

FCC Radio Test Report

FCC ID : PPQ-WCBN3512R
Equipment : WCBN3512R
Brand Name : LITEON
Model Name : WCBN3512R
Applicant : LITE-ON Technology Corp.
Bldg. C, 90, Chien 1 Road, Chung Ho, New
Taipei City 23585, Taiwan, R.O.C
Manufacturer : LITE-ON TECHNOLOGY (Changzhou) CO., LTD
A9 Building, No.88 Yanghu Road, Wujin Hi-Tech
Industrial Development Zone, Changzhou City,
Jiangsu Province 213100 China
Standard : 47 CFR FCC Part 15.247

The product was received on Mar. 30, 2022, and testing was started from Apr. 23, 2022 and completed on Jun. 26, 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.)



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History of this test report

[illegible]

Summary of Test Result

Report Clause	Ref.Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:

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

Comments and explanations:

None

Reviewed by: Sam Tsai

Report Producer: Ann Hou

1 General Description

1.1 Information

1.1.1 RF General Information

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

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

Note:

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

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	SHENZHEN SOUTH STAR	N12-8145-ROA	PCB	I-PEX
2	SHENZHEN SOUTH STAR	N12-8145-ROA	PCB	I-PEX

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	4.07	4.56	-
2	2	3.42	4.97	3.42

Note 1: The EUT has two antennas.

For 2.4 GHz function:

For IEEE 802.11b/g/n mode (2TX/2RX)

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

For 5 GHz function:

For IEEE 802.11a/n/ac mode (2TX/2RX)

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

For Bluetooth function:

For Bluetooth mode (1TX/1RX)

Only Ant. 2 (port 2) can be used as transmitting/receiving antenna.

1.1.3 EUT Information

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

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-LE(1Mbps)	0.851	0.7	2.128m	1k
BT-LE(2Mbps)	0.594	2.26	1.072m	1k

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

1.2 Testing Applied Standards

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

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

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

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

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		FAX: 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Wayne	21.1~21.8℃ / 57~58%	17/May/2022
RF Conducted	TH07-HY	Yuna	22.3~24.9℃ / 51~57%	06/May/2022~31/May/2022
Radiated (Co-location)	03CH03-HY	Edward	23.3~24.5℃ / 55~61%	26/Jun/2022
☒ Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787		FAX: 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated	03CH09-HY	Daniel	22.3~24.3℃ / 57~68%	23/Apr/2022~06/May/2022

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)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.0 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	WCN_Combo Tool#1a
-----------------------	-------------------

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	15
2440MHz	15
2480MHz	15
BT-LE(2Mbps)	-
2402MHz	15
2440MHz	15
2480MHz	15

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	Test Fixture mode

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

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

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	CTX
1	2.4GHz WLAN+Bluetooth
2	5GHz WLAN+Bluetooth
Refer to Sporton Test Report No.: FA232501 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

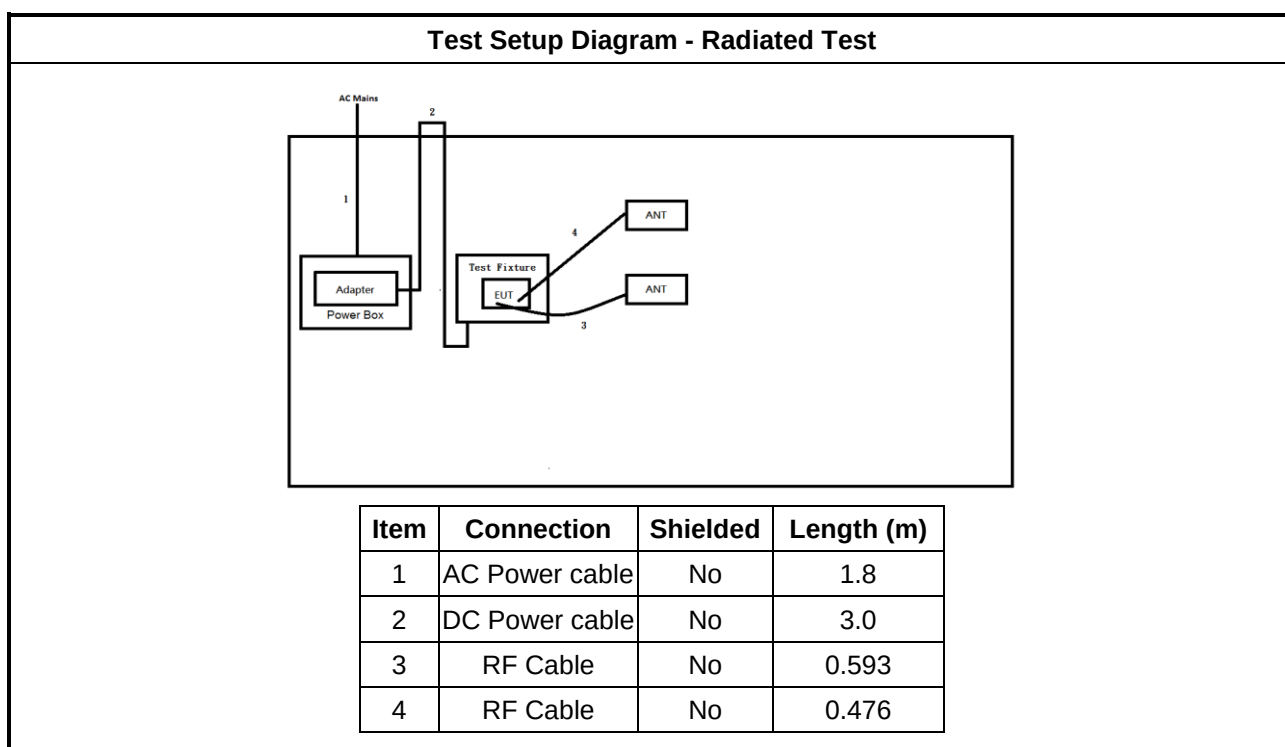
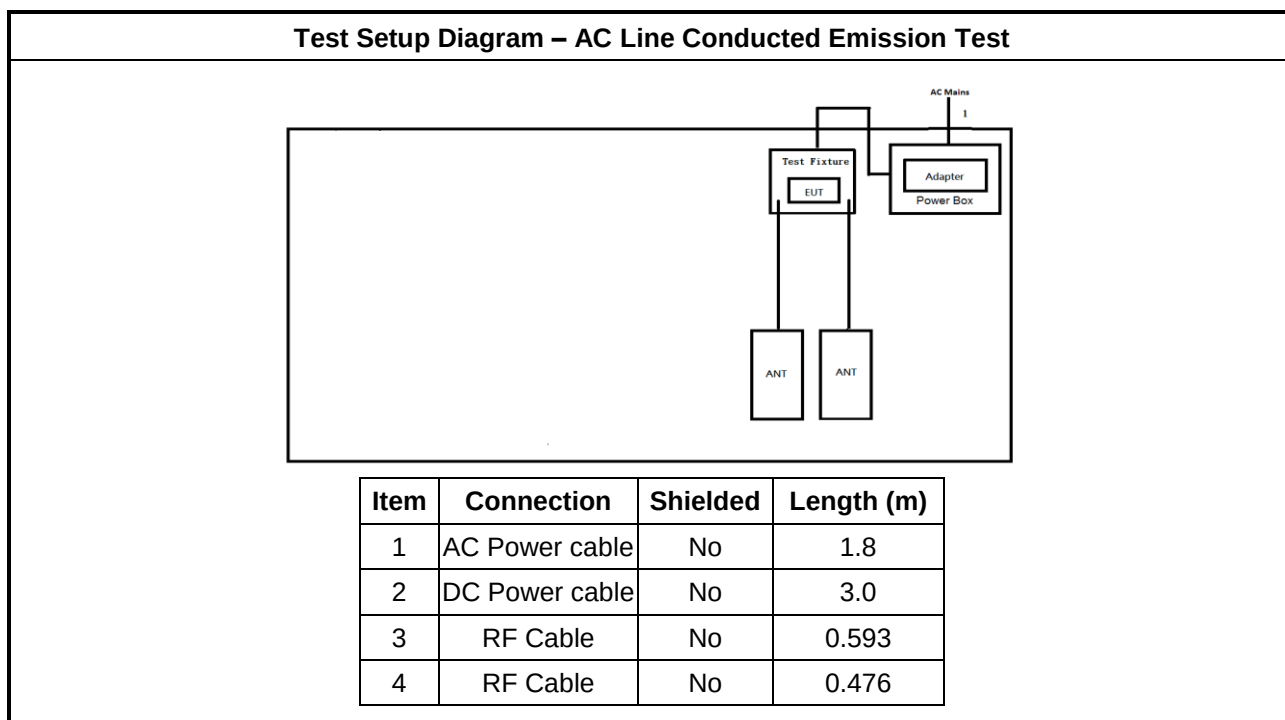
2.3 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Test Fixture	-	-	-	Provided by Customer
2	AC Adapter for Test fixture	APD	WB-12G12FU	-	Provided by Customer

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

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Test Fixture	-	-	-	Provided by Customer
2	AC Adapter for Test fixture	APD	WB-12G12FU	-	Provided by Customer

