

FCC Radio Test Report

FCC ID : 2A8MT-CONTROL
Equipment : Network Controller
Brand Name : ALTA LABS 
Model Name : Control
Applicant : SoundVision Technologies, dba Alta Labs
192 N Old Hwy 91, Unit 1 Hurricane, Utah,
United States 84737
Manufacturer : SoundVision Technologies, dba Alta Labs
192 N Old Hwy 91, Unit 1 Hurricane, Utah,
United States 84737
Standard : 47 CFR FCC Part 15.247

The product was received on May 03, 2024, and testing was started from May 06, 2024 and completed on May 20, 2024. We, SPORTON INTERNATIONAL INC. Hsinhua 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. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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APPENDIX G. TEST PHOTOS

PHOTOGRAPHS OF EUT V01

[illegible]

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	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and explanations:

None

Reviewed by: Ben Tseng

Report Producer: Ann Hou

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1.0	1TX
2.4-2.4835GHz	BT-LE(2Mbps)	2.0	1TX

Note:

- Bluetooth LE uses a GFSK (1Mbps/2Mbps) modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	LITEON	20301-002360A000	PIFA	I-PEX	4.68

Note 1: The EUT has one antenna.

For Bluetooth function:

For Bluetooth mode (1TX/1RX)

Ant. 1 (port 1) could transmit/receive.

1.1.3 EUT Information

Operational Condition	
EUT Power Type	From AC Adapter / PoE
EUT Function	☒ Point-to-multipoint ☐ Point-to-point
Type of EUT	
☒	Stand-alone
☐	Combined (EUT where the radio part is fully integrated within another device)
☐	Combined Equipment - Brand Name / Model No.: ...
☐	Plug-in radio (EUT intended for a variety of host systems)
☐	Host System - Brand Name / Model No.: ...
☐	Other:

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz) 1/T
BT-LE(1Mbps)	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
BT-LE(2Mbps)	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.2 Testing Applied Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013

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

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

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		FAX: 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Rian Zhong	21.7~22.8°C / 56~61%	20/May/2024
RF Conducted	TH07-HY	Yuna Lin	21.6~22.6°C / 55~58%	14/May/2024
☒ Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787		FAX: 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated below 1G	03CH09-HY	Rian Zhong	20.5~21.9°C / 56~61%	13/May/2024
Radiated above 1G	03CH09-HY	Andy Wang	22.2~23.4°C / 50~52%	06/May/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
AC Power-line Conducted Emissions	4.53 dB	Confidence levels of 95%
Bandwidth	3 MHz	Confidence levels of 95%
Maximum Conducted Output Power	2 dB	Confidence levels of 95%
Power Spectral Density	2 dB	Confidence levels of 95%
Emissions in Non-restricted Frequency Bands	0.14 dB	Confidence levels of 95%
Emissions in Restricted Frequency Bands	4.8 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Test Software Version	Putty Release 0.62
-----------------------	--------------------

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4
BT-LE(2Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4

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	Adapter mode
2	PoE mode

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

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX		
1	PoE mode		
2	Adapter mode		
Operating Mode > 1GHz	CTX		
1	PoE mode		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT		V	

2.3 Accessories

Accessories				
Bracket	Brand Name	N/A	Model Name	N/A

Reminder: Regarding to more detail and other information, please refer to user manual.

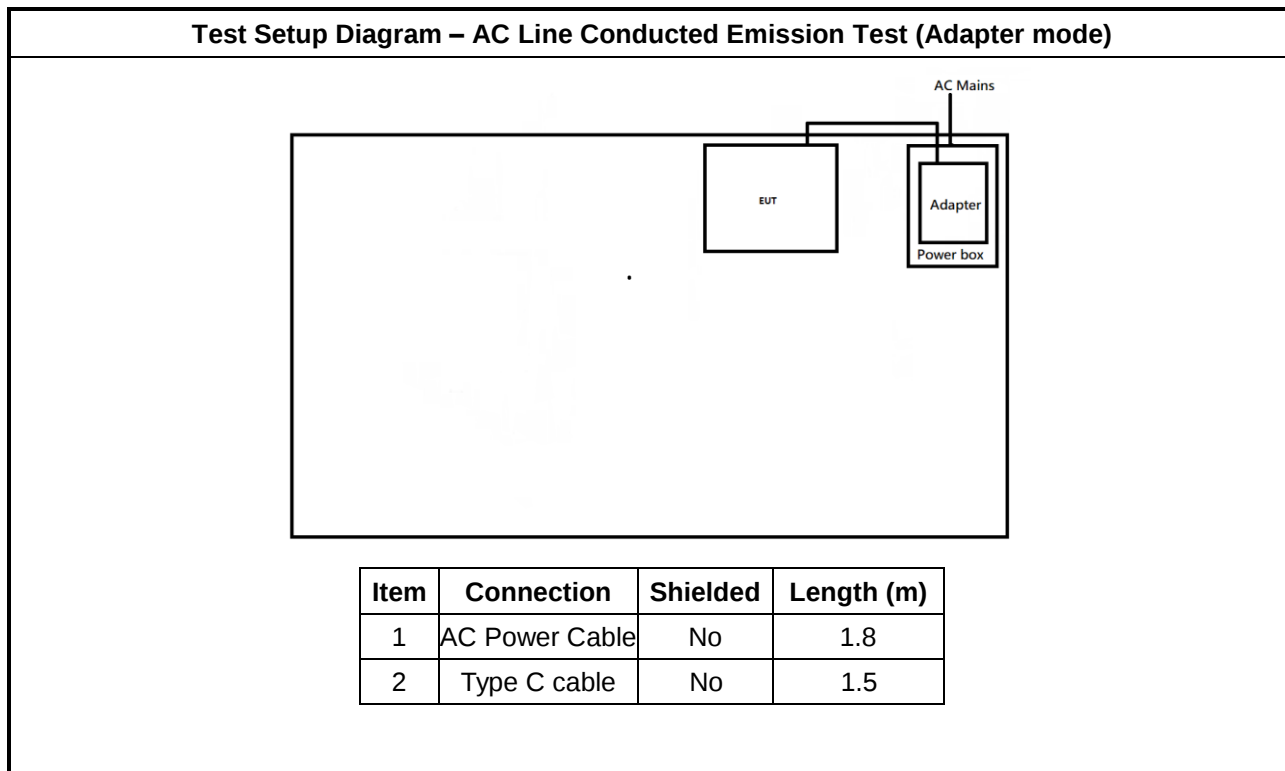
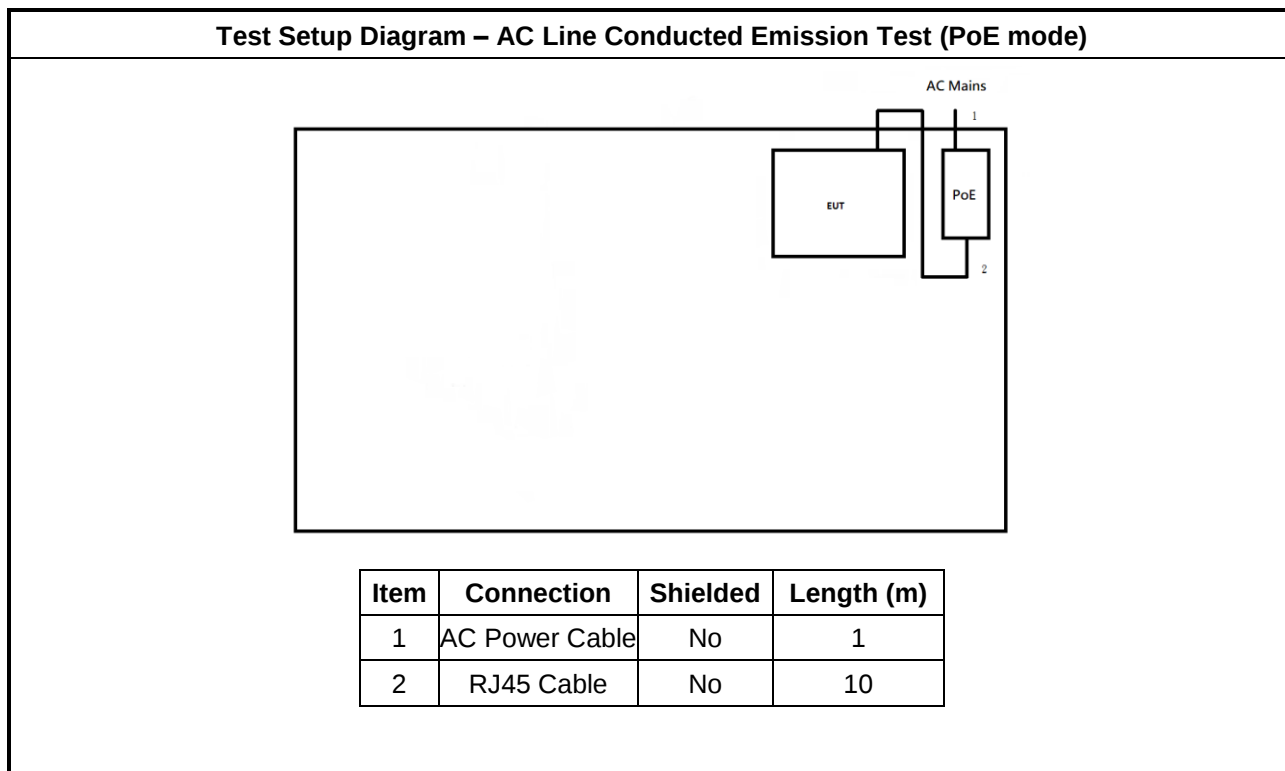
2.4 Support Equipment

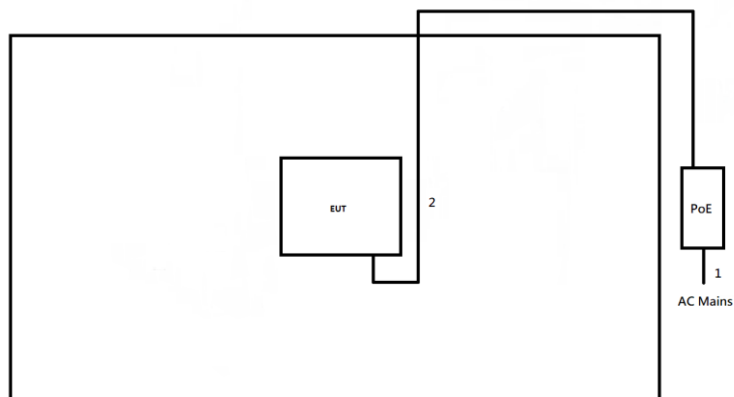
Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Type C cable	UGREEN	Sporton	-	-
2	Adapter	DTAudio	5w-A1	-	-
3	PoE	Ruckus	740-64214-001	-	Provided by Customer

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-

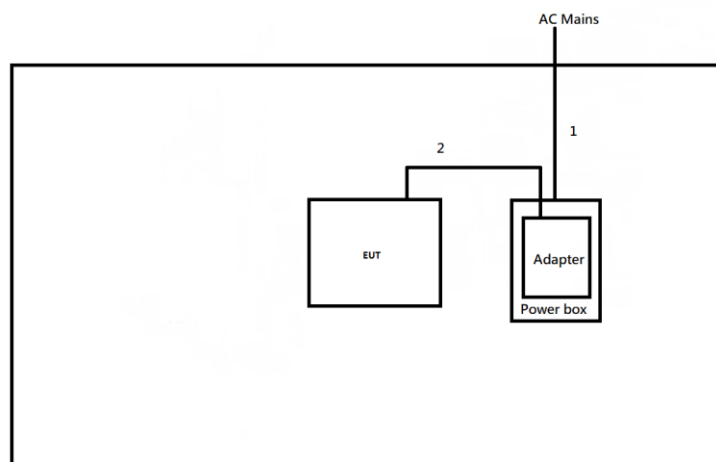
Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Type C cable	UGREEN	Sporton	-	-
2	Adapter	DTAudio	5w-A1	-	-
3	PoE	Ruckus	740-64214-001	-	Provided by Customer

