



RADIO TEST REPORT

FCC ID : N89-JB413A1V1
Equipment : 2.4GHz Bluetooth4.1 IoT Module
Brand Name : SonicFi, CyberTAN
Model Name : JB413-A1
Applicant : CyberTAN Technology Inc.
No. 99, Park Avenue III Science-based Industrial Park
Hsinchu Taiwan 308
Manufacturer : CyberTAN Technology Inc.
No. 99, Park Avenue III Science-based Industrial Park
Hsinchu Taiwan 308
Standard : 47 CFR FCC Part 15.247

The product was received on Sep. 28, 2023, and testing was started from Oct. 04, 2023 and completed on Oct. 27, 2023. 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_6 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: Cathy Chiu



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

Note:

- ♦ Bluetooth LE uses a GFSK modulation.
- ♦ BWch is the nominal channel bandwidth.

**1.1.2 Antenna Information**

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	INPAQ	ACA-2012-A1-CC-S	Chip Antenna	N/A	1.72

Note: The above information was declared by manufacturer.

For Bluetooth 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) $\geq 1/T$
BT-LE(1Mbps)	0.612	2.13	397.5u	3k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From host system		
Function	☒ Point-to-multipoint	☐ Point-to-point	
Test Software Version	BlueTest3 v2.6.2.632		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

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

Brand Name	Description
SonicFi	All the brands are identical, the difference brand served as marketing strategy.
CyberTAN	

Note 1: From the above brands, brand: CyberTAN was selected as representative brand 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 (TAF: 3787)	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.) TEL: 886-3-656-9065 FAX: 886-3-656-9085 Test site Designation No. TW3787 with FCC. Conformity Assessment Body Identifier (CABID) TW3787 with ISCED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Owen Hsu	24.1-25.1 / 62-67	Oct. 06, 2023
Radiated (Below 1GHz)	03CH04-CB	RJ Huang	21.2-22.3 / 56-59	Oct. 04, 2023~ Oct. 19, 2023
Radiated (Above 1GHz)	03CH02-CB	RJ Huang	23-24 / 55-58	Oct. 04, 2023~ Oct. 19, 2023
AC Conduction	CO02-CB	Joe Chu	22~23 / 61~62	Oct. 27, 2023

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.1 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 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%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	0a
2440MHz	0a
2480MHz	0a

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

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
After evaluating, the worst case was found at X axis from Emissions in Restricted Frequency Bands above 1GHz. So the measurement will follow this same test configuration.	
1	EUT in X-axis
Operating Mode > 1GHz	CTX
After evaluating, the worst case was found at X axis, thus the measurement will follow this same test configuration.	
1	EUT in X-axis

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

N/A



2.5 Support Equipment

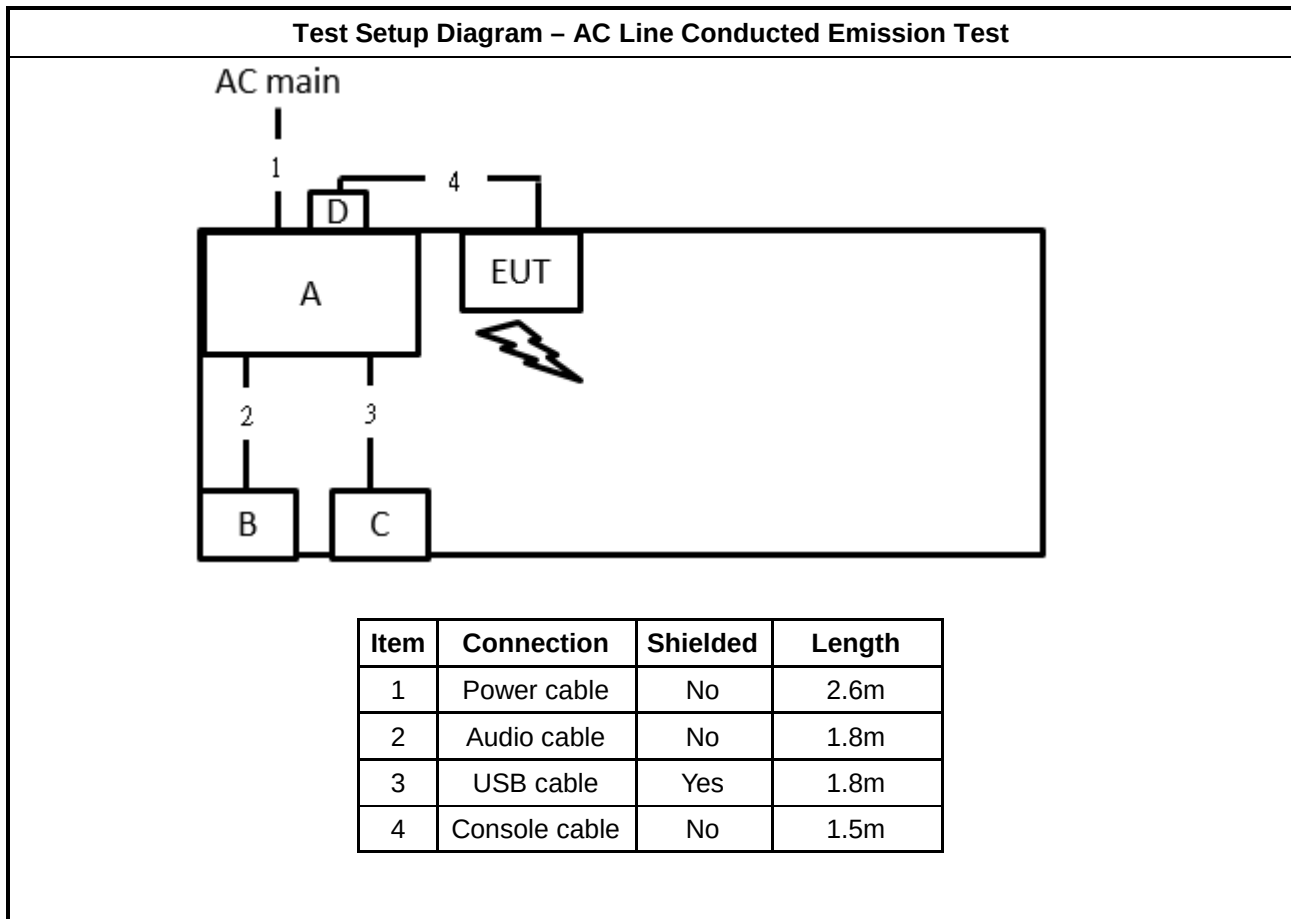
For AC Conduction:

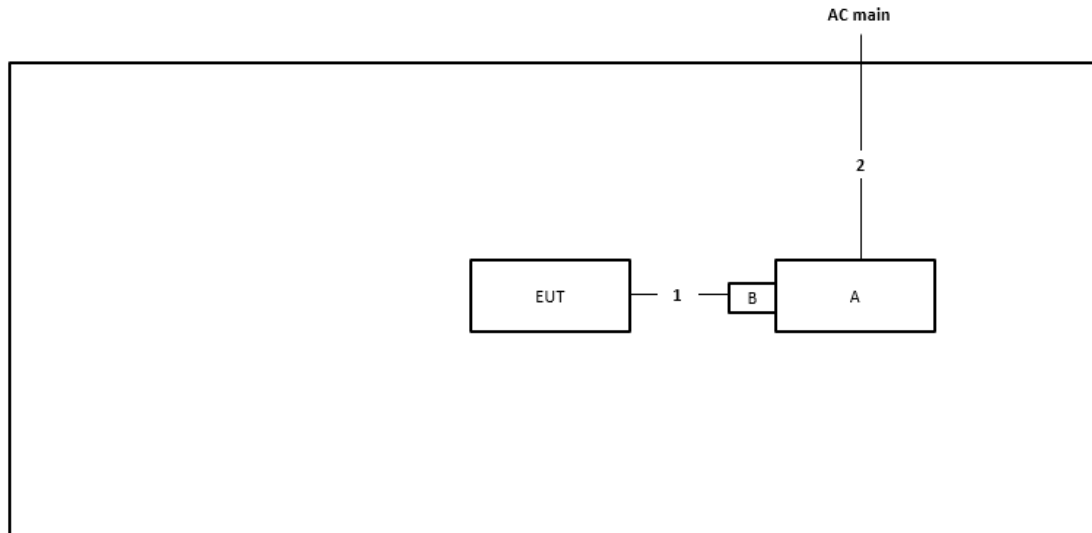
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E6430	N/A
B	Earphone	SHYARO CHI	MIC-04	N/A
C	Mouse	HP	FM100	T41259
D	Fixture	CyberTAN	FT232	N/A

For Radiated and RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Fixture	CyberTAN	FT232	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length
1	Console cable	No	1.5m
2	Power cable	No	1.5m



