98	21.56996G	-45.97	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
Thread_3MHz_Nss1_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	2.43975G	1.68	-28.32	2.1836G	-54.52	2.39995G	-40.12	2.4G	-39.98	21.56996G	-45.97	1
2440MHz	Pass	2.43975G	1.68	-28.32	2.05595G	-54.30	2.39993G	-54.36	2.4G	-56.56	21.64312G	-44.96	1
2480MHz	Pass	2.43975G	1.68	-28.32	71.37M	-54.47	2.39546G	-54.56	2.4G	-57.21	21.68814G	-45.52	1

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

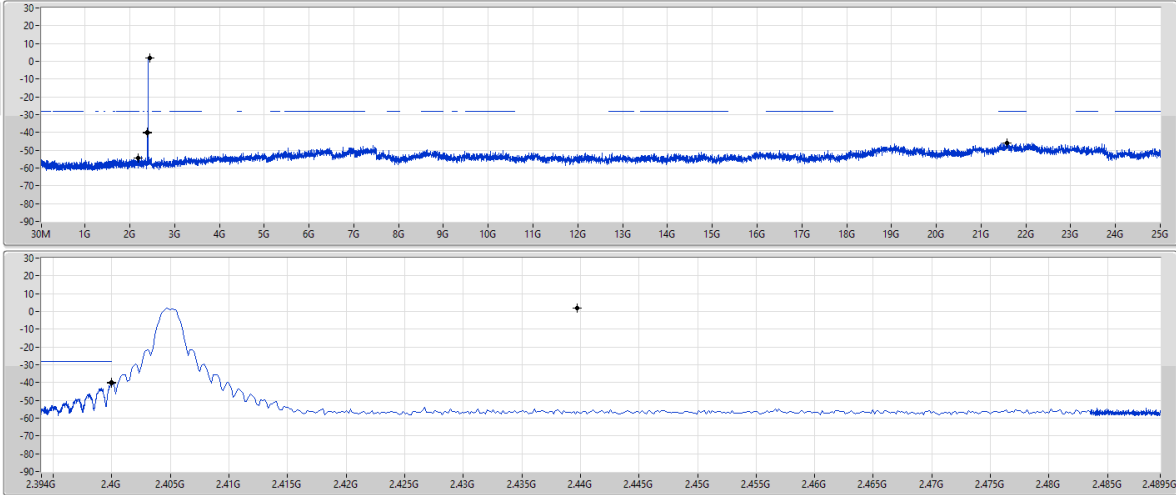
CSEndB

2405MHz

27/03/2025

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