2.4 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

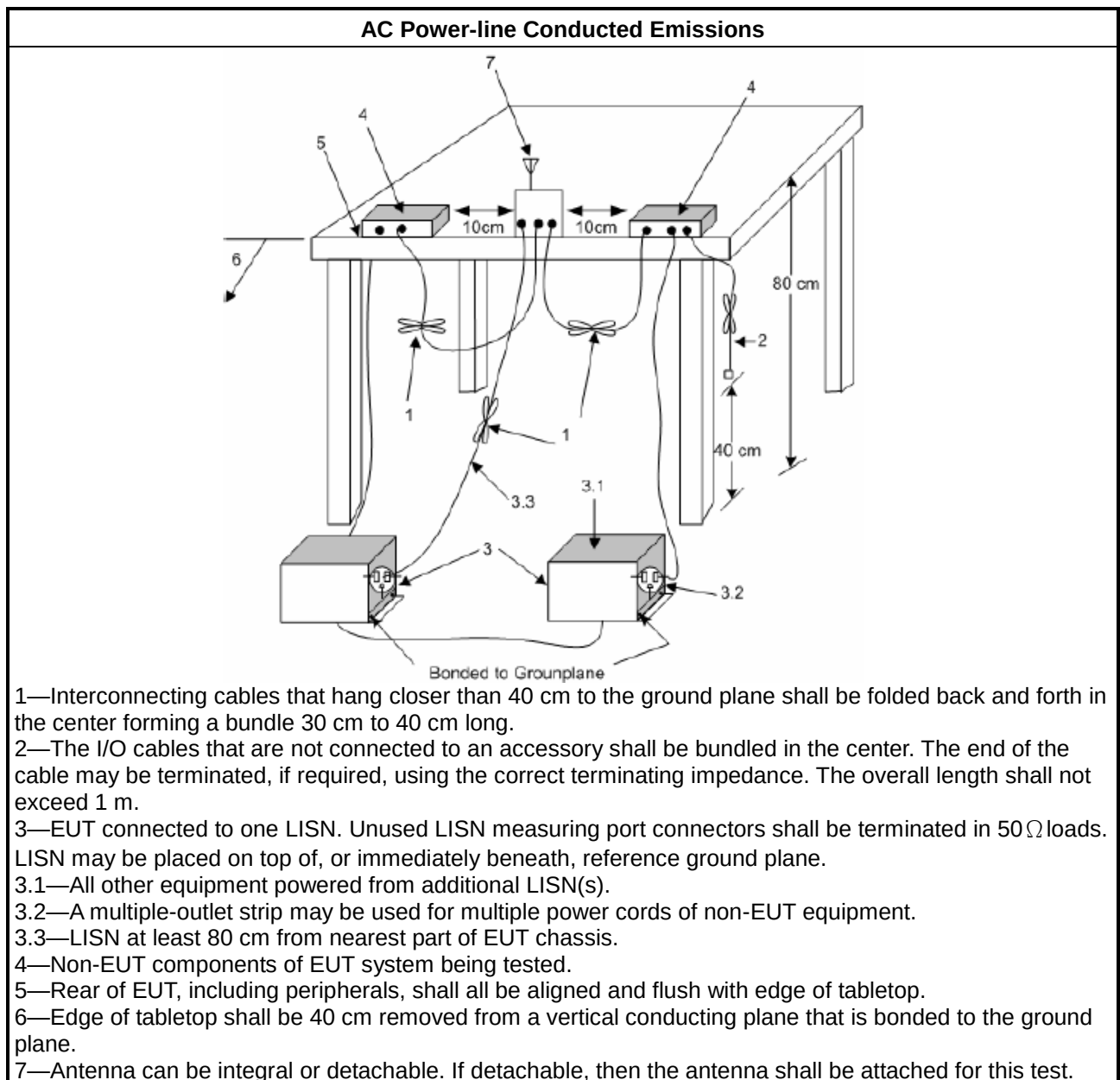
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

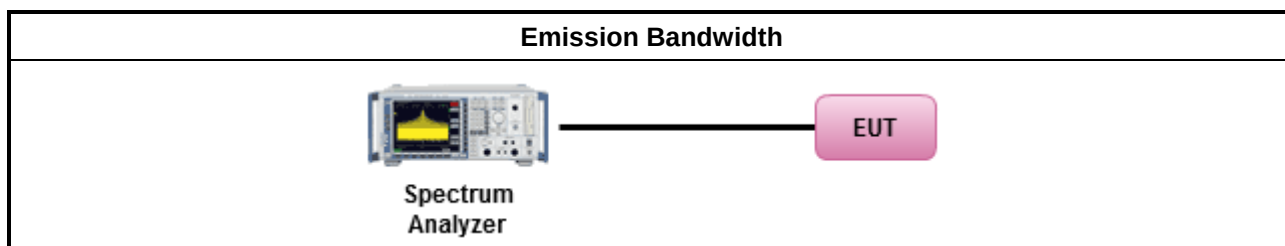
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪	For the emission bandwidth shall be measured using one of the options below:
☒	Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
☒	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
☐	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	Smart antenna system (SAS):
	- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
e.i.r.p. Power Limit:	
	2400-2483.5 MHz Band
	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	Smart antenna system (SAS)
	- Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

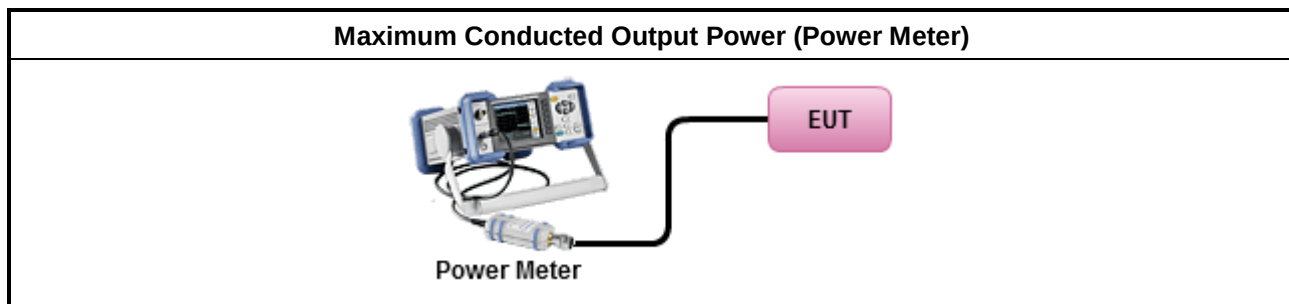
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

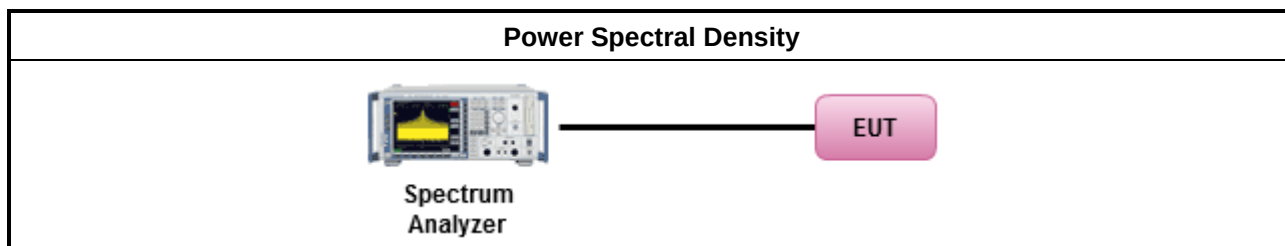
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method
Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒ Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.
For conducted measurement.
If The EUT supports multiple transmit chains using options given below:
Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

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

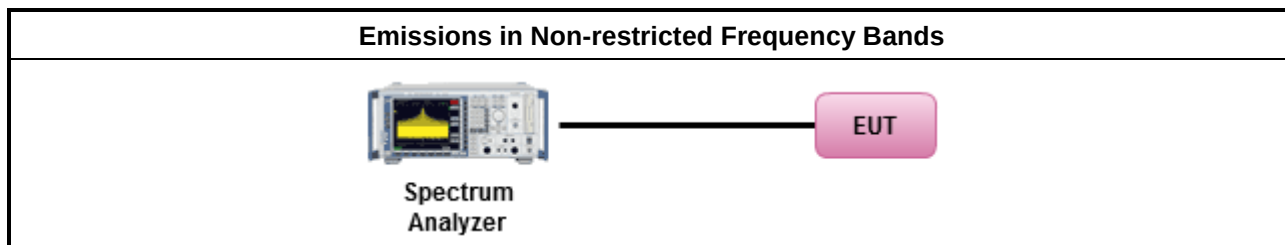
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

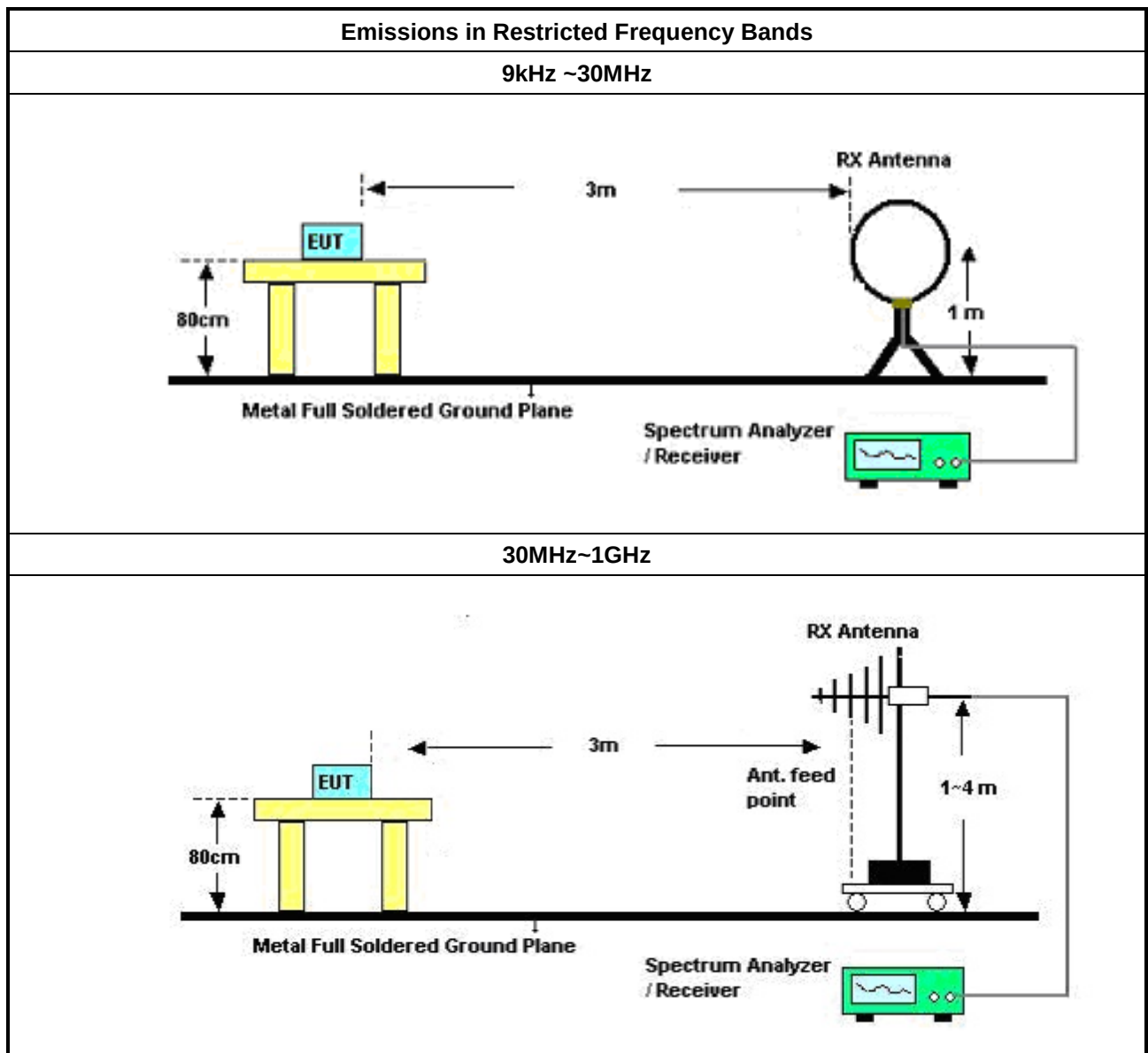
Test Method	
	The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].
	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
	For the transmitter unwanted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