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

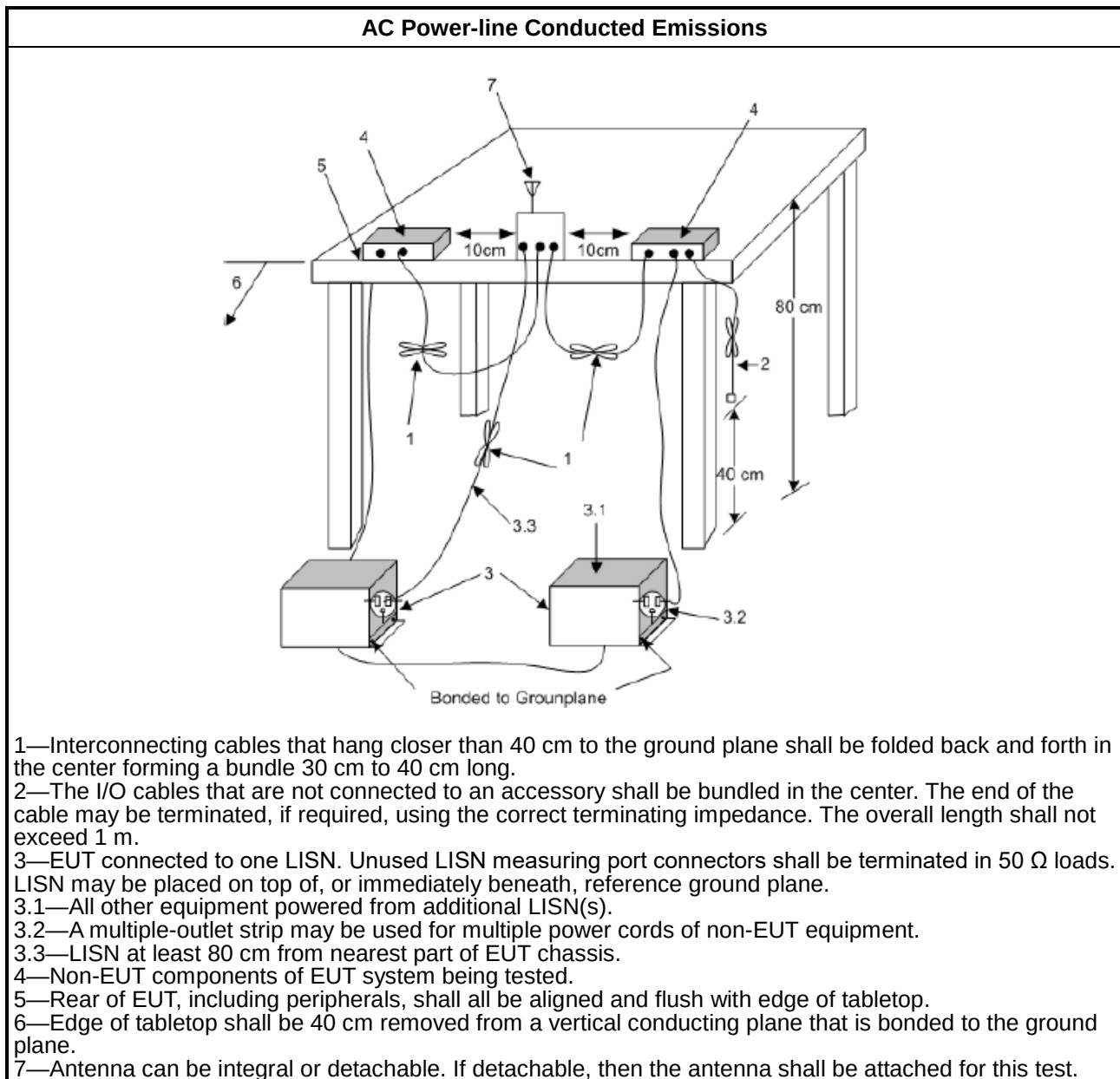
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



1.1.1. 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

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

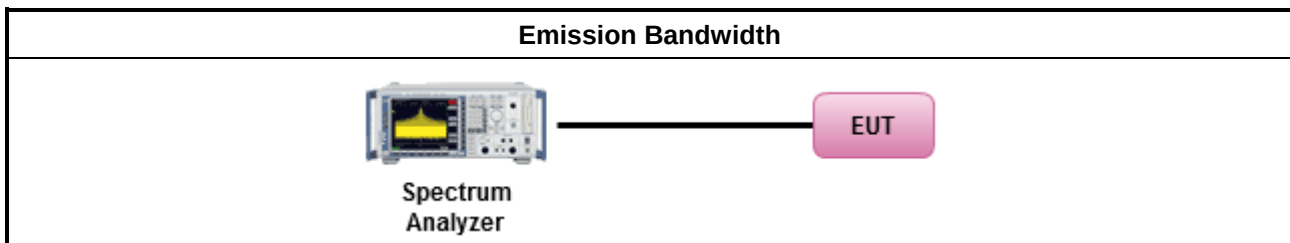
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
For the emission bandwidth shall be measured using one of the options below:
☒ Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
☐ Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
☐ Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	▪ Smart antenna system (SAS):
	- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

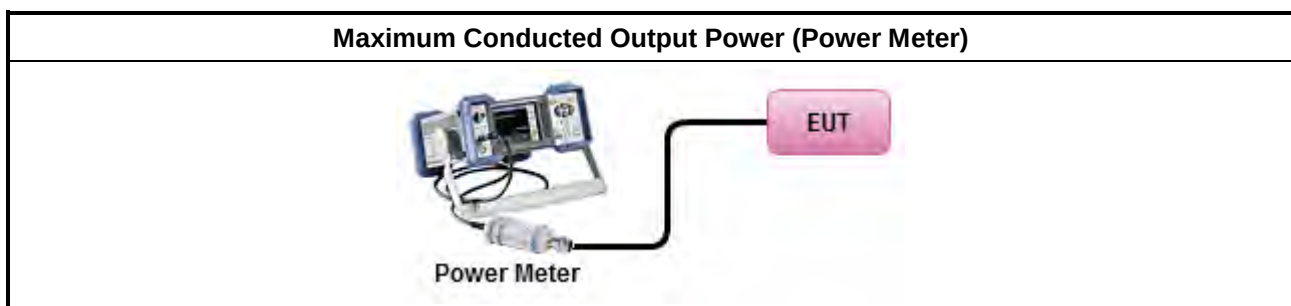
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
☐	Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
Maximum Conducted Output Power	
[duty cycle ≥ 98% or external video / power trigger]	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
duty cycle < 98% and average over on/off periods with duty factor	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
Measurement using a power meter (PM)	
☐	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
☒	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup





3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

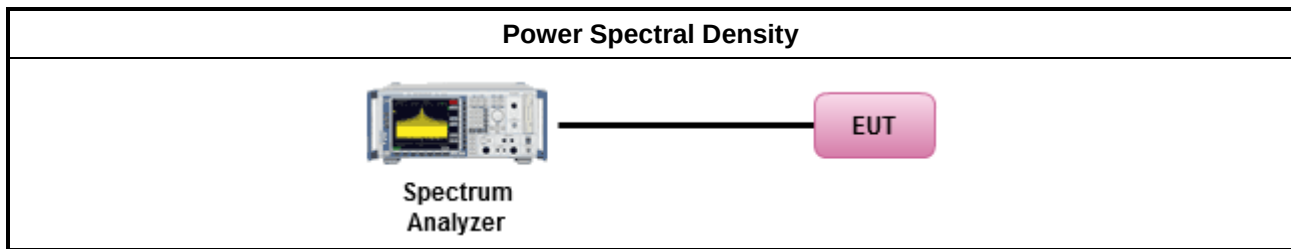
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).	
☒	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD. [duty cycle $\geq 98\%$ or external video / power trigger]
▪ For conducted measurement.	
▪ If The EUT supports multiple transmit chains using options given below:	
☐	Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
☐	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
☐	Option 3: Measure and add $10 \log(N)$ dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with $10 \log(N)$. Or each transmit chains shall be add $10 \log(N)$ to compared with the limit.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

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

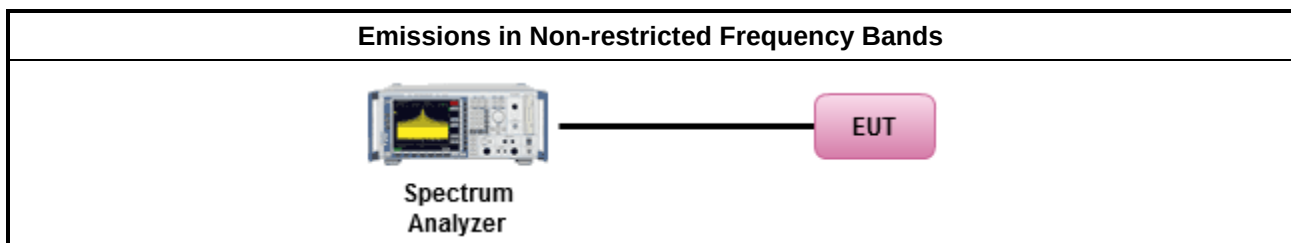
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.6.2 Measuring Instruments

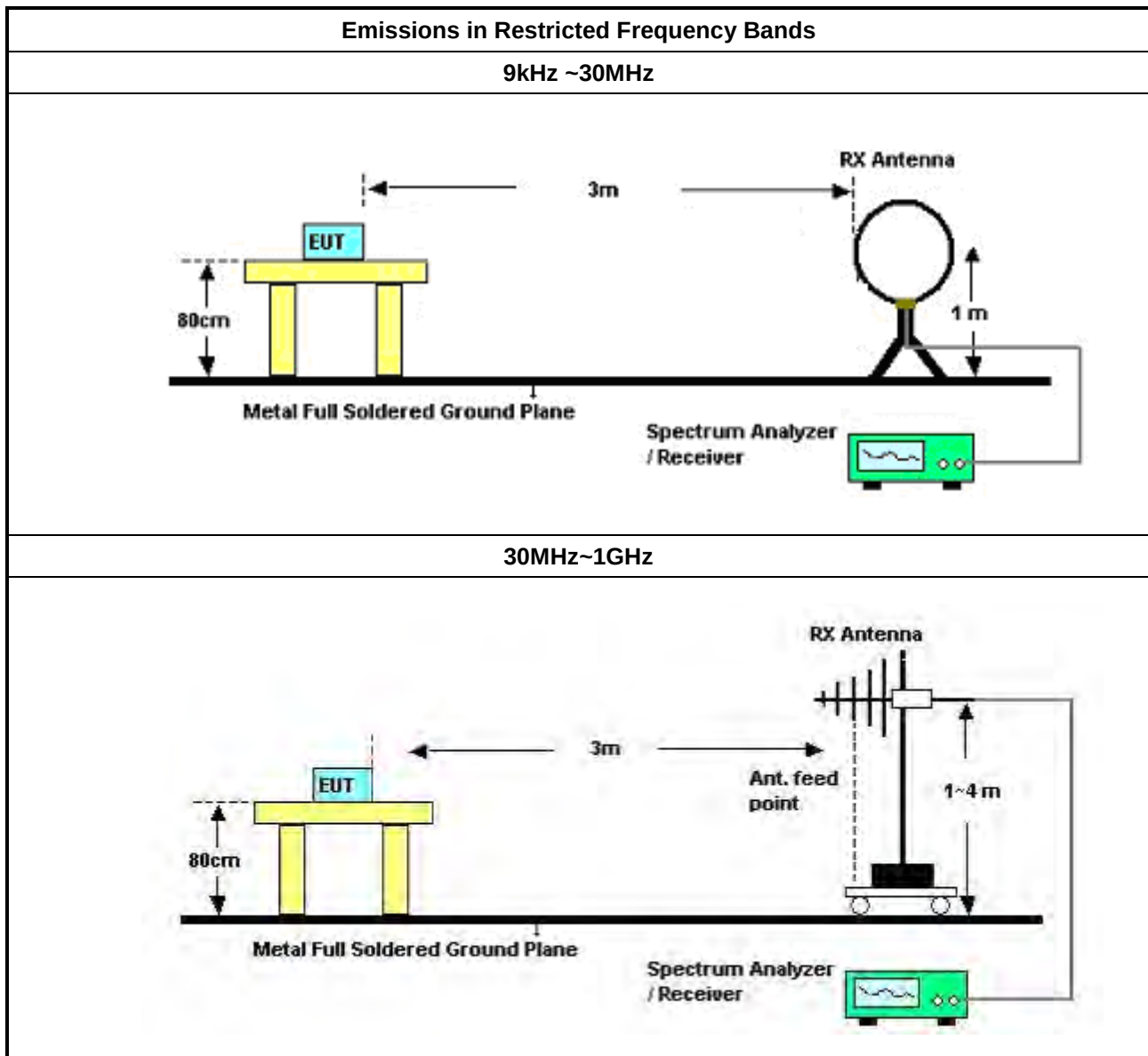
Refer a test equipment and calibration data table in this test report.