Port 1



2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

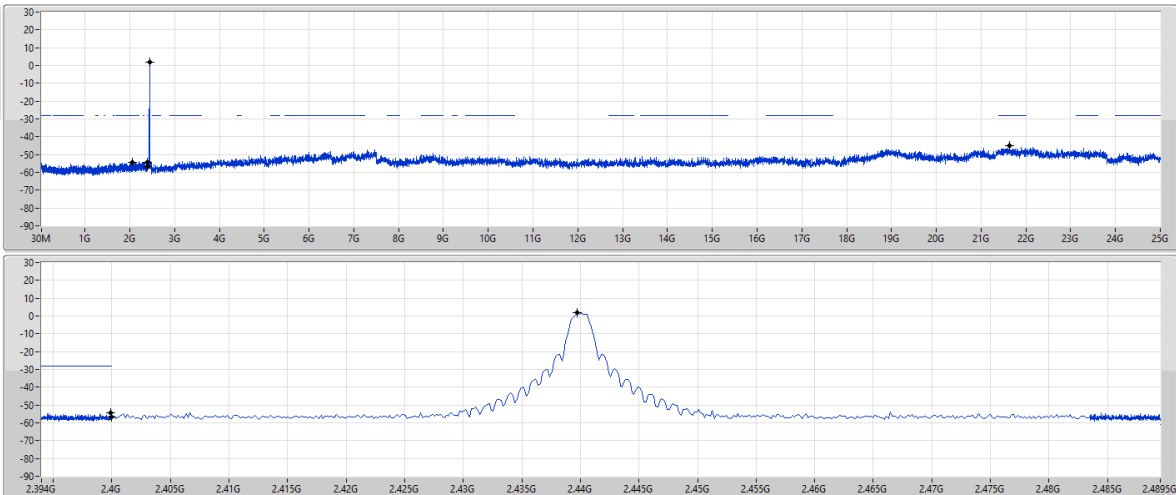
CSEndB

2440MHz

27/03/2025

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

Port 1

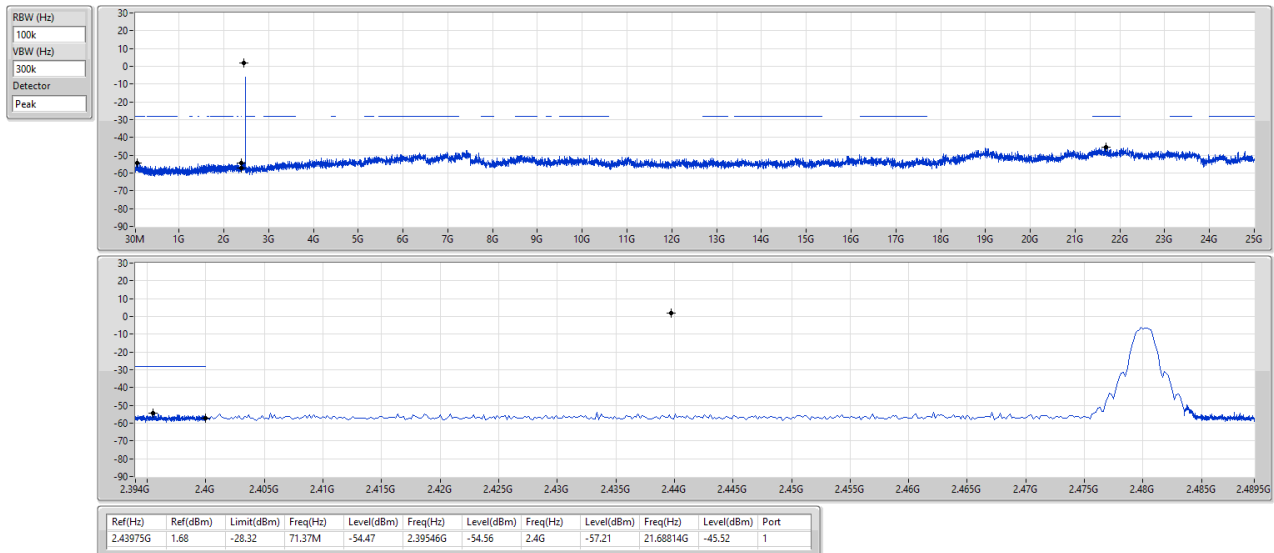


2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

CSEndB

2480MHz

27/03/2025





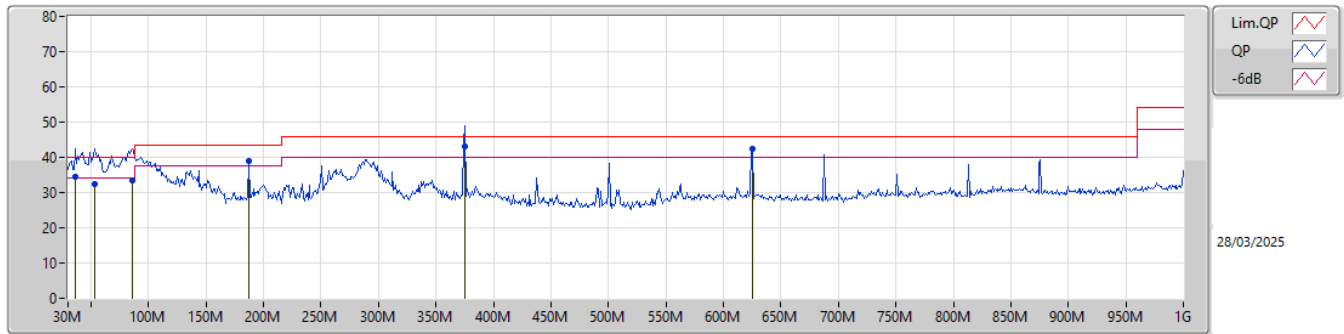
Radiated Emissions below 1GHz

Appendix F.1

Summary

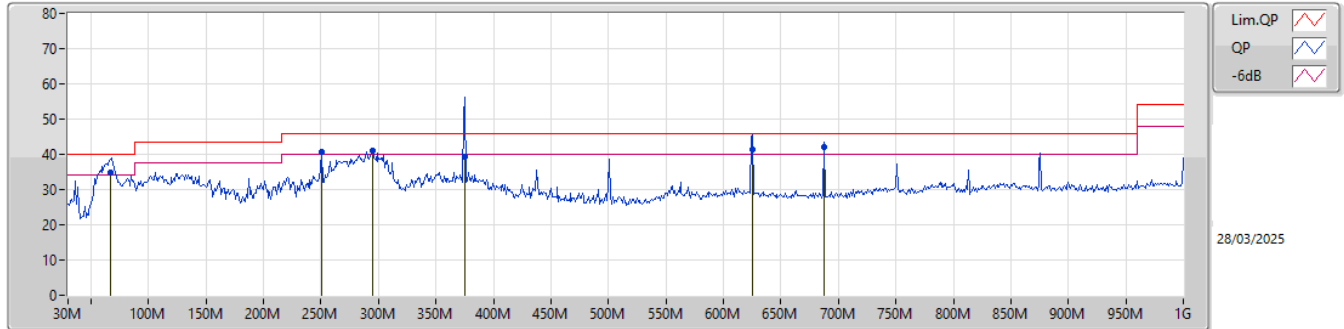
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	375.32M	42.94	46.00	-3.06	Vertical

