

FCC Radio Test Report

FCC ID : 2AST4-M1818
Equipment : JMATE
Brand Name : JACFIT
Model Name : JM101
Applicant : JSPORTS TECHNOLOGY CO., LTD
Rm. 5, 9F., No.490, Sec. 2, Ren'ai Rd., Linkou Dist.,
New Taipei City 244020, Taiwan (R.O.C.)
Manufacturer : Chen Wei Electronics inc.
No.12, Nanyuan Rd., Zhongli Dist., Taoyuan City
32063, Taiwan (R.O.C.)
Standard : 47 CFR FCC Part 15.247

The product was received on Aug. 18, 2022, and testing was started from Aug. 26, 2022 and completed on Aug. 29, 2022. 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.)



Table of Contents

HISTORY OF THIS TEST REPORT3

SUMMARY OF TEST RESULT4

1 GENERAL DESCRIPTION5

1.1 Information.....5

1.2 Testing Applied Standards6

1.3 Testing Location Information6

1.4 Measurement Uncertainty6

2 TEST CONFIGURATION OF EUT.....7

2.1 Test Channel Mode7

2.2 The Worst Case Measurement Configuration.....8

2.3 Accessories9

2.4 Support Equipment.....9

2.5 Test Setup Diagram10

3 TRANSMITTER TEST RESULT12

3.1 AC Power-line Conducted Emissions12

3.2 DTS Bandwidth.....14

3.3 Maximum Conducted Output Power15

3.4 Power Spectral Density17

3.5 Emissions in Non-restricted Frequency Bands18

3.6 Emissions in Restricted Frequency Bands.....19

4 TEST EQUIPMENT AND CALIBRATION DATA.....23

APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS

APPENDIX B. TEST RESULTS OF DTS BANDWIDTH

APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER

APPENDIX D. TEST RESULTS OF POWER SPECTRAL DENSITY

APPENDIX E. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS

APPENDIX F. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS

APPENDIX G TEST PHOTOS

PHOTOGRAPHS OF EUT V01



History of this test report

Report No.	Version	Description	Issued Date
FR281705AL	01	Initial issue of report	Sep. 19, 2022



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: Barry Hsaio
Report Producer: Jenny Yang



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 (1Mbps) modulation.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Gain (dBi)	Connector
1	JACFIT	JM101	PCB	0.85	N/A

Note 1: The EUT has one antenna.

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Ant. 1 can be used as transmitting/receiving.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From Test Fixture / Battery		
EUT Function	<input checked="" type="checkbox"/> Point-to-multipoint	<input type="checkbox"/> Point-to-point	
Type of EUT			
<input checked="" type="checkbox"/> Stand-alone			
<input type="checkbox"/> Combined (EUT where the radio part is fully integrated within another device)			
	Combined Equipment - Brand Name / Model No.:	...	
<input type="checkbox"/> Plug-in radio (EUT intended for a variety of host systems)			
	Host System - Brand Name / Model No.:	...	
<input type="checkbox"/> Other:			

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.633	1.99	395.625u	3k

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				
<input checked="" type="checkbox"/>	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	Wayne Chiu	20.2~20.5°C / 55~57%	29/Aug/2022
RF Conducted	TH01-HY	Johnny Yu	22.1~25.6°C / 51~57%	26/Aug/2022
Radiated	03CH03-HY	Billy Wang	24.5~24.6°C / 58~60%	27/Aug/2022~29/Aug/2022
<input type="checkbox"/>	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.				

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%
Receiver Radiated Unwanted Emissions	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	Direct Test Mode V2.4.0
-----------------------	-------------------------

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	8
2440MHz	8
2480MHz	8

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	
1	Test Fixture mode; CTX

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			
1	Test Fixture mode; CTX		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT			V

2.3 Accessories

Accessories				
Battery	Brand Name	CHEN WEI SMT ELECTRONICS CO., LTD.	Model Name	601220
	Manufacturer	HELIX CO., LTD.	SN	-
	Power Rating	3.7Vdc, 90mAh	Type	Li-ion
USB Cable	Brand Name	Lian Ji	Model Name	S959-02U
	Power Cord	0.81 meter, shielded cable, w/o ferrite core		

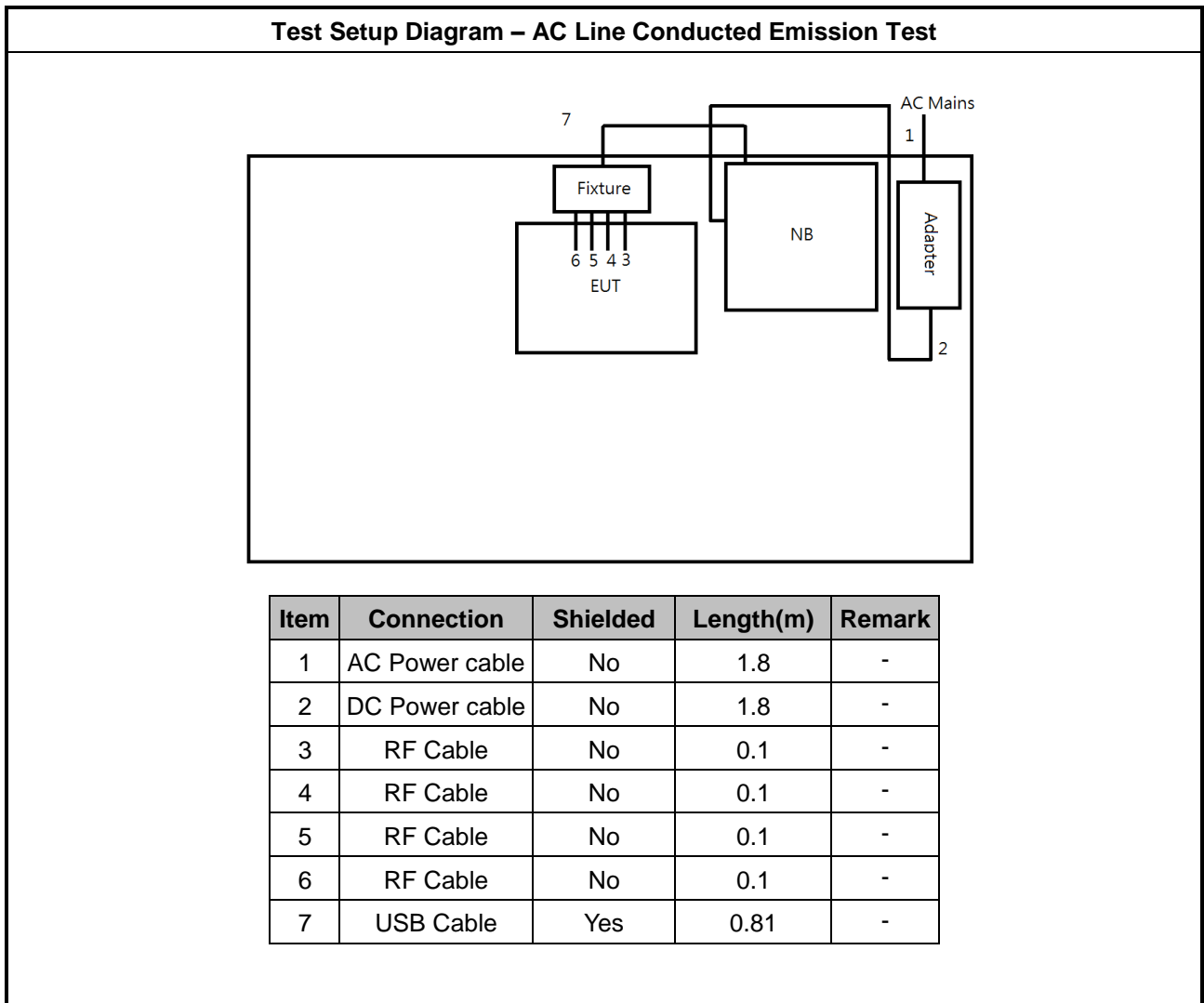
Reminder: Regarding to more detail and other information, please refer to user manual.

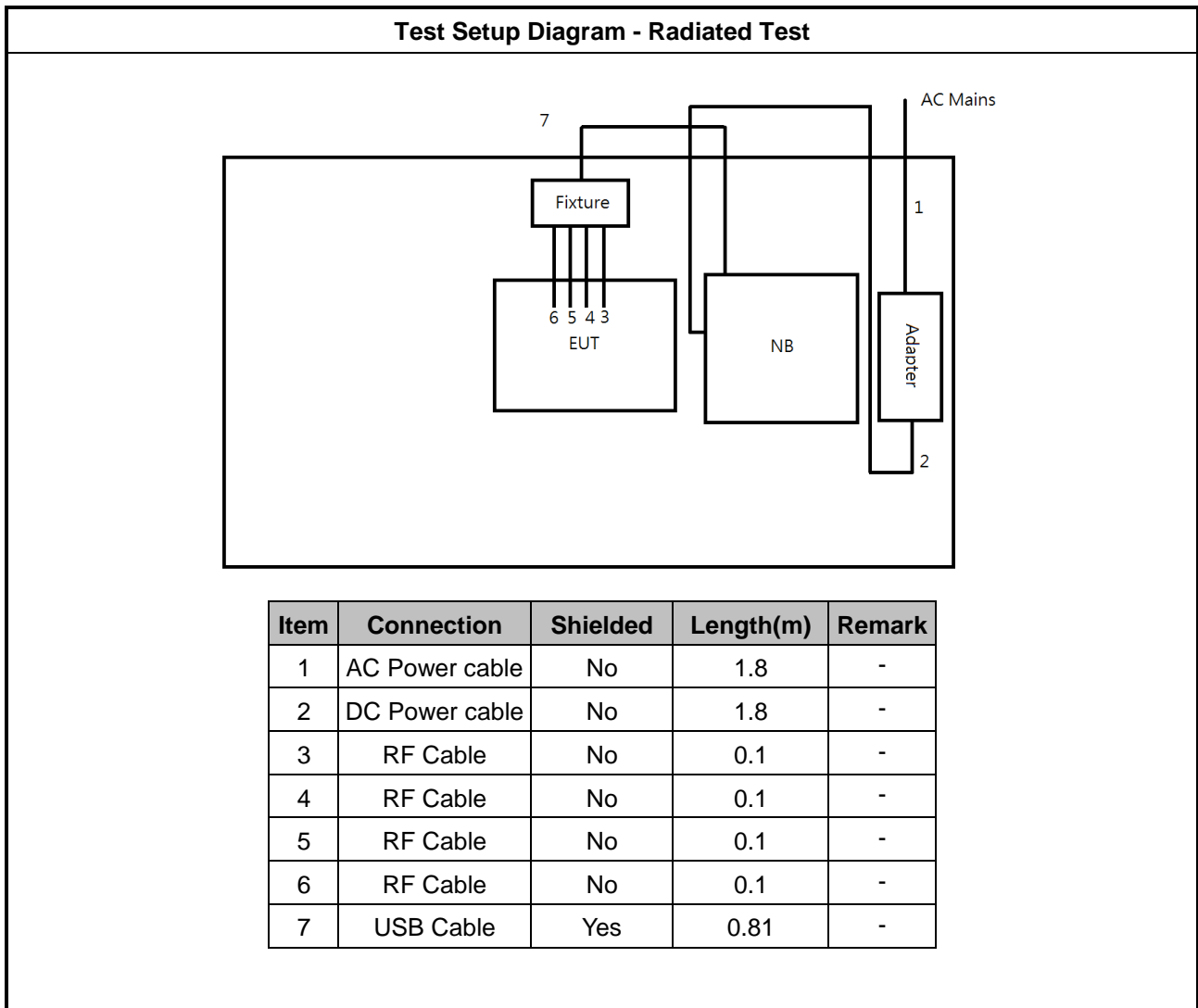
2.4 Support Equipment

Support Equipment – AC Conduction and Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	AC Power Cable	Power sync	TPCMRN0018	-	-
2	Fixture	JACFIT	0001-I-U-008-A	-	Provided by Customer
3	Notebook	DELL	E5540	-	-
4	Adapter for NB	HP	PPP012H-S	-	-

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	Fixture	JACFIT	0001-I-U-008-A	-	Provided by Customer

2.5 Test Setup Diagram





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

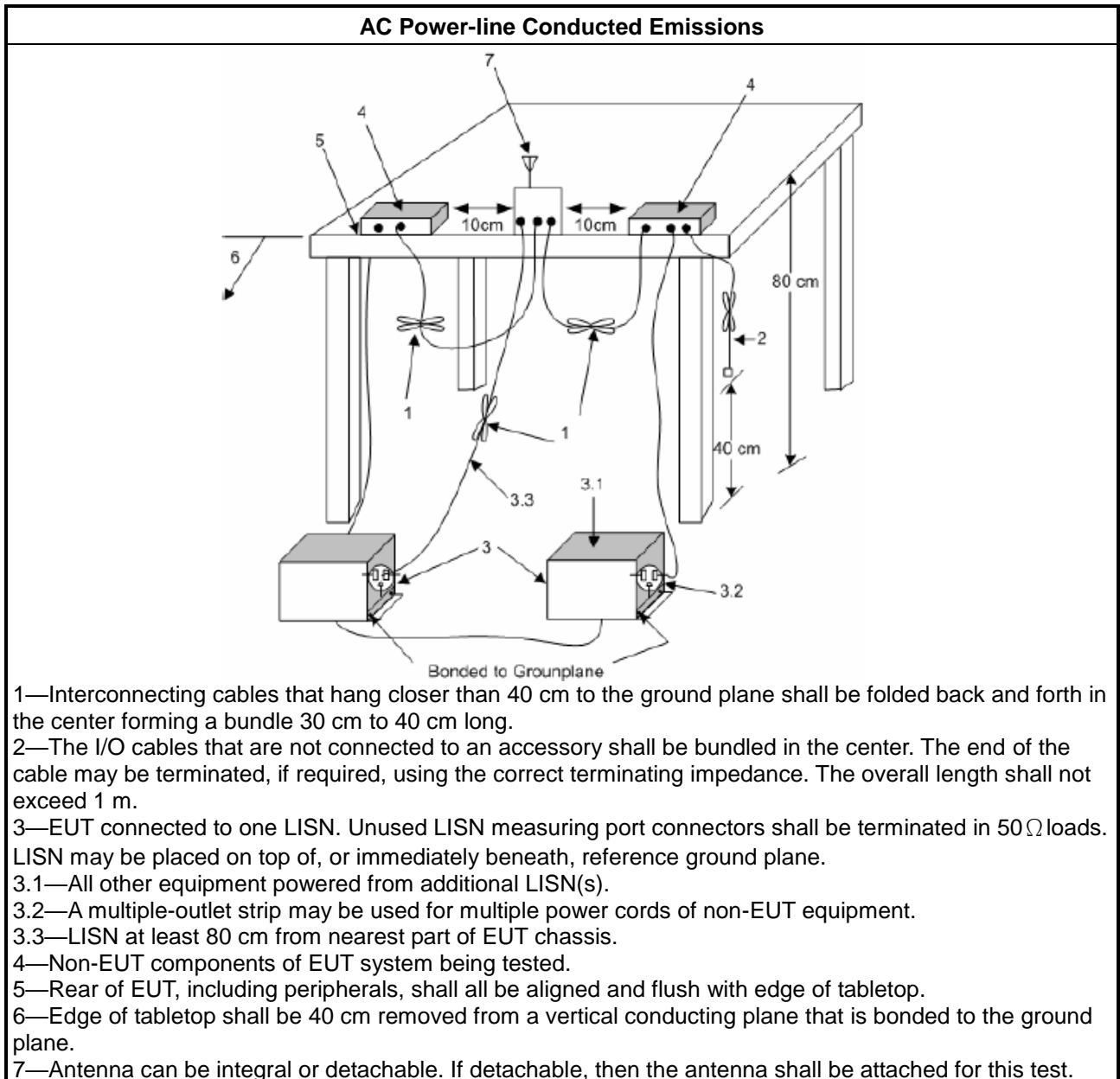
Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

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.