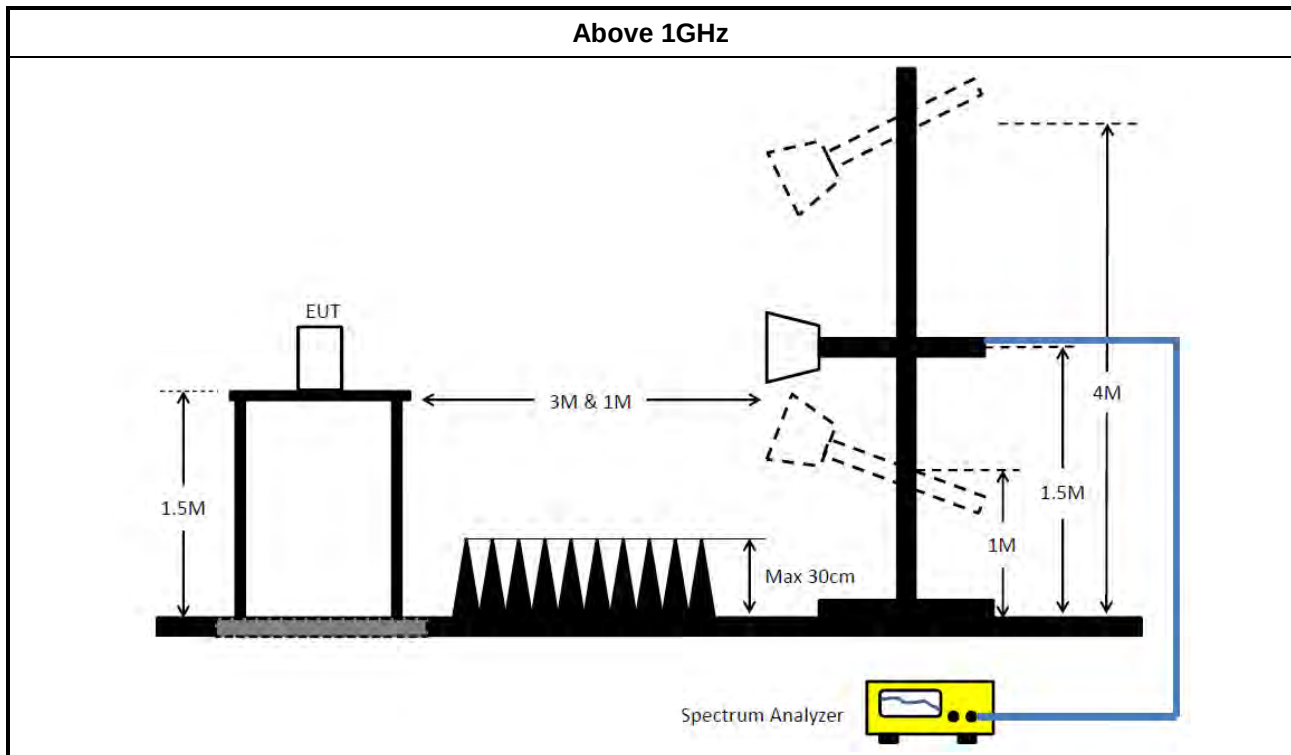


3.6.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle $\geq 98\%$).
	☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
	☒ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW $\geq 1/T$).
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	☒ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
▪ For the transmitter band-edge emissions shall be measured using following options below:	
	▪ Refer as FCC KDB 558074 clause 8.7 & c63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	▪ Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.
	▪ Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
	▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

3.6.4 Test Setup





3.6.5 Measurement Results Calculation

The measured Level is calculated using:

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

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

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

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

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Apr. 06, 2023	Apr. 05, 2024	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Dec. 20, 2022	Dec. 19, 2023	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 18, 2023	May 17, 2024	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Loop Antenna	Teseq	HLA 6120	31244	9kHz - 30 MHz	Mar. 23, 2023	Mar. 22, 2024	Radiation (03CH04-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH04-CB	30 MHz ~ 1 GHz	Aug. 01, 2023	Jul. 31, 2024	Radiation (03CH04-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	22021&AT-N06 07	30MHz ~ 1GHz	Oct. 08, 2022	Oct. 07, 2023	Radiation (03CH04-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	22021&AT-N06 07	30MHz ~ 1GHz	Oct. 07, 2023	Oct. 06, 2024	Radiation (03CH04-CB)
Pre-Amplifier	EMCI	EMC330N	980391	20MHz ~ 3GHz	May 23, 2023	May 22, 2024	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Mar. 21, 2023	Mar. 20, 2024	Radiation (03CH04-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 13, 2023	Jun. 12, 2024	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+67	30MHz ~ 1GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 25, 2023	Mar. 24, 2024	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 18, 2023	Apr. 17, 2024	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jun. 30, 2023	Jun. 29, 2024	Radiation (03CH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Dec. 05, 2022	Dec. 04, 2023	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Dec. 30, 2022	Dec. 29, 2023	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Sep. 04, 2023	Sep. 03, 2024	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Sep. 04, 2023	Sep. 03, 2024	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-11	30MHz ~18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-12	30MHz ~18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-13	30MHz ~18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz ~18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz ~18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
Switch	SPTCB	SP-SWI	SWI-03	1 ~26.5 GHz	Oct. 03, 2023	Oct. 02, 2024	Conducted (TH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH03-CB)

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

NCR means Non-Calibration required.



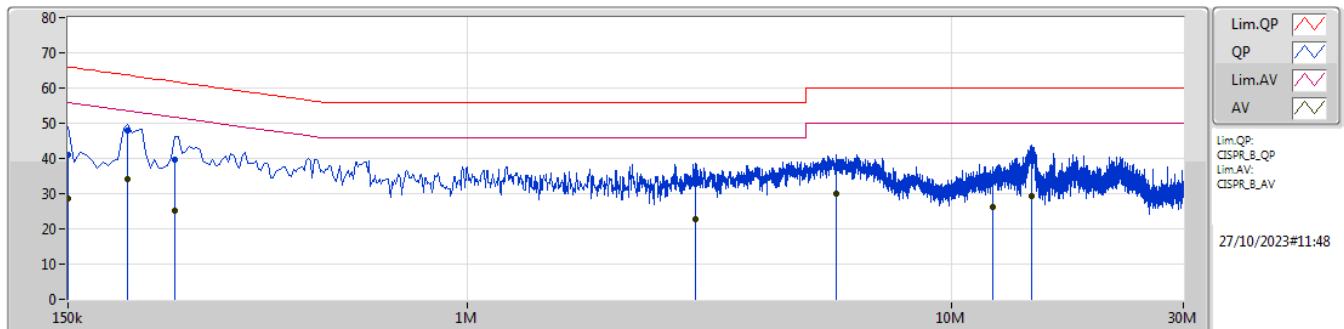
Conducted Emissions at Powerline

Appendix A

Summary

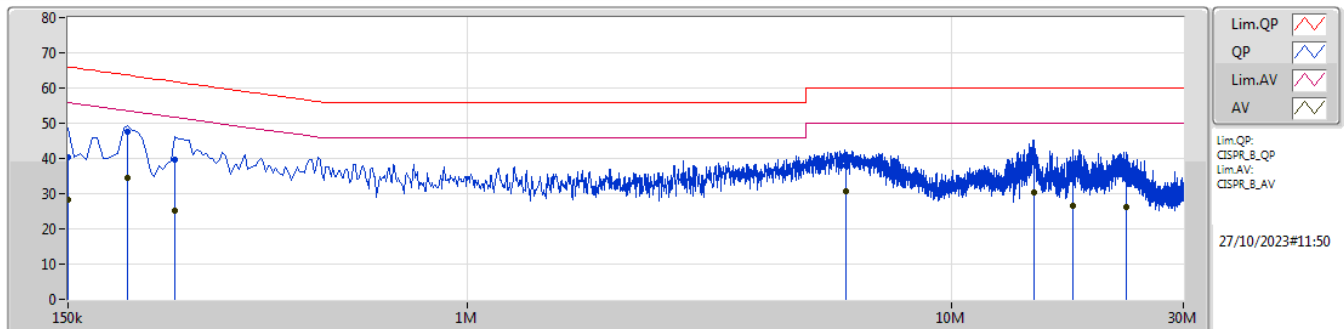
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	199.5k	47.86	63.63	-15.77	Line