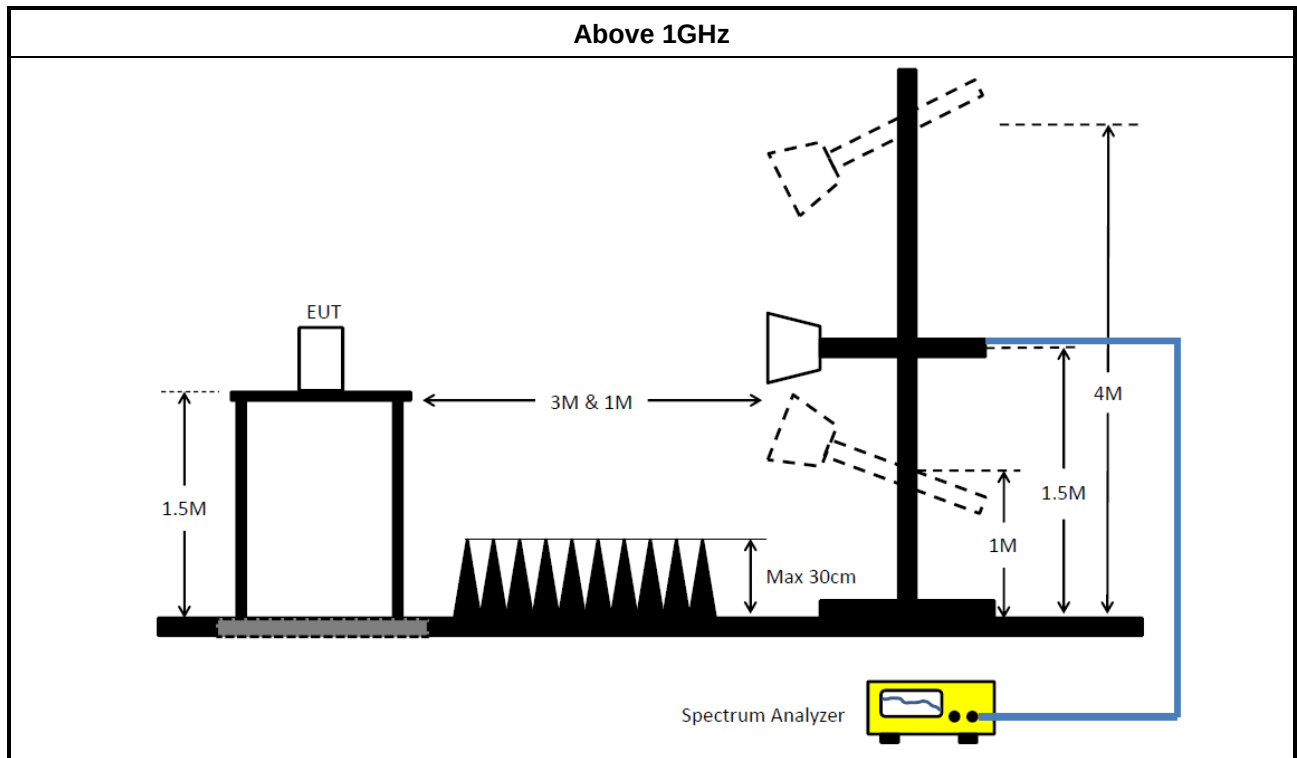
3.6.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.6.5 Test Setup





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

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	21/May/2021	20/May/2022
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	V5.10.7	-	NCR	NCR

NCR: No Calibration Required

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	10Hz~40GHz	14/Feb/2022	13/Feb/2023
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	21/Oct/2021	20/Oct/2022
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	17/Dec/2021	16/Dec/2022
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	20/Dec/2021	19/Dec/2022
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	TDK	SAC-3M	03CH09-HY	30MHz~1GHz 3m	25/Mar/2022	24/Mar/2023
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz~18GHz 3m	17/Mar/2022	16/Mar/2023
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	13/Aug/2021	12/Aug/2022
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz~18GHz	27/Dec/2021	26/Dec/2022
Amplifier	EMC	EMC9135	980232	9kHz~1GHz	08/Apr/2022	07/Apr/2023
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	23/Jul/2021	22/Jul/2022
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D&MT J6102-05	35418 & 3	30MHz~1GHz	04/Sep/2021	03/Sep/2022
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz~18GHz	27/Dec/2021	26/Dec/2022
RF Cable-low	Jye Bao	RG142	CB031+324530/4	9kHz~30MHz	30/Aug/2021	29/Aug/2022
RF Cable-low	Jye Bao	RG142	CB031+324530/4	30MHz~1GHz	07/Feb/2022	06/Feb/2023
RF CABLE 5m+3m+1m	HUBER+SUHNER	SUCOFLEX104	CB009	1GHz~40GHz	13/Aug/2021	12/Aug/2022
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	18/Mar/2022	17/Mar/2023
Microwave Preamplifier	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
EMI Test Receiver	R&S	ESR3	102051	9kHz~3.6GHz	21/May/2021	20/May/2022
SENSE-15247_FS	Sporton	V5.10.7.14	N/A	N/A	N/A	N/A

Instrument for Radiated Test (Co-location)

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	03/Aug/2021	02/Aug/2022
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	12/Oct/2021	11/Oct/2022
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02267	1GHz ~18GHz	14/Sep/2021	13/Sep/2022
RF CABLE 5+6m	HUBER+SUHNER	SUOFLEX 104	SN MY38596/4 +SN 804300/4	1GHz~40GHz	28/Jul/2021	27/Jul/2022
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz~40GHz	18/Mar/2022	17/Mar/2023
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	08/Mar/2022	07/Mar/2023
Microwave Preamplifier	Agilent	8449B	3008A02326	1GHz~26.5GHz	15/Jul/2021	14/Jul/2022
Software	Sporton	SENSE-EMI	V5.10.7	-	N/A	N/A



Conducted Emissions at Powerline

Appendix A

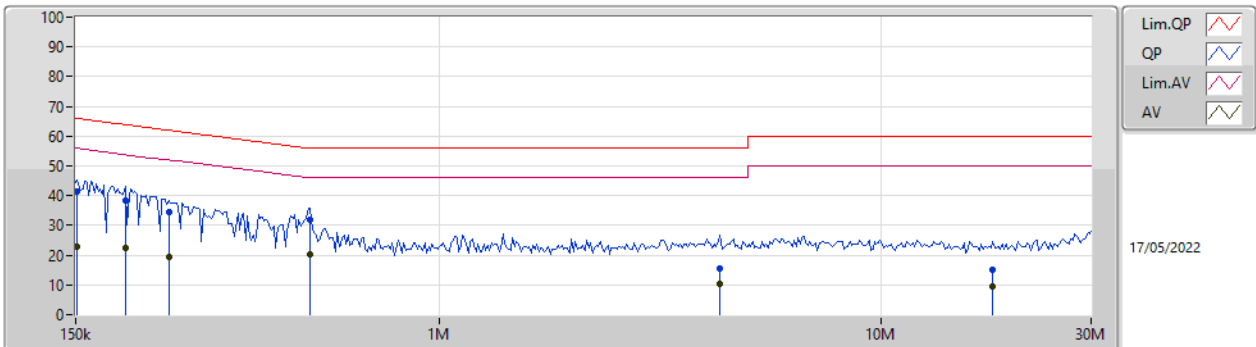
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	520.311k	30.55	46.00	-15.45	Neutral