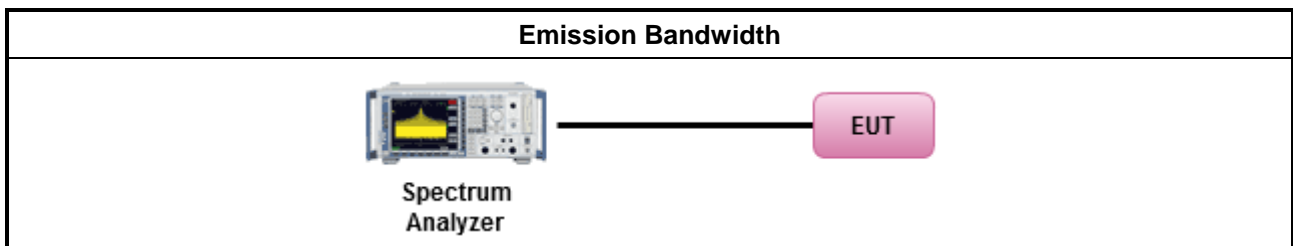
3.2.2 Measuring Instruments

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:
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
<input type="checkbox"/>	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
<input type="checkbox"/>	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	
	<ul style="list-style-type: none"> ▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	<ul style="list-style-type: none"> ▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> ▪ Smart antenna system (SAS):
	<ul style="list-style-type: none"> - Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - 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:	
	<ul style="list-style-type: none"> ▪ 2400-2483.5 MHz Band
	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	<ul style="list-style-type: none"> ▪ Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	<ul style="list-style-type: none"> ▪ Smart antenna system (SAS)
	<ul style="list-style-type: none"> - Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	<ul style="list-style-type: none"> - Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	<ul style="list-style-type: none"> - 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.	

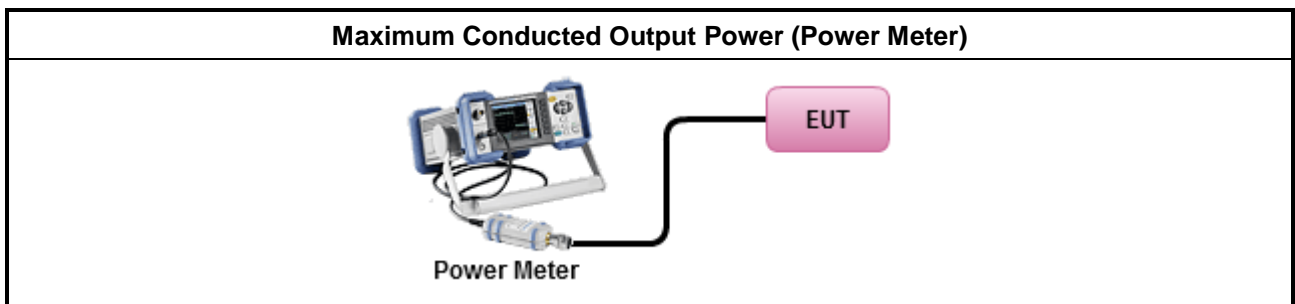
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Maximum Peak Conducted Output Power 	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
<ul style="list-style-type: none"> ▪ Maximum Average Conducted Output Power 	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them. 	
<ul style="list-style-type: none"> ▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$ 	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
<ul style="list-style-type: none"> Power Spectral Density (PSD) ≤ 8 dBm/3kHz

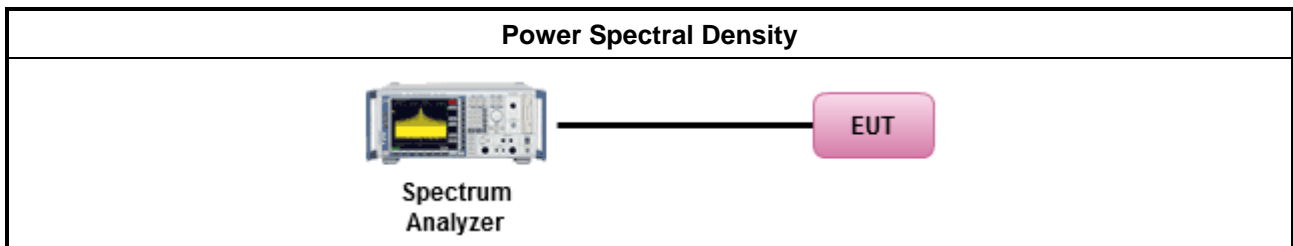
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option). 	
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.
<ul style="list-style-type: none"> For conducted measurement. <ul style="list-style-type: none"> If The EUT supports multiple transmit chains using options given below: <ul style="list-style-type: none"> 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.

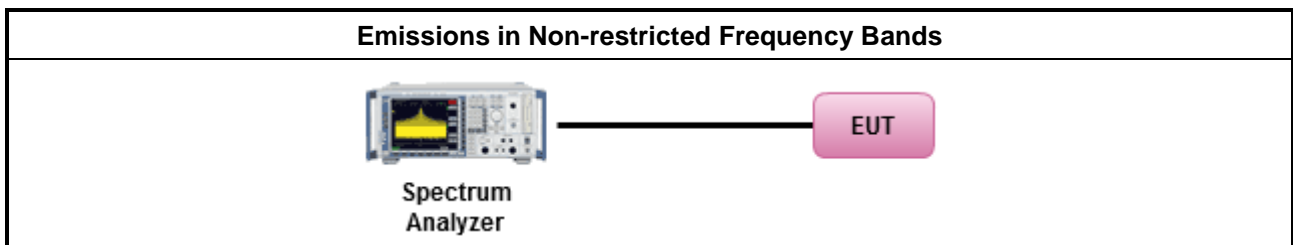
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

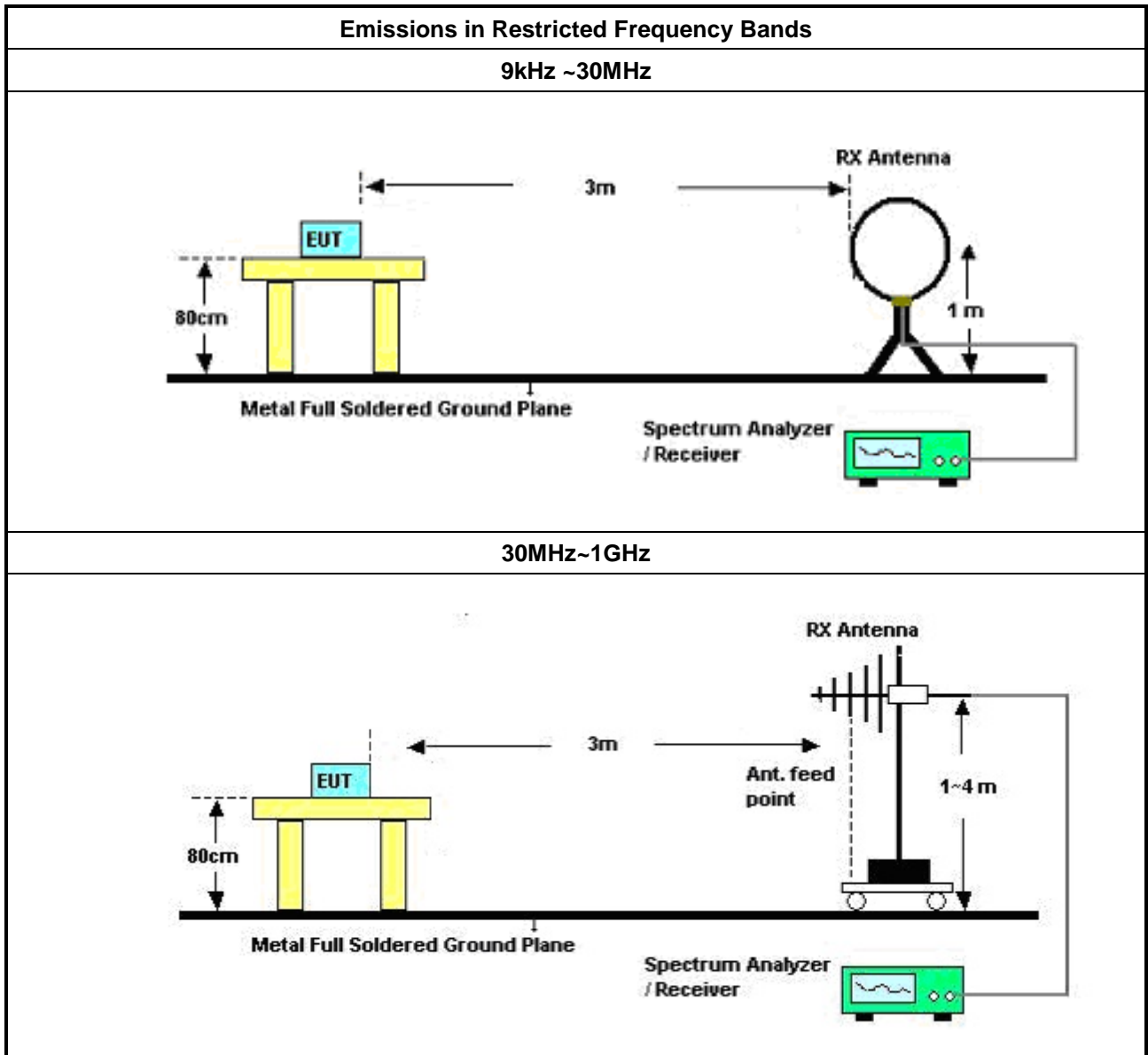
Test Method	
	<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
	<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
	<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below:
	<ul style="list-style-type: none"> ▪ Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
	<ul style="list-style-type: none"> ▪ For the transmitter band-edge emissions shall be measured using following options below:
	<ul style="list-style-type: none"> ▪ 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.
	<ul style="list-style-type: none"> ▪ Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	<ul style="list-style-type: none"> ▪ Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
	<ul style="list-style-type: none"> ▪ Use the following spectrum analyzer settings:
	<ul style="list-style-type: none"> ▪ Set RBW=100 kHz for f < 1 GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	<ul style="list-style-type: none"> ▪ Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement. For average measurement, refer as 1.1.4.
	<ul style="list-style-type: none"> ▪ KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.
	<ul style="list-style-type: none"> ▪ 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.
	<ul style="list-style-type: none"> ▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

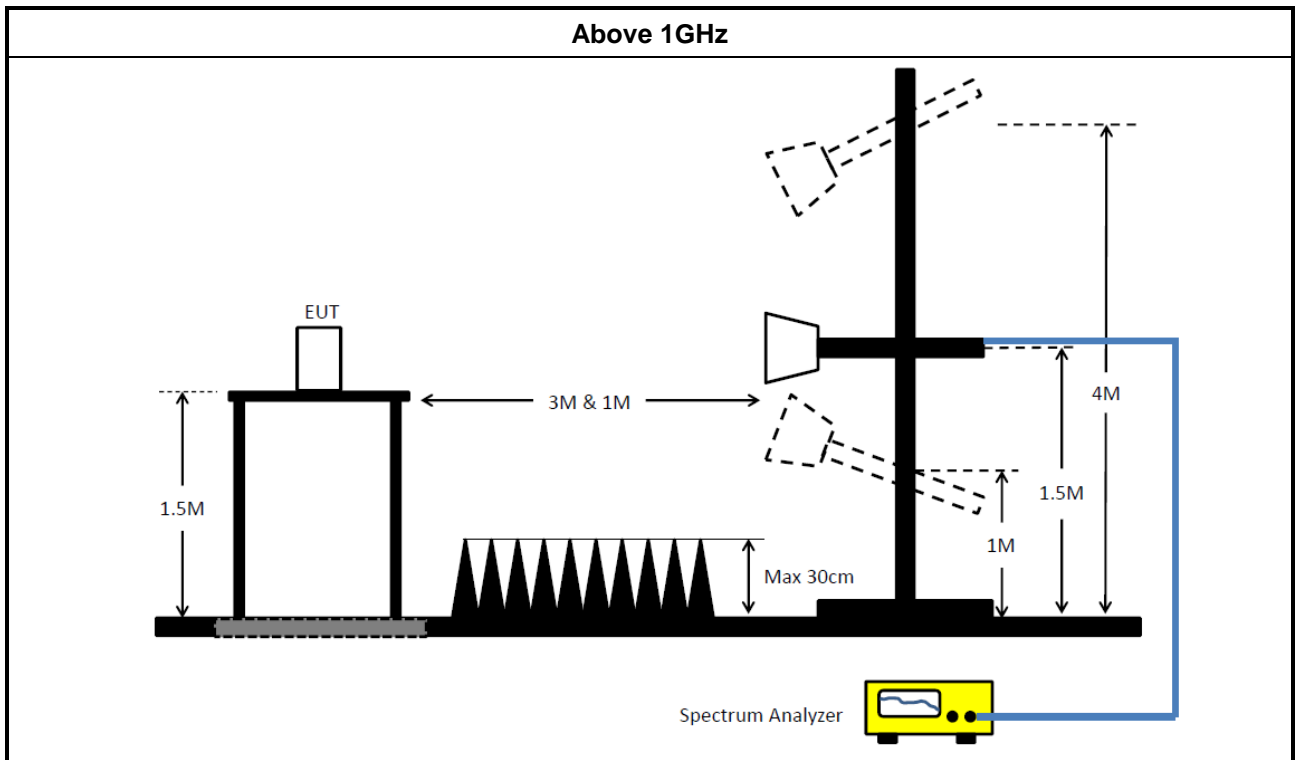
3.6.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp 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	ESR3	102051	9kHz ~ 3.6GHz	13/May/2022	12/May/2023
Two-Line V-Network	R&S	ENV 216	100003	9kHz ~ 30MHz	18/Feb/2022	17/Feb/2023
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	01/Mar/2022	28/Feb/2023
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	26/Oct/2021	25/Oct/2022
Software	Sporton	SENSE-EMI	V5.10.8.2	-	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	101013	10Hz~40GHz	01/Apr/2022	31/Mar/2023
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	21/Oct/2021	20/Oct/2022
Pulse Sensor	Anritsu	MA2411B	0917017	300MHz~40GHz	21/Feb/2022	20/Feb/2023
Power Meter	Anritsu	ML2495A	0949003	300MHz~40GHz	21/Feb/2022	20/Feb/2023
SENSE-15247_FS	Sporton	V5.10.7.16	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	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	01/Aug/2022	31/Jul/2023
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	02/Aug/2022	01/Aug/2023
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	12/Oct/2021	11/Oct/2022
Amplifier	HP	8447D	2944A08033	10kHz~1.3GHz	08/Apr/2022	07/Apr/2023
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02267	1GHz ~18GHz	14/Sep/2021	13/Sep/2022
Bilog Antenna & 6dB Attenuator	SCHAFFNER / EMCI	CBL6112B / N-6-05	22237 / AT-N-0603	30MHz~1GHz	17/Oct/2021	16/Oct/2022
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz~30MHz	13/Jun/2022	12/Jun/2023
RF Cable-R03m	Jye Bao	RG142	MY37335/4+CB021-1+CB021-2	30MHz~1GHz	22/Mar/2022	21/Mar/2023
RF CABLE 5+6m	HUBER+SUHNER	SUOFLEX 104	03CH03-cable-01	1GHz~40GHz	27/Jul/2022	26/Jul/2023
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz~40GHz	18/Mar/2022	17/Mar/2023
Microwave Prempplier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	08/Mar/2022	07/Mar/2023
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	18/Mar/2022	17/Mar/2023
Microwave Preampplier	Agilent	8449B	3008A02326	1GHz~26.5GHz	14/Jul/2022	13/Jul/2023
EMI Test Receiver	R&S	ESR3	102052	9kHz~3.6GHz	13/May/2022	12/May/2023
SENSE-15224_FS	Sporton	v5.10.7.14	NA	NA	NA	NA
SENSE-EMI	Sporton	V5.10.8.6	NA	NA	NA	NA