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test (PoE mode)


Item	Connection	Shielded	Length (m)
1	AC Power Cable	No	1
2	RJ45 Cable	No	10

Test Setup Diagram - Radiated Test (Adapter mode)


Item	Connection	Shielded	Length (m)
1	AC Power Cable	No	1.8
2	Type C cable	No	1.5

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

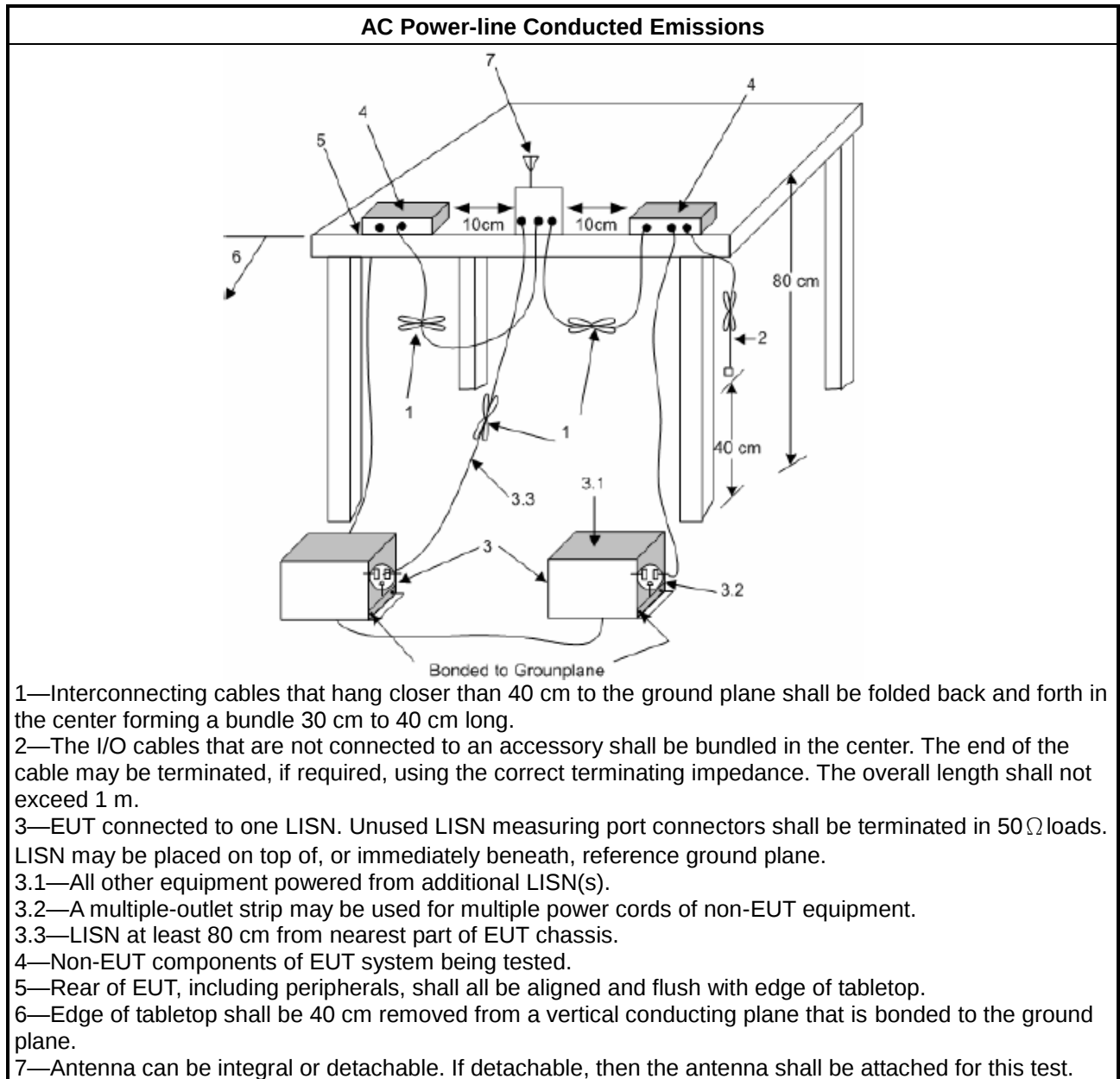
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

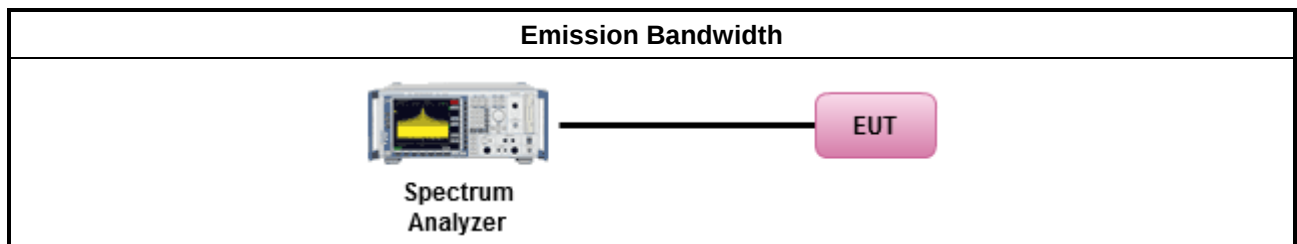
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪	For the emission bandwidth shall be measured using one of the options below:
☒	Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
☐	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
☐	Refer as ANSI C63.10, clause 6.9.3 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
e.i.r.p. Power Limit:	
	2400-2483.5 MHz Band
	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	Smart antenna system (SAS)
	- Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

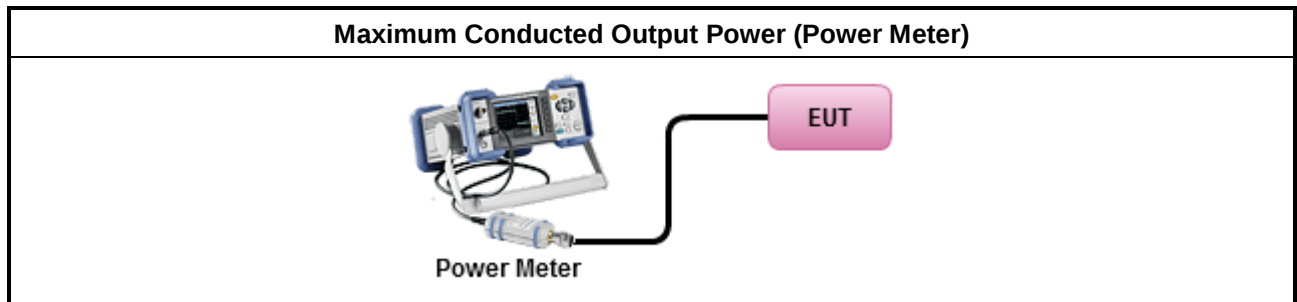
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
☐	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
☐	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
Maximum Average Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
☒	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

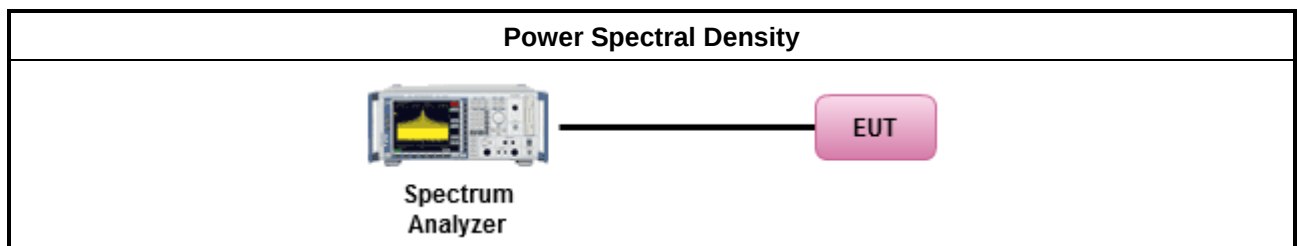
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method
Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒ Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.
For conducted measurement.
If The EUT supports multiple transmit chains using options given below:
Measure and sum the spectra across the outputs. Refer as 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.

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 (dB)
Peak output power procedure	20
Average output power procedure	30
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak level. Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average level.	

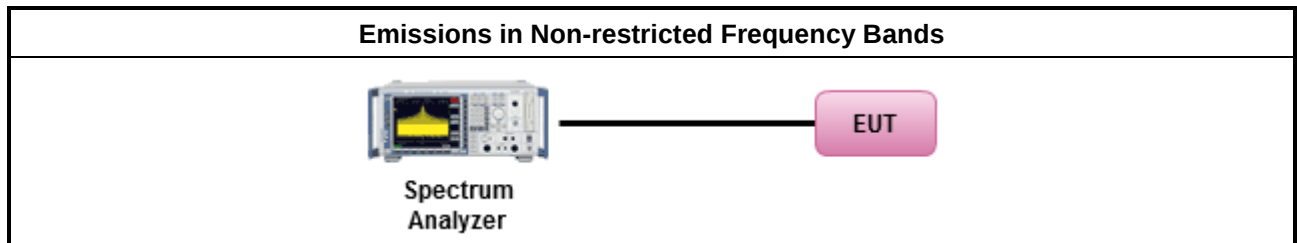
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency 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

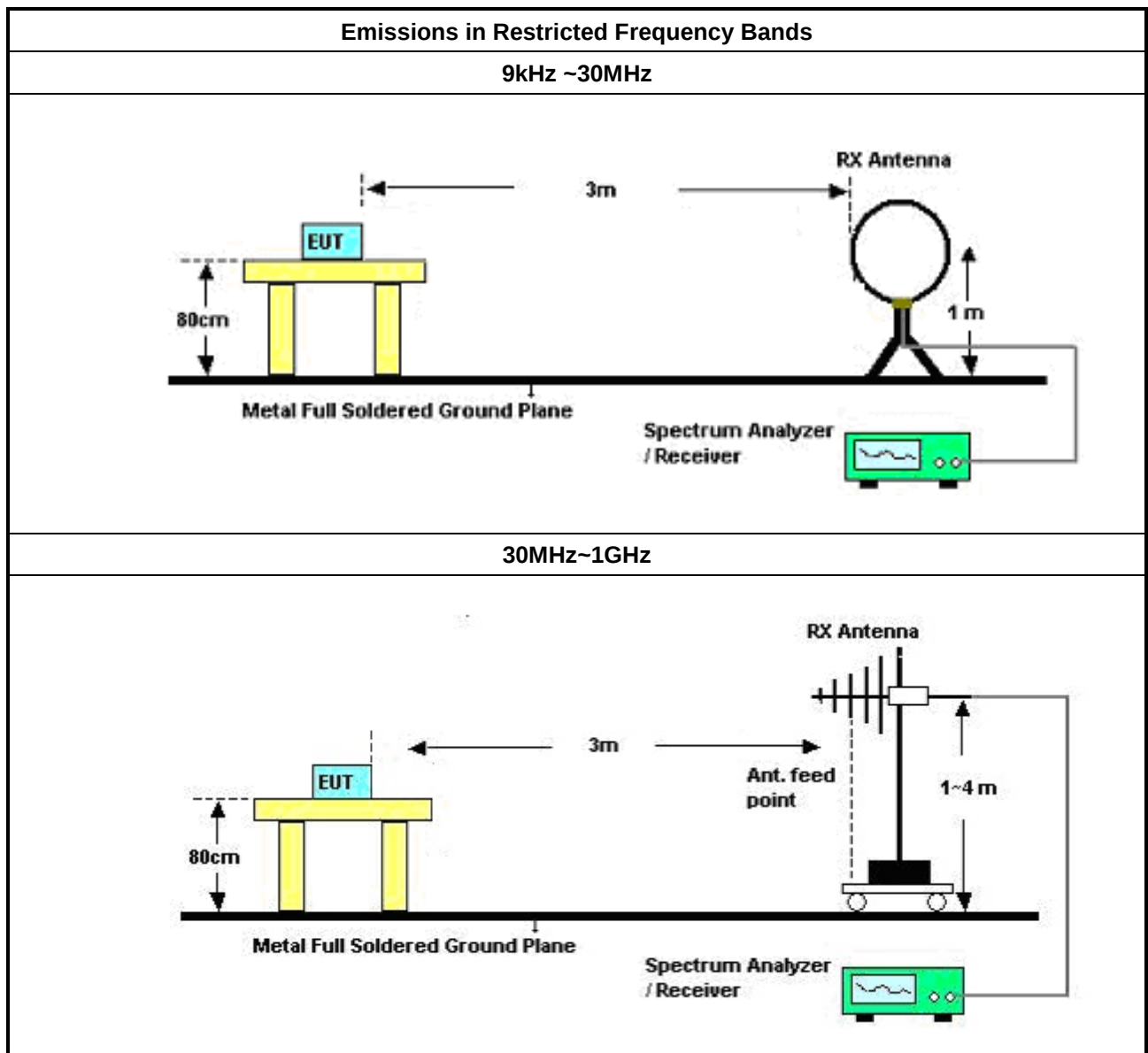
Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
For the transmitter band-edge emissions shall be measured using following options below:	
	Refer as KDB 558074 clause 8.7.1, 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 KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
Use the following spectrum analyzer settings:	
	Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.
KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.	
	Based on FCC 15.31(f)(2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