Mode Configure

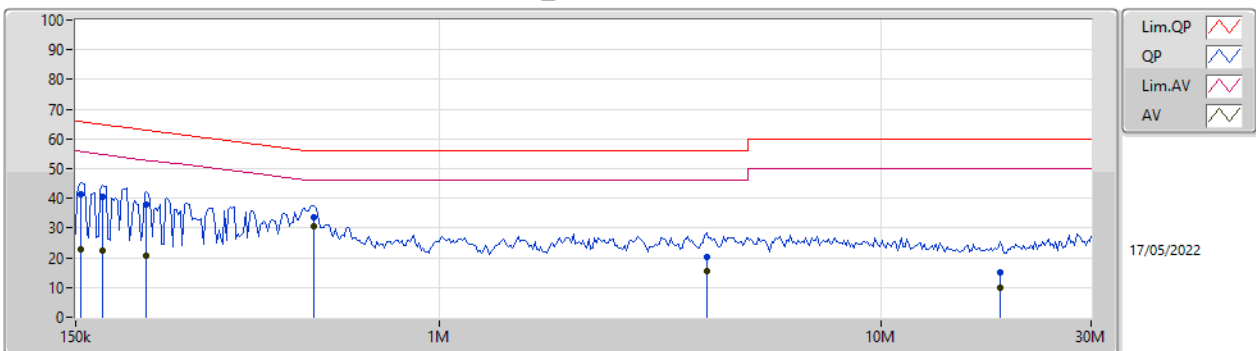
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	151.5k	41.37	65.92	-24.55	Line	-
Mode 1	Pass	AV	151.5k	23.03	55.92	-32.89	Line	-
Mode 1	Pass	QP	194.288k	38.41	63.86	-25.45	Line	-
Mode 1	Pass	AV	194.288k	22.58	53.86	-31.28	Line	-
Mode 1	Pass	QP	244.252k	34.43	61.95	-27.52	Line	-
Mode 1	Pass	AV	244.252k	19.33	51.95	-32.62	Line	-
Mode 1	Pass	QP	510.059k	31.77	56.00	-24.23	Line	-
Mode 1	Pass	AV	510.059k	20.46	46.00	-25.54	Line	-
Mode 1	Pass	QP	4.332M	15.52	56.00	-40.48	Line	-
Mode 1	Pass	AV	4.332M	10.25	46.00	-35.75	Line	-
Mode 1	Pass	QP	17.975M	15.01	60.00	-44.99	Line	-
Mode 1	Pass	AV	17.975M	9.48	50.00	-40.52	Line	-
Mode 1	Pass	QP	154.545k	41.28	65.75	-24.47	Neutral	-
Mode 1	Pass	AV	154.545k	22.80	55.75	-32.95	Neutral	-
Mode 1	Pass	QP	172.421k	40.37	64.83	-24.46	Neutral	-
Mode 1	Pass	AV	172.421k	22.31	54.83	-32.52	Neutral	-
Mode 1	Pass	QP	216.761k	37.72	62.94	-25.22	Neutral	-
Mode 1	Pass	AV	216.761k	20.58	52.94	-32.36	Neutral	-
Mode 1	Pass	QP	520.311k	33.72	56.00	-22.28	Neutral	-
Mode 1	Pass	AV	520.311k	30.55	46.00	-15.45	Neutral	-
Mode 1	Pass	QP	4.041M	20.31	56.00	-35.69	Neutral	-
Mode 1	Pass	AV	4.041M	15.42	46.00	-30.58	Neutral	-
Mode 1	Pass	QP	18.705M	15.05	60.00	-44.95	Neutral	-
Mode 1	Pass	AV	18.705M	9.79	50.00	-40.21	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	151.5k	41.37	65.92	-24.55	19.63	Line	-	21.74	9.69	0.03	9.91			
AV	151.5k	23.03	55.92	-32.89	19.63	Line	-	3.40	9.69	0.03	9.91			
QP	194.288k	38.41	63.86	-25.45	19.63	Line	-	18.78	9.69	0.03	9.91			
AV	194.288k	22.58	53.86	-31.28	19.63	Line	-	2.95	9.69	0.03	9.91			
QP	244.252k	34.43	61.95	-27.52	19.63	Line	-	14.80	9.69	0.03	9.91			
AV	244.252k	19.33	51.95	-32.62	19.63	Line	-	-0.30	9.69	0.03	9.91			
QP	510.059k	31.77	56.00	-24.23	19.63	Line	-	12.14	9.68	0.04	9.91			
AV	510.059k	20.46	46.00	-25.54	19.63	Line	-	0.83	9.68	0.04	9.91			
QP	4.332M	15.52	56.00	-40.48	19.77	Line	-	-4.25	9.72	0.13	9.92			
AV	4.332M	10.25	46.00	-35.75	19.77	Line	-	-9.52	9.72	0.13	9.92			
QP	17.975M	15.01	60.00	-44.99	19.98	Line	-	-4.97	9.79	0.26	9.93			
AV	17.975M	9.48	50.00	-40.52	19.98	Line	-	-10.50	9.79	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	154.545k	41.28	65.75	-24.47	19.67	Neutral	-	21.61	9.73	0.03	9.91			
AV	154.545k	22.80	55.75	-32.95	19.67	Neutral	-	3.13	9.73	0.03	9.91			
QP	172.421k	40.37	64.83	-24.46	19.67	Neutral	-	20.70	9.73	0.03	9.91			
AV	172.421k	22.31	54.83	-32.52	19.67	Neutral	-	2.64	9.73	0.03	9.91			
QP	216.761k	37.72	62.94	-25.22	19.66	Neutral	-	18.06	9.72	0.03	9.91			
AV	216.761k	20.58	52.94	-32.36	19.66	Neutral	-	0.92	9.72	0.03	9.91			
QP	520.311k	33.72	56.00	-22.28	19.67	Neutral	-	14.05	9.72	0.04	9.91			
AV	520.311k	30.55	46.00	-15.45	19.67	Neutral	-	10.88	9.72	0.04	9.91			
QP	4.041M	20.31	56.00	-35.69	19.81	Neutral	-	0.50	9.76	0.13	9.92			
AV	4.041M	15.42	46.00	-30.58	19.81	Neutral	-	-4.39	9.76	0.13	9.92			
QP	18.705M	15.05	60.00	-44.95	20.17	Neutral	-	-5.12	9.98	0.26	9.93			
AV	18.705M	9.79	50.00	-40.21	20.17	Neutral	-	-10.38	9.98	0.26	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)	665k	1.043M	1M04F1D	661.25k	1.039M
BT-LE(2Mbps)	1.225M	2.079M	2M08F1D	1.22M	2.074M

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

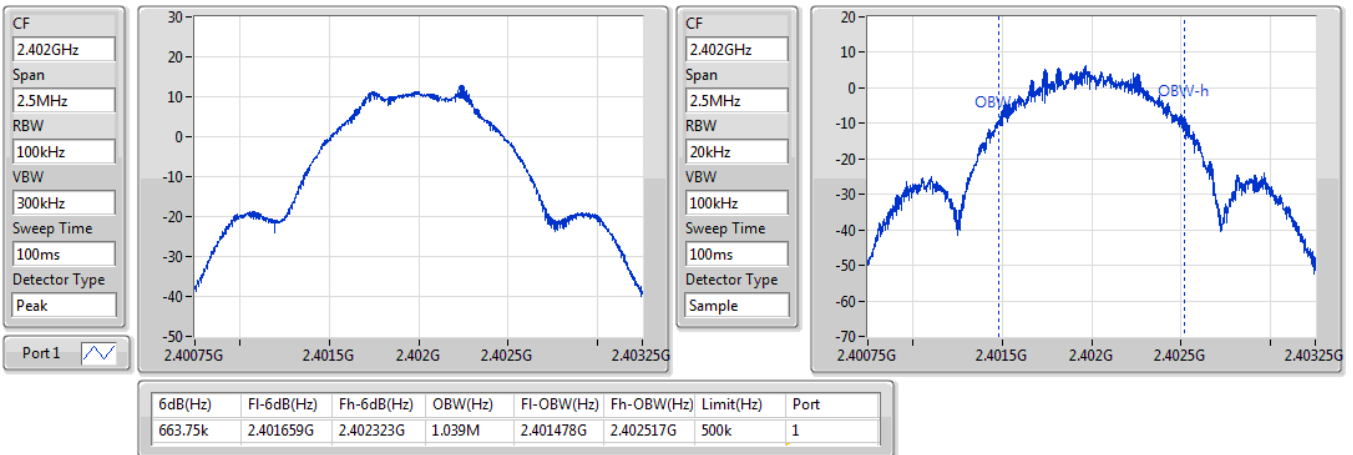
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	663.75k	1.039M
2440MHz	Pass	500k	665k	1.041M
2480MHz	Pass	500k	661.25k	1.043M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.225M	2.074M
2440MHz	Pass	500k	1.22M	2.079M
2480MHz	Pass	500k	1.225M	2.079M

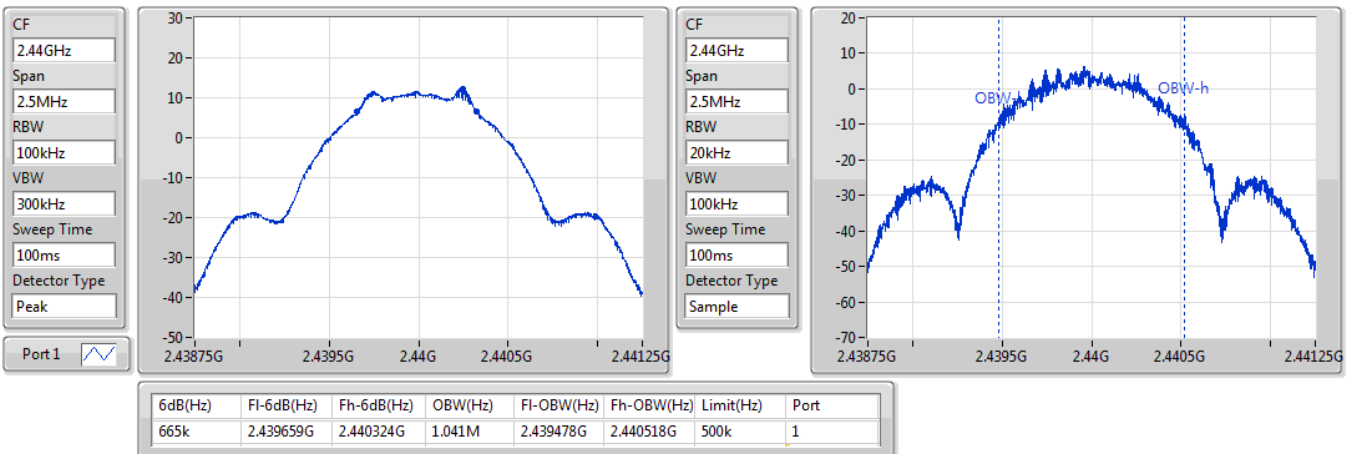
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