Mode 1



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	36.79M	34.58	40.00	-5.42	-11.13	3	Vertical	350	3.00	-	45.71	20.57	0.58	32.28		
QP	53.28M	32.53	40.00	-7.47	-18.66	3	Vertical	220	1.25	-	51.19	12.94	0.68	32.28		
QP	86.26M	33.45	40.00	-6.55	-17.32	3	Vertical	220	1.25	-	50.77	14.03	0.97	32.32		
PK	187.14M	38.92	43.50	-4.58	-15.87	3	Vertical	147	1.00	-	54.79	14.88	1.35	32.10		
QP	375.32M	42.94	46.00	-3.06	-9.18	3	Vertical	183	1.25	"Worst"	52.12	20.78	1.93	31.89		
QP	625.58M	42.25	46.00	-3.75	-4.27	3	Vertical	36	1.00	-	46.52	24.96	2.51	31.74		

Mode 1



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	66.86M	34.78	40.00	-5.22	-19.57	3	Horizontal	148	3.00	-	54.35	12.08	0.80	32.45		
PK	250.19M	40.60	46.00	-5.40	-12.26	3	Horizontal	345	1.25	-	52.86	18.32	1.56	32.14		
PK	294.81M	40.92	46.00	-5.08	-11.47	3	Horizontal	261	1.00	-	52.39	18.96	1.67	32.10		
QP	375.32M	39.34	46.00	-6.66	-9.18	3	Horizontal	165	1.00	-	48.52	20.78	1.93	31.89		
QP	625.58M	41.42	46.00	-4.58	-4.27	3	Horizontal	49	1.50	-	45.69	24.96	2.51	31.74		
QP	687.66M	42.08	46.00	-3.92	-4.14	3	Horizontal	155	1.25	"Worst"	46.22	25.07	2.60	31.81		

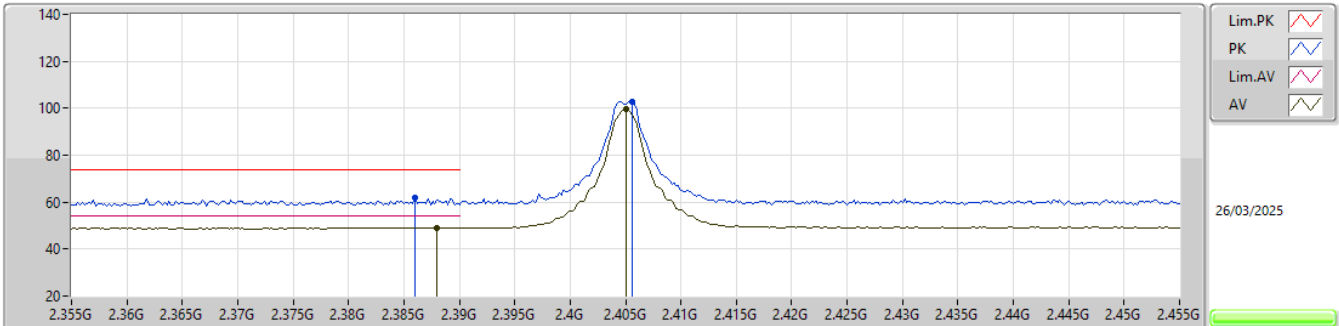


Summary

Mode	Result	Type	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Thread_3MHz_Nss1_1TX	Pass	AV	2.4835G	51.40	54.00	-2.60	3	Vertical	274	1.88	-

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2405MHz_TX

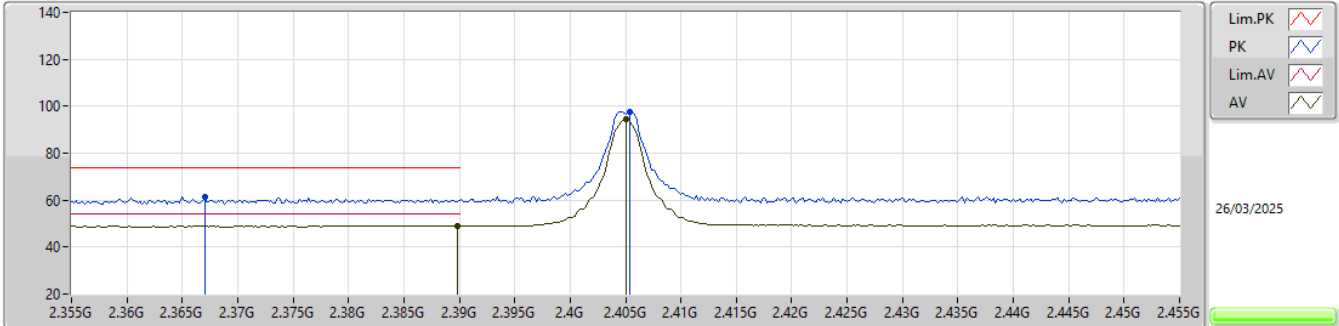


EUT_Z_1TX
Setting 6
03-P-J-10

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	2.386G	61.70	74.00	-12.30	28.54	3	Vertical	288	1.42	-	28.36	4.80	-				
AV	2.388G	49.18	54.00	-4.82	16.00	3	Vertical	288	1.42	-	28.38	4.80	-				
PK	2.4056G	102.77	Inf	-Inf	69.64	3	Vertical	288	1.42	-	28.30	4.83	-				
AV	2.405G	99.45	Inf	-Inf	66.32	3	Vertical	288	1.42	-	28.30	4.83	-				