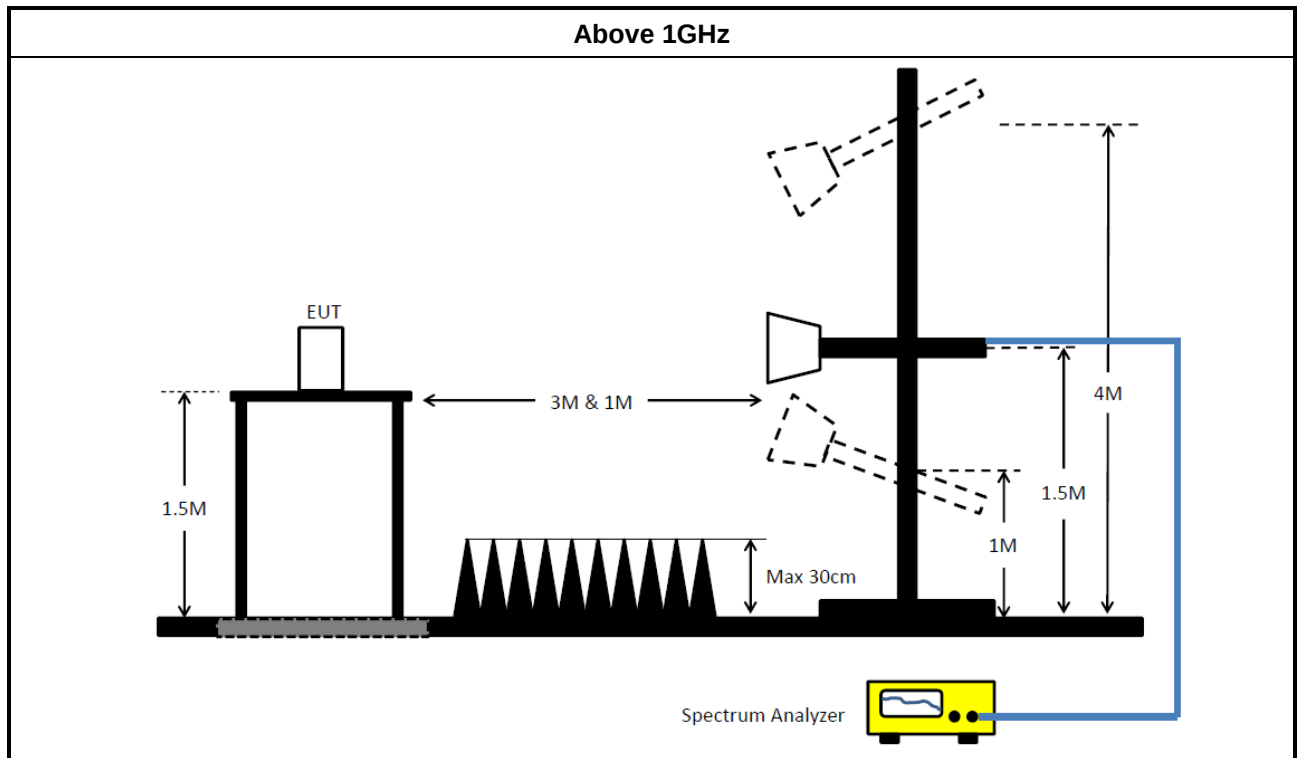
3.6.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

3.6.5 Test Setup





3.6.6 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR	102051	9kHz ~ 3.6GHz	17/May/2024	16/May/2025
LISN(Artificial Mains Network)	SCHWARZBECK	NSLK 8127	8127477	9kHz ~ 30MHz	12/Apr/2024	11/Apr/2025
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	27/Feb/2024	26/Feb/2025
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	18/Oct/2023	17/Oct/2024
Software	Sporton	SENSE-EMI	V5.11.3	-	NCR	NCR

NCR: No Calibration Required

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	9kHz~40GHz	02/Feb/2024	01/Feb/2025
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	20/Oct/2023	19/Oct/2024
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	15/Dec/2023	14/Dec/2024
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	15/Dec/2023	14/Dec/2024
SENSE-15247_FS	Sporton	V5.11.18	N/A	N/A	N/A	N/A

Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz~1GHz 3m	08/Mar/2024	07/Mar/2025
Site V.S.W.R	TDK	SAC-3M	03CH09-HY	1GHz~18GHz 3m	07/Mar/2024	06/Mar/2025
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	10/Aug/2023	09/Aug/2024
Preamplifier	EMCI	EMC9135	980232	9kHz~1GHz	08/Apr/2024	07/Apr/2025
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz ~ 18GHz	20/Dec/2023	19/Dec/2024
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	21/Jul/2023	20/Jul/2024
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D&MT J6102-05	35418 & 3	30MHz~1GHz	27/Aug/2023	26/Aug/2024
RF Cable-R03m	Jye Bao	RG142	03CH09-cable-01	9kHz~1GHz	20/Feb/2024	19/Feb/2025
RF CABLE 5m+3m+1m	HUBER+SUHNE R	SUCOFLEX104	03CH09-cable-02	1GHz~40GHz	20/Feb/2024	19/Feb/2025
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	01248	18GHz~40GHz	21/Aug/2023	20/Aug/2024
Amplifier	EM	EM18G40G	060874	18GHz~40GHz	15/Apr/2024	14/Apr/2025
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	19/Mar/2024	18/Mar/2025
EMI Test Receiver	R&S	ESR3	102052	9kHz~3.6GHz	3/May/2024	2/May/2025
SENSE-15247_FS	Sporton	V5.11.17	NA	NA	NA	NA



Conducted Emissions at Powerline

Appendix A

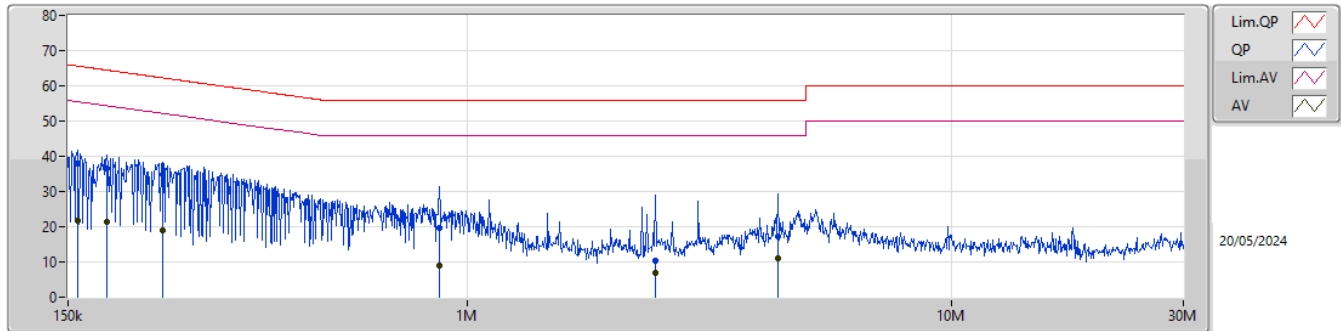
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	236.447k	35.15	62.21	-27.06	Neutral
Mode 2	Pass	AV	467.95k	37.64	46.55	-8.91	Line

Result

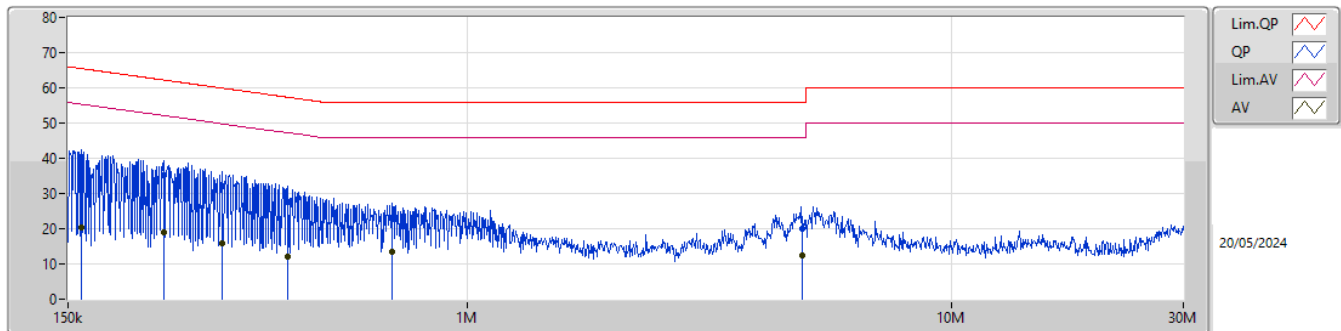
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	156.734k	37.80	65.64	-27.84	Line
Mode 1	Pass	AV	156.734k	21.57	55.64	-34.07	Line
Mode 1	Pass	QP	180.236k	36.49	64.47	-27.98	Line
Mode 1	Pass	AV	180.236k	21.24	54.47	-33.23	Line
Mode 1	Pass	QP	234.567k	34.67	62.29	-27.62	Line
Mode 1	Pass	AV	234.567k	19.03	52.29	-33.26	Line
Mode 1	Pass	QP	875.775k	19.79	56.00	-36.21	Line
Mode 1	Pass	AV	875.775k	9.03	46.00	-36.97	Line
Mode 1	Pass	QP	2.443M	10.32	56.00	-45.68	Line
Mode 1	Pass	AV	2.443M	7.04	46.00	-38.96	Line
Mode 1	Pass	QP	4.376M	17.33	56.00	-38.67	Line
Mode 1	Pass	AV	4.376M	10.97	46.00	-35.03	Line
Mode 1	Pass	QP	159.893k	37.88	65.46	-27.58	Neutral
Mode 1	Pass	AV	159.893k	20.36	55.46	-35.10	Neutral
Mode 1	Pass	QP	236.447k	35.15	62.21	-27.06	Neutral
Mode 1	Pass	AV	236.447k	18.95	52.21	-33.26	Neutral
Mode 1	Pass	QP	311.43k	32.11	59.94	-27.83	Neutral
Mode 1	Pass	AV	311.43k	15.93	49.94	-34.01	Neutral
Mode 1	Pass	QP	426.898k	27.51	57.32	-29.81	Neutral
Mode 1	Pass	AV	426.898k	12.23	47.32	-35.09	Neutral
Mode 1	Pass	QP	697.543k	22.85	56.00	-33.15	Neutral
Mode 1	Pass	AV	697.543k	13.52	46.00	-32.48	Neutral
Mode 1	Pass	QP	4.894M	20.14	56.00	-35.86	Neutral
Mode 1	Pass	AV	4.894M	12.55	46.00	-33.45	Neutral
Mode 2	Pass	QP	150k	52.85	66.00	-13.15	Line
Mode 2	Pass	AV	150k	39.57	56.00	-16.43	Line
Mode 2	Pass	QP	165.082k	53.27	65.20	-11.93	Line
Mode 2	Pass	AV	165.082k	40.05	55.20	-15.15	Line
Mode 2	Pass	QP	213.137k	46.33	63.07	-16.74	Line
Mode 2	Pass	AV	213.137k	33.33	53.07	-19.74	Line
Mode 2	Pass	QP	467.95k	44.23	56.55	-12.32	Line
Mode 2	Pass	AV	467.95k	37.64	46.55	-8.91	Line
Mode 2	Pass	QP	11.182M	33.61	60.00	-26.39	Line
Mode 2	Pass	AV	11.182M	32.37	50.00	-17.63	Line
Mode 2	Pass	QP	15.084M	35.05	60.00	-24.95	Line
Mode 2	Pass	AV	15.084M	33.86	50.00	-16.14	Line
Mode 2	Pass	QP	152.414k	50.32	65.87	-15.55	Neutral
Mode 2	Pass	AV	152.414k	38.66	55.87	-17.21	Neutral
Mode 2	Pass	QP	165.743k	53.27	65.18	-11.91	Neutral
Mode 2	Pass	AV	165.743k	39.75	55.18	-15.43	Neutral
Mode 2	Pass	QP	215.704k	47.35	62.98	-15.63	Neutral
Mode 2	Pass	AV	215.704k	33.21	52.98	-19.77	Neutral
Mode 2	Pass	QP	467.95k	43.62	56.55	-12.93	Neutral
Mode 2	Pass	AV	467.95k	37.19	46.55	-9.36	Neutral
Mode 2	Pass	QP	11.182M	34.13	60.00	-25.87	Neutral
Mode 2	Pass	AV	11.182M	32.71	50.00	-17.29	Neutral
Mode 2	Pass	QP	15.084M	35.67	60.00	-24.33	Neutral
Mode 2	Pass	AV	15.084M	34.82	50.00	-15.18	Neutral