Summary

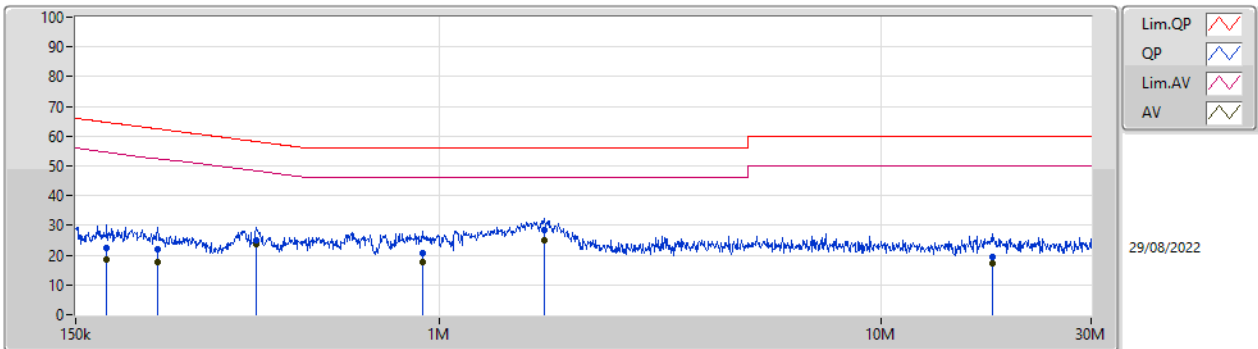
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	1.726M	25.18	46.00	-20.82	Line



Result

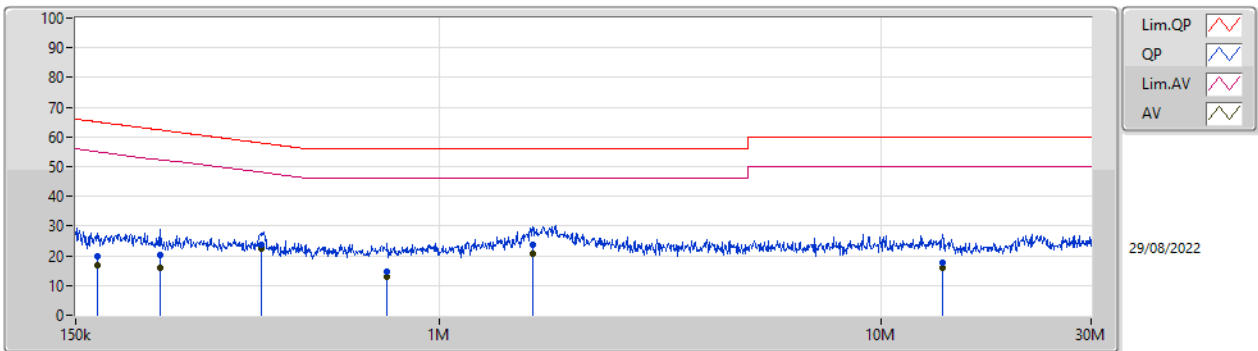
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	176.674k	22.22	64.64	-42.42	Line	-
Mode 1	Pass	AV	176.674k	18.63	54.64	-36.01	Line	-
Mode 1	Pass	QP	229.932k	22.15	62.44	-40.29	Line	-
Mode 1	Pass	AV	229.932k	17.80	52.44	-34.64	Line	-
Mode 1	Pass	QP	384.811k	24.81	58.18	-33.37	Line	-
Mode 1	Pass	AV	384.811k	23.57	48.18	-24.61	Line	-
Mode 1	Pass	QP	915.089k	20.83	56.00	-35.17	Line	-
Mode 1	Pass	AV	915.089k	17.83	46.00	-28.17	Line	-
Mode 1	Pass	QP	1.726M	28.28	56.00	-27.72	Line	-
Mode 1	Pass	AV	1.726M	25.18	46.00	-20.82	Line	-
Mode 1	Pass	QP	17.981M	19.38	60.00	-40.62	Line	-
Mode 1	Pass	AV	17.981M	17.10	50.00	-32.90	Line	-
Mode 1	Pass	QP	233.633k	20.47	62.31	-41.84	Neutral	-
Mode 1	Pass	AV	233.633k	16.07	52.31	-36.24	Neutral	-
Mode 1	Pass	QP	168.41k	19.70	65.04	-45.34	Neutral	-
Mode 1	Pass	AV	168.41k	16.99	55.04	-38.05	Neutral	-
Mode 1	Pass	QP	395.716k	23.59	57.95	-34.36	Neutral	-
Mode 1	Pass	AV	395.716k	22.29	47.95	-25.66	Neutral	-
Mode 1	Pass	QP	761.574k	14.64	56.00	-41.36	Neutral	-
Mode 1	Pass	AV	761.574k	13.14	46.00	-32.86	Neutral	-
Mode 1	Pass	QP	1.626M	23.65	56.00	-32.35	Neutral	-
Mode 1	Pass	AV	1.626M	20.61	46.00	-25.39	Neutral	-
Mode 1	Pass	QP	13.816M	17.71	60.00	-42.29	Neutral	-
Mode 1	Pass	AV	13.816M	15.95	50.00	-34.05	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	176.674k	22.22	64.64	-42.42	19.63	Line	-	2.59	9.69	0.03	9.91
AV	176.674k	18.63	54.64	-36.01	19.63	Line	-	-1.00	9.69	0.03	9.91
QP	229.932k	22.15	62.44	-40.29	19.63	Line	-	2.52	9.69	0.03	9.91
AV	229.932k	17.80	52.44	-34.64	19.63	Line	-	-1.83	9.69	0.03	9.91
QP	384.811k	24.81	58.18	-33.37	19.64	Line	-	5.17	9.69	0.04	9.91
AV	384.811k	23.57	48.18	-24.61	19.64	Line	-	3.93	9.69	0.04	9.91
QP	915.089k	20.83	56.00	-35.17	19.66	Line	-	1.17	9.69	0.05	9.92
AV	915.089k	17.83	46.00	-28.17	19.66	Line	-	-1.83	9.69	0.05	9.92
QP	1.726M	28.28	56.00	-27.72	19.68	Line	-	8.60	9.69	0.07	9.92
AV	1.726M	25.18	46.00	-20.82	19.68	Line	-	5.50	9.69	0.07	9.92
QP	17.981M	19.38	60.00	-40.62	19.88	Line	-	-0.50	9.69	0.26	9.93
AV	17.981M	17.10	50.00	-32.90	19.88	Line	-	-2.78	9.69	0.26	9.93

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	233.633k	20.47	62.31	-41.84	19.66	Neutral	-	0.81	9.72	0.03	9.91
AV	233.633k	16.07	52.31	-36.24	19.66	Neutral	-	-3.59	9.72	0.03	9.91
QP	168.41k	19.70	65.04	-45.34	19.67	Neutral	-	0.03	9.73	0.03	9.91
AV	168.41k	16.99	55.04	-38.05	19.67	Neutral	-	-2.68	9.73	0.03	9.91
QP	395.716k	23.59	57.95	-34.36	19.67	Neutral	-	3.92	9.72	0.04	9.91
AV	395.716k	22.29	47.95	-25.66	19.67	Neutral	-	2.62	9.72	0.04	9.91
QP	761.574k	14.64	56.00	-41.36	19.70	Neutral	-	-5.06	9.73	0.05	9.92
AV	761.574k	13.14	46.00	-32.86	19.70	Neutral	-	-6.56	9.73	0.05	9.92
QP	1.626M	23.65	56.00	-32.35	19.73	Neutral	-	3.92	9.74	0.07	9.92
AV	1.626M	20.61	46.00	-25.39	19.73	Neutral	-	0.88	9.74	0.07	9.92
QP	13.816M	17.71	60.00	-42.29	20.10	Neutral	-	-2.39	9.94	0.23	9.93
AV	13.816M	15.95	50.00	-34.05	20.10	Neutral	-	-4.15	9.94	0.23	9.93



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)	702.5k	1.052M	1M05F1D	695k	1.044M

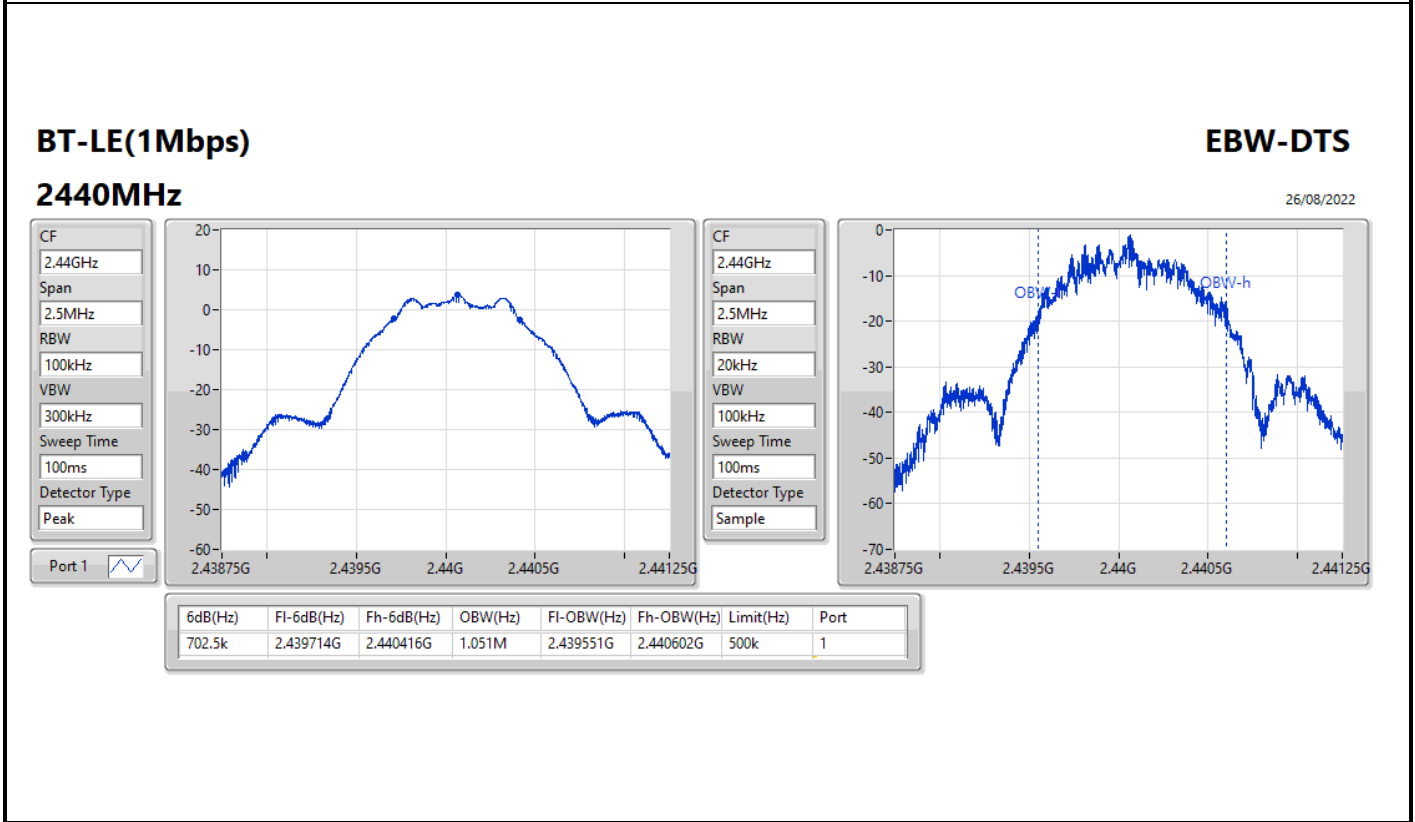
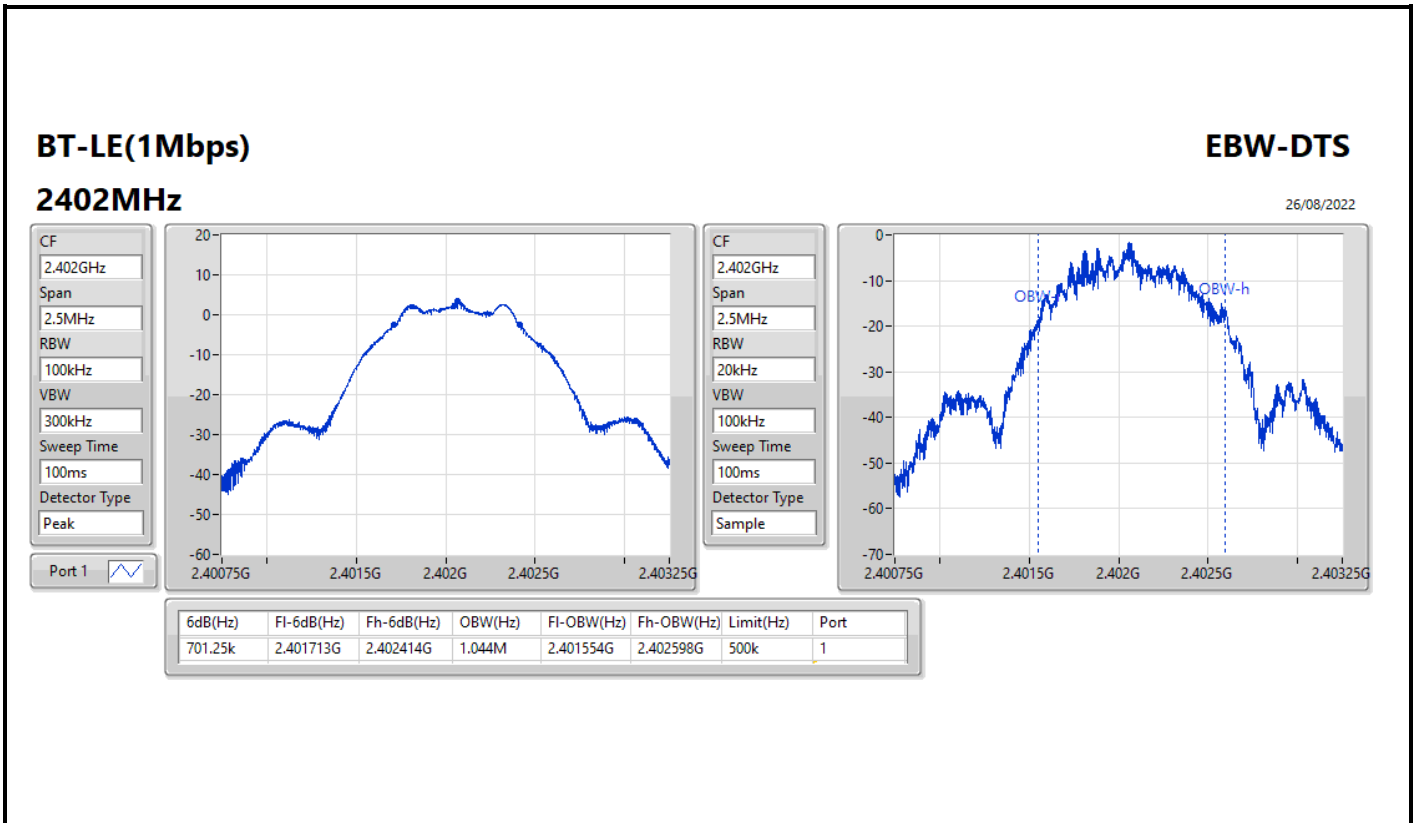
Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth



Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	701.25k	1.044M
2440MHz	Pass	500k	702.5k	1.051M
2480MHz	Pass	500k	695k	1.052M

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

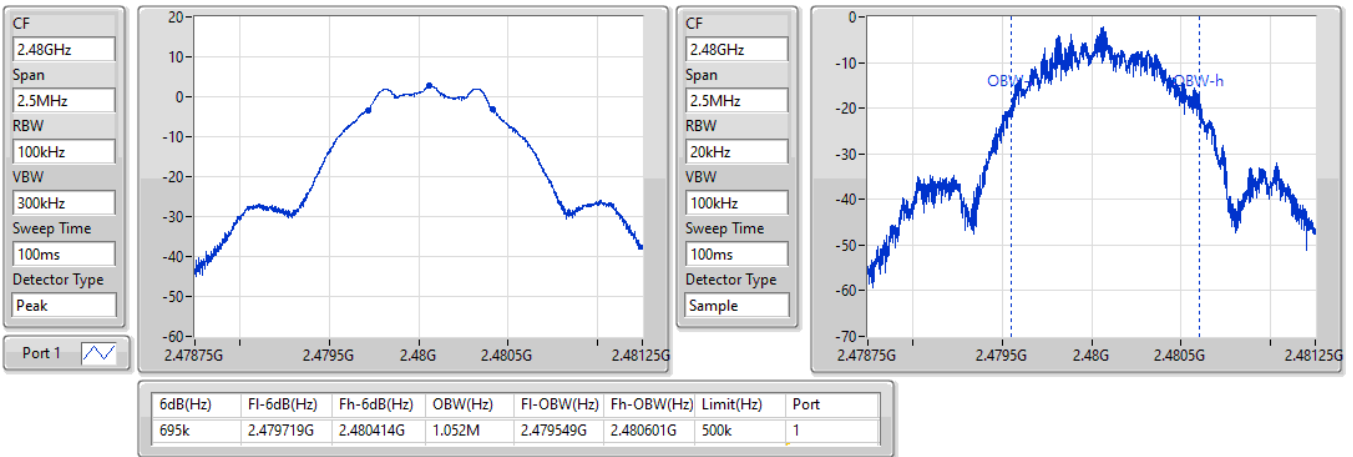


BT-LE(1Mbps)

2480MHz

EBW-DTS

26/08/2022





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	3.78	0.00239



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	0.85	3.52	30.00
2440MHz	Pass	0.85	3.78	30.00
2480MHz	Pass	0.85	3.05	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-11.71

RBW = 3kHz;



Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	0.85	-12.34	8.00
2440MHz	Pass	0.85	-11.71	8.00
2480MHz	Pass	0.85	-12.76	8.00

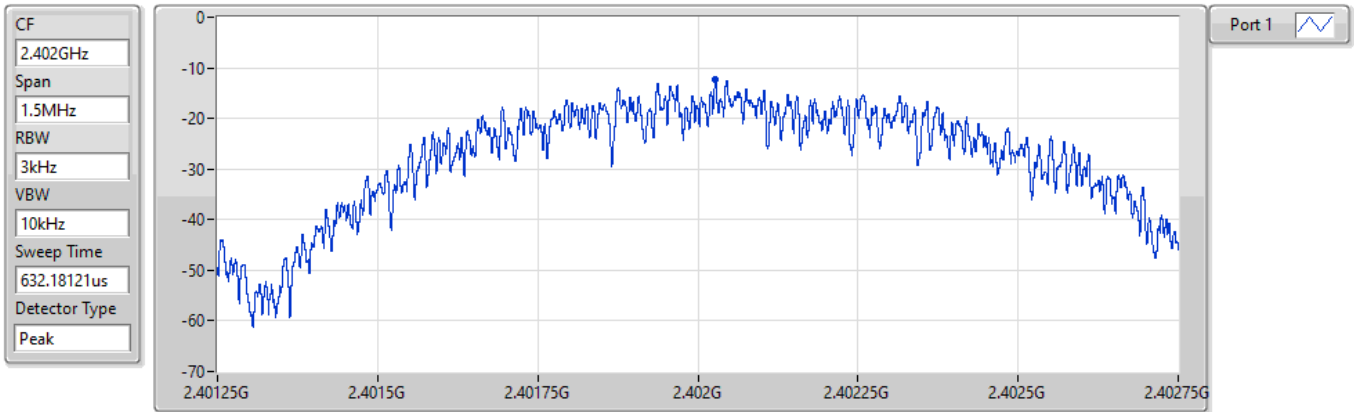
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

BT-LE(1Mbps)

PSD

2402MHz

26/08/2022

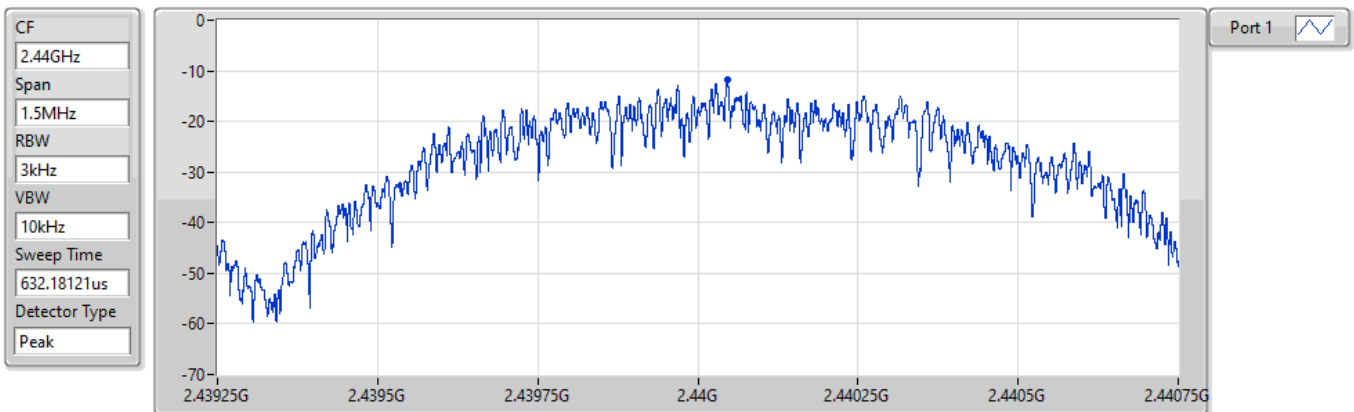


BT-LE(1Mbps)

PSD

2440MHz

26/08/2022



BT-LE(1Mbps)