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2405MHz_TX

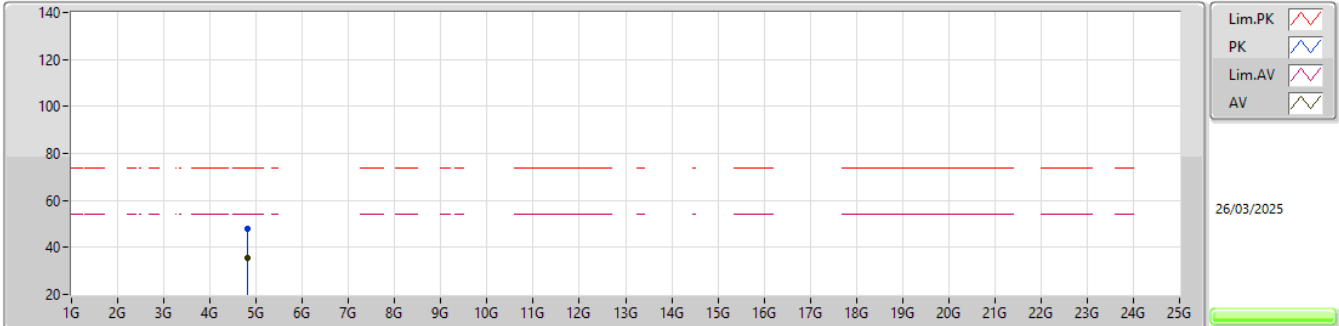


EUT_Z_1TX
Setting 6
03-P-J-10

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	2.367G	61.43	74.00	-12.57	28.35	3	Horizontal	335	1.80	-	28.30	4.78	-				
AV	2.3898G	49.22	54.00	-4.78	16.01	3	Horizontal	335	1.80	-	28.40	4.81	-				
PK	2.4054G	97.68	Inf	-Inf	64.55	3	Horizontal	335	1.80	-	28.30	4.83	-				
AV	2.405G	94.34	Inf	-Inf	61.21	3	Horizontal	335	1.80	-	28.30	4.83	-				

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2405MHz_TX

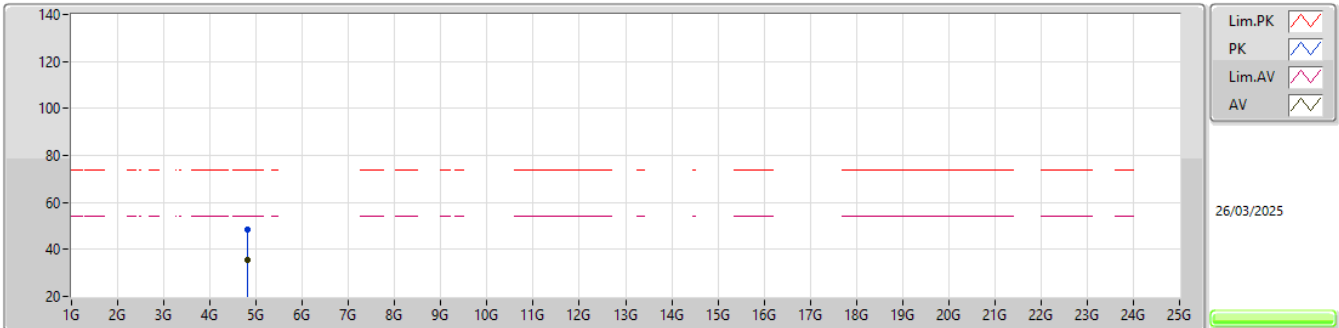


EUT_Z_1TX
Setting 6
03-P-J-10

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	4.80998G	47.89	74.00	-26.11	42.59	3	Vertical	357	1.57	-	33.42	7.21	35.33			
AV	4.81108G	35.34	54.00	-18.66	30.04	3	Vertical	357	1.57	-	33.42	7.21	35.33			

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2405MHz_TX

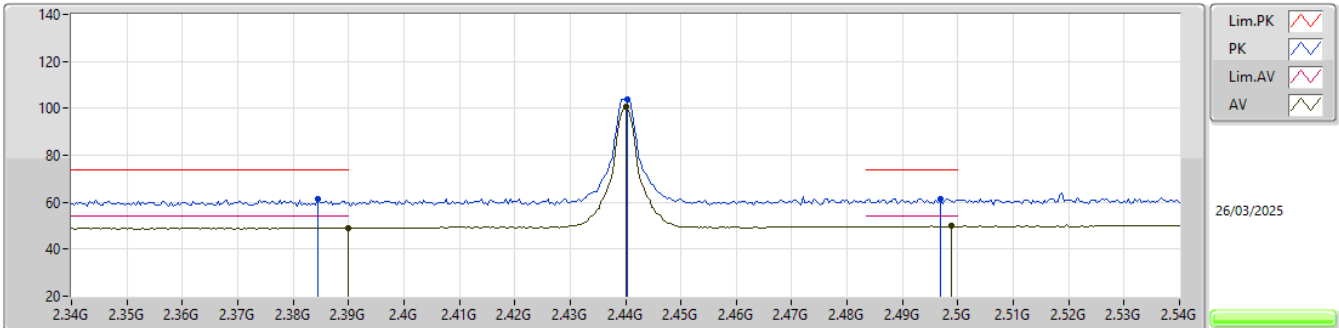


EUT_Z_1TX
Setting 6
03-P-J-10

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	4.80848G	48.54	74.00	-25.46	43.24	3	Horizontal	183	2.87	-	33.42	7.21	35.33			
AV	4.81296G	35.27	54.00	-18.73	29.96	3	Horizontal	183	2.87	-	33.43	7.21	35.33			