Conducted Emissions at Powerline_Mode 1



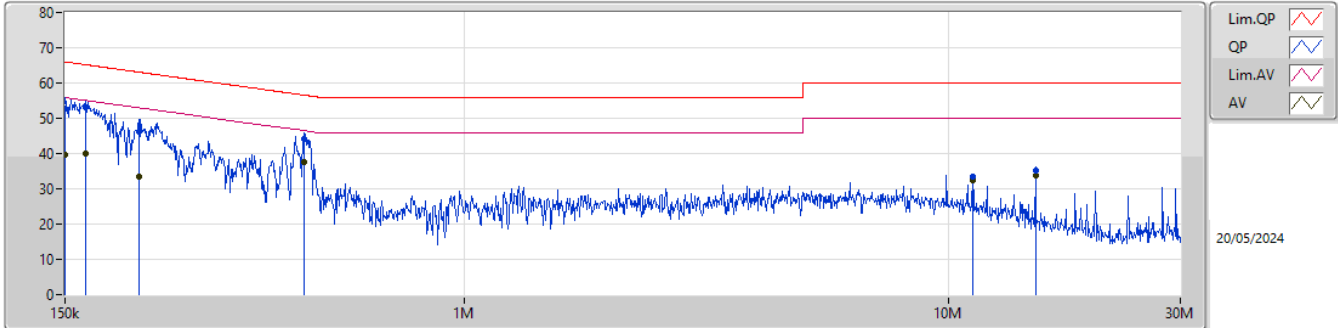
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	156.734k	37.80	65.64	-27.84	9.86	Line	-	27.94	0.04	0.07	9.75						
AV	156.734k	21.57	55.64	-34.07	9.86	Line	-	11.71	0.04	0.07	9.75						
QP	180.236k	36.49	64.47	-27.98	9.83	Line	-	26.66	0.04	0.08	9.71						
AV	180.236k	21.24	54.47	-33.23	9.83	Line	-	11.41	0.04	0.08	9.71						
QP	234.567k	34.67	62.29	-27.62	9.84	Line	-	24.83	0.04	0.10	9.70						
AV	234.567k	19.03	52.29	-33.26	9.84	Line	-	9.19	0.04	0.10	9.70						
QP	875.775k	19.79	56.00	-36.21	9.94	Line	-	9.85	0.06	0.09	9.79						
AV	875.775k	9.03	46.00	-36.97	9.94	Line	-	-0.91	0.06	0.09	9.79						
QP	2.443M	10.32	56.00	-45.68	9.98	Line	-	0.34	0.08	0.10	9.80						
AV	2.443M	7.04	46.00	-38.96	9.98	Line	-	-2.94	0.08	0.10	9.80						
QP	4.376M	17.33	56.00	-38.67	9.97	Line	-	7.36	0.11	0.07	9.79						
AV	4.376M	10.97	46.00	-35.03	9.97	Line	-	1.00	0.11	0.07	9.79						

Conducted Emissions at Powerline_Mode 1



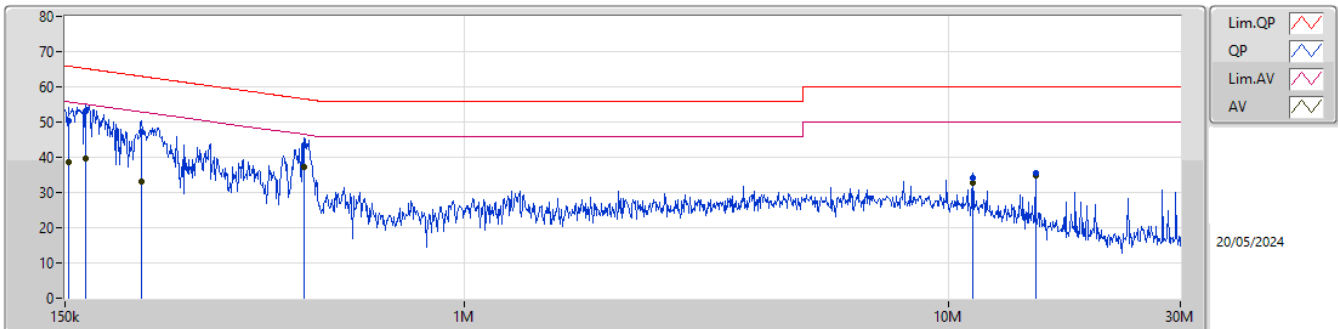
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	159.893k	37.88	65.46	-27.58	9.87	Neutral	-	28.01	0.06	0.07	9.74						
AV	159.893k	20.36	55.46	-35.10	9.87	Neutral	-	10.49	0.06	0.07	9.74						
QP	236.447k	35.15	62.21	-27.06	9.86	Neutral	-	25.29	0.06	0.10	9.70						
AV	236.447k	18.95	52.21	-33.26	9.86	Neutral	-	9.09	0.06	0.10	9.70						
QP	311.43k	32.11	59.94	-27.83	9.91	Neutral	-	22.20	0.07	0.11	9.73						
AV	311.43k	15.93	49.94	-34.01	9.91	Neutral	-	6.02	0.07	0.11	9.73						
QP	426.898k	27.51	57.32	-29.81	9.95	Neutral	-	17.56	0.07	0.12	9.76						
AV	426.898k	12.23	47.32	-35.09	9.95	Neutral	-	2.28	0.07	0.12	9.76						
QP	697.543k	22.85	56.00	-33.15	9.96	Neutral	-	12.89	0.08	0.10	9.78						
AV	697.543k	13.52	46.00	-32.48	9.96	Neutral	-	3.56	0.08	0.10	9.78						
QP	4.894M	20.14	56.00	-35.86	10.02	Neutral	-	10.12	0.16	0.07	9.79						
AV	4.894M	12.55	46.00	-33.45	10.02	Neutral	-	2.53	0.16	0.07	9.79						

Conducted Emissions at Powerline_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	150k	52.85	66.00	-13.15	9.87	Line	-	42.98	0.04	0.07	9.76						
AV	150k	39.57	56.00	-16.43	9.87	Line	-	29.70	0.04	0.07	9.76						
QP	165.082k	53.27	65.20	-11.93	9.84	Line	-	43.43	0.04	0.07	9.73						
AV	165.082k	40.05	55.20	-15.15	9.84	Line	-	30.21	0.04	0.07	9.73						
QP	213.137k	46.33	63.07	-16.74	9.82	Line	-	36.51	0.04	0.09	9.69						
AV	213.137k	33.33	53.07	-19.74	9.82	Line	-	23.51	0.04	0.09	9.69						
QP	467.95k	44.23	56.55	-12.32	9.93	Line	-	34.30	0.05	0.11	9.77						
AV	467.95k	37.64	46.55	-8.91	9.93	Line	-	27.71	0.05	0.11	9.77						
QP	11.182M	33.61	60.00	-26.39	10.09	Line	-	23.52	0.23	0.06	9.80						
AV	11.182M	32.37	50.00	-17.63	10.09	Line	-	22.28	0.23	0.06	9.80						
QP	15.084M	35.05	60.00	-24.95	10.19	Line	-	24.86	0.27	0.09	9.83						
AV	15.084M	33.86	50.00	-16.14	10.19	Line	-	23.67	0.27	0.09	9.83						

Conducted Emissions at Powerline_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	152.414k	50.32	65.87	-15.55	9.88	Neutral	-	40.44	0.06	0.07	9.75						
AV	152.414k	38.66	55.87	-17.21	9.88	Neutral	-	28.78	0.06	0.07	9.75						
QP	165.743k	53.27	65.18	-11.91	9.86	Neutral	-	43.41	0.06	0.07	9.73						
AV	165.743k	39.75	55.18	-15.43	9.86	Neutral	-	29.89	0.06	0.07	9.73						
QP	215.704k	47.35	62.98	-15.63	9.84	Neutral	-	37.51	0.06	0.09	9.69						
AV	215.704k	33.21	52.98	-19.77	9.84	Neutral	-	23.37	0.06	0.09	9.69						
QP	467.95k	43.62	56.55	-12.93	9.95	Neutral	-	33.67	0.07	0.11	9.77						
AV	467.95k	37.19	46.55	-9.36	9.95	Neutral	-	27.24	0.07	0.11	9.77						
QP	11.182M	34.13	60.00	-25.87	10.14	Neutral	-	23.99	0.28	0.06	9.80						
AV	11.182M	32.71	50.00	-17.29	10.14	Neutral	-	22.57	0.28	0.06	9.80						
QP	15.084M	35.67	60.00	-24.33	10.26	Neutral	-	25.41	0.34	0.09	9.83						
AV	15.084M	34.82	50.00	-15.18	10.26	Neutral	-	24.56	0.34	0.09	9.83						

**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	707.5k	1.076M	1M08F1D	681.25k	1.049M
BT-LE(2Mbps)	1.255M	2.103M	2M10F1D	1.08M	2.088M

Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	695k	1.049M
2440MHz	Pass	500k	707.5k	1.064M
2480MHz	Pass	500k	681.25k	1.076M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.08M	2.103M
2440MHz	Pass	500k	1.255M	2.089M
2480MHz	Pass	500k	1.228M	2.088M