BT-LE(1Mbps)
2402MHz
EBW-DTS

06/05/2022

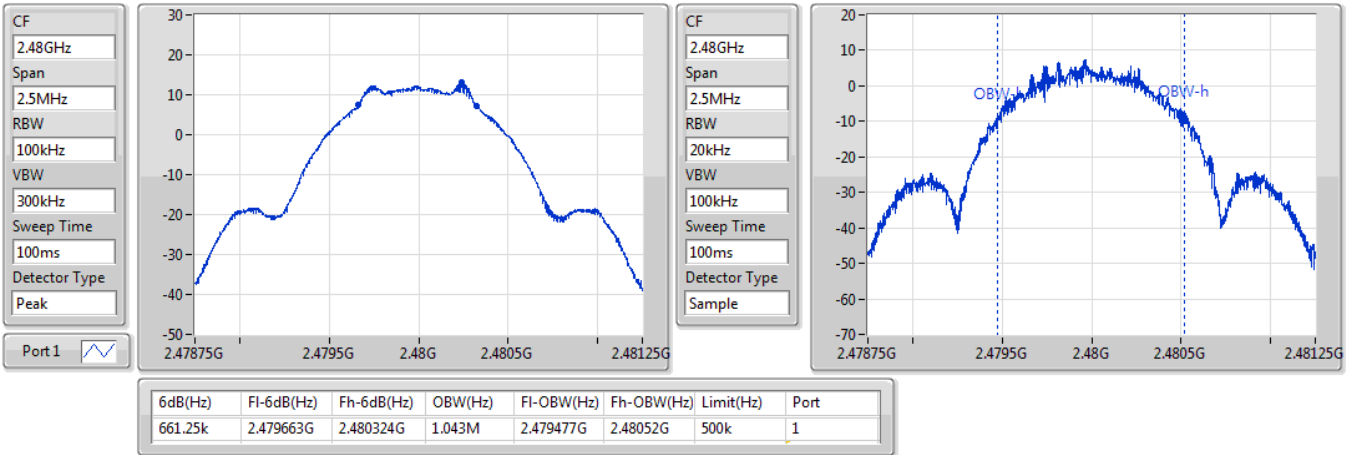

BT-LE(1Mbps)
2440MHz
EBW-DTS

06/05/2022

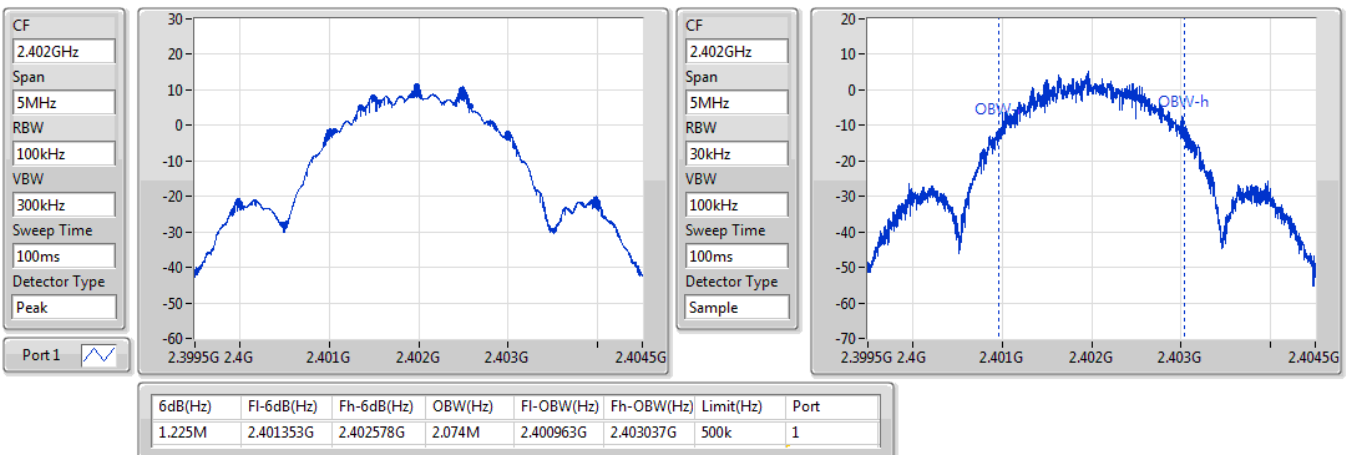


BT-LE(1Mbps)
EBW-DTS
2480MHz

06/05/2022

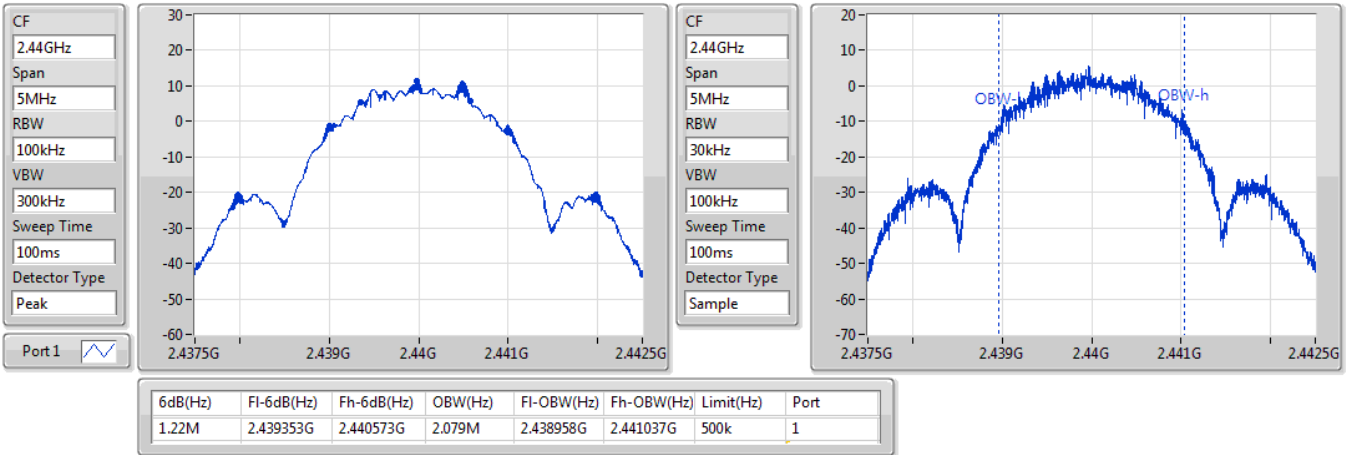

BT-LE(2Mbps)
EBW-DTS
2402MHz

06/05/2022

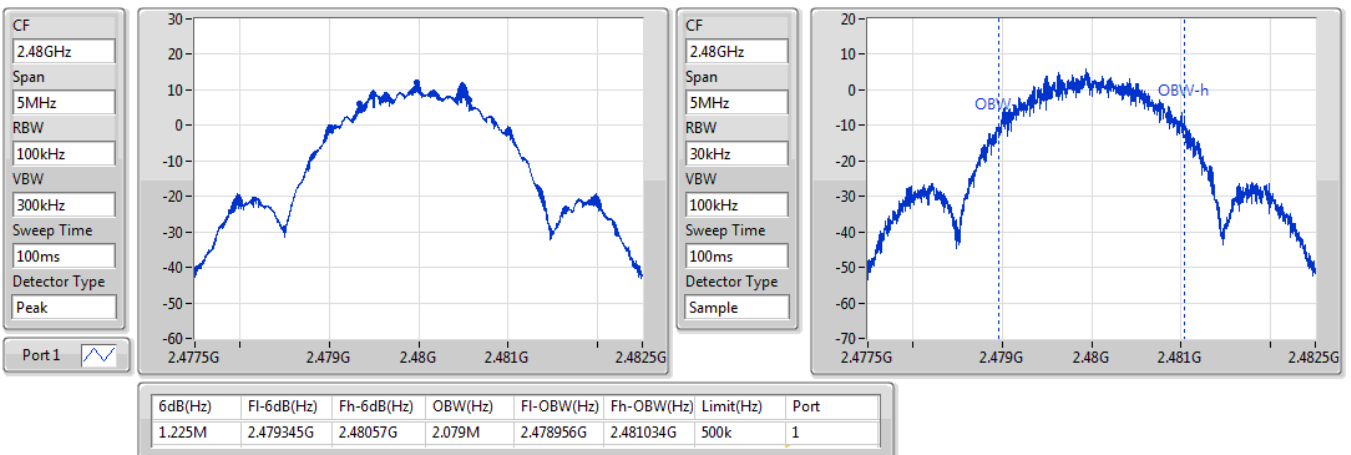


BT-LE(2Mbps)
EBW-DTS
2440MHz

06/05/2022


BT-LE(2Mbps)
EBW-DTS
2480MHz

06/05/2022





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	14.84	0.03048
BT-LE(2Mbps)	14.71	0.02958



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	3.42	14.84	30.00
2440MHz	Pass	3.42	14.11	30.00
2480MHz	Pass	3.42	13.17	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	3.42	14.71	30.00
2440MHz	Pass	3.42	14.32	30.00
2480MHz	Pass	3.42	13.18	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-2.49
BT-LE(2Mbps)	-7.86

RBW = 3kHz;



Result

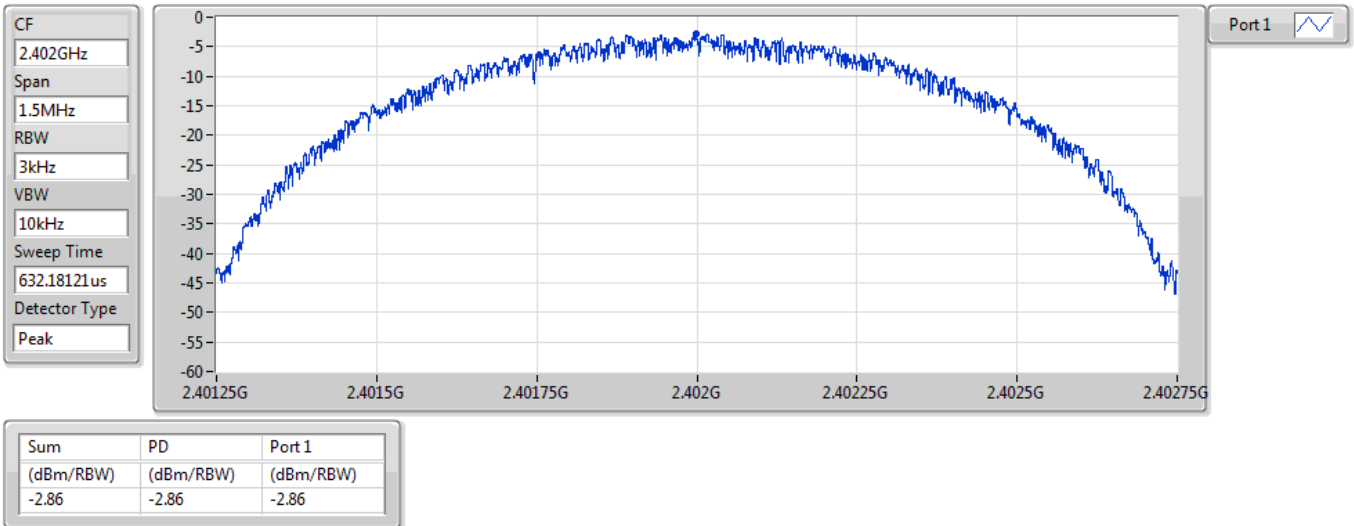
Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	3.42	-2.86	8.00
2440MHz	Pass	3.42	-2.49	8.00
2480MHz	Pass	3.42	-4.59	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	3.42	-8.38	8.00
2440MHz	Pass	3.42	-7.86	8.00
2480MHz	Pass	3.42	-8.50	8.00