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2440MHz_TX

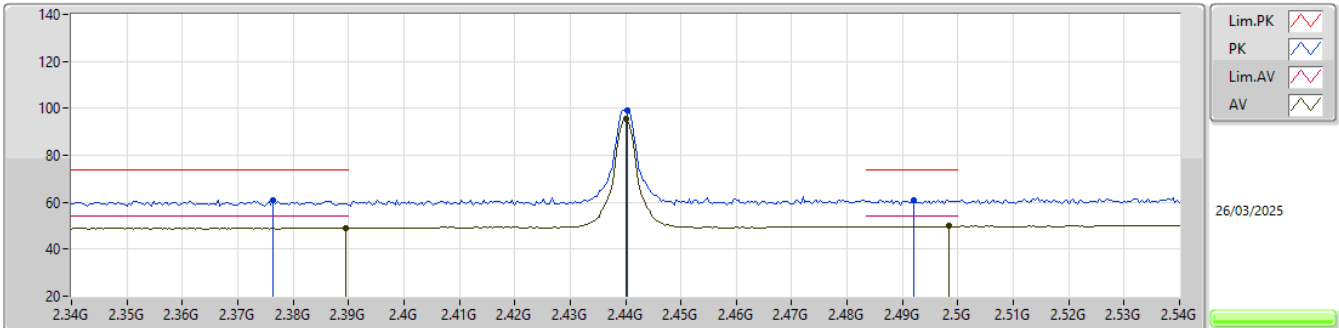


EUT_Z_1TX
Setting 6
03-P-J-10

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	61.36	74.00	-12.64	28.22	3	Vertical	288	1.29	-	28.34	4.80	-					
AV	2.39G	49.22	54.00	-4.78	16.01	3	Vertical	288	1.29	-	28.40	4.81	-					
PK	2.4404G	103.99	Inf	-Inf	70.73	3	Vertical	288	1.29	-	28.40	4.86	-					
AV	2.44G	100.65	Inf	-Inf	67.39	3	Vertical	288	1.29	-	28.40	4.86	-					
PK	2.4968G	61.62	74.00	-12.38	28.22	3	Vertical	288	1.29	-	28.47	4.93	-					
AV	2.4988G	49.80	54.00	-4.20	16.38	3	Vertical	288	1.29	-	28.49	4.93	-					

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2440MHz_TX

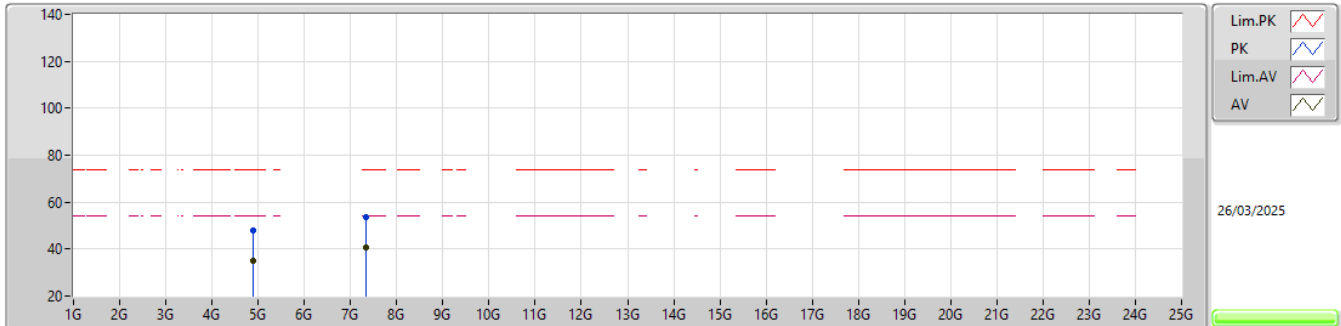


EUT_Z_1TX
Setting 6
03-P-J-10

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	2.3764G	61.11	74.00	-12.89	28.02	3	Horizontal	33	1.37	-	28.30	4.79	-				
AV	2.3896G	49.22	54.00	-4.78	16.01	3	Horizontal	33	1.37	-	28.40	4.81	-				
PK	2.4404G	99.02	Inf	-Inf	65.76	3	Horizontal	33	1.37	-	28.40	4.86	-				
AV	2.44G	95.68	Inf	-Inf	62.42	3	Horizontal	33	1.37	-	28.40	4.86	-				
PK	2.492G	61.04	74.00	-12.96	27.70	3	Horizontal	33	1.37	-	28.42	4.92	-				
AV	2.4984G	49.79	54.00	-4.21	16.38	3	Horizontal	33	1.37	-	28.48	4.93	-				