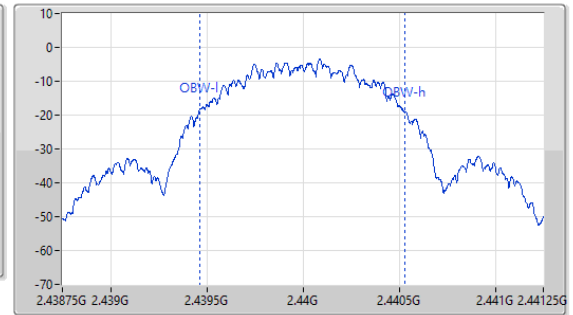
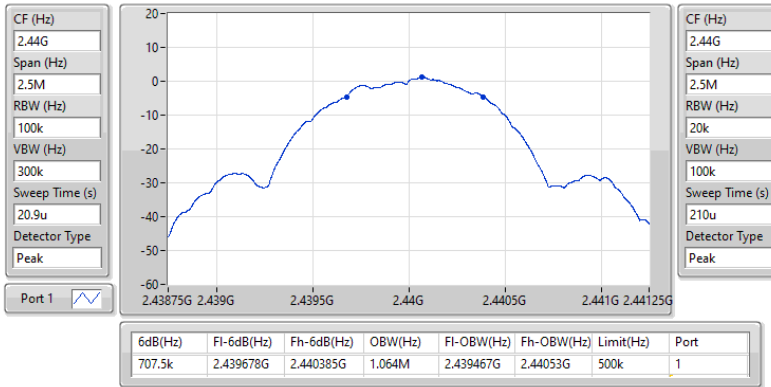
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

2440MHz

14/05/2024

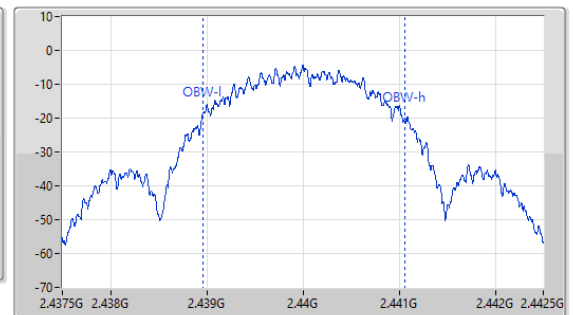
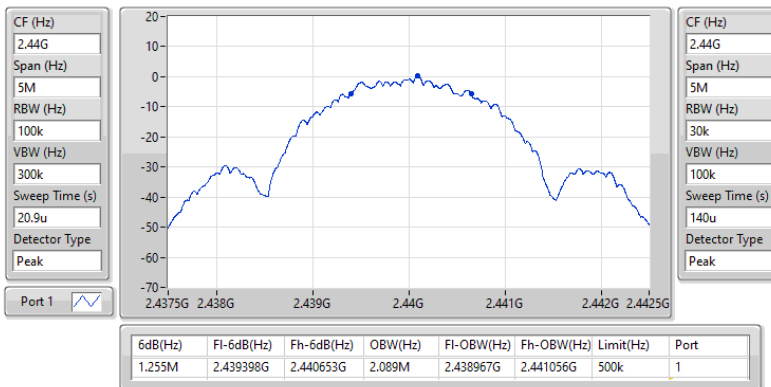


2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

2440MHz

14/05/2024





Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	3.08	0.00203
BT-LE(2Mbps)	3.08	0.00203

**Result**

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	4.68	2.75	30.00
2440MHz	Pass	4.68	2.97	30.00
2480MHz	Pass	4.68	3.08	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	4.68	2.75	30.00
2440MHz	Pass	4.68	2.96	30.00
2480MHz	Pass	4.68	3.08	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	-
BT-LE(1Mbps)	-10.88
BT-LE(2Mbps)	-12.95

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	4.68	-11.74	8.00
2440MHz	Pass	4.68	-10.88	8.00
2480MHz	Pass	4.68	-11.19	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	4.68	-14.49	8.00
2440MHz	Pass	4.68	-13.64	8.00
2480MHz	Pass	4.68	-12.95	8.00

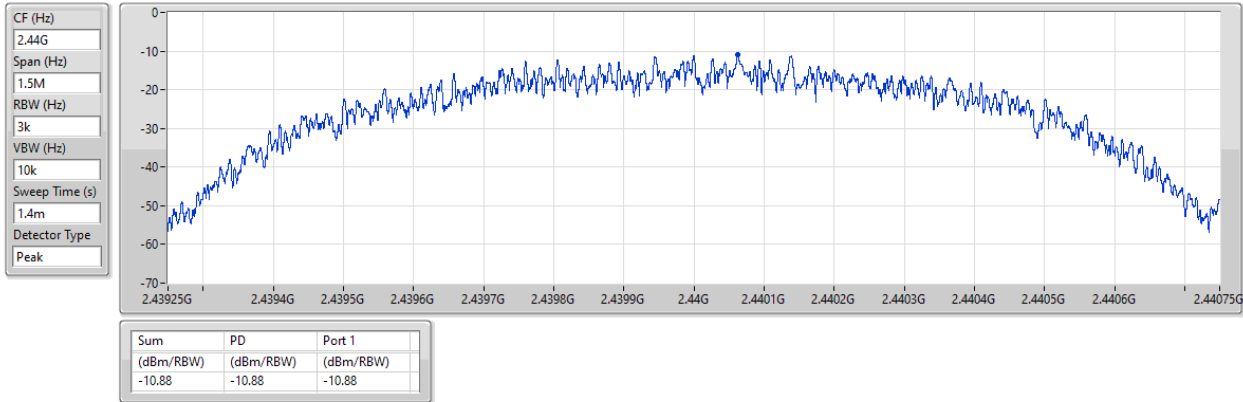
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;
Inf = There's no restriction for the limit.

2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2440MHz

14/05/2024

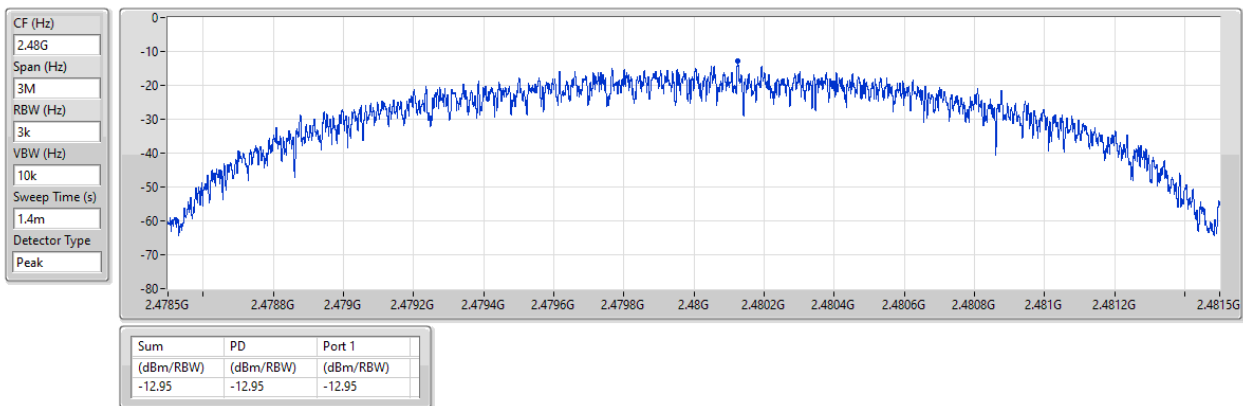


2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2480MHz

14/05/2024





Summary

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.48033G	2.21	-27.79	2.14735G	-54.51	2.39204G	-49.30	2.4G	-57.47	2.50218G	-53.00	21.61428G	-44.12	1
BT-LE(2Mbps)	Pass	2.48016G	1.58	-28.42	1.8395G	-55.11	2.4G	-30.10	2.4G	-28.68	2.50242G	-52.74	21.54116G	-43.49	1

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.48033G	2.21	-27.79	2.16498G	-54.25	2.39976G	-51.18	2.4G	-51.24	2.50314G	-52.25	21.61709G	-44.80	1
2440MHz	Pass	2.48033G	2.21	-27.79	2.14735G	-54.51	2.39204G	-49.30	2.4G	-57.47	2.50218G	-53.00	21.61428G	-44.12	1
2480MHz	Pass	2.48033G	2.21	-27.79	2.12385G	-54.96	2.3976G	-52.34	2.4G	-52.72	2.50118G	-52.07	21.49617G	-44.58	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.48016G	1.58	-28.42	1.8395G	-55.11	2.4G	-30.10	2.4G	-28.68	2.50242G	-52.74	21.54116G	-43.49	1
2440MHz	Pass	2.48016G	1.58	-28.42	1.89943G	-55.24	2.392G	-48.44	2.4G	-57.27	2.5035G	-52.66	21.58616G	-43.54	1
2480MHz	Pass	2.48016G	1.58	-28.42	1.74903G	-54.87	2.394G	-52.58	2.4G	-50.34	2.5031G	-52.62	21.49617G	-44.00	1

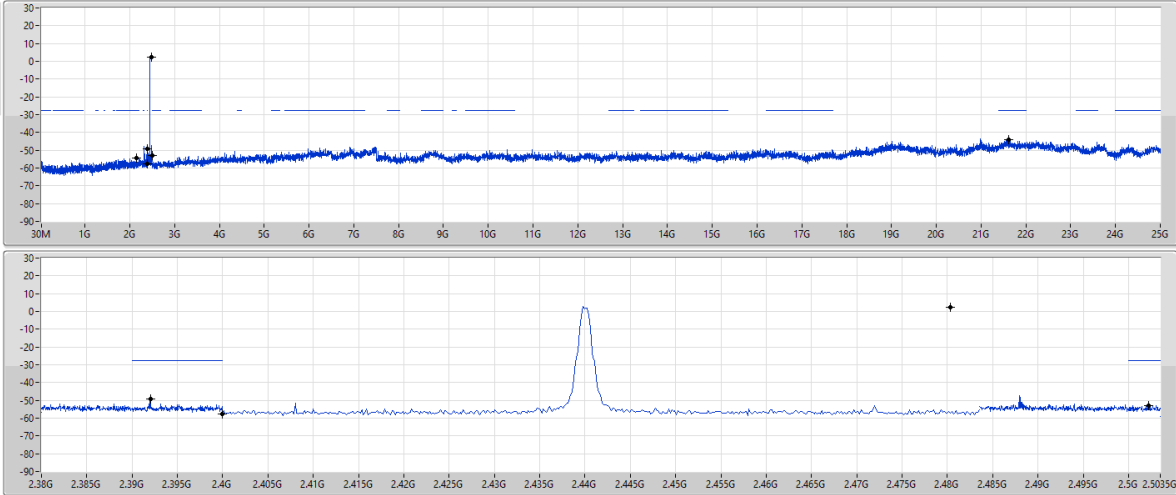
2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2440MHz

14/05/2024

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



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48033G	2.21	-27.79	2.14735G	-54.51	2.39204G	-49.30	2.4G	-57.47	2.50218G	-53.00	21.61428G	-44.12	1

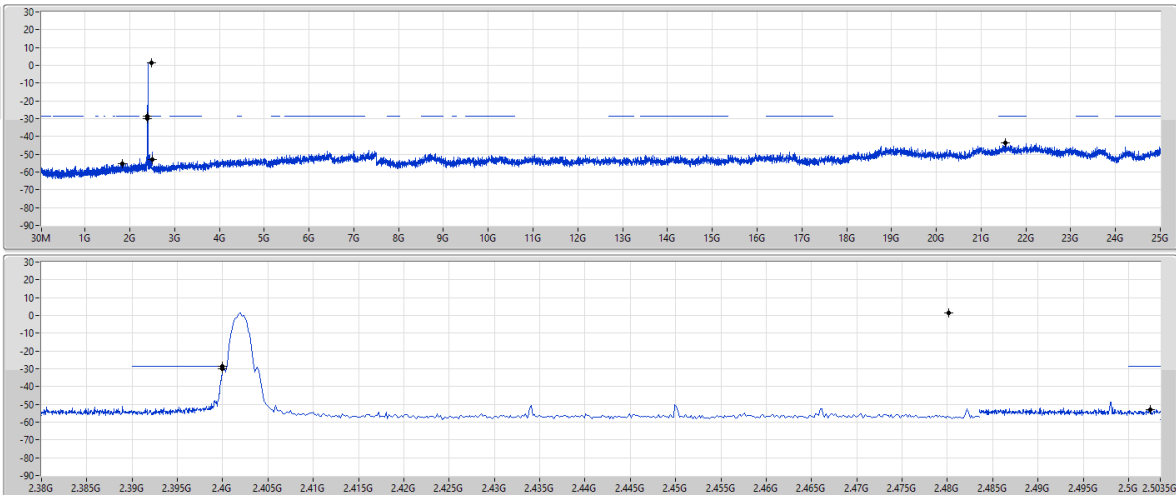
2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