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)

2402MHz

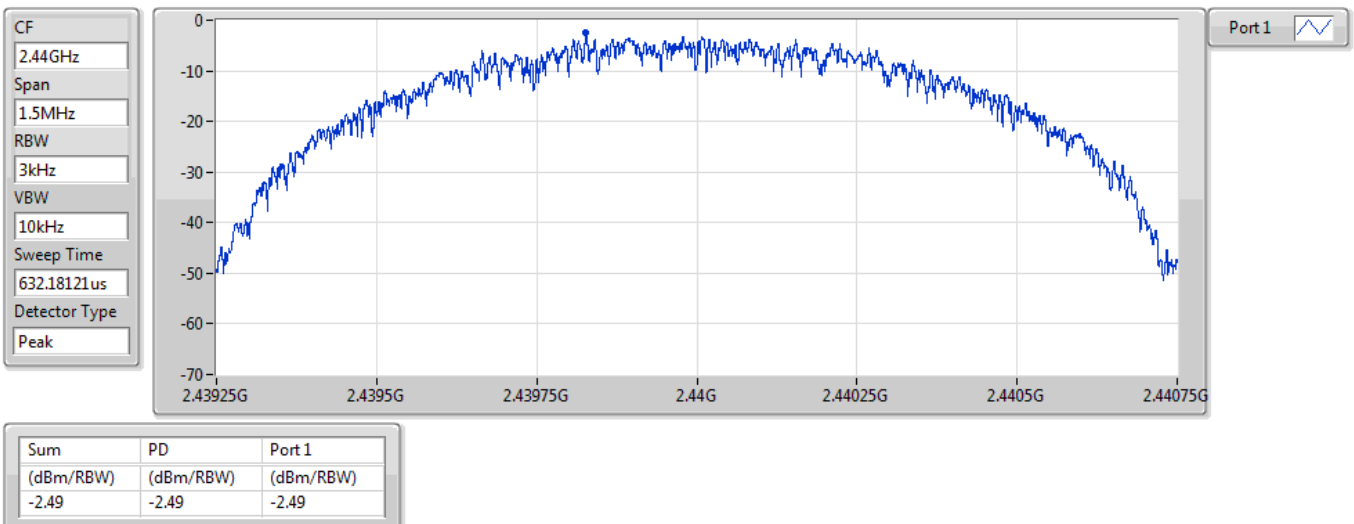
31/05/2022



BT-LE(1Mbps)

2440MHz

31/05/2022

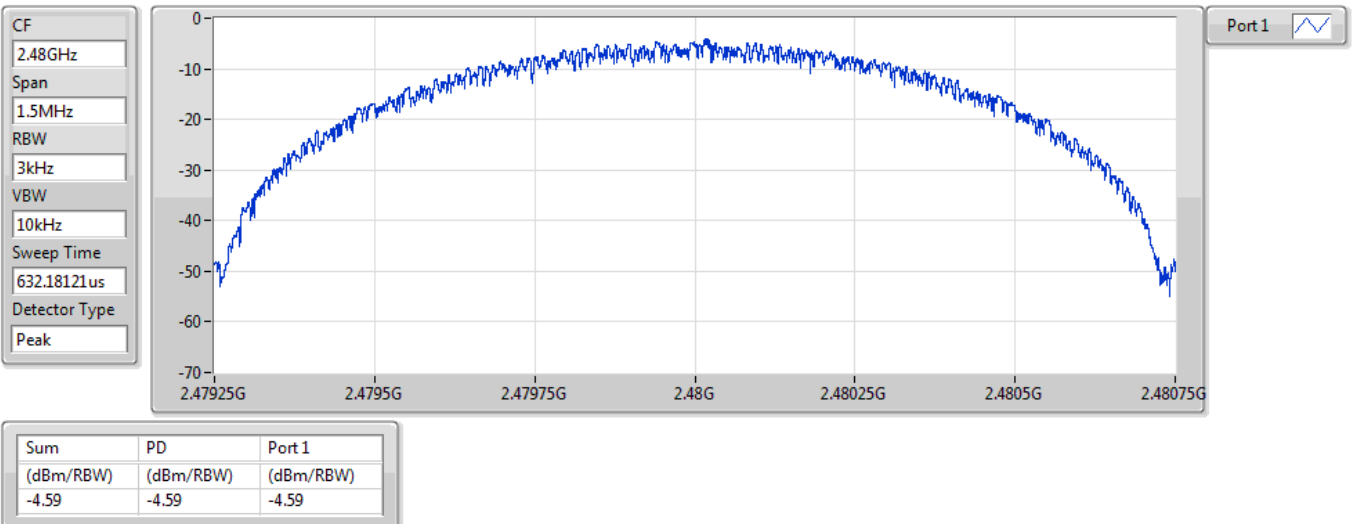


BT-LE(1Mbps)

2480MHz

PSD

31/05/2022

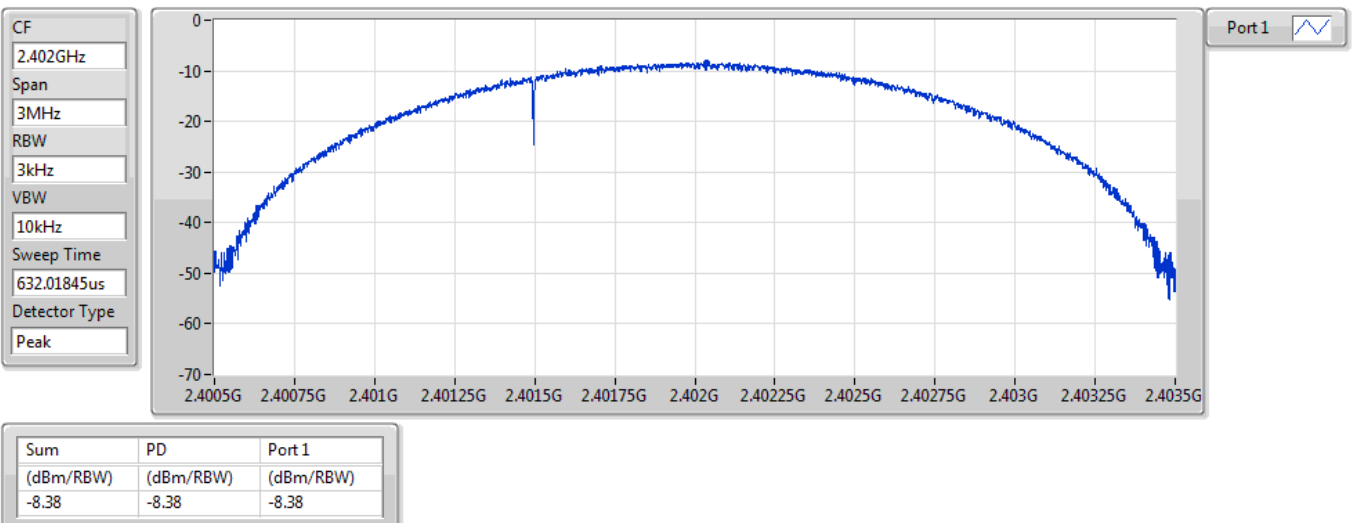


BT-LE(2Mbps)

2402MHz

PSD

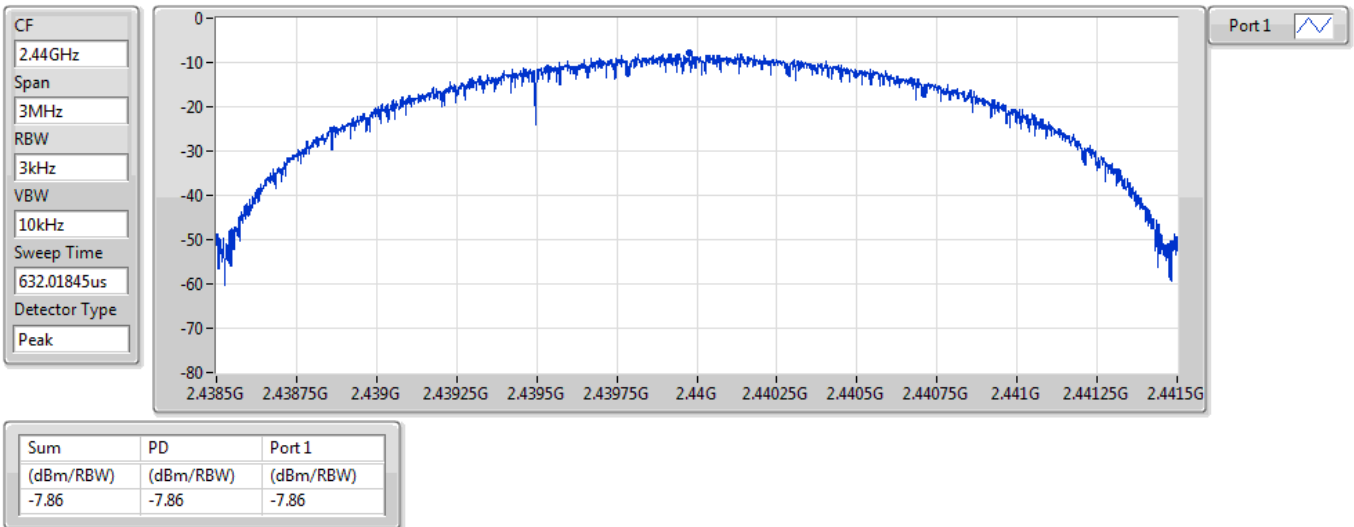
31/05/2022



BT-LE(2Mbps)