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2440MHz_TX

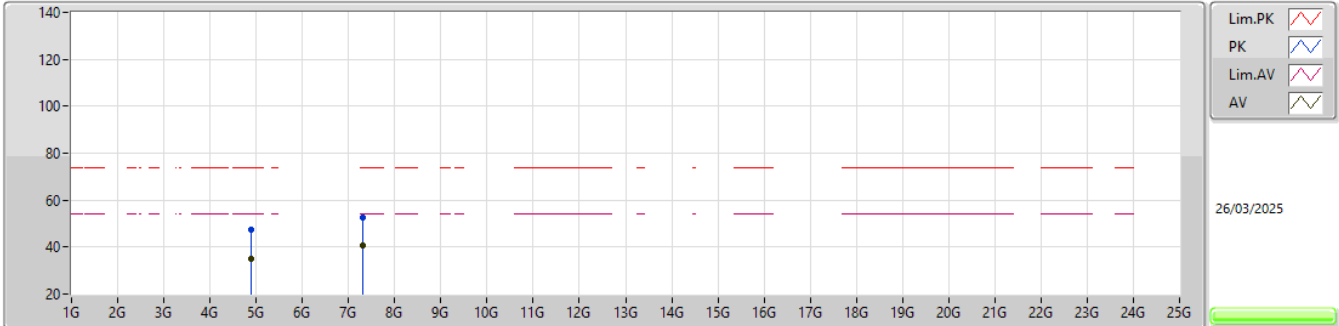


EUT_Z_1TX
Setting 6
03-P-J-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	4.8812G	47.96	74.00	-26.04	42.55	3	Vertical	147	2.69	-	33.56	7.18	35.33				
AV	4.87752G	35.20	54.00	-18.80	29.79	3	Vertical	147	2.69	-	33.56	7.18	35.33				
PK	7.32468G	53.47	74.00	-20.53	43.16	3	Vertical	232	2.03	-	36.85	8.62	35.16				
AV	7.3243G	40.44	54.00	-13.56	30.13	3	Vertical	232	2.03	-	36.85	8.62	35.16				

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2440MHz_TX

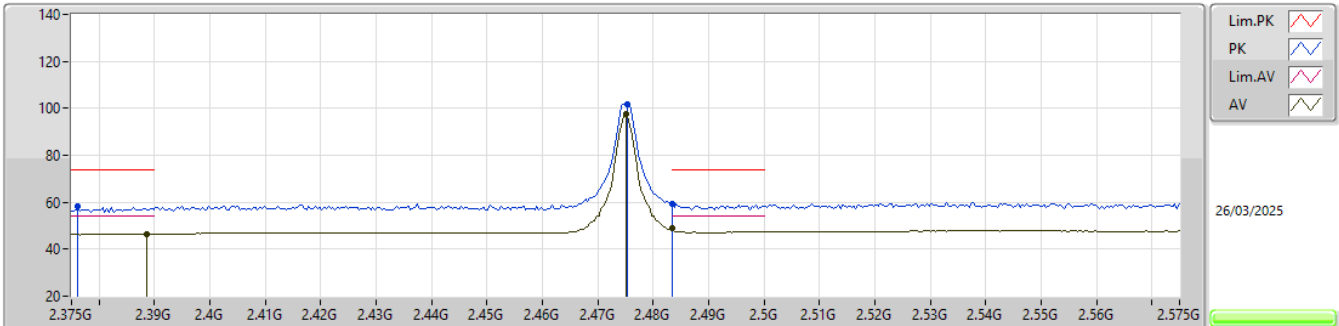


EUT_Z_1TX
Setting 6
03-P-J-10

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	4.87804G	47.28	74.00	-26.72	41.87	3	Horizontal	285	2.11	-	33.56	7.18	35.33			
AV	4.87762G	35.20	54.00	-18.80	29.79	3	Horizontal	285	2.11	-	33.56	7.18	35.33			
PK	7.31818G	52.66	74.00	-21.34	42.36	3	Horizontal	222	2.65	-	36.84	8.62	35.16			
AV	7.32126G	40.47	54.00	-13.53	30.17	3	Horizontal	222	2.65	-	36.84	8.62	35.16			