2402MHz

14/05/2024

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



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48016G	1.58	-28.42	1.8395G	-55.11	2.4G	-30.10	2.4G	-28.68	2.50242G	-52.74	21.54116G	-43.49	1



Summary

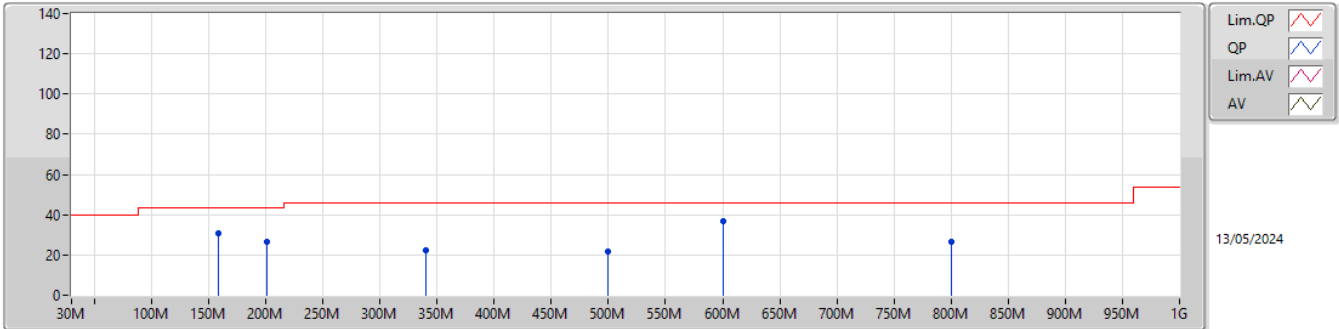
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	QP	600.01M	45.49	46.00	-0.51	3	Horizontal	353	1.35

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	158.04M	30.91	43.50	-12.59	3	Vertical	0	1.00
2440MHz	Pass	PK	200.72M	26.62	43.50	-16.88	3	Vertical	0	1.00
2440MHz	Pass	PK	340.4M	22.46	46.00	-23.54	3	Vertical	0	1.00
2440MHz	Pass	PK	499.48M	21.96	46.00	-24.04	3	Vertical	0	1.00
2440MHz	Pass	PK	600.36M	36.93	46.00	-9.07	3	Vertical	0	1.00
2440MHz	Pass	PK	800.18M	26.66	46.00	-19.34	3	Vertical	0	1.00
2440MHz	Pass	PK	109.54M	33.03	43.50	-10.47	3	Horizontal	360	1.00
2440MHz	Pass	PK	158.04M	30.16	43.50	-13.34	3	Horizontal	360	1.00
2440MHz	Pass	PK	200.72M	27.90	43.50	-15.60	3	Horizontal	360	1.00
2440MHz	Pass	PK	712.88M	36.08	46.00	-9.92	3	Horizontal	360	1.00
2440MHz	Pass	PK	800.18M	32.52	46.00	-13.48	3	Horizontal	360	1.00
2440MHz	Pass	QP	600.01M	45.49	46.00	-0.51	3	Horizontal	353	1.35
2440MHz	Pass	PK	109.54M	28.11	43.50	-15.39	3	Vertical	360	1.00
2440MHz	Pass	PK	220.12M	30.18	46.00	-15.82	3	Vertical	360	1.00
2440MHz	Pass	PK	245.34M	29.69	46.00	-16.31	3	Vertical	360	1.00
2440MHz	Pass	PK	489.78M	28.30	46.00	-17.70	3	Vertical	360	1.00
2440MHz	Pass	PK	600.36M	32.52	46.00	-13.48	3	Vertical	360	1.00
2440MHz	Pass	PK	800.18M	31.33	46.00	-14.67	3	Vertical	360	1.00
2440MHz	Pass	PK	109.54M	23.11	43.50	-20.39	3	Horizontal	0	1.00
2440MHz	Pass	PK	194.9M	30.93	43.50	-12.57	3	Horizontal	0	1.00
2440MHz	Pass	PK	245.34M	28.19	46.00	-17.81	3	Horizontal	0	1.00
2440MHz	Pass	PK	600.36M	33.52	46.00	-12.48	3	Horizontal	0	1.00
2440MHz	Pass	PK	623.64M	30.77	46.00	-15.23	3	Horizontal	0	1.00
2440MHz	Pass	PK	800.18M	33.33	46.00	-12.67	3	Horizontal	0	1.00

2.4-2.4835GHz_BT-LE(2Mbps)

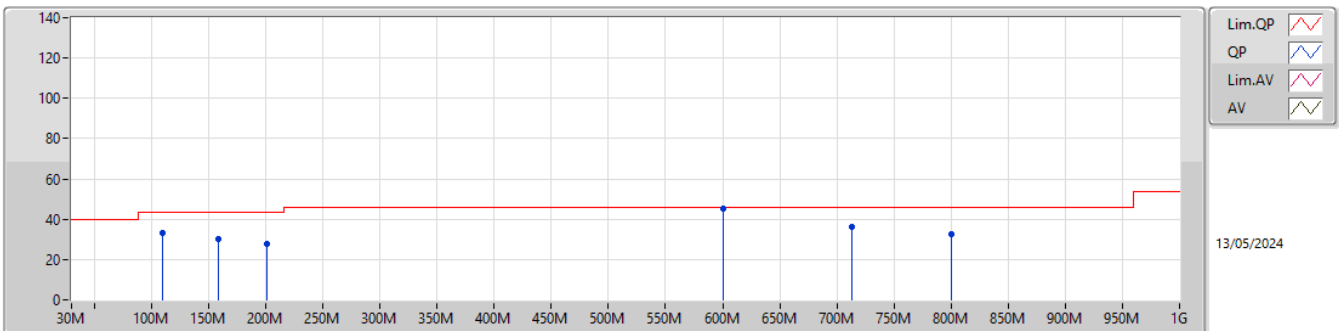
2440MHz_PoE



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	158.04M	30.91	43.50	-12.59	-19.19	3	Vertical	0	1.00	50.10	15.84	1.30	36.33
PK	200.72M	26.62	43.50	-16.88	-20.50	3	Vertical	0	1.00	47.12	14.20	1.50	36.20
PK	340.4M	22.46	46.00	-23.54	-15.15	3	Vertical	0	1.00	37.61	19.26	2.06	36.47
PK	499.48M	21.96	46.00	-24.04	-11.32	3	Vertical	0	1.00	33.28	23.02	2.55	36.89
PK	600.36M	36.93	46.00	-9.07	-9.54	3	Vertical	0	1.00	46.47	24.70	2.84	37.08
PK	800.18M	26.66	46.00	-19.34	-6.91	3	Vertical	0	1.00	33.57	27.15	3.32	37.38

2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_PoE



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	109.54M	33.03	43.50	-10.47	-19.43	3	Horizontal	360	1.00	52.46	16.05	1.08	36.56
PK	158.04M	30.16	43.50	-13.34	-19.19	3	Horizontal	360	1.00	49.35	15.84	1.30	36.33
PK	200.72M	27.90	43.50	-15.60	-20.50	3	Horizontal	360	1.00	48.40	14.20	1.50	36.20
PK	712.88M	36.08	46.00	-9.92	-8.38	3	Horizontal	360	1.00	44.46	25.82	3.14	37.34
PK	800.18M	32.52	46.00	-13.48	-6.91	3	Horizontal	360	1.00	39.43	27.15	3.32	37.38
QP	600.01M	45.49	46.00	-0.51	-9.53	3	Horizontal	353	1.35	55.02	24.71	2.84	37.08



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4848G	45.67	54.00	-8.33	3	Vertical	322	1.00
BT-LE(2Mbps)	Pass	AV	2.4835G	46.72	54.00	-7.28	3	Horizontal	43	1.13