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	150k	41.08	66.00	-24.92	10.08	Line	-	31.00	0.04	0.03	10.01						
AV	150k	28.79	56.00	-27.21	10.08	Line	-	18.71	0.04	0.03	10.01						
QP	199.5k	47.86	63.63	-15.77	10.06	Line	"Worst"	37.80	0.04	0.03	9.99						
AV	199.5k	34.25	53.63	-19.38	10.06	Line	-	24.19	0.04	0.03	9.99						
QP	249k	39.61	61.79	-22.18	10.06	Line	-	29.55	0.04	0.03	9.99						
AV	249k	25.19	51.79	-26.60	10.06	Line	-	15.13	0.04	0.03	9.99						
QP	2.963M	32.77	56.00	-23.23	10.10	Line	-	22.67	0.09	0.10	9.91						
AV	2.963M	22.74	46.00	-23.26	10.10	Line	-	12.64	0.09	0.10	9.91						
QP	5.771M	37.80	60.00	-22.20	10.20	Line	-	27.60	0.14	0.12	9.94						
AV	5.771M	29.99	50.00	-20.01	10.20	Line	-	19.79	0.14	0.12	9.94						
QP	12.143M	33.37	60.00	-26.63	10.34	Line	-	23.03	0.24	0.13	9.97						
AV	12.143M	26.17	50.00	-23.83	10.34	Line	-	15.83	0.24	0.13	9.97						
QP	14.622M	40.34	60.00	-19.66	10.35	Line	-	29.99	0.27	0.14	9.94						
AV	14.622M	29.33	50.00	-20.67	10.35	Line	-	18.98	0.27	0.14	9.94						

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	150k	40.23	66.00	-25.77	10.09	Neutral	-	30.14	0.05	0.03	10.01						
AV	150k	28.44	56.00	-27.56	10.09	Neutral	-	18.35	0.05	0.03	10.01						
QP	199.5k	47.75	63.63	-15.88	10.07	Neutral	-	37.68	0.05	0.03	9.99						
AV	199.5k	34.47	53.63	-19.16	10.07	Neutral	-	24.40	0.05	0.03	9.99						
QP	249k	39.61	61.79	-22.18	10.07	Neutral	-	29.54	0.05	0.03	9.99						
AV	249k	25.08	51.79	-26.71	10.07	Neutral	-	15.01	0.05	0.03	9.99						
QP	6.023M	37.80	60.00	-22.20	10.20	Neutral	-	27.60	0.14	0.12	9.94						
AV	6.023M	30.64	50.00	-19.36	10.20	Neutral	-	20.44	0.14	0.12	9.94						
QP	14.721M	40.66	60.00	-19.34	10.28	Neutral	-	30.38	0.21	0.14	9.93						
AV	14.721M	30.45	50.00	-19.55	10.28	Neutral	-	20.17	0.21	0.14	9.93						
QP	17.79M	36.27	60.00	-23.73	10.31	Neutral	-	25.96	0.22	0.18	9.91						
AV	17.79M	26.56	50.00	-23.44	10.31	Neutral	-	16.25	0.22	0.18	9.91						
QP	22.916M	34.03	60.00	-25.97	10.40	Neutral	-	23.63	0.25	0.28	9.87						
AV	22.916M	26.29	50.00	-23.71	10.40	Neutral	-	15.89	0.25	0.28	9.87						



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	1.027M	1M03F1D	690k	1.023M

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

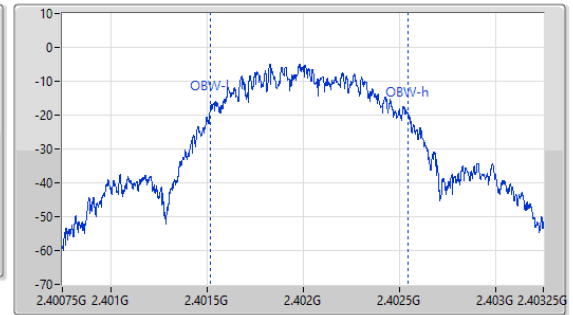
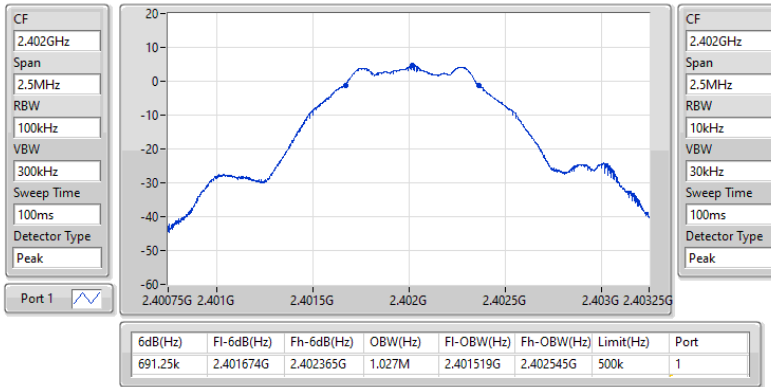
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	691.25k	1.027M
2440MHz	Pass	500k	690k	1.023M
2480MHz	Pass	500k	707.5k	1.023M

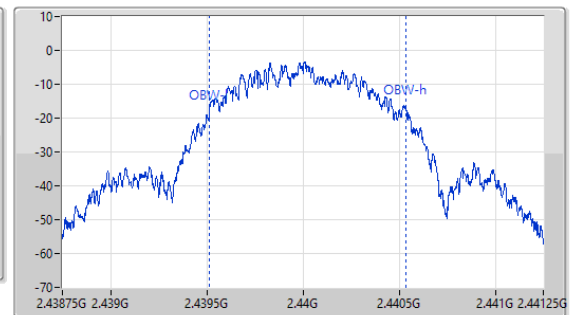
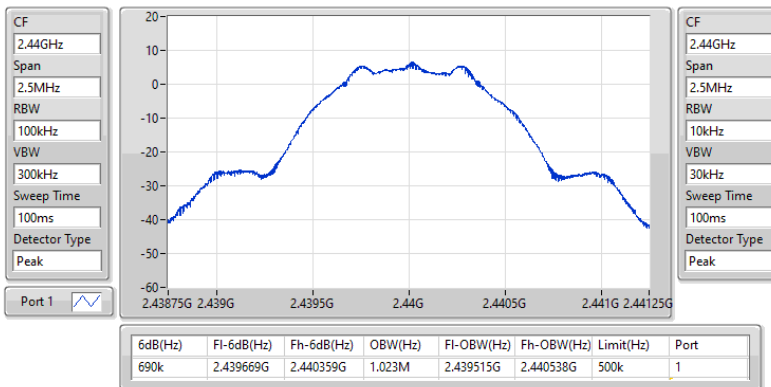
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_BT-LE(1Mbps)
EBW-DTS
2402MHz

06/10/2023


2.4-2.4835GHz_BT-LE(1Mbps)
EBW-DTS
2440MHz

06/10/2023

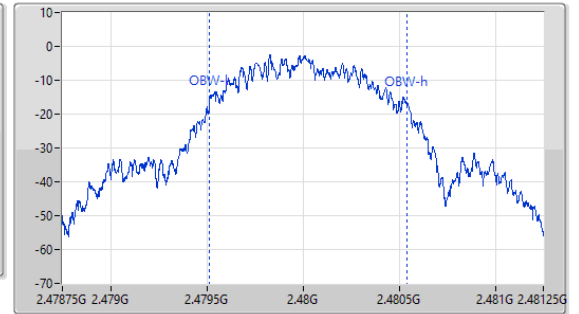
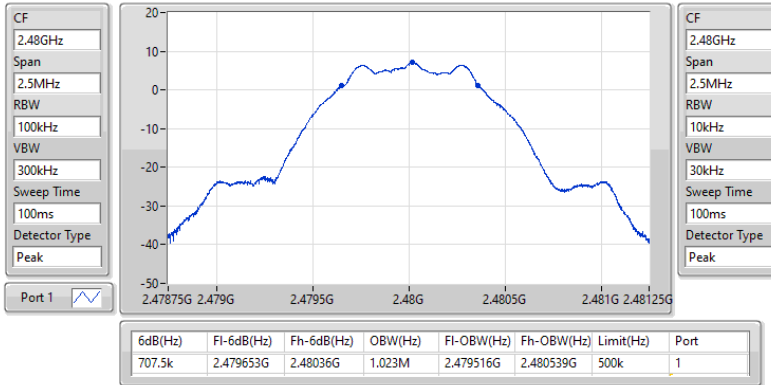


2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

2480MHz

06/10/2023





Average Power-DTS

Appendix C

Summary

Mode	Total Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	7.17	0.00521



Average Power-DTS

Appendix C

Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	1.72	4.91	30.00
2440MHz	Pass	1.72	6.12	30.00
2480MHz	Pass	1.72	7.17	30.00

DG = Directional Gain; Port X = Port X output power



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-8.57

RBW = 3kHz;



Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	1.72	-10.89	8.00
2440MHz	Pass	1.72	-9.45	8.00
2480MHz	Pass	1.72	-8.57	8.00

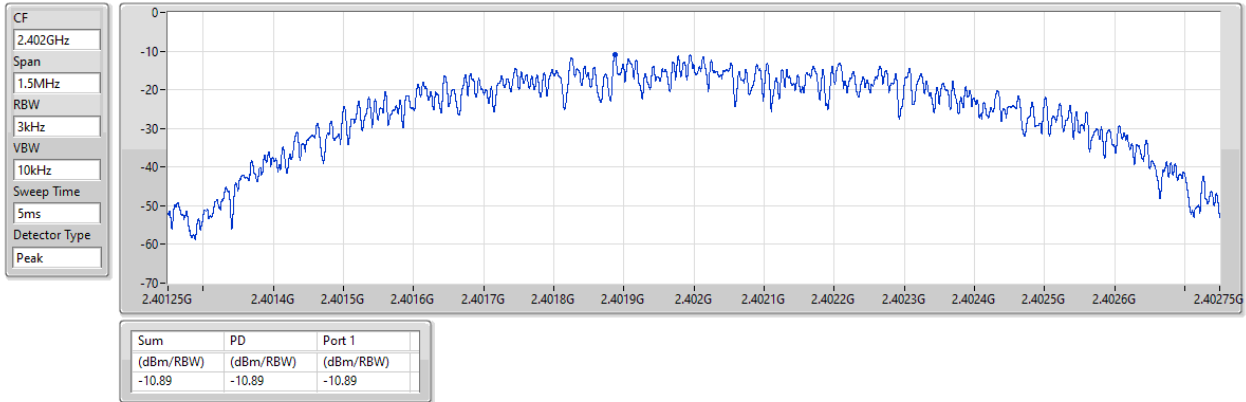
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2402MHz