2440MHz

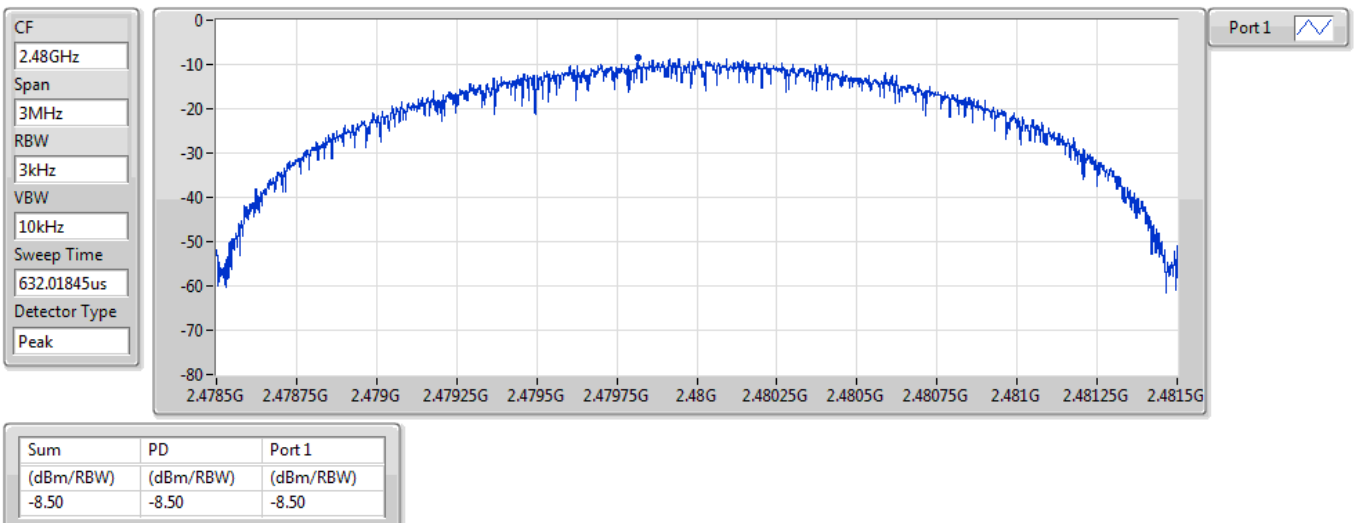
31/05/2022



BT-LE(2Mbps)

2480MHz

31/05/2022



Summary

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.48033G	12.80	-17.20	1.96288G	-54.48	2.4G	-44.06	2.4G	-42.05	2.50038G	-53.32	24.89877G	-41.80	1
BT-LE(2Mbps)	Pass	2.47999G	11.88	-18.12	2.10623G	-54.34	2.4G	-20.64	2.4G	-21.17	2.50258G	-51.47	24.5107G	-41.47	1

Result

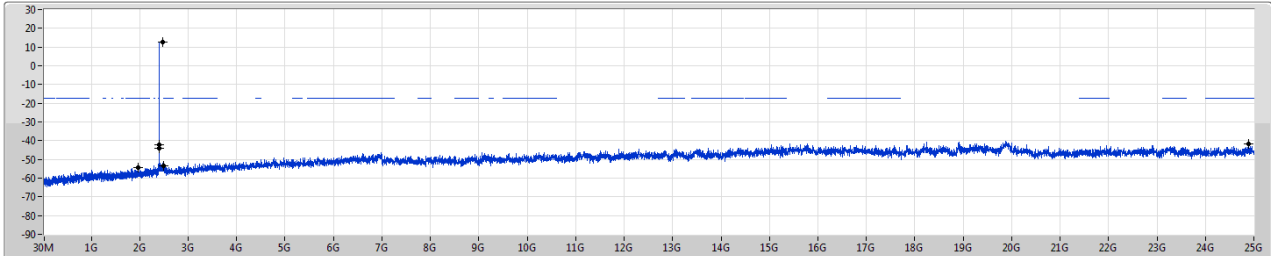
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.48033G	12.80	-17.20	1.96288G	-54.48	2.4G	-44.06	2.4G	-42.05	2.50038G	-53.32	24.89877G	-41.80	1
2440MHz	Pass	2.48033G	12.80	-17.20	1.99578G	-52.76	2.39392G	-53.13	2.4G	-56.03	2.50274G	-52.38	23.19747G	-41.80	1
2480MHz	Pass	2.48033G	12.80	-17.20	2.17908G	-54.29	2.3938G	-53.87	2.4G	-55.41	2.50062G	-52.31	16.89001G	-42.30	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.47999G	11.88	-18.12	2.10623G	-54.34	2.4G	-20.64	2.4G	-21.17	2.50258G	-51.47	24.5107G	-41.47	1
2440MHz	Pass	2.47999G	11.88	-18.12	1.9335G	-53.68	2.3952G	-52.55	2.4G	-55.60	2.50042G	-53.28	16.78034G	-41.81	1
2480MHz	Pass	2.47999G	11.88	-18.12	2.1356G	-54.30	2.39944G	-53.59	2.4G	-55.93	2.50058G	-53.19	17.41587G	-42.07	1

BT-LE(1Mbps)

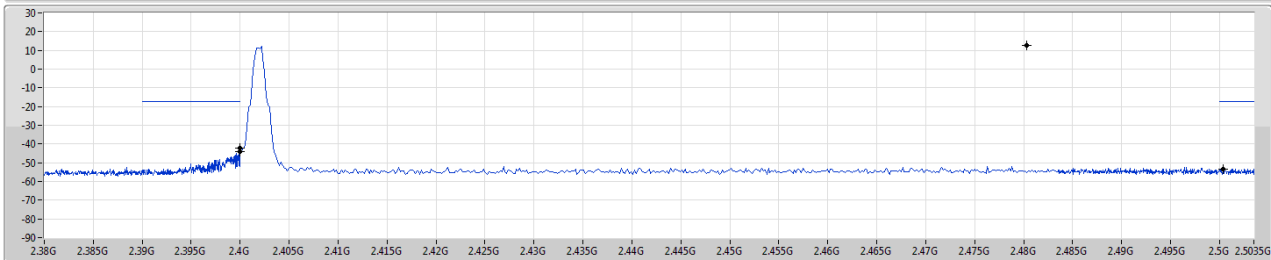
CSEndB-DTS

2402MHz

06/05/2022



Port1



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

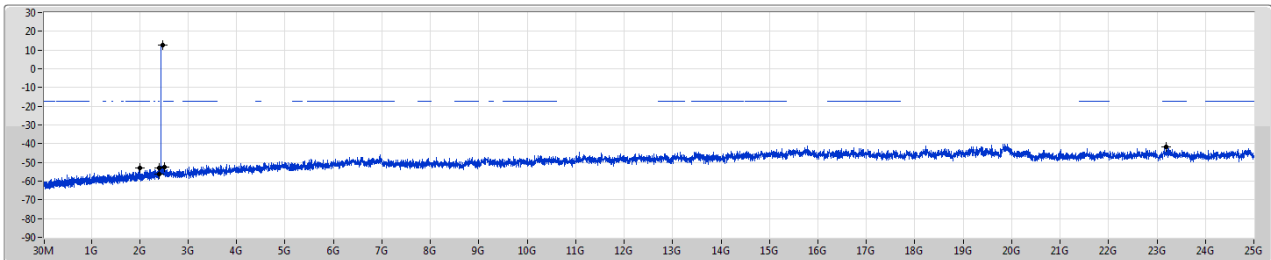
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48033G	12.80	-17.20	1.96288G	-54.48	2.4G	-44.06	2.4G	-42.05	2.50038G	-53.32	2.489877G	-41.80	1

BT-LE(1Mbps)