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2475MHz_TX

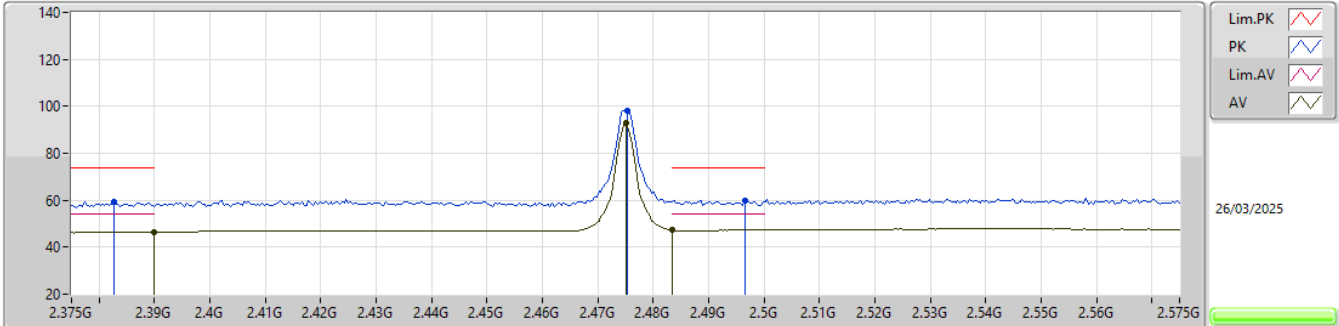


EUT_Z_1TX
Setting 6
01-C-E-6

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	2.3762G	58.12	74.00	-15.88	27.06	3	Vertical	261	1.58	-	27.34	3.72	-				
AV	2.3886G	46.40	54.00	-7.60	15.29	3	Vertical	261	1.58	-	27.39	3.72	-				
PK	2.4754G	101.95	Inf	-Inf	70.40	3	Vertical	261	1.58	-	27.75	3.80	-				
AV	2.475G	97.60	Inf	-Inf	66.05	3	Vertical	261	1.58	-	27.75	3.80	-				
PK	2.4835G	59.36	74.00	-14.64	27.71	3	Vertical	261	1.58	-	27.84	3.81	-				
AV	2.4835G	49.00	54.00	-5.00	17.35	3	Vertical	261	1.58	-	27.84	3.81	-				

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2475MHz_TX

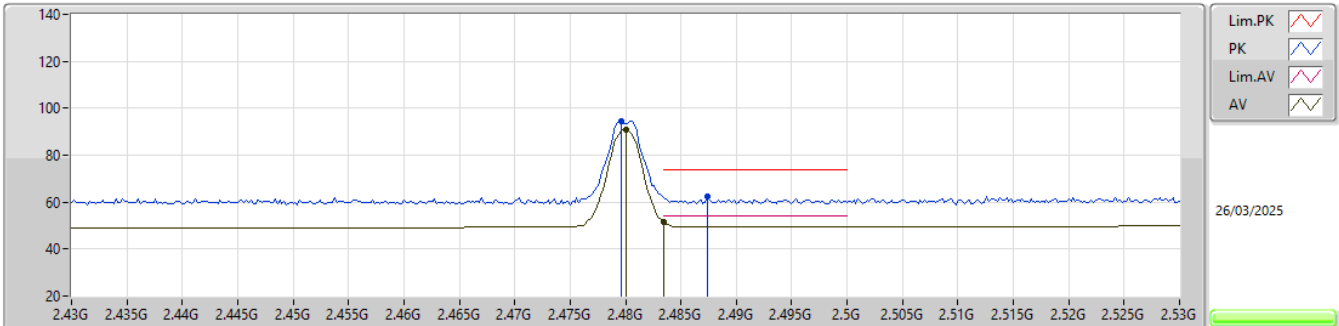


EUT_Z_1TX
Setting 6
01-C-E-6

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	2.3826G	59.20	74.00	-14.80	28.15	3	Horizontal	251	1.80	-	27.33	3.72	-			
AV	2.3898G	46.47	54.00	-7.53	15.35	3	Horizontal	251	1.80	-	27.40	3.72	-			
PK	2.4754G	98.04	Inf	-Inf	66.49	3	Horizontal	251	1.80	-	27.75	3.80	-			
AV	2.475G	92.69	Inf	-Inf	61.14	3	Horizontal	251	1.80	-	27.75	3.80	-			
PK	2.4966G	59.93	74.00	-14.07	28.13	3	Horizontal	251	1.80	-	27.97	3.83	-			
AV	2.4835G	47.30	54.00	-6.70	15.65	3	Horizontal	251	1.80	-	27.84	3.81	-			

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2480MHz_TX

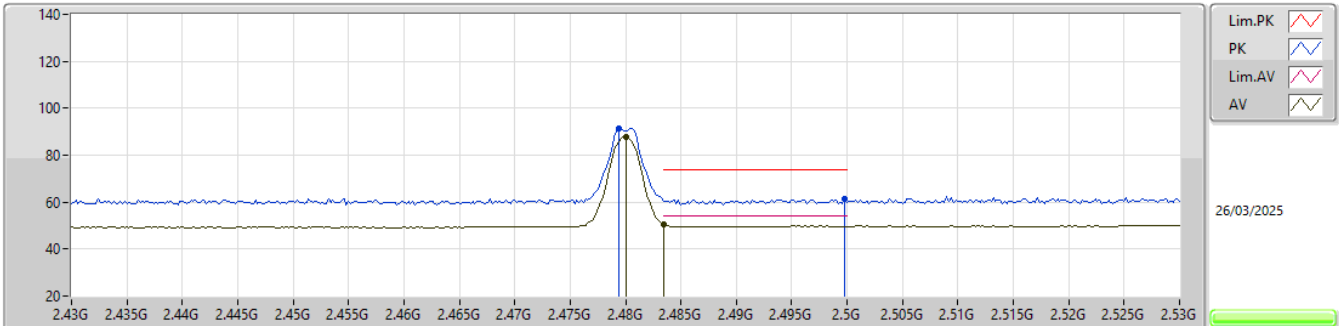


EUT_Z_1TX
Setting 0
03-P-J-10

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	2.4796G	94.42	Inf	-Inf	61.11	3	Vertical	274	1.88	-	28.40	4.91	-				
AV	2.48G	91.06	Inf	-Inf	57.75	3	Vertical	274	1.88	-	28.40	4.91	-				
PK	2.4874G	62.23	74.00	-11.77	28.91	3	Vertical	274	1.88	-	28.40	4.92	-				
AV	2.4835G	51.40	54.00	-2.60	18.09	3	Vertical	274	1.88	-	28.40	4.91	-				