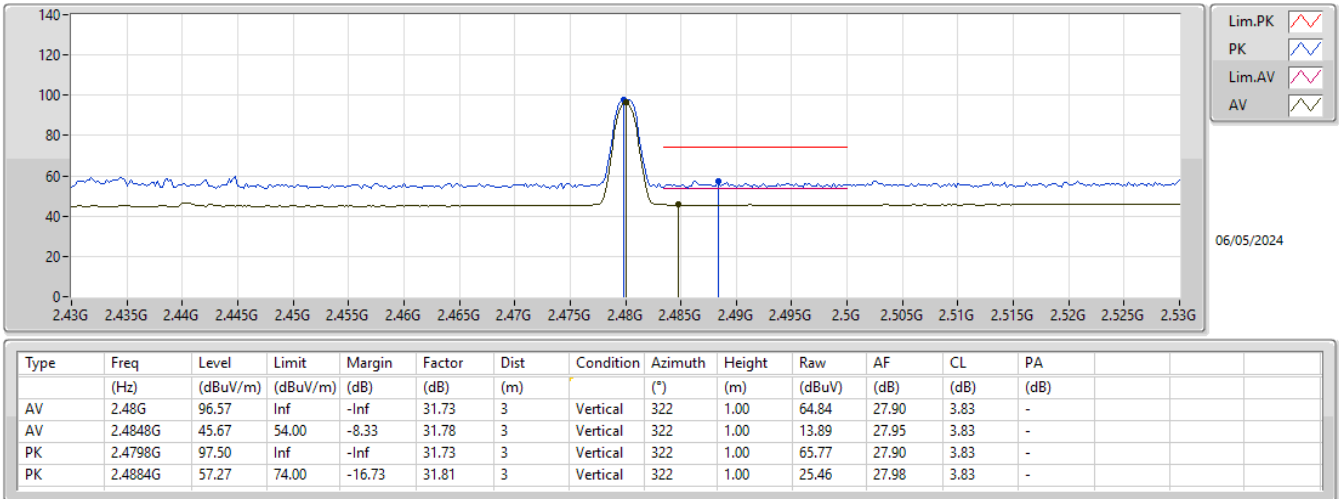
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3898G	44.24	54.00	-9.76	3	Vertical	341	1.07
2402MHz	Pass	AV	2.402G	97.13	Inf	-Inf	3	Vertical	341	1.07
2402MHz	Pass	PK	2.3824G	56.15	74.00	-17.85	3	Vertical	341	1.07
2402MHz	Pass	PK	2.4018G	97.99	Inf	-Inf	3	Vertical	341	1.07
2402MHz	Pass	AV	2.389G	44.29	54.00	-9.71	3	Horizontal	42	1.17
2402MHz	Pass	AV	2.402G	98.72	Inf	-Inf	3	Horizontal	42	1.17
2402MHz	Pass	PK	2.3758G	56.51	74.00	-17.49	3	Horizontal	42	1.17
2402MHz	Pass	PK	2.4022G	99.61	Inf	-Inf	3	Horizontal	42	1.17
2402MHz	Pass	AV	4.80493G	18.16	54.00	-35.84	3	Vertical	167.1	1.50
2402MHz	Pass	PK	4.80339G	30.54	74.00	-43.46	3	Vertical	167.1	1.50
2402MHz	Pass	AV	4.80324G	18.19	54.00	-35.81	3	Horizontal	166	1.50
2402MHz	Pass	PK	4.80323G	30.11	74.00	-43.89	3	Horizontal	166	1.50
2440MHz	Pass	AV	2.3864G	44.40	54.00	-9.60	3	Vertical	339	1.04
2440MHz	Pass	AV	2.44G	96.64	Inf	-Inf	3	Vertical	339	1.04
2440MHz	Pass	AV	2.5G	45.49	54.00	-8.51	3	Vertical	339	1.04
2440MHz	Pass	PK	2.3724G	56.85	74.00	-17.15	3	Vertical	339	1.04
2440MHz	Pass	PK	2.4396G	97.58	Inf	-Inf	3	Vertical	339	1.04
2440MHz	Pass	PK	2.4896G	57.32	74.00	-16.68	3	Vertical	339	1.04
2440MHz	Pass	AV	2.376G	44.48	54.00	-9.52	3	Horizontal	30	1.38
2440MHz	Pass	AV	2.44G	97.69	Inf	-Inf	3	Horizontal	30	1.38
2440MHz	Pass	AV	2.4896G	45.44	54.00	-8.56	3	Horizontal	30	1.38
2440MHz	Pass	PK	2.36G	56.52	74.00	-17.48	3	Horizontal	30	1.38
2440MHz	Pass	PK	2.4396G	98.58	Inf	-Inf	3	Horizontal	30	1.38
2440MHz	Pass	PK	2.4944G	57.31	74.00	-16.69	3	Horizontal	30	1.38
2440MHz	Pass	AV	4.88016G	17.69	54.00	-36.31	3	Vertical	359	1.50
2440MHz	Pass	AV	7.31914G	22.98	54.00	-31.02	3	Vertical	218	1.63
2440MHz	Pass	PK	4.8798G	29.98	74.00	-44.02	3	Vertical	359	1.50
2440MHz	Pass	PK	7.32076G	35.14	74.00	-38.86	3	Vertical	218	1.63
2440MHz	Pass	AV	4.87951G	17.73	54.00	-36.27	3	Horizontal	342.1	1.50
2440MHz	Pass	AV	7.3197G	22.96	54.00	-31.04	3	Horizontal	270	1.72
2440MHz	Pass	PK	4.88047G	29.94	74.00	-44.06	3	Horizontal	342.1	1.50
2440MHz	Pass	PK	7.31994G	35.25	74.00	-38.75	3	Horizontal	270	1.72
2480MHz	Pass	AV	2.48G	96.57	Inf	-Inf	3	Vertical	322	1.00
2480MHz	Pass	AV	2.4848G	45.67	54.00	-8.33	3	Vertical	322	1.00
2480MHz	Pass	PK	2.4798G	97.50	Inf	-Inf	3	Vertical	322	1.00
2480MHz	Pass	PK	2.4884G	57.27	74.00	-16.73	3	Vertical	322	1.00
2480MHz	Pass	AV	2.48G	97.09	Inf	-Inf	3	Horizontal	9	1.12
2480MHz	Pass	AV	2.4835G	45.52	54.00	-8.48	3	Horizontal	9	1.12
2480MHz	Pass	PK	2.4798G	98.03	Inf	-Inf	3	Horizontal	9	1.12
2480MHz	Pass	PK	2.4848G	56.87	74.00	-17.13	3	Horizontal	9	1.12
2480MHz	Pass	AV	4.95985G	34.84	54.00	-19.16	3	Vertical	221	1.50
2480MHz	Pass	AV	7.43953G	37.52	54.00	-16.48	3	Vertical	258	1.67
2480MHz	Pass	PK	4.95941G	46.03	74.00	-27.97	3	Vertical	221	1.50
2480MHz	Pass	PK	7.44046G	50.25	74.00	-23.75	3	Vertical	258	1.67
2480MHz	Pass	AV	4.95982G	34.67	54.00	-19.33	3	Horizontal	225	1.50
2480MHz	Pass	AV	7.43946G	37.51	54.00	-16.49	3	Horizontal	245	1.50
2480MHz	Pass	PK	4.95915G	45.73	74.00	-28.27	3	Horizontal	225	1.50
2480MHz	Pass	PK	7.4408G	49.06	74.00	-24.94	3	Horizontal	245	1.50
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3882G	44.57	54.00	-9.43	3	Vertical	320	1.06
2402MHz	Pass	AV	2.402G	95.90	Inf	-Inf	3	Vertical	320	1.06
2402MHz	Pass	PK	2.3892G	56.46	74.00	-17.54	3	Vertical	320	1.06
2402MHz	Pass	PK	2.4026G	98.22	Inf	-Inf	3	Vertical	320	1.06
2402MHz	Pass	AV	2.3898G	44.54	54.00	-9.46	3	Horizontal	322	1.06
2402MHz	Pass	AV	2.402G	95.83	Inf	-Inf	3	Horizontal	322	1.06
2402MHz	Pass	PK	2.3552G	55.79	74.00	-18.21	3	Horizontal	322	1.06
2402MHz	Pass	PK	2.4026G	98.14	Inf	-Inf	3	Horizontal	322	1.06
2402MHz	Pass	AV	4.80309G	34.80	54.00	-19.20	3	Vertical	10	2.10
2402MHz	Pass	PK	4.80302G	46.96	74.00	-27.04	3	Vertical	10	2.10
2402MHz	Pass	AV	4.80304G	34.54	54.00	-19.46	3	Horizontal	293	2.74

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2402MHz	Pass	PK	4.80498G	45.79	74.00	-28.21	3	Horizontal	293	2.74
2440MHz	Pass	AV	2.386G	44.51	54.00	-9.49	3	Vertical	352	1.04
2440MHz	Pass	AV	2.44G	94.92	Inf	-Inf	3	Vertical	352	1.04
2440MHz	Pass	AV	2.5G	45.52	54.00	-8.48	3	Vertical	352	1.04
2440MHz	Pass	PK	2.3544G	56.25	74.00	-17.75	3	Vertical	352	1.04
2440MHz	Pass	PK	2.4396G	97.49	Inf	-Inf	3	Vertical	352	1.04
2440MHz	Pass	PK	2.4944G	57.16	74.00	-16.84	3	Vertical	352	1.04
2440MHz	Pass	AV	2.376G	44.51	54.00	-9.49	3	Horizontal	41	1.18
2440MHz	Pass	AV	2.44G	95.53	Inf	-Inf	3	Horizontal	41	1.18
2440MHz	Pass	AV	2.4848G	45.54	54.00	-8.46	3	Horizontal	41	1.18
2440MHz	Pass	PK	2.3648G	56.48	74.00	-17.52	3	Horizontal	41	1.18
2440MHz	Pass	PK	2.4396G	98.05	Inf	-Inf	3	Horizontal	41	1.18
2440MHz	Pass	PK	2.4996G	56.75	74.00	-17.25	3	Horizontal	41	1.18
2440MHz	Pass	AV	4.87918G	33.42	54.00	-20.58	3	Vertical	242	2.58
2440MHz	Pass	AV	7.31906G	37.53	54.00	-16.47	3	Vertical	346.1	1.50
2440MHz	Pass	PK	4.88058G	44.95	74.00	-29.05	3	Vertical	242	2.58
2440MHz	Pass	PK	7.31943G	49.71	74.00	-24.29	3	Vertical	346.1	1.50
2440MHz	Pass	AV	4.87908G	35.16	54.00	-18.84	3	Horizontal	58	2.16
2440MHz	Pass	AV	7.32015G	37.47	54.00	-16.53	3	Horizontal	330	1.02
2440MHz	Pass	PK	4.88062G	46.35	74.00	-27.65	3	Horizontal	58	2.16
2440MHz	Pass	PK	7.31943G	49.41	74.00	-24.59	3	Horizontal	330	1.02
2480MHz	Pass	AV	2.48G	95.08	Inf	-Inf	3	Vertical	346	1.01
2480MHz	Pass	AV	2.4835G	46.69	54.00	-7.31	3	Vertical	346	1.01
2480MHz	Pass	PK	2.4796G	97.58	Inf	-Inf	3	Vertical	346	1.01
2480MHz	Pass	PK	2.4888G	56.87	74.00	-17.13	3	Vertical	346	1.01
2480MHz	Pass	AV	2.48G	95.12	Inf	-Inf	3	Horizontal	43	1.13
2480MHz	Pass	AV	2.4835G	46.72	54.00	-7.28	3	Horizontal	43	1.13
2480MHz	Pass	PK	2.4796G	97.67	Inf	-Inf	3	Horizontal	43	1.13
2480MHz	Pass	PK	2.4934G	56.90	74.00	-17.10	3	Horizontal	43	1.13
2480MHz	Pass	AV	4.96099G	34.43	54.00	-19.57	3	Vertical	-0	2.42
2480MHz	Pass	AV	7.43915G	37.13	54.00	-16.87	3	Vertical	206	1.50
2480MHz	Pass	PK	4.96008G	46.13	74.00	-27.87	3	Vertical	-0	2.42
2480MHz	Pass	PK	7.43936G	48.81	74.00	-25.19	3	Vertical	206	1.50
2480MHz	Pass	AV	4.96087G	35.15	54.00	-18.85	3	Horizontal	333	1.12
2480MHz	Pass	AV	7.44079G	37.07	54.00	-16.93	3	Horizontal	251	2.39
2480MHz	Pass	PK	4.96018G	47.06	74.00	-26.94	3	Horizontal	333	1.12
2480MHz	Pass	PK	7.44022G	48.57	74.00	-25.43	3	Horizontal	251	2.39

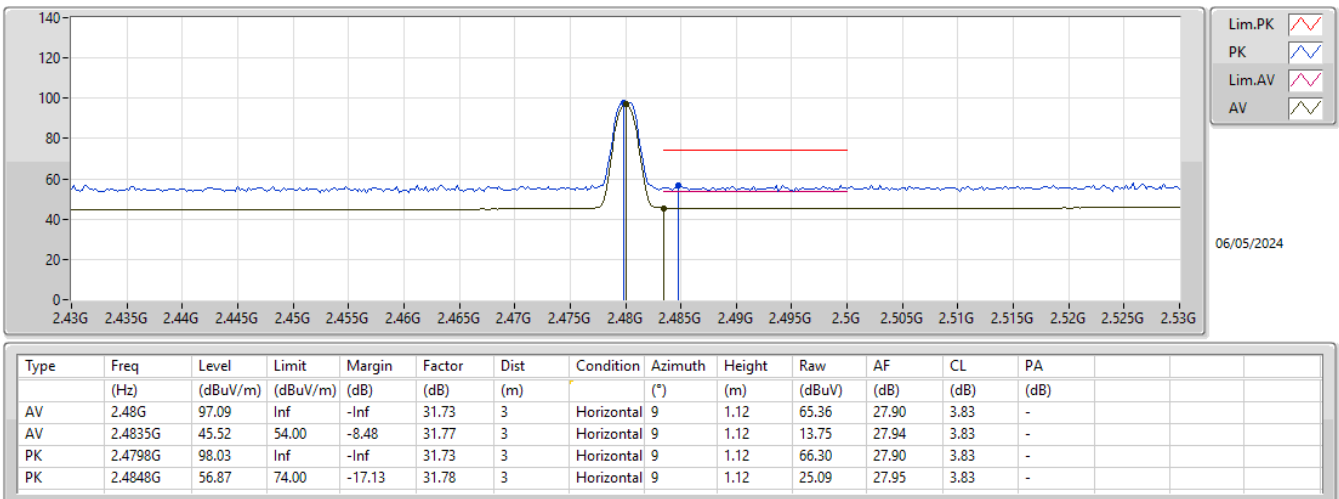
2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX



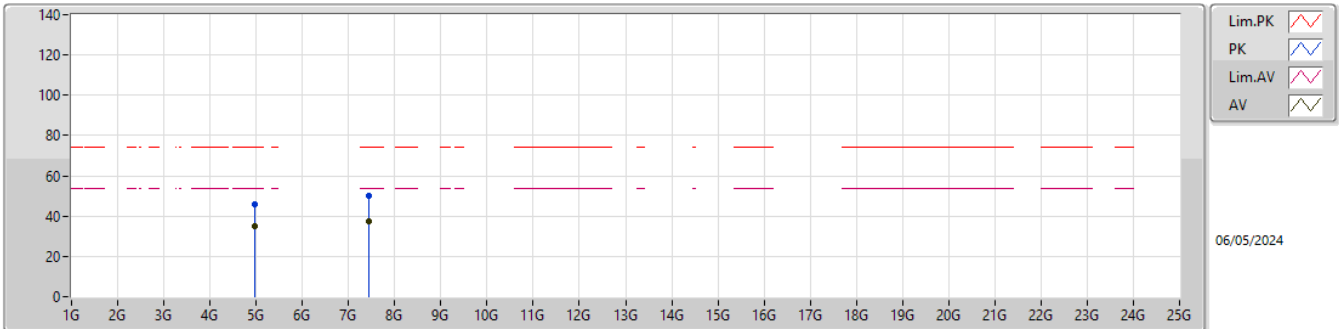
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2480MHz_TX



2.4-2.4835GHz_BT-LE(1Mbps)

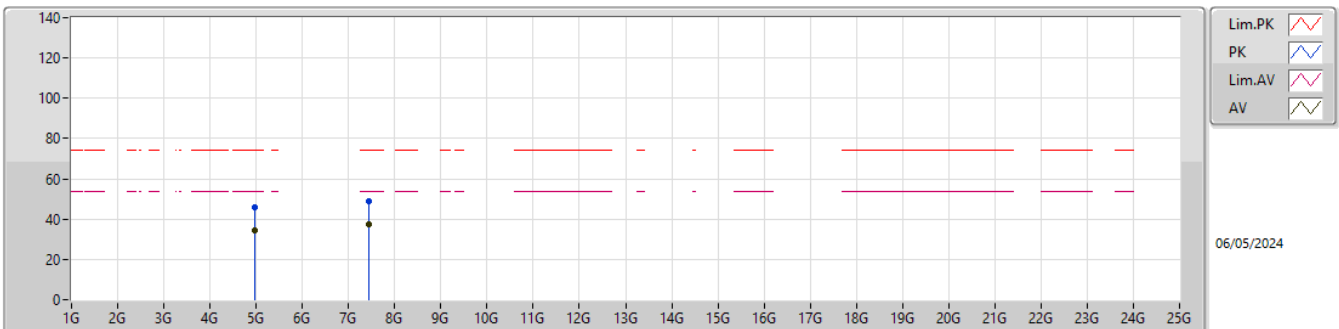
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95985G	34.84	54.00	-19.16	3.48	3	Vertical	221	1.50	31.36	33.24	5.43	35.19
AV	7.43953G	37.52	54.00	-16.48	7.75	3	Vertical	258	1.67	29.77	36.40	6.81	35.46
PK	4.95941G	46.03	74.00	-27.97	3.48	3	Vertical	221	1.50	42.55	33.24	5.43	35.19
PK	7.44046G	50.25	74.00	-23.75	7.75	3	Vertical	258	1.67	42.50	36.40	6.81	35.46

2.4-2.4835GHz_BT-LE(1Mbps)

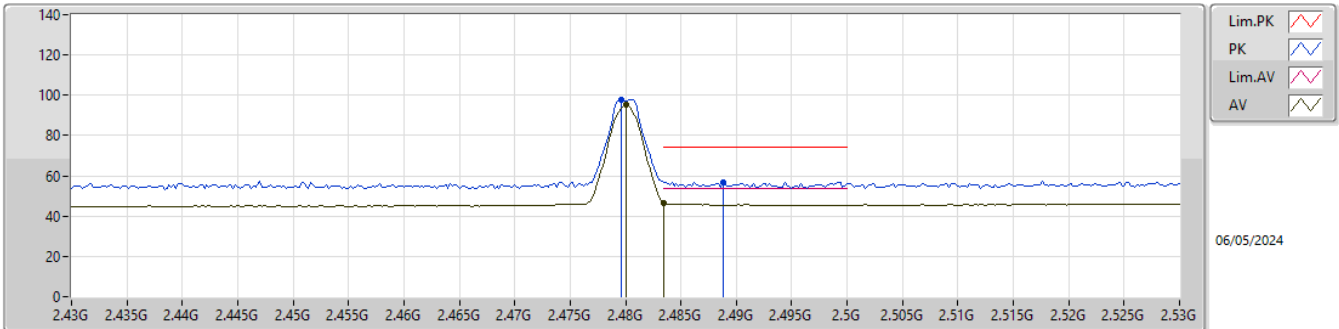
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95982G	34.67	54.00	-19.33	3.48	3	Horizontal	225	1.50	31.19	33.24	5.43	35.19
AV	7.43946G	37.51	54.00	-16.49	7.75	3	Horizontal	245	1.50	29.76	36.40	6.81	35.46
PK	4.95915G	45.73	74.00	-28.27	3.48	3	Horizontal	225	1.50	42.25	33.24	5.43	35.19
PK	7.4408G	49.06	74.00	-24.94	7.75	3	Horizontal	245	1.50	41.31	36.40	6.81	35.46

2.4-2.4835GHz_BT-LE(2Mbps)

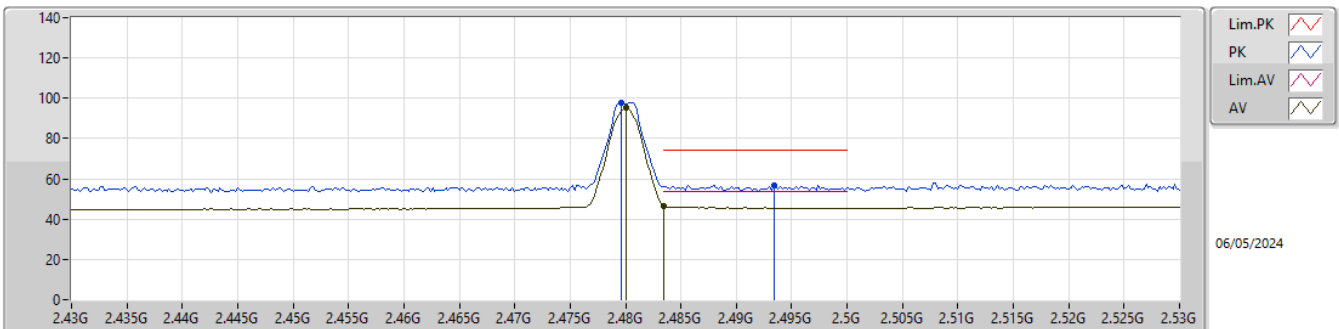
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	95.08	Inf	-Inf	31.73	3	Vertical	346	1.01	63.35	27.90	3.83	-
AV	2.4835G	46.69	54.00	-7.31	31.77	3	Vertical	346	1.01	14.92	27.94	3.83	-
PK	2.4796G	97.58	Inf	-Inf	31.73	3	Vertical	346	1.01	65.85	27.90	3.83	-
PK	2.4888G	56.87	74.00	-17.13	31.82	3	Vertical	346	1.01	25.05	27.99	3.83	-

2.4-2.4835GHz_BT-LE(2Mbps)

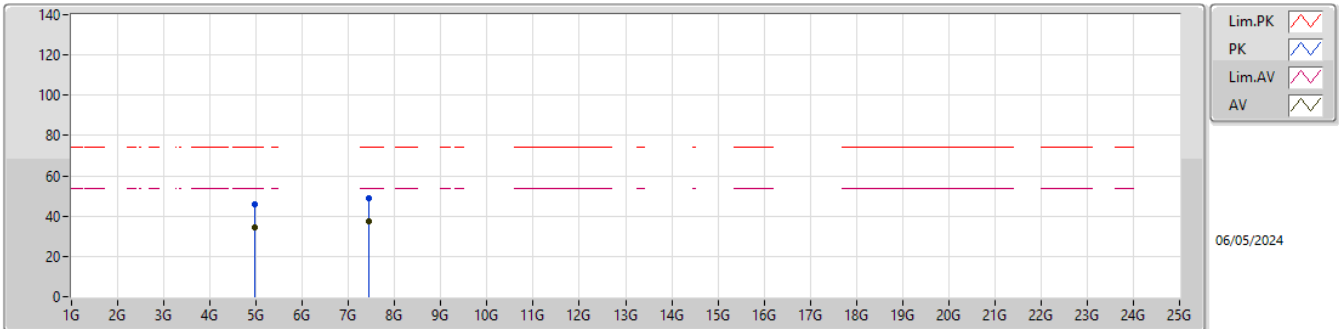
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	95.12	Inf	-Inf	31.73	3	Horizontal	43	1.13	63.39	27.90	3.83	-
AV	2.4835G	46.72	54.00	-7.28	31.77	3	Horizontal	43	1.13	14.95	27.94	3.83	-
PK	2.4796G	97.67	Inf	-Inf	31.73	3	Horizontal	43	1.13	65.94	27.90	3.83	-
PK	2.4934G	56.90	74.00	-17.10	31.84	3	Horizontal	43	1.13	25.06	28.00	3.84	-

2.4-2.4835GHz_BT-LE(2Mbps)

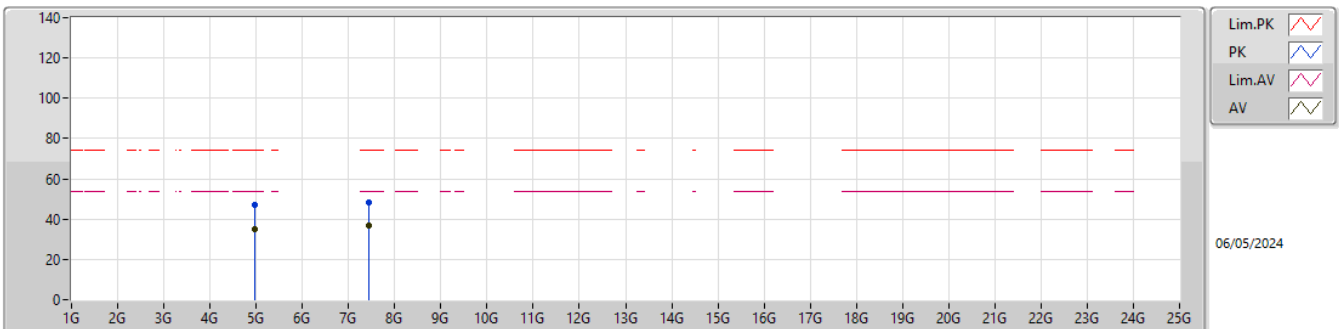
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96099G	34.43	54.00	-19.57	3.48	3	Vertical	-0	2.42	30.95	33.24	5.43	35.19
AV	7.43915G	37.13	54.00	-16.87	7.75	3	Vertical	206	1.50	29.38	36.40	6.81	35.46
PK	4.96008G	46.13	74.00	-27.87	3.48	3	Vertical	-0	2.42	42.65	33.24	5.43	35.19
PK	7.43936G	48.81	74.00	-25.19	7.75	3	Vertical	206	1.50	41.06	36.40	6.81	35.46

2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96087G	35.15	54.00	-18.85	3.48	3	Horizontal	333	1.12	31.67	33.24	5.43	35.19
AV	7.44079G	37.07	54.00	-16.93	7.75	3	Horizontal	251	2.39	29.32	36.40	6.81	35.46
PK	4.96018G	47.06	74.00	-26.94	3.48	3	Horizontal	333	1.12	43.58	33.24	5.43	35.19
PK	7.44022G	48.57	74.00	-25.43	7.75	3	Horizontal	251	2.39	40.82	36.40	6.81	35.46