PSD

2480MHz

26/08/2022

CF
2.48GHz

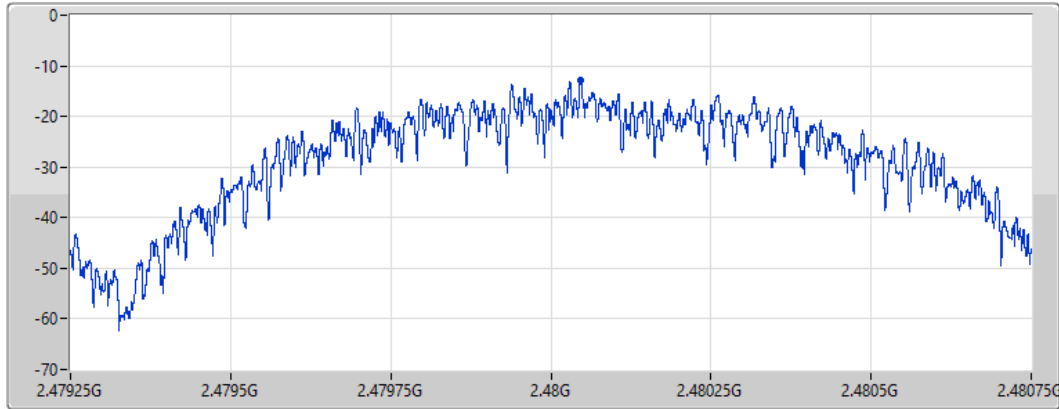
Span
1.5MHz


RBW
3kHz

VBW
10kHz

Sweep Time
632.18121us

Detector Type
Peak



Port 1 

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.76	-12.76	-12.76



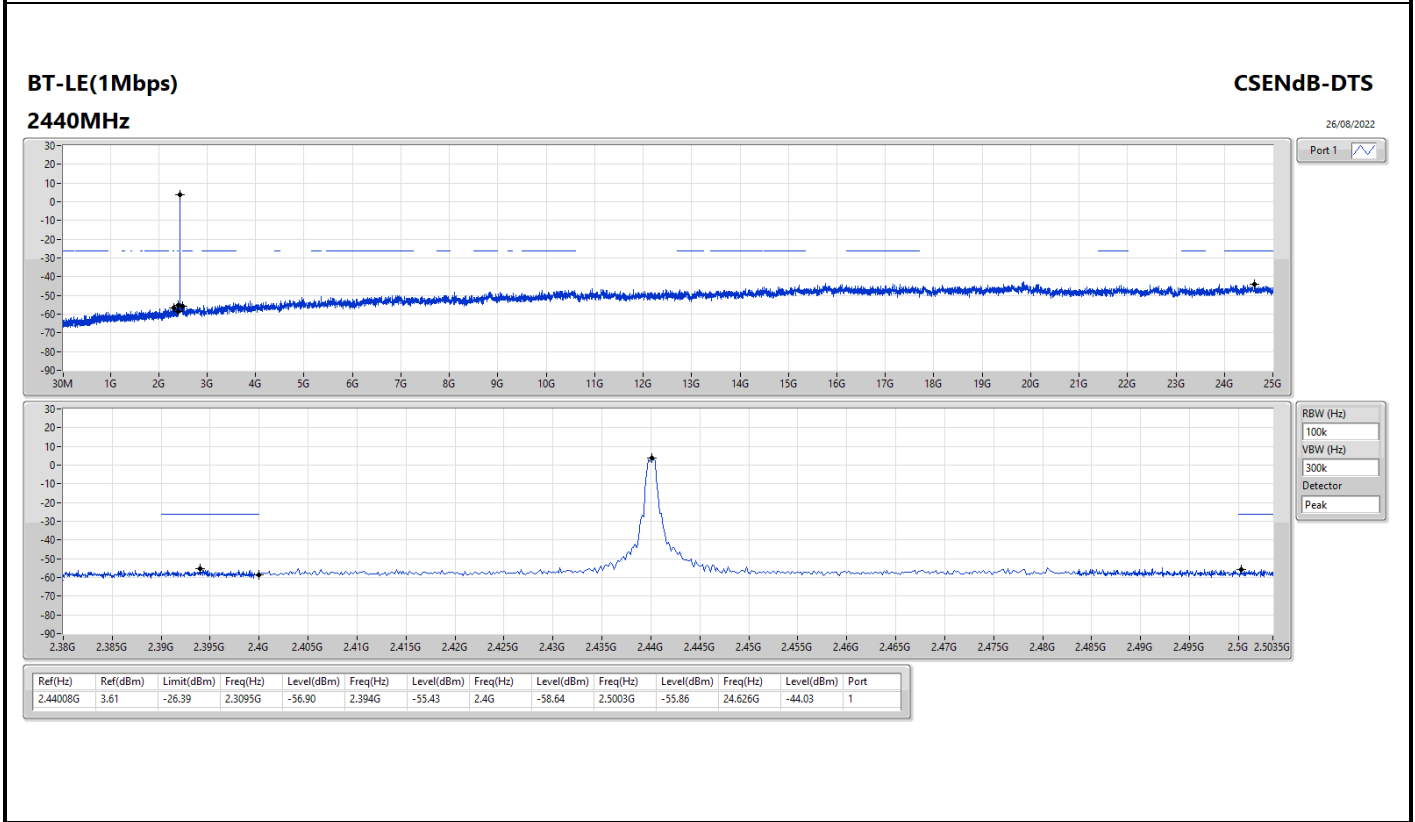
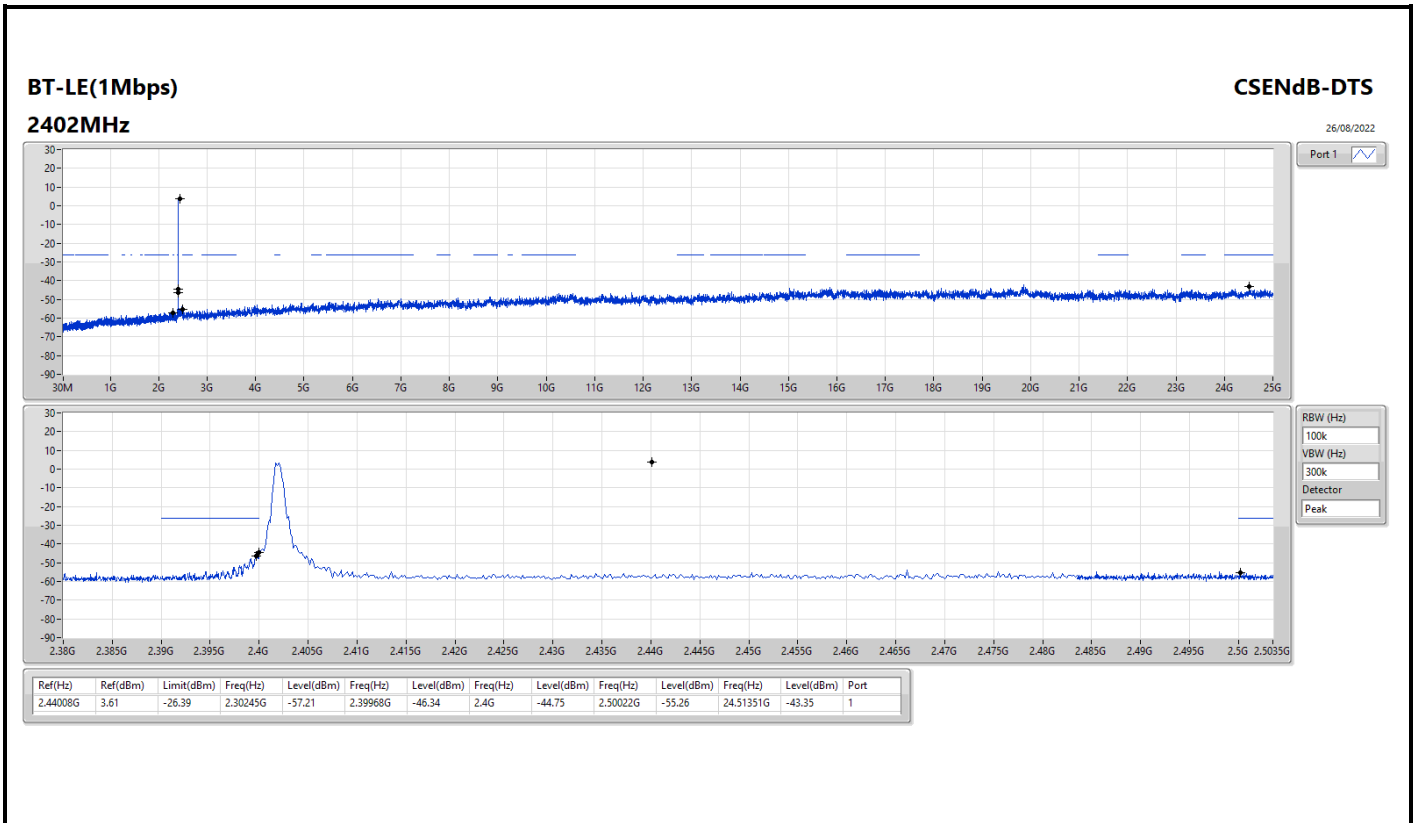
Summary

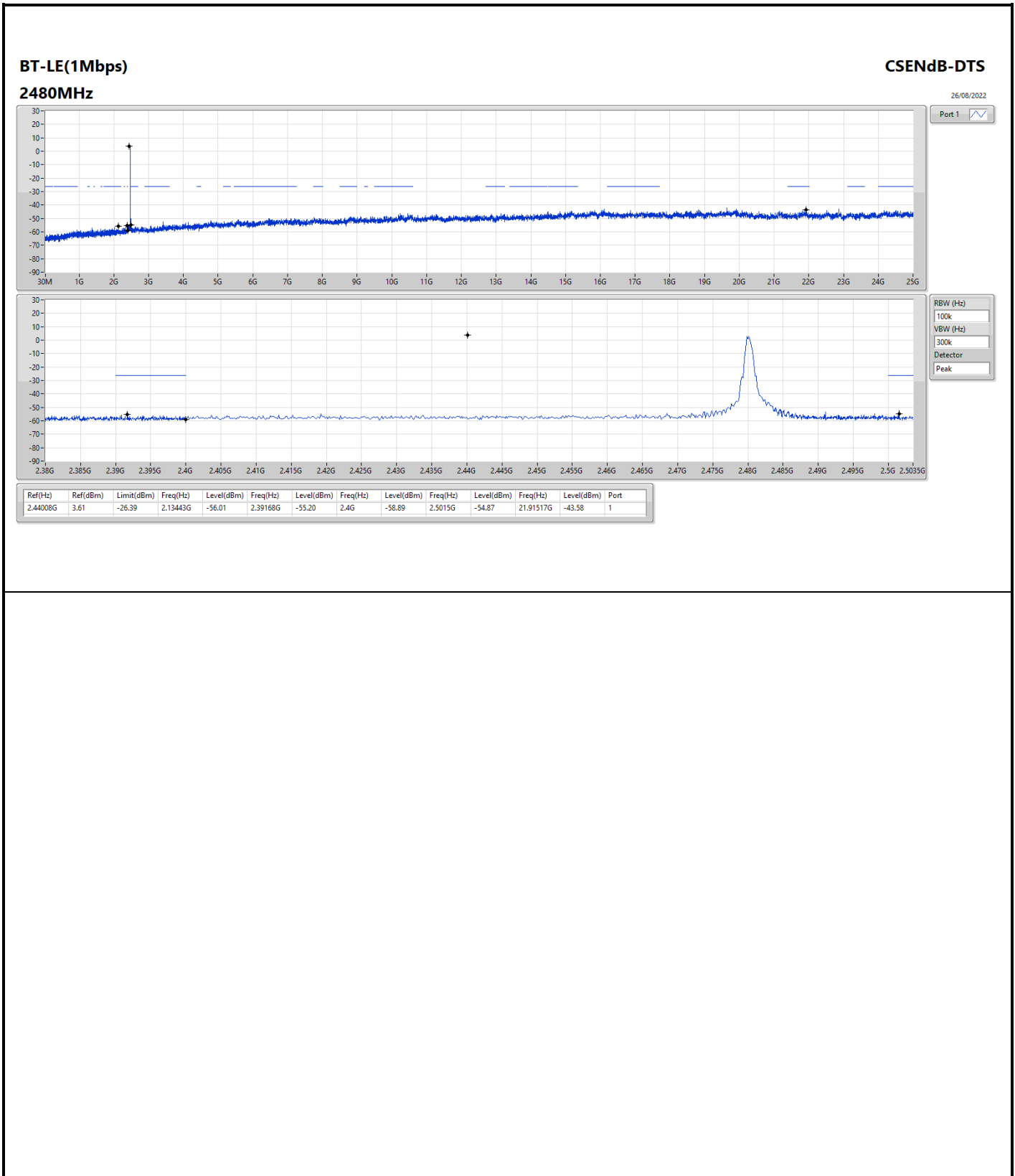
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44008G	3.61	-26.39	2.30245G	-57.21	2.39968G	-46.34	2.4G	-44.75	2.50022G	-55.26	24.51351G	-43.35	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	3.61	-26.39	2.30245G	-57.21	2.39968G	-46.34	2.4G	-44.75	2.50022G	-55.26	24.51351G	-43.35	1
2440MHz	Pass	2.44008G	3.61	-26.39	2.3095G	-56.90	2.394G	-55.43	2.4G	-58.64	2.5003G	-55.86	24.626G	-44.03	1
2480MHz	Pass	2.44008G	3.61	-26.39	2.13443G	-56.01	2.39168G	-55.20	2.4G	-58.89	2.5015G	-54.87	21.91517G	-43.58	1







Summary

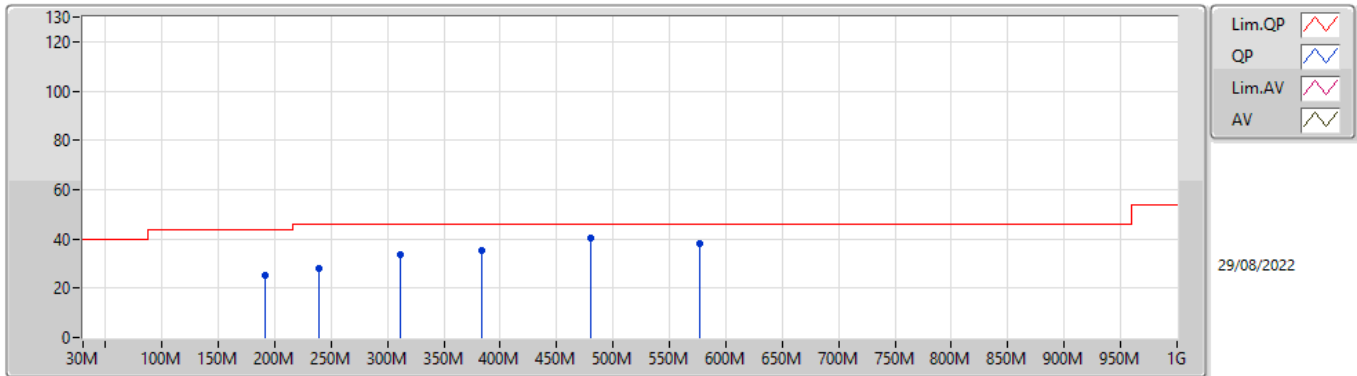
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	311.3M	42.93	46.00	-3.07	3	Horizontal	0	1.00	-



Result

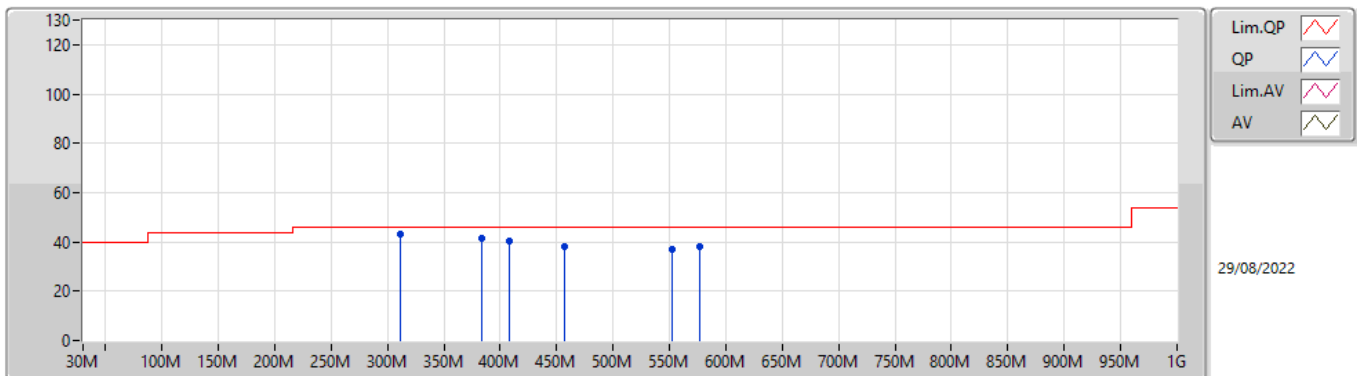
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	191.02M	25.01	43.50	-18.49	3	Vertical	360	1.00	-
2440MHz	Pass	PK	239.52M	27.89	46.00	-18.11	3	Vertical	360	1.00	-
2440MHz	Pass	PK	311.3M	33.37	46.00	-12.63	3	Vertical	360	1.00	-
2440MHz	Pass	PK	383.08M	35.47	46.00	-10.53	3	Vertical	360	1.00	-
2440MHz	Pass	PK	480.08M	40.46	46.00	-5.54	3	Vertical	360	1.00	-
2440MHz	Pass	PK	577.08M	38.14	46.00	-7.86	3	Vertical	360	1.00	-
2440MHz	Pass	PK	311.3M	42.93	46.00	-3.07	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	383.08M	41.32	46.00	-4.68	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	408.3M	40.24	46.00	-5.76	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	456.8M	38.28	46.00	-7.72	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	551.86M	36.74	46.00	-9.26	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	577.08M	38.37	46.00	-7.63	3	Horizontal	0	1.00	-

BT-LE(1Mbps)
2440MHz_Test Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	191.02M	25.01	43.50	-18.49	-10.53	3	Vertical	360	1.00	-	35.54	14.11	2.29	26.93
PK	239.52M	27.89	46.00	-18.11	-7.84	3	Vertical	360	1.00	-	35.73	16.31	2.57	26.72
PK	311.3M	33.37	46.00	-12.63	-5.08	3	Vertical	360	1.00	-	38.45	18.62	2.97	26.67
PK	383.08M	35.47	46.00	-10.53	-3.55	3	Vertical	360	1.00	-	39.02	20.23	3.30	27.08
PK	480.08M	40.46	46.00	-5.54	-1.30	3	Vertical	360	1.00	-	41.76	22.67	3.72	27.69
PK	577.08M	38.14	46.00	-7.86	0.00	3	Vertical	360	1.00	-	38.14	23.87	4.10	27.97

BT-LE(1Mbps)
2440MHz_Test Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	311.3M	42.93	46.00	-3.07	-5.08	3	Horizontal	0	1.00	-	48.01	18.62	2.97	26.67
PK	383.08M	41.32	46.00	-4.68	-3.55	3	Horizontal	0	1.00	-	44.87	20.23	3.30	27.08
PK	408.3M	40.24	46.00	-5.76	-2.46	3	Horizontal	0	1.00	-	42.70	21.38	3.41	27.25
PK	456.8M	38.28	46.00	-7.72	-1.66	3	Horizontal	0	1.00	-	39.94	22.31	3.62	27.59
PK	551.86M	36.74	46.00	-9.26	0.25	3	Horizontal	0	1.00	-	36.49	24.26	3.98	27.99
PK	577.08M	38.37	46.00	-7.63	0.00	3	Horizontal	0	1.00	-	38.37	23.87	4.10	27.97