06/10/2023

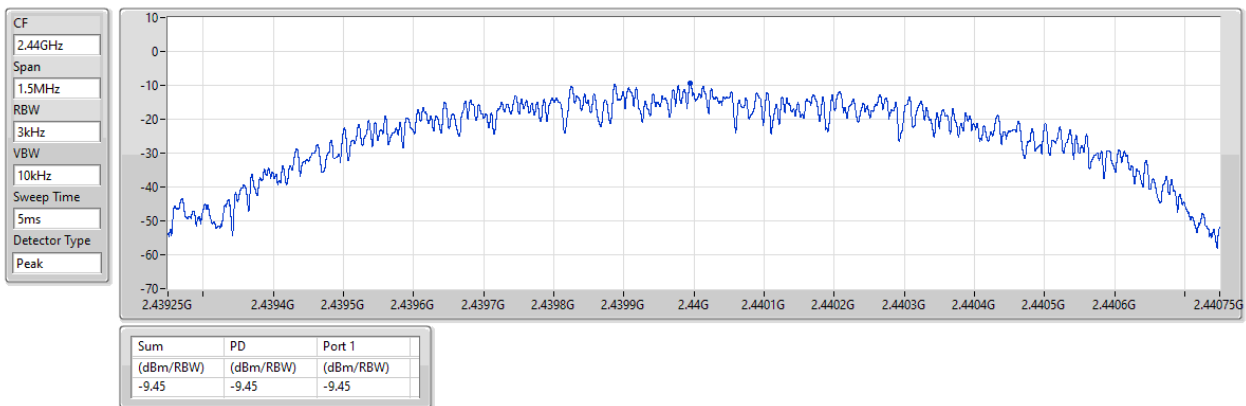


2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2440MHz

06/10/2023

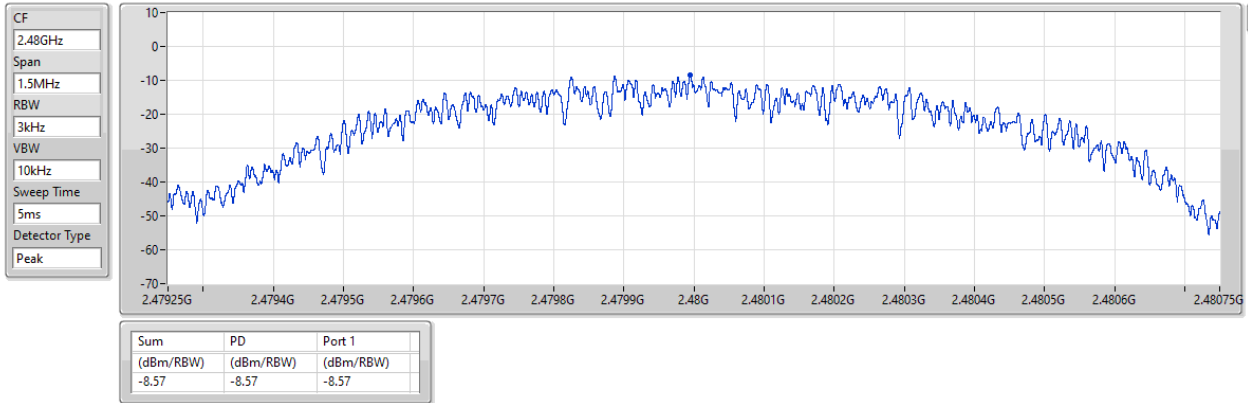


2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2480MHz

06/10/2023



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	2.44008G	6.02	-23.98	1.957G	-53.63	2.39924G	-43.45	2.4G	-45.95	2.5021G	-52.57	21.57772G	-46.60	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	2.44008G	6.02	-23.98	1.957G	-53.63	2.39924G	-43.45	2.4G	-45.95	2.5021G	-52.57	21.57772G	-46.60	1
2440MHz	Pass	2.44008G	6.02	-23.98	2.12855G	-53.25	2.39652G	-51.55	2.4G	-56.86	2.5003G	-51.71	21.52148G	-47.56	1
2480MHz	Pass	2.44008G	6.02	-23.98	1.65503G	-53.33	2.39684G	-52.03	2.4G	-55.85	2.5029G	-52.33	21.43149G	-47.02	1

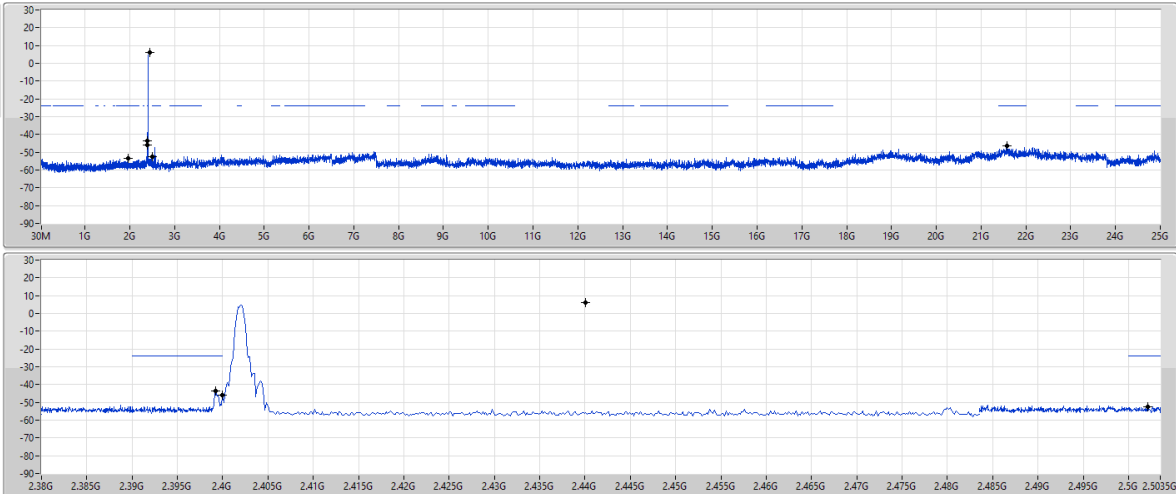
2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2402MHz

06/10/2023

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
2.44008G	6.02	-23.98	1.957G	-53.63	2.39924G	-43.45	2.4G	-45.95	2.5021G	-52.57	21.57772G	-46.60	1

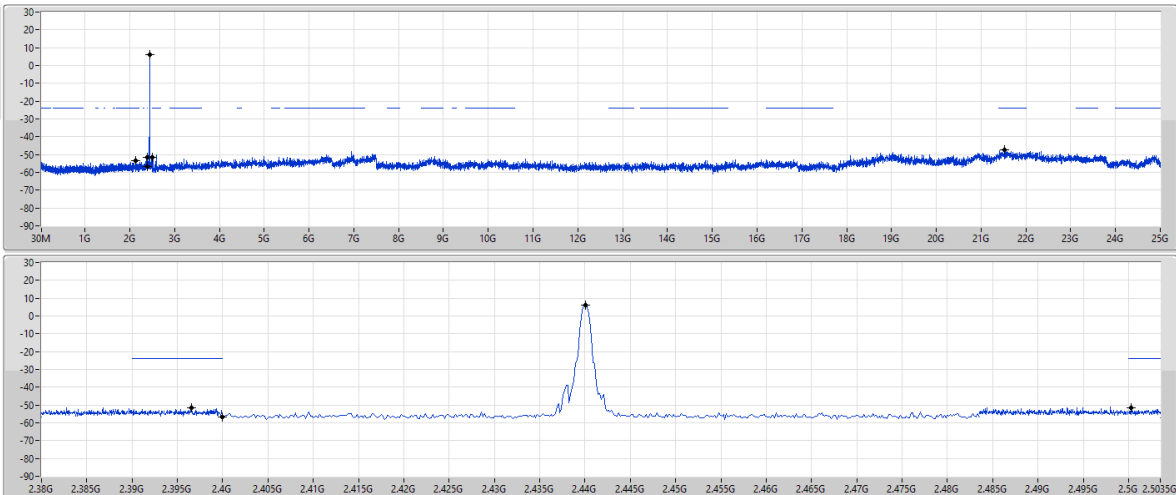
2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2440MHz

06/10/2023

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
2.44008G	6.02	-23.98	2.12855G	-53.25	2.39652G	-51.55	2.4G	-56.86	2.5003G	-51.71	21.52148G	-47.56	1

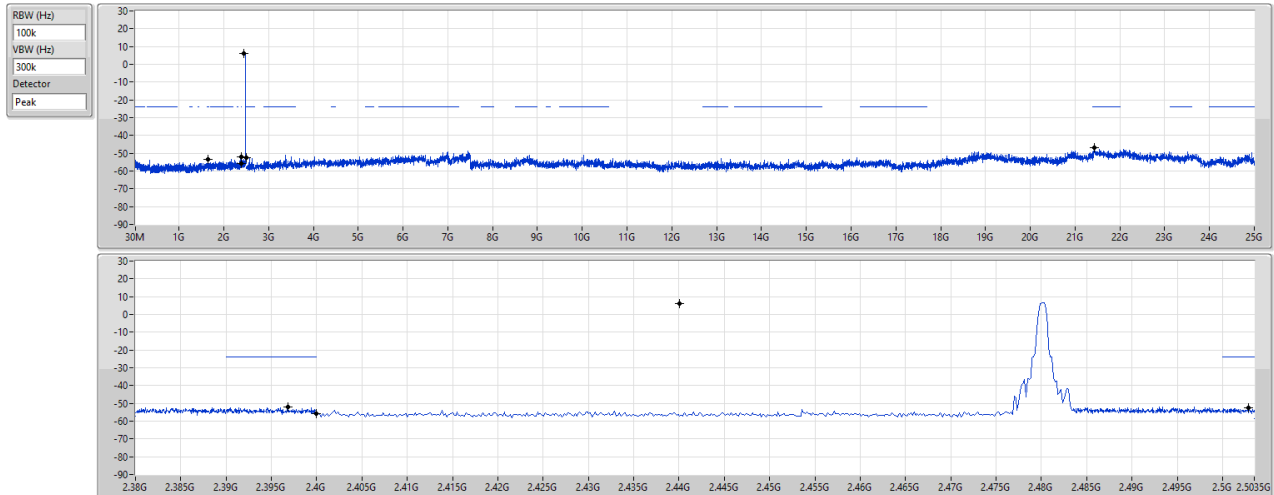
2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2480MHz