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2480MHz_TX

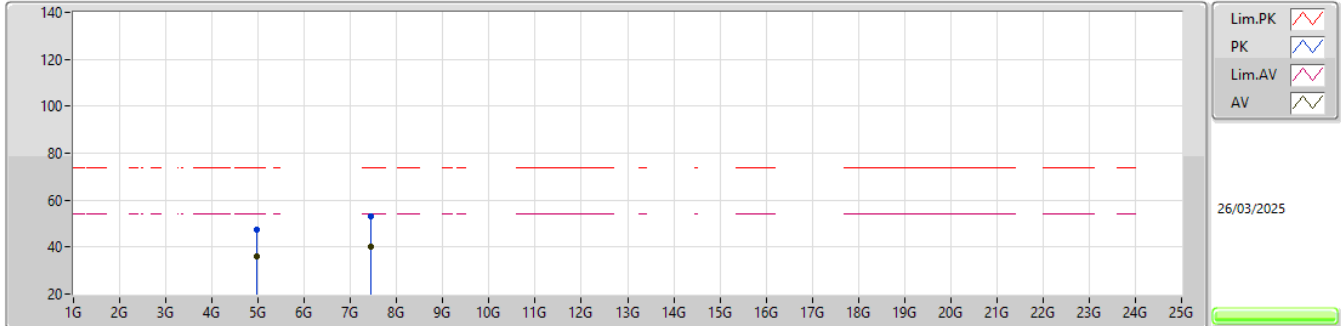


EUT_Z_1TX
Setting 0
03-P-J-10

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	91.37	Inf	-Inf	58.06	3	Horizontal	303	1.79	-	28.40	4.91	-				
AV	2.48G	87.96	Inf	-Inf	54.65	3	Horizontal	303	1.79	-	28.40	4.91	-				
PK	2.4998G	61.15	74.00	-12.85	27.72	3	Horizontal	303	1.79	-	28.50	4.93	-				
AV	2.4835G	50.57	54.00	-3.43	17.26	3	Horizontal	303	1.79	-	28.40	4.91	-				

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2480MHz_TX

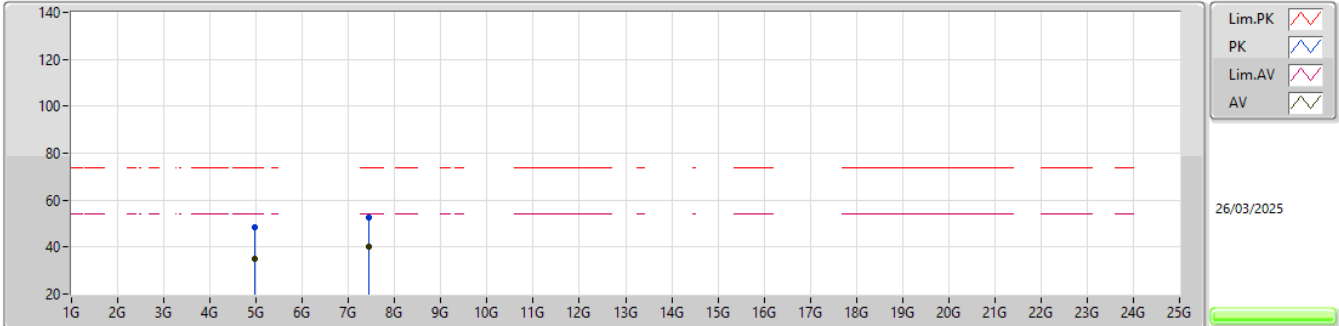


EUT_Z_1TX
Setting 0
03-P-J-10

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	4.96714G	47.58	74.00	-26.42	42.13	3	Vertical	193	2.56	-	33.63	7.15	35.33				
AV	4.96084G	36.23	54.00	-17.77	30.79	3	Vertical	193	2.56	-	33.62	7.15	35.33				
PK	7.44232G	53.04	74.00	-20.96	42.48	3	Vertical	166	2.43	-	37.00	8.73	35.17				
AV	7.45308G	40.35	54.00	-13.65	29.79	3	Vertical	360	1.80	-	36.99	8.74	35.17				

2.4-2.4835GHz_Thread_3MHz_Nss1_1TX

2480MHz_TX



EUT_Z_1TX
Setting 0
03-P-J-10

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	4.957G	48.19	74.00	-25.81	42.75	3	Horizontal	312	2.05	-	33.61	7.16	35.33				
AV	4.96226G	35.18	54.00	-18.82	29.74	3	Horizontal	312	2.05	-	33.62	7.15	35.33				
PK	7.44172G	52.79	74.00	-21.21	42.24	3	Horizontal	152	2.02	-	37.00	8.72	35.17				
AV	7.43846G	40.37	54.00	-13.63	29.82	3	Horizontal	152	2.02	-	37.00	8.72	35.17				