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	4.95995G	50.08	54.00	-3.92	5.78	3	Horizontal	280	1.05	-

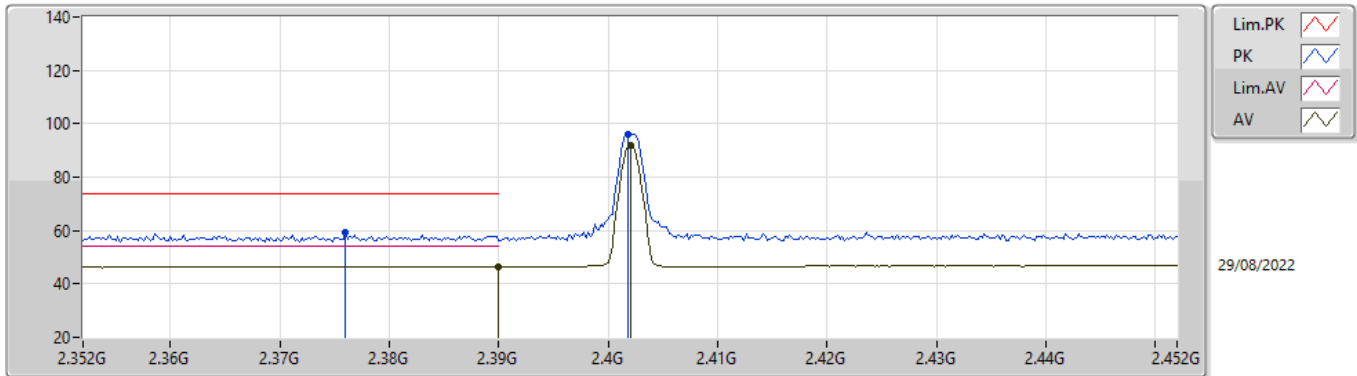


Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.39G	46.63	54.00	-7.37	31.86	3	Vertical	52	2.86	-
2402MHz	Pass	AV	2.402G	91.69	Inf	-Inf	31.88	3	Vertical	52	2.86	-
2402MHz	Pass	PK	2.376G	59.21	74.00	-14.79	31.83	3	Vertical	52	2.86	-
2402MHz	Pass	PK	2.4018G	96.19	Inf	-Inf	31.88	3	Vertical	52	2.86	-
2402MHz	Pass	AV	2.3796G	46.58	54.00	-7.42	31.84	3	Horizontal	292	2.56	-
2402MHz	Pass	AV	2.402G	95.58	Inf	-Inf	31.88	3	Horizontal	292	2.56	-
2402MHz	Pass	PK	2.39G	59.45	74.00	-14.55	31.86	3	Horizontal	292	2.56	-
2402MHz	Pass	PK	2.4024G	100.05	Inf	-Inf	31.88	3	Horizontal	292	2.56	-
2402MHz	Pass	AV	4.80413G	39.40	54.00	-14.60	5.13	3	Vertical	92	1.33	-
2402MHz	Pass	PK	4.80399G	51.18	74.00	-22.82	5.13	3	Vertical	92	1.33	-
2402MHz	Pass	AV	4.80405G	39.23	54.00	-14.77	5.13	3	Horizontal	300	1.05	-
2402MHz	Pass	PK	4.80413G	58.66	74.00	-15.34	5.13	3	Horizontal	300	1.05	-
2440MHz	Pass	AV	2.3516G	47.75	54.00	-6.25	31.80	3	Vertical	76	1.00	-
2440MHz	Pass	AV	2.44G	94.08	Inf	-Inf	32.04	3	Vertical	76	1.00	-
2440MHz	Pass	AV	2.5G	48.43	54.00	-5.57	32.38	3	Vertical	76	1.00	-
2440MHz	Pass	PK	2.354G	58.97	74.00	-15.03	31.81	3	Vertical	76	1.00	-
2440MHz	Pass	PK	2.44G	95.08	Inf	-Inf	32.04	3	Vertical	76	1.00	-
2440MHz	Pass	PK	2.4972G	59.94	74.00	-14.06	32.36	3	Vertical	76	1.00	-
2440MHz	Pass	AV	2.3768G	47.95	54.00	-6.05	31.83	3	Horizontal	85	2.51	-
2440MHz	Pass	AV	2.44G	99.51	Inf	-Inf	32.04	3	Horizontal	85	2.51	-
2440MHz	Pass	AV	2.4864G	48.63	54.00	-5.37	32.30	3	Horizontal	85	2.51	-
2440MHz	Pass	PK	2.3588G	58.50	74.00	-15.50	31.81	3	Horizontal	85	2.51	-
2440MHz	Pass	PK	2.4404G	100.45	Inf	-Inf	32.04	3	Horizontal	85	2.51	-
2440MHz	Pass	PK	2.5G	59.64	74.00	-14.36	32.38	3	Horizontal	85	2.51	-
2440MHz	Pass	AV	4.87984G	41.32	54.00	-12.68	5.38	3	Vertical	332	1.40	-
2440MHz	Pass	AV	7.31954G	46.77	54.00	-7.23	10.52	3	Vertical	16	2.80	-
2440MHz	Pass	PK	4.88012G	52.33	74.00	-21.67	5.38	3	Vertical	332	1.40	-
2440MHz	Pass	PK	7.31953G	55.52	74.00	-18.48	10.52	3	Vertical	16	2.80	-
2440MHz	Pass	AV	4.87986G	44.91	54.00	-9.09	5.38	3	Horizontal	278	1.12	-
2440MHz	Pass	AV	7.31956G	43.92	54.00	-10.08	10.52	3	Horizontal	336	2.00	-
2440MHz	Pass	PK	4.88023G	55.27	74.00	-18.73	5.38	3	Horizontal	278	1.12	-
2440MHz	Pass	PK	7.31929G	53.28	74.00	-20.72	10.52	3	Horizontal	336	2.00	-
2480MHz	Pass	AV	2.48G	92.03	Inf	-Inf	32.26	3	Vertical	360	2.71	-
2480MHz	Pass	AV	2.4916G	48.71	54.00	-5.29	32.33	3	Vertical	360	2.71	-
2480MHz	Pass	PK	2.4798G	93.02	Inf	-Inf	32.26	3	Vertical	360	2.71	-
2480MHz	Pass	PK	2.4836G	60.96	74.00	-13.04	32.28	3	Vertical	360	2.71	-
2480MHz	Pass	AV	2.48G	99.07	Inf	-Inf	32.26	3	Horizontal	290	2.16	-
2480MHz	Pass	AV	2.4876G	48.92	54.00	-5.08	32.31	3	Horizontal	290	2.16	-
2480MHz	Pass	PK	2.4798G	99.98	Inf	-Inf	32.26	3	Horizontal	290	2.16	-
2480MHz	Pass	PK	2.4835G	66.20	74.00	-7.80	32.28	3	Horizontal	290	2.16	-
2480MHz	Pass	AV	4.95994G	47.08	54.00	-6.92	5.78	3	Vertical	16	2.96	-
2480MHz	Pass	AV	7.43946G	45.60	54.00	-8.40	10.43	3	Vertical	20	2.65	-
2480MHz	Pass	PK	4.95984G	54.36	74.00	-19.64	5.78	3	Vertical	16	2.96	-
2480MHz	Pass	PK	7.4396G	54.04	74.00	-19.96	10.43	3	Vertical	20	2.65	-
2480MHz	Pass	AV	4.95995G	50.08	54.00	-3.92	5.78	3	Horizontal	280	1.05	-
2480MHz	Pass	AV	7.43958G	41.68	54.00	-12.32	10.43	3	Horizontal	342	2.06	-
2480MHz	Pass	PK	4.95969G	55.81	74.00	-18.19	5.78	3	Horizontal	280	1.05	-
2480MHz	Pass	PK	7.43957G	51.63	74.00	-22.37	10.43	3	Horizontal	342	2.06	-

BT-LE(1Mbps)

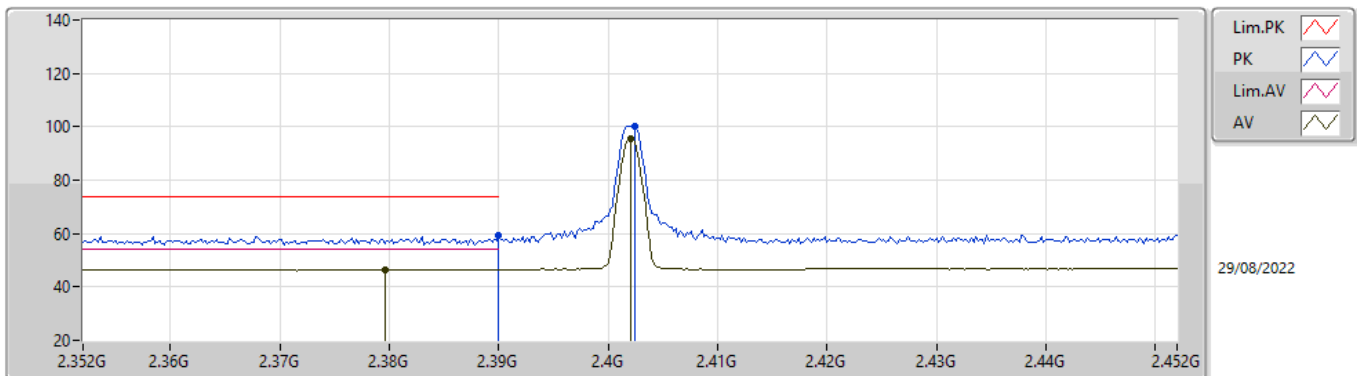
2402MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.39G	46.63	54.00	-7.37	31.86	3	Vertical	52	2.86	-	14.77	27.38	4.48	-
AV	2.402G	91.69	Inf	-Inf	31.88	3	Vertical	52	2.86	-	59.81	27.41	4.47	-
PK	2.376G	59.21	74.00	-14.79	31.83	3	Vertical	52	2.86	-	27.38	27.35	4.48	-
PK	2.4018G	96.19	Inf	-Inf	31.88	3	Vertical	52	2.86	-	64.31	27.41	4.47	-

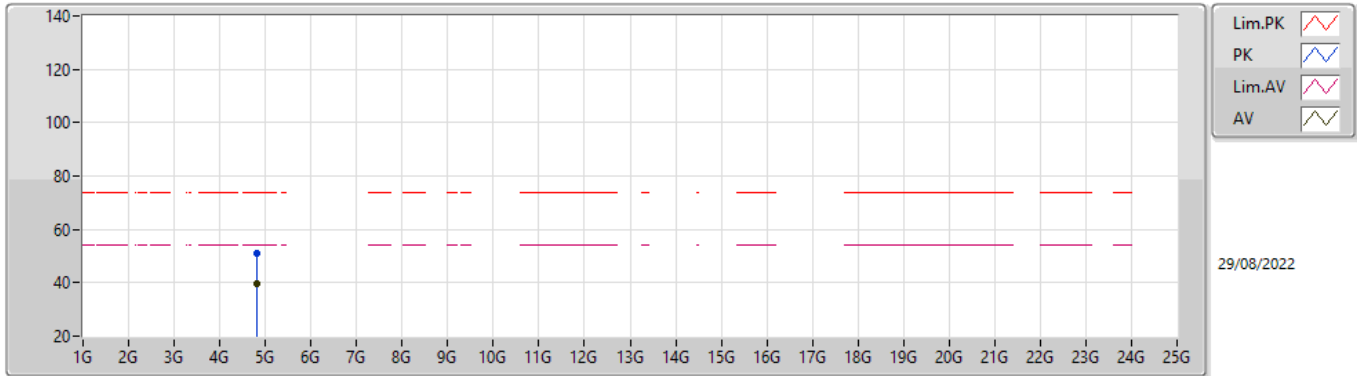
BT-LE(1Mbps)

2402MHz_TX



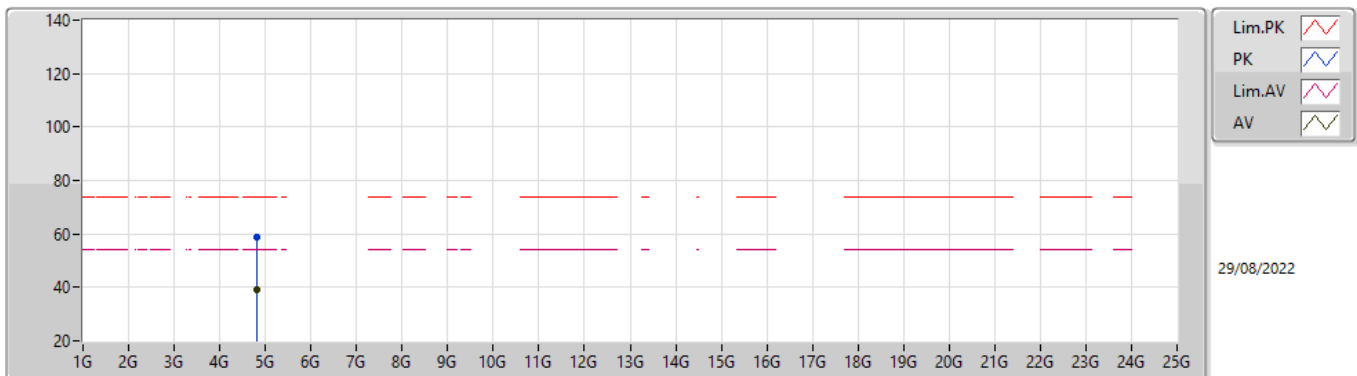
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3796G	46.58	54.00	-7.42	31.84	3	Horizontal	292	2.56	-	14.74	27.36	4.48	-
AV	2.402G	95.58	Inf	-Inf	31.88	3	Horizontal	292	2.56	-	63.70	27.41	4.47	-
PK	2.39G	59.45	74.00	-14.55	31.86	3	Horizontal	292	2.56	-	27.59	27.38	4.48	-
PK	2.4024G	100.05	Inf	-Inf	31.88	3	Horizontal	292	2.56	-	68.17	27.41	4.47	-