06/10/2023

Port 1



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
2.44008G	6.02	-23.98	1.65503G	-53.33	2.39684G	-52.03	2.4G	-55.85	2.5029G	-52.33	21.43149G	-47.02	1



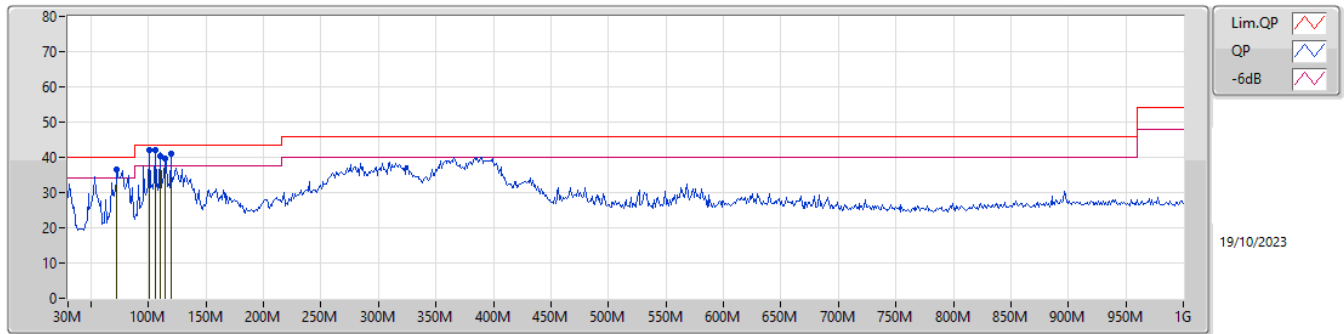
Radiated Emissions below 1GHz

Appendix F.1

Summary

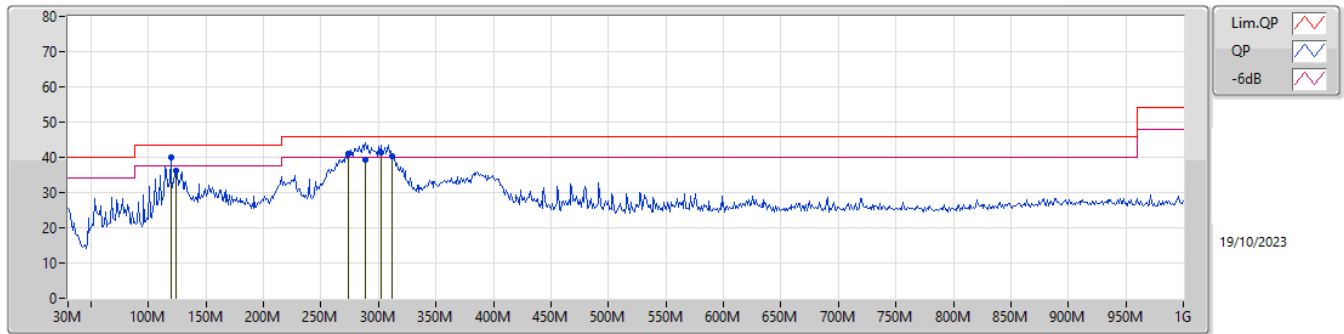
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	105.66M	42.20	43.50	-1.30	Vertical

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/m)	AF (dB/m)	CL (dB)	PA (dB)		
QP	72.68M	36.71	40.00	-3.29	-18.60	3	Vertical	16	2.00	-	55.31	12.43	0.67	31.70		
QP	100.81M	41.92	43.50	-1.58	-13.49	3	Vertical	219	1.00	-	55.41	17.23	0.82	31.54		
QP	105.66M	42.20	43.50	-1.30	-13.02	3	Vertical	239	1.00	"Worst"	55.22	17.70	0.85	31.57		
QP	110.51M	40.20	43.50	-3.30	-12.60	3	Vertical	206	1.00	-	52.80	18.11	0.88	31.59		
PK	114.39M	39.56	43.50	-3.94	-12.40	3	Vertical	180	1.00	-	51.96	18.30	0.91	31.61		
QP	119.24M	41.18	43.50	-2.32	-12.22	3	Vertical	186	1.00	-	53.40	18.48	0.94	31.64		

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/m)	AF (dB/m)	CL (dB)	PA (dB)		
PK	119.24M	39.88	43.50	-3.62	-12.22	3	Horizontal	313	3.00	"Worst"	52.10	18.48	0.94	31.64		
PK	124.09M	36.23	43.50	-7.27	-12.29	3	Horizontal	326	3.00	-	48.52	18.42	0.97	31.68		
PK	273.47M	40.99	46.00	-5.01	-11.60	3	Horizontal	330	1.25	-	52.59	18.66	1.56	31.82		
QP	288.99M	39.23	46.00	-6.77	-11.27	3	Horizontal	347	1.50	-	50.50	18.93	1.63	31.83		
QP	302.57M	41.42	46.00	-4.58	-10.94	3	Horizontal	340	1.00	-	52.36	19.21	1.69	31.84		
PK	312.27M	40.45	46.00	-5.55	-10.72	3	Horizontal	327	1.00	-	51.17	19.41	1.70	31.83		

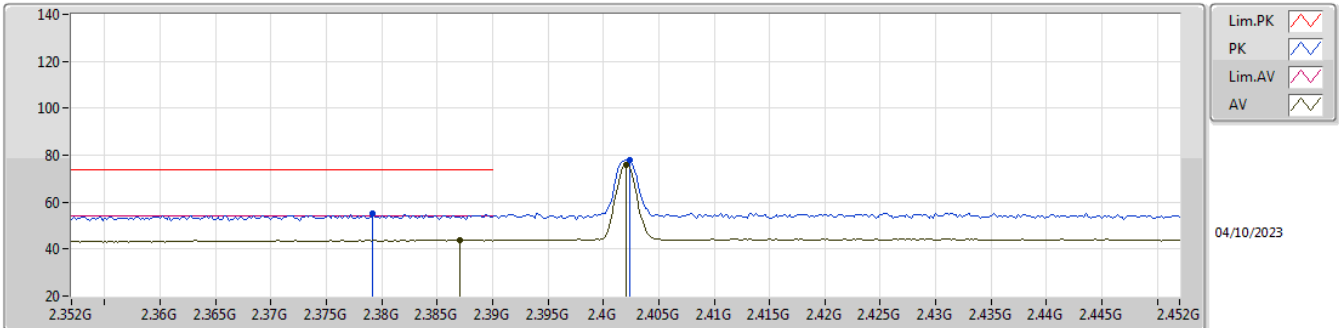


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LF(1Mbps)	Pass	AV	4.96001G	46.70	54.00	-7.30	3	Vertical	290	1.07	-

2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX

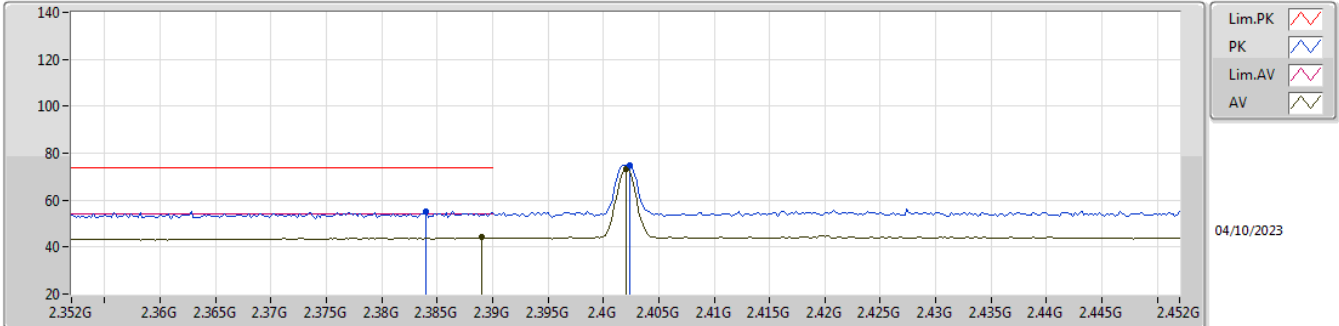


EUT X_1TX
Setting 0a
02-E-C-6

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	2.3792G	55.24	74.00	-18.76	23.80	3	Vertical	273	1.68	-	28.39	3.05	-				
AV	2.387G	43.93	54.00	-10.07	12.48	3	Vertical	273	1.68	-	28.40	3.05	-				
PK	2.4024G	77.89	Inf	-Inf	46.43	3	Vertical	273	1.68	-	28.40	3.06	-				
AV	2.402G	76.10	Inf	-Inf	44.64	3	Vertical	273	1.68	-	28.40	3.06	-				

2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX

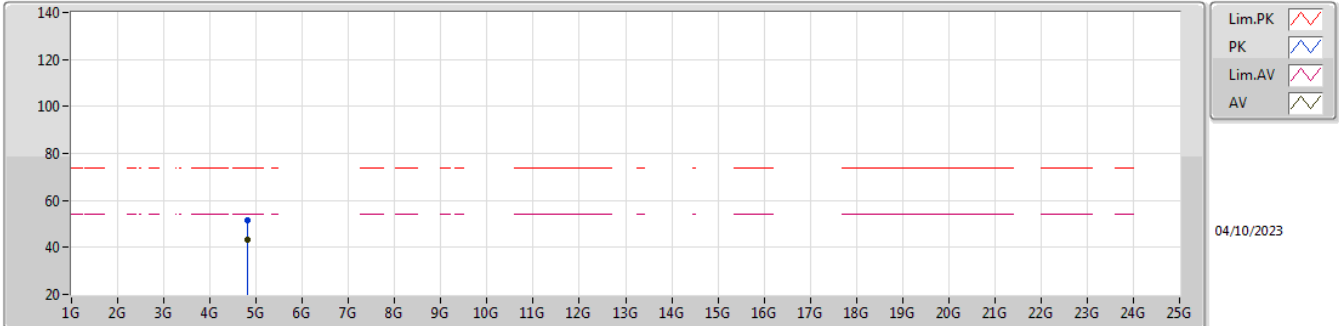


EUT X_1TX
Setting 0a
02-E-C-6

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	2.384G	55.37	74.00	-18.63	23.92	3	Horizontal	130	2.85	-	28.40	3.05	-				
AV	2.389G	44.07	54.00	-9.93	12.62	3	Horizontal	130	2.85	-	28.40	3.05	-				
PK	2.4024G	74.97	Inf	-Inf	43.51	3	Horizontal	130	2.85	-	28.40	3.06	-				
AV	2.402G	73.26	Inf	-Inf	41.80	3	Horizontal	130	2.85	-	28.40	3.06	-				

2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX

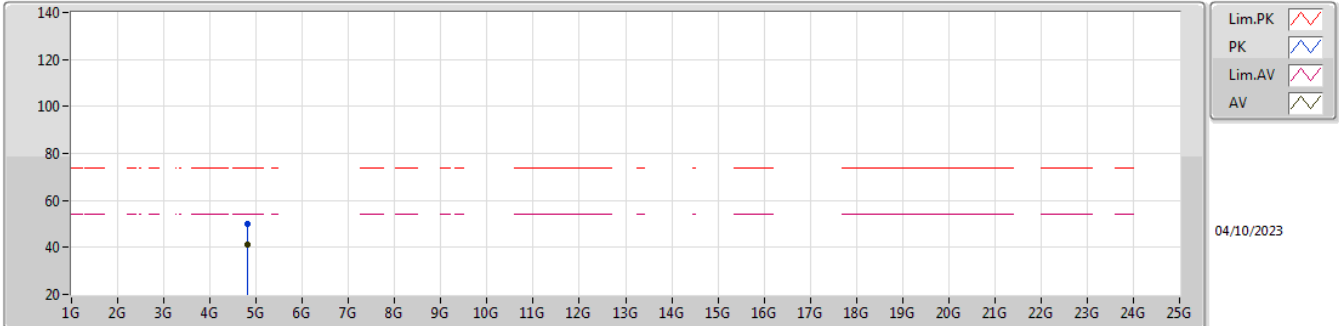


EUT_X_1TX
Setting 0a
02-E-C-6

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	4.80448G	51.76	74.00	-22.24	44.53	3	Vertical	34	1.00	-	32.83	5.09	30.69			
AV	4.8041G	43.21	54.00	-10.79	35.99	3	Vertical	34	1.00	-	32.82	5.09	30.69			

2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX

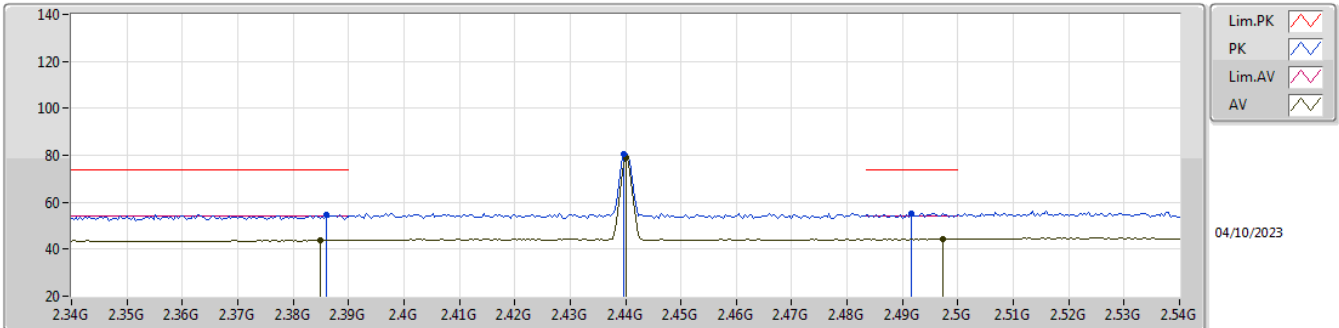


EUT_X_1TX
Setting 0a
02-E-C-6

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	4.80344G	50.20	74.00	-23.80	42.98	3	Horizontal	20	1.00	-	32.82	5.09	30.69			
AV	4.80386G	41.17	54.00	-12.83	33.95	3	Horizontal	20	1.00	-	32.82	5.09	30.69			

2.4-2.4835GHz_BT-LE(1Mbps)

2440MHz_TX

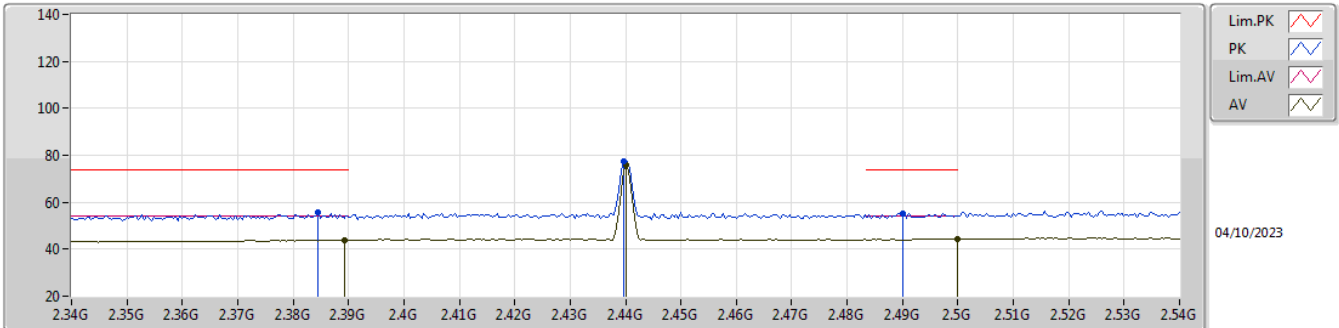


EUT_X1TX
Setting 0a
02-E-C-6

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	2.386G	54.82	74.00	-19.18	23.37	3	Vertical	273	2.52	-	28.40	3.05	-				
AV	2.3848G	43.99	54.00	-10.01	12.54	3	Vertical	273	2.52	-	28.40	3.05	-				
PK	2.4396G	80.40	Inf	-Inf	48.92	3	Vertical	273	2.52	-	28.40	3.08	-				
AV	2.44G	78.86	Inf	-Inf	47.38	3	Vertical	273	2.52	-	28.40	3.08	-				
PK	2.4916G	55.36	74.00	-18.64	23.74	3	Vertical	273	2.52	-	28.52	3.10	-				
AV	2.4972G	44.53	54.00	-9.47	12.86	3	Vertical	273	2.52	-	28.57	3.10	-				

2.4-2.4835GHz_BT-LE(1Mbps)

2440MHz_TX

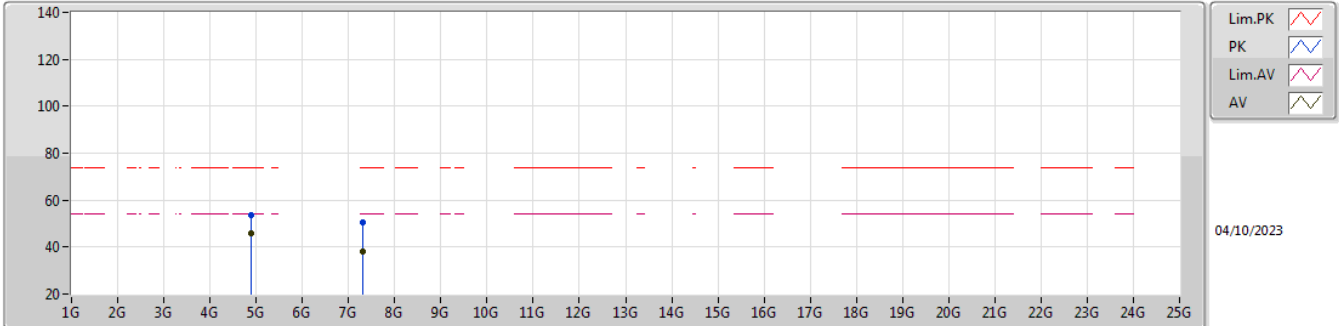


EUT_X1TX
Setting 0a
02-E-C-6

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	2.3844G	55.63	74.00	-18.37	24.18	3	Horizontal	354	2.62	-	28.40	3.05	-				
AV	2.3892G	43.97	54.00	-10.03	12.52	3	Horizontal	354	2.62	-	28.40	3.05	-				
PK	2.4396G	77.31	Inf	-Inf	45.83	3	Horizontal	354	2.62	-	28.40	3.08	-				
AV	2.44G	75.63	Inf	-Inf	44.15	3	Horizontal	354	2.62	-	28.40	3.08	-				
PK	2.49G	55.34	74.00	-18.66	23.74	3	Horizontal	354	2.62	-	28.50	3.10	-				
AV	2.5G	44.45	54.00	-9.55	12.75	3	Horizontal	354	2.62	-	28.60	3.10	-				

2.4-2.4835GHz_BT-LE(1Mbps)