BT-LE(1Mbps)
2402MHz_TX



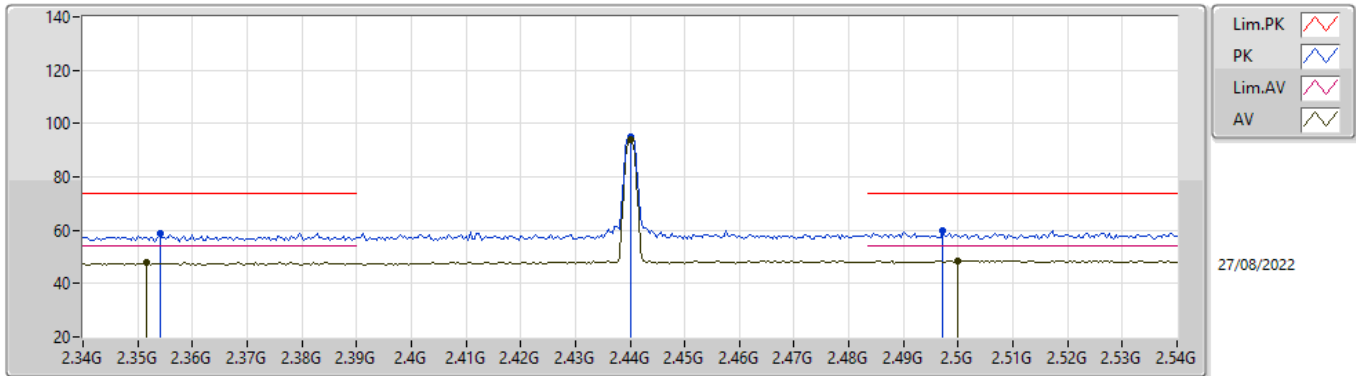
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80413G	39.40	54.00	-14.60	5.13	3	Vertical	92	1.33	-	34.27	32.52	6.90	34.29
PK	4.80399G	51.18	74.00	-22.82	5.13	3	Vertical	92	1.33	-	46.05	32.52	6.90	34.29

BT-LE(1Mbps)
2402MHz_TX



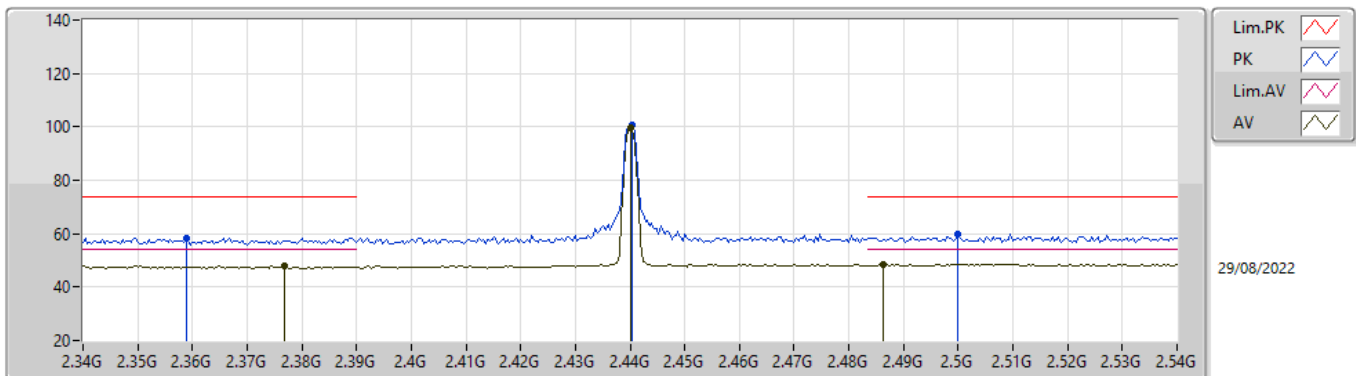
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80405G	39.23	54.00	-14.77	5.13	3	Horizontal	300	1.05	-	34.10	32.52	6.90	34.29
PK	4.80413G	58.66	74.00	-15.34	5.13	3	Horizontal	300	1.05	-	53.53	32.52	6.90	34.29

BT-LE(1Mbps)
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3516G	47.75	54.00	-6.25	31.80	3	Vertical	76	1.00	-	15.95	27.30	4.50	-
AV	2.44G	94.08	Inf	-Inf	32.04	3	Vertical	76	1.00	-	62.04	27.56	4.48	-
AV	2.5G	48.43	54.00	-5.57	32.38	3	Vertical	76	1.00	-	16.05	27.90	4.48	-
PK	2.354G	58.97	74.00	-15.03	31.81	3	Vertical	76	1.00	-	27.16	27.31	4.50	-
PK	2.44G	95.08	Inf	-Inf	32.04	3	Vertical	76	1.00	-	63.04	27.56	4.48	-
PK	2.4972G	59.94	74.00	-14.06	32.36	3	Vertical	76	1.00	-	27.58	27.88	4.48	-

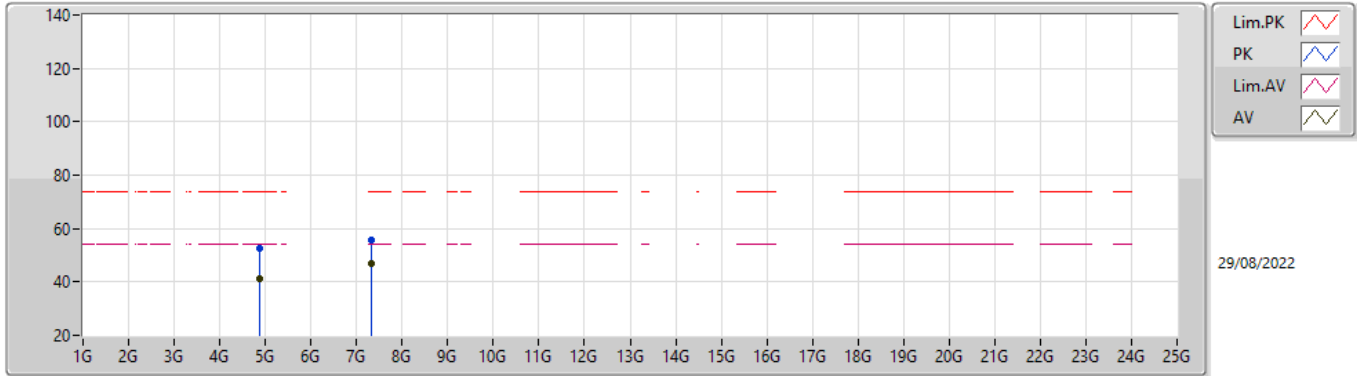
BT-LE(1Mbps)
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3768G	47.95	54.00	-6.05	31.83	3	Horizontal	85	2.51	-	16.12	27.35	4.48	-
AV	2.44G	99.51	Inf	-Inf	32.04	3	Horizontal	85	2.51	-	67.47	27.56	4.48	-
AV	2.4864G	48.63	54.00	-5.37	32.30	3	Horizontal	85	2.51	-	16.33	27.82	4.48	-
PK	2.3588G	58.50	74.00	-15.50	31.81	3	Horizontal	85	2.51	-	26.69	27.32	4.49	-
PK	2.4404G	100.45	Inf	-Inf	32.04	3	Horizontal	85	2.51	-	68.41	27.56	4.48	-
PK	2.5G	59.64	74.00	-14.36	32.38	3	Horizontal	85	2.51	-	27.26	27.90	4.48	-

BT-LE(1Mbps)

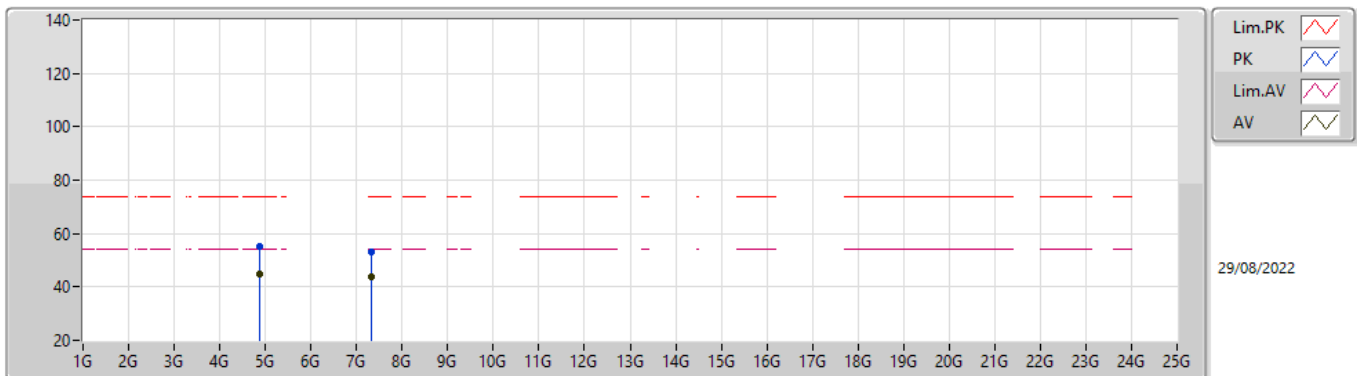
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87984G	41.32	54.00	-12.68	5.38	3	Vertical	332	1.40	-	35.94	32.76	6.90	34.28
AV	7.31954G	46.77	54.00	-7.23	10.52	3	Vertical	16	2.80	-	36.25	36.78	8.54	34.80
PK	4.88012G	52.33	74.00	-21.67	5.38	3	Vertical	332	1.40	-	46.95	32.76	6.90	34.28
PK	7.31953G	55.52	74.00	-18.48	10.52	3	Vertical	16	2.80	-	45.00	36.78	8.54	34.80

BT-LE(1Mbps)

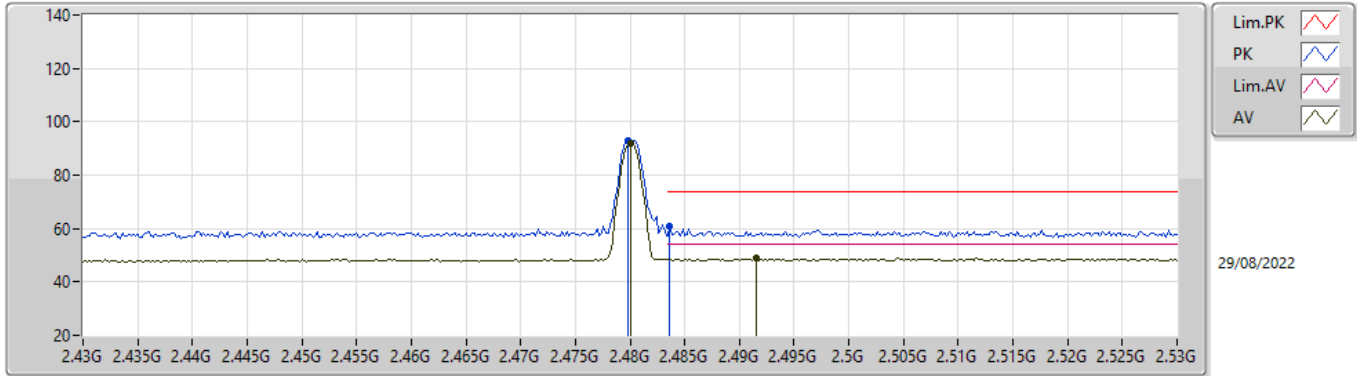
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87986G	44.91	54.00	-9.09	5.38	3	Horizontal	278	1.12	-	39.53	32.76	6.90	34.28
AV	7.31956G	43.92	54.00	-10.08	10.52	3	Horizontal	336	2.00	-	33.40	36.78	8.54	34.80
PK	4.88023G	55.27	74.00	-18.73	5.38	3	Horizontal	278	1.12	-	49.89	32.76	6.90	34.28
PK	7.31929G	53.28	74.00	-20.72	10.52	3	Horizontal	336	2.00	-	42.76	36.78	8.54	34.80

BT-LE(1Mbps)

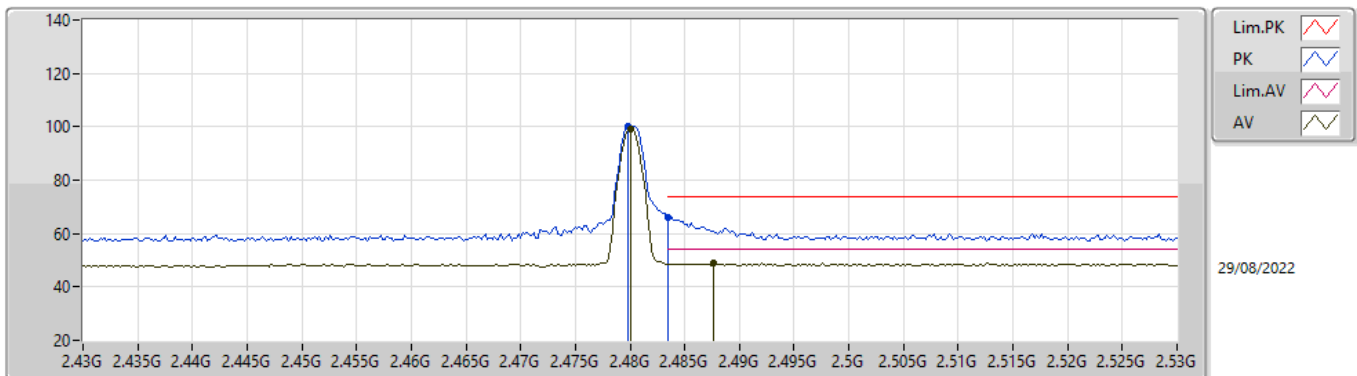
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	92.03	Inf	-Inf	32.26	3	Vertical	360	2.71	-	59.77	27.78	4.48	-
AV	2.4916G	48.71	54.00	-5.29	32.33	3	Vertical	360	2.71	-	16.38	27.85	4.48	-
PK	2.4798G	93.02	Inf	-Inf	32.26	3	Vertical	360	2.71	-	60.76	27.78	4.48	-
PK	2.4836G	60.96	74.00	-13.04	32.28	3	Vertical	360	2.71	-	28.68	27.80	4.48	-

BT-LE(1Mbps)