2440MHz_TX

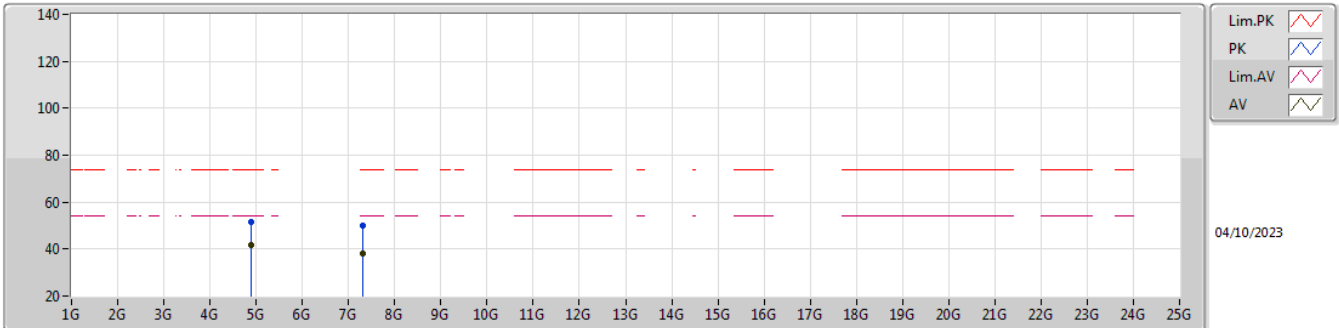


EUT X_1TX
Setting 0a
02-E-C-6

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	4.8795G	53.43	74.00	-20.57	45.80	3	Vertical	259	1.98	-	33.16	5.11	30.64			
AV	4.87988G	45.86	54.00	-8.14	38.23	3	Vertical	259	1.98	-	33.16	5.11	30.64			
PK	7.31992G	50.35	74.00	-23.65	39.31	3	Vertical	303	2.28	-	36.64	6.52	32.12			
AV	7.31998G	38.25	54.00	-15.75	27.21	3	Vertical	303	2.28	-	36.64	6.52	32.12			

2.4-2.4835GHz_BT-LE(1Mbps)

2440MHz_TX

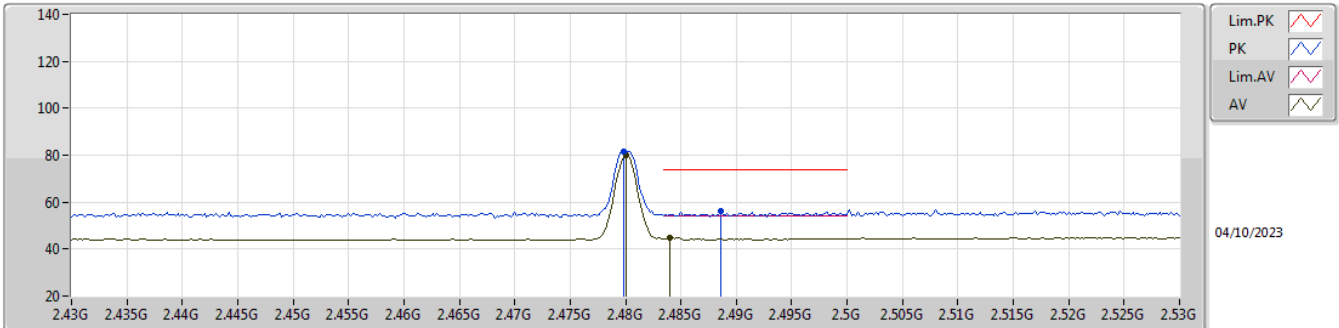


EUT X_1TX
Setting 0a
02-E-C-6

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	4.88048G	51.45	74.00	-22.55	43.82	3	Horizontal	77	1.20	-	33.16	5.11	30.64			
AV	4.87994G	41.98	54.00	-12.02	34.35	3	Horizontal	77	1.20	-	33.16	5.11	30.64			
PK	7.3155G	49.87	74.00	-24.13	38.85	3	Horizontal	321	2.69	-	36.63	6.51	32.12			
AV	7.32062G	38.25	54.00	-15.75	27.21	3	Horizontal	321	2.69	-	36.64	6.52	32.12			

2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX

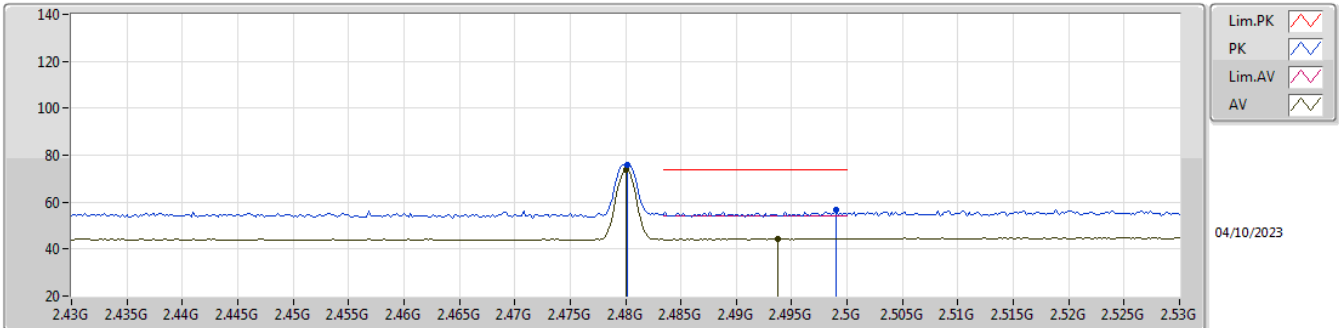


EUT X_1TX
Setting 0a
02-E-C-6

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	2.4798G	81.70	Inf	-Inf	50.11	3	Vertical	255	2.54	-	28.50	3.09	-				
AV	2.48G	80.13	Inf	-Inf	48.54	3	Vertical	255	2.54	-	28.50	3.09	-				
PK	2.4886G	56.30	74.00	-17.70	24.70	3	Vertical	255	2.54	-	28.50	3.10	-				
AV	2.484G	44.74	54.00	-9.26	13.15	3	Vertical	255	2.54	-	28.50	3.09	-				

2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX

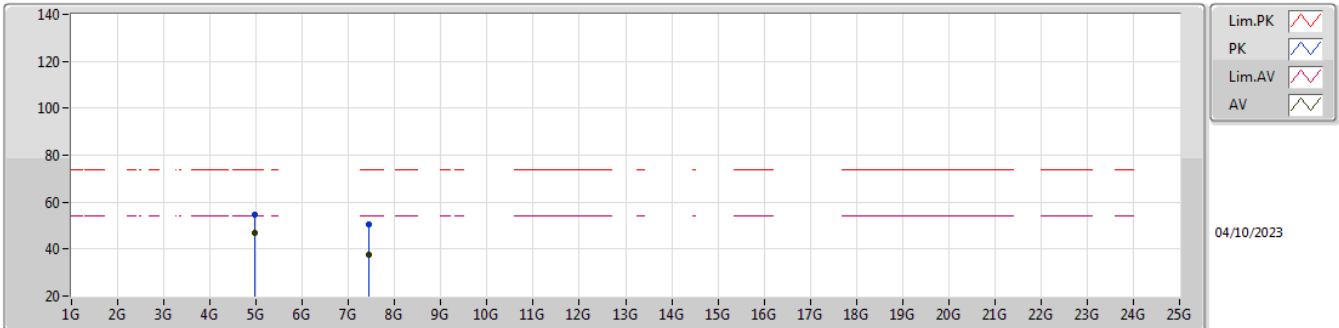


EUT X_1TX
Setting 0a
02-E-C-6

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	2.4802G	75.73	Inf	-Inf	44.14	3	Horizontal	146	2.73	-	28.50	3.09	-				
AV	2.48G	73.95	Inf	-Inf	42.36	3	Horizontal	146	2.73	-	28.50	3.09	-				
PK	2.499G	56.55	74.00	-17.45	24.86	3	Horizontal	146	2.73	-	28.59	3.10	-				
AV	2.4938G	44.56	54.00	-9.44	12.92	3	Horizontal	146	2.73	-	28.54	3.10	-				

2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX

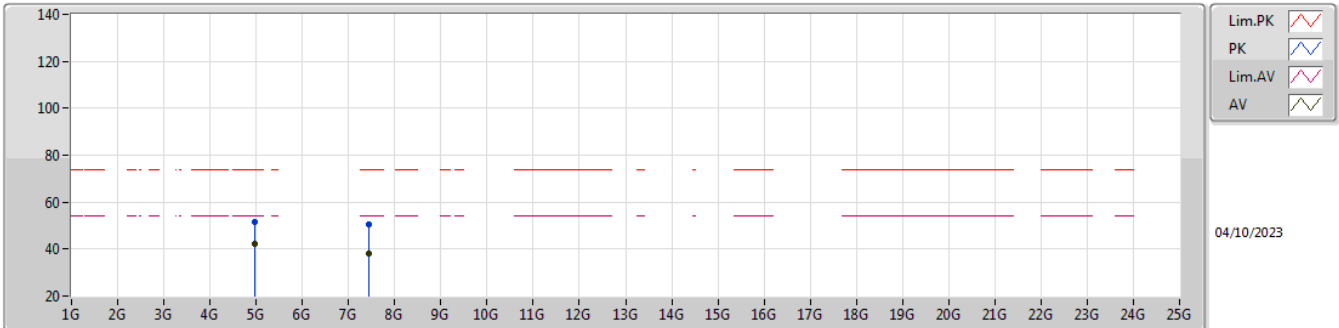


EUT X_1TX
Setting 0a
02-E-C-6

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	4.95954G	54.46	74.00	-19.54	46.59	3	Vertical	290	1.07	-	33.32	5.14	30.59			
AV	4.96001G	46.70	54.00	-7.30	38.83	3	Vertical	290	1.07	-	33.32	5.14	30.59			
PK	7.44052G	50.46	74.00	-23.54	39.37	3	Vertical	287	2.28	-	36.70	6.58	32.19			
AV	7.4359G	37.84	54.00	-16.16	26.74	3	Vertical	287	2.28	-	36.70	6.58	32.18			

2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX



EUT X_1TX
Setting 0a
02-E-C-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	4.95938G	51.49	74.00	-22.51	43.62	3	Horizontal	133	2.47	-	33.32	5.14	30.59			
AV	4.95991G	41.99	54.00	-12.01	34.12	3	Horizontal	133	2.47	-	33.32	5.14	30.59			
PK	7.43951G	50.54	74.00	-23.46	39.45	3	Horizontal	0	1.80	-	36.70	6.58	32.19			
AV	7.44056G	38.05	54.00	-15.95	26.96	3	Horizontal	0	1.80	-	36.70	6.58	32.19			