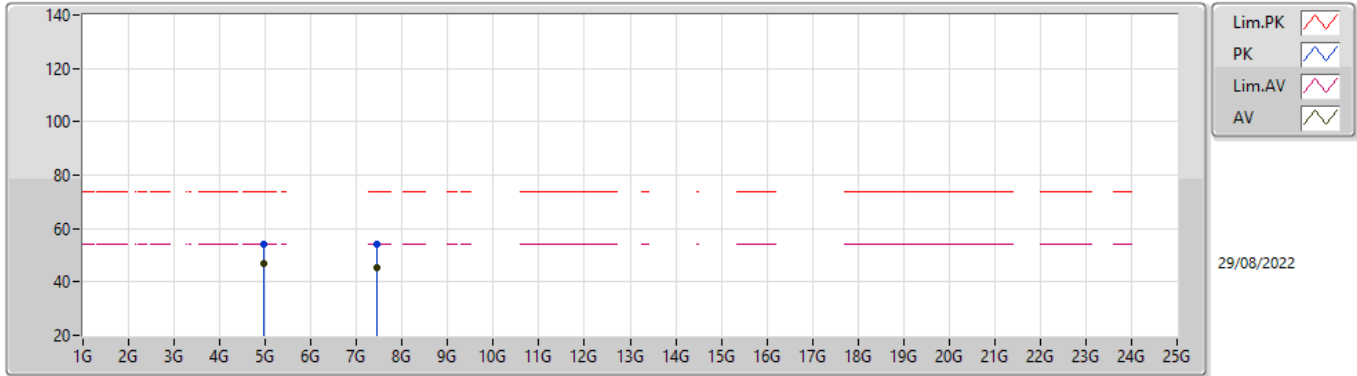
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	99.07	Inf	-Inf	32.26	3	Horizontal	290	2.16	-	66.81	27.78	4.48	-
AV	2.4876G	48.92	54.00	-5.08	32.31	3	Horizontal	290	2.16	-	16.61	27.83	4.48	-
PK	2.4798G	99.98	Inf	-Inf	32.26	3	Horizontal	290	2.16	-	67.72	27.78	4.48	-
PK	2.4835G	66.20	74.00	-7.80	32.28	3	Horizontal	290	2.16	-	33.92	27.80	4.48	-

BT-LE(1Mbps)

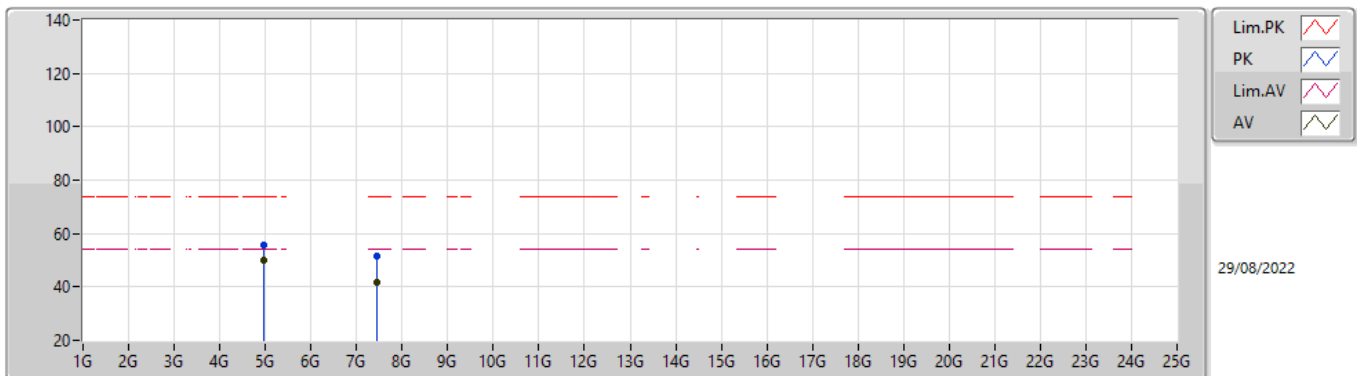
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95994G	47.08	54.00	-6.92	5.78	3	Vertical	16	2.96	-	41.30	33.14	6.91	34.27
AV	7.43946G	45.60	54.00	-8.40	10.43	3	Vertical	20	2.65	-	35.17	36.60	8.65	34.82
PK	4.95984G	54.36	74.00	-19.64	5.78	3	Vertical	16	2.96	-	48.58	33.14	6.91	34.27
PK	7.4396G	54.04	74.00	-19.96	10.43	3	Vertical	20	2.65	-	43.61	36.60	8.65	34.82

BT-LE(1Mbps)

2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95995G	50.08	54.00	-3.92	5.78	3	Horizontal	280	1.05	-	44.30	33.14	6.91	34.27
AV	7.43958G	41.68	54.00	-12.32	10.43	3	Horizontal	342	2.06	-	31.25	36.60	8.65	34.82
PK	4.95969G	55.81	74.00	-18.19	5.78	3	Horizontal	280	1.05	-	50.03	33.14	6.91	34.27
PK	7.43957G	51.63	74.00	-22.37	10.43	3	Horizontal	342	2.06	-	41.20	36.60	8.65	34.82

1. Photographs of Conducted Emissions Test Configuration

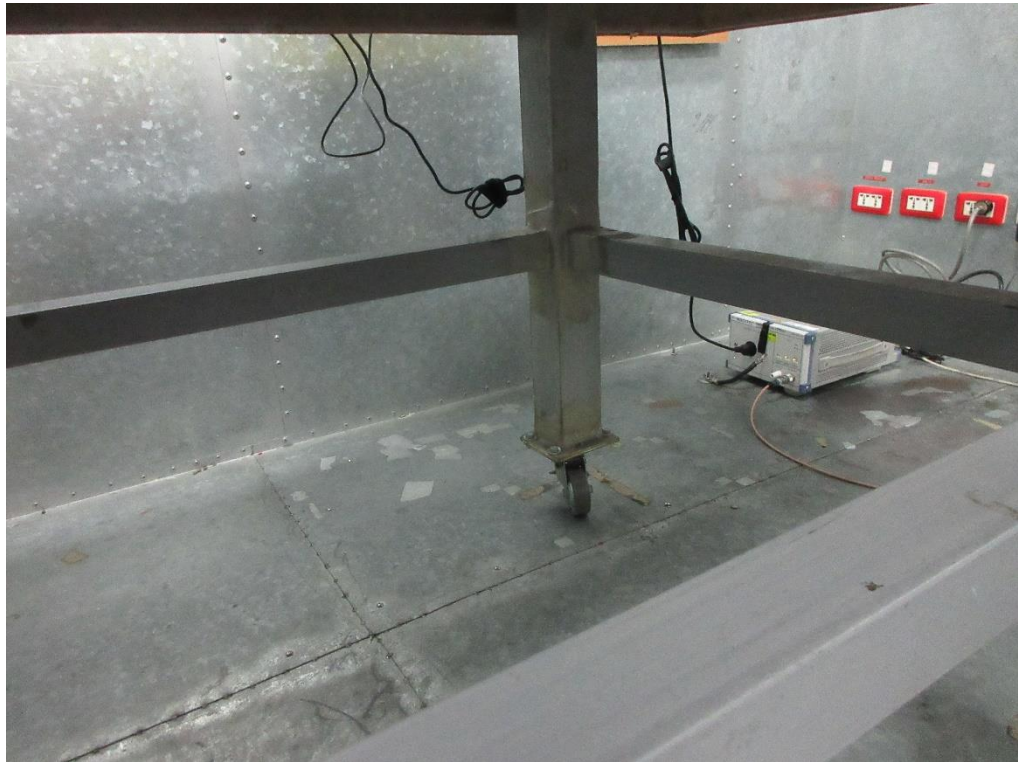
Front view



Side view



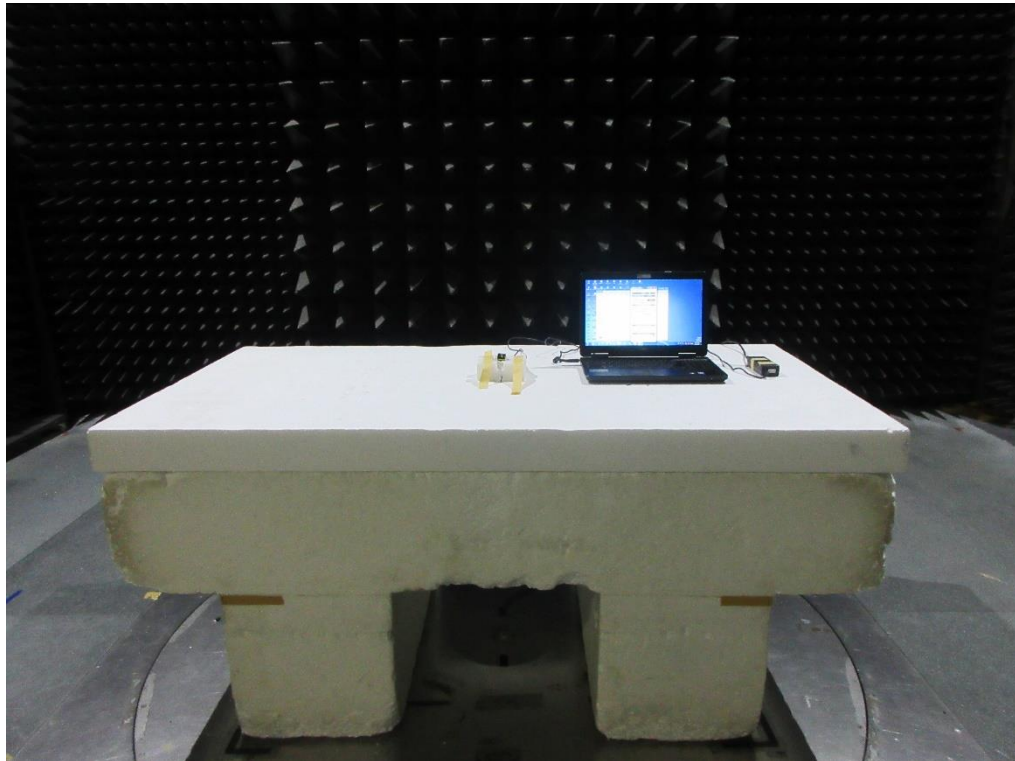
Under table view



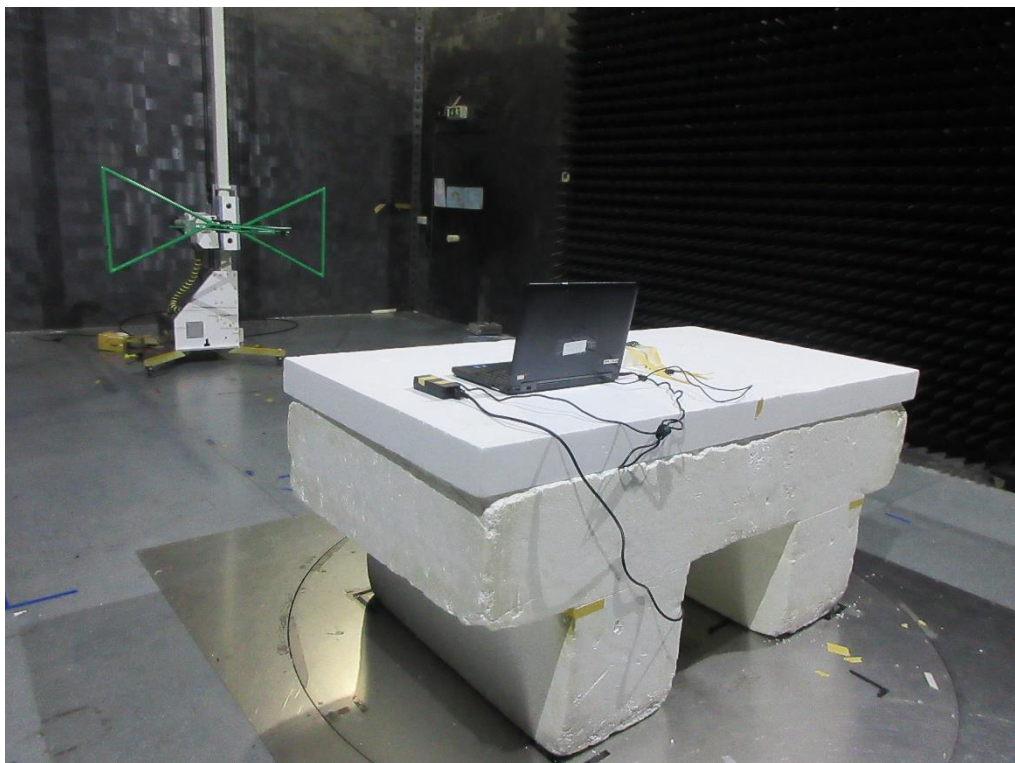
2. Photographs of Radiated Emissions Test Configuration

For radiated emissions 30MHz~1GHz

Front view

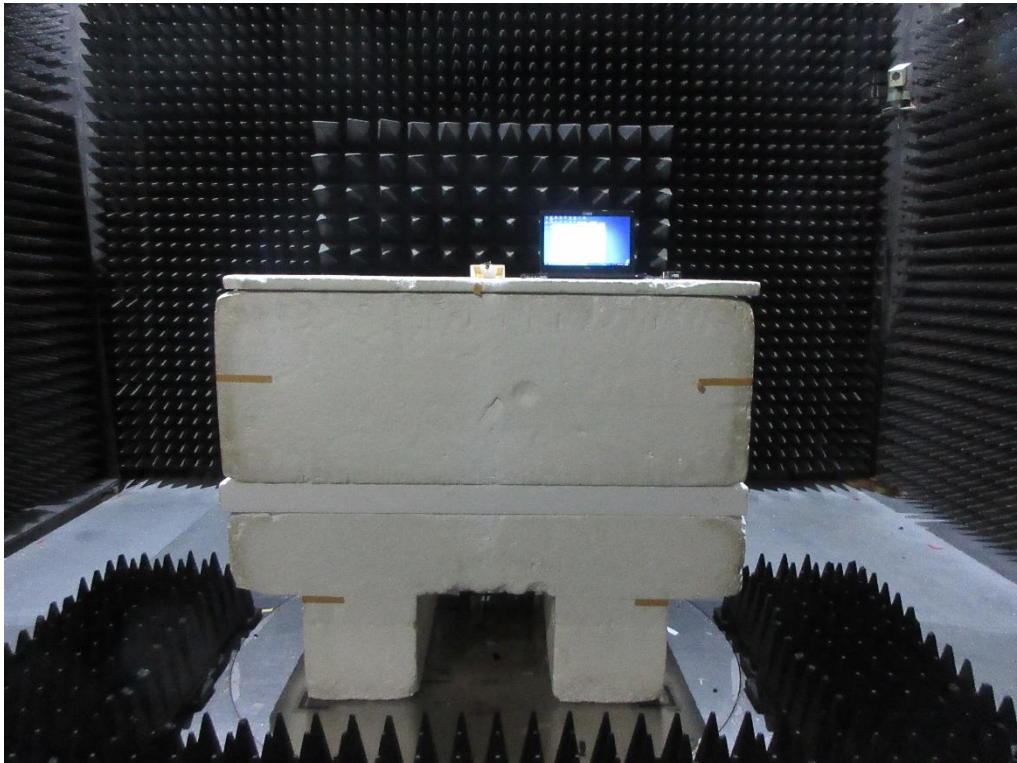


Rear view



For radiated emissions above 1GHz

Front view



Rear view



————THE END————