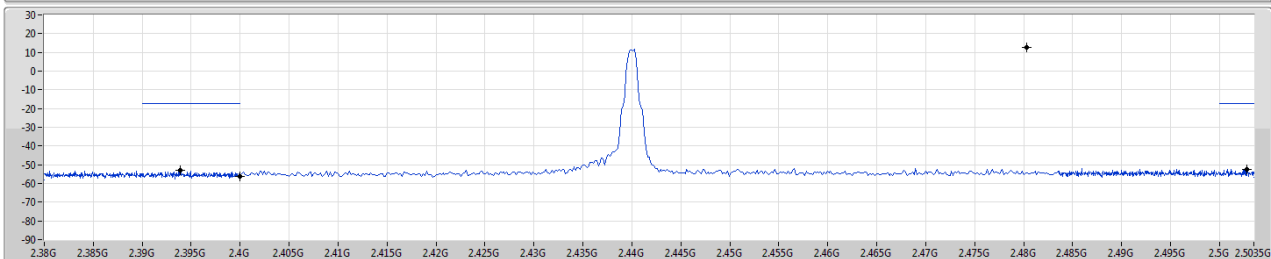
CSEndB-DTS

2440MHz

06/05/2022



Port1



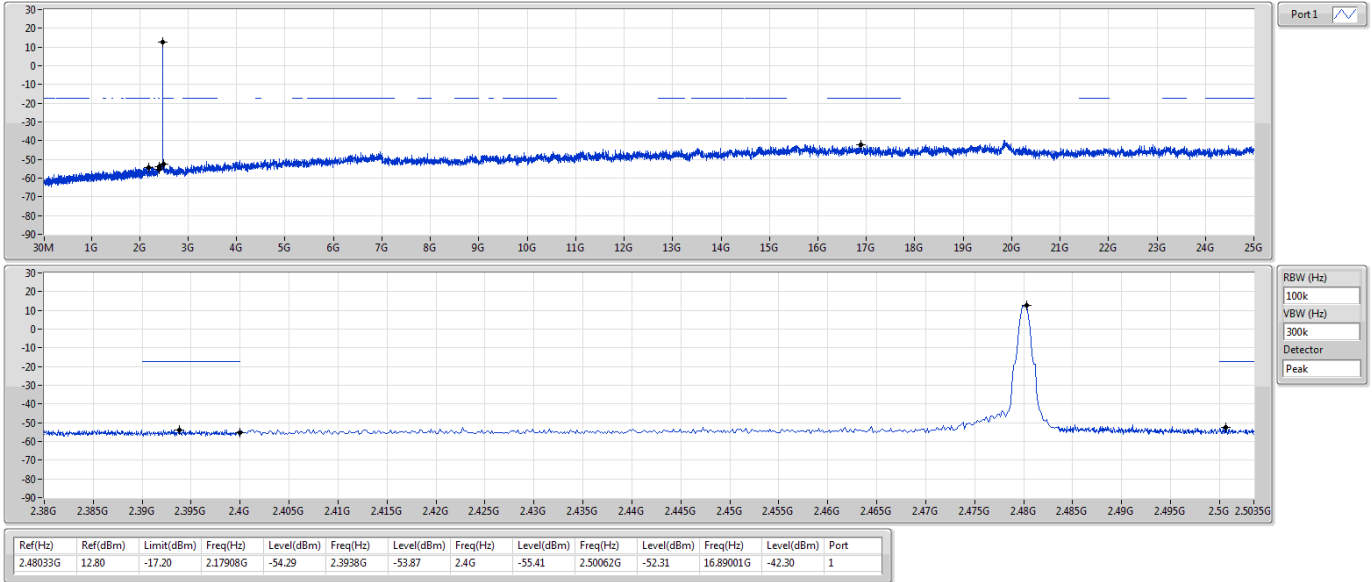
RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48033G	12.80	-17.20	1.99578G	-52.76	2.39392G	-53.13	2.4G	-56.03	2.50274G	-52.38	2.319747G	-41.80	1

BT-LE(1Mbps)

CSEndB-DTS

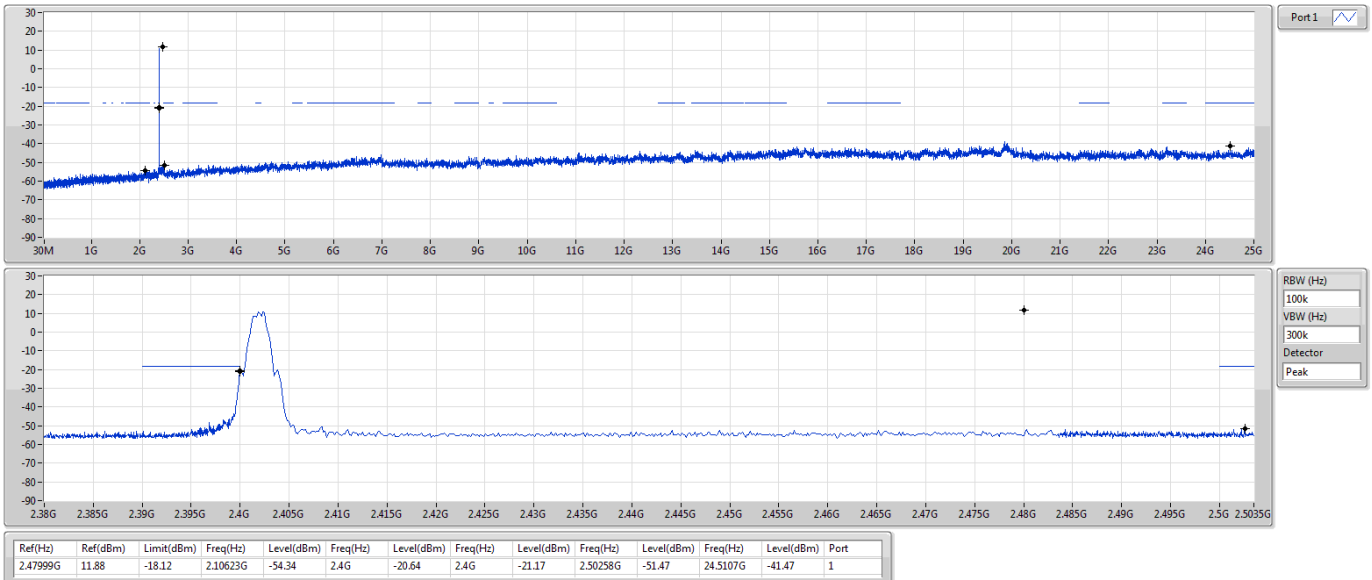
2480MHz



BT-LE(2Mbps)

CSEndB-DTS

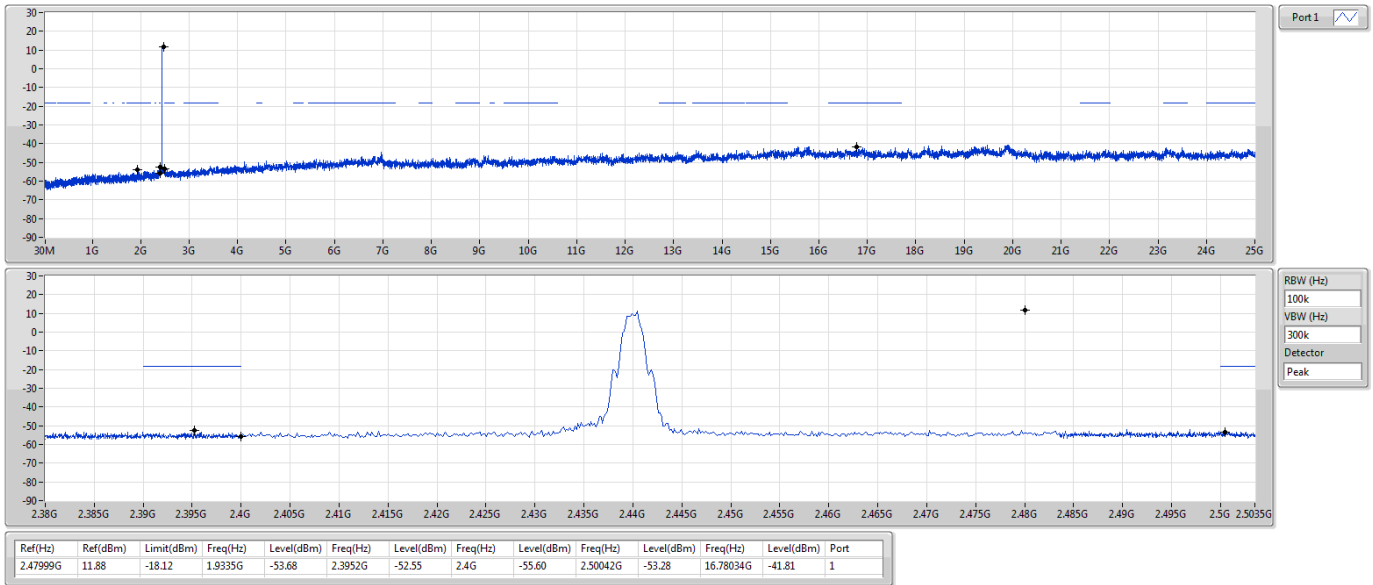
2402MHz



BT-LE(2Mbps)

CSEndB-DTS

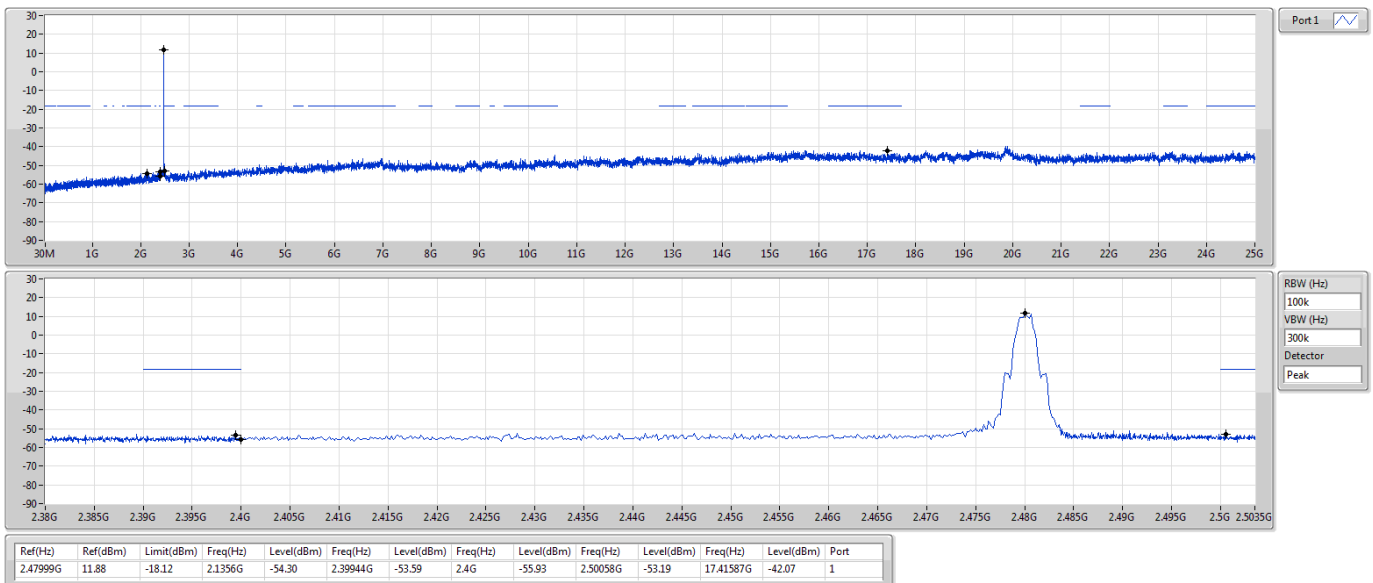
2440MHz



BT-LE(2Mbps)

CSEndB-DTS

2480MHz





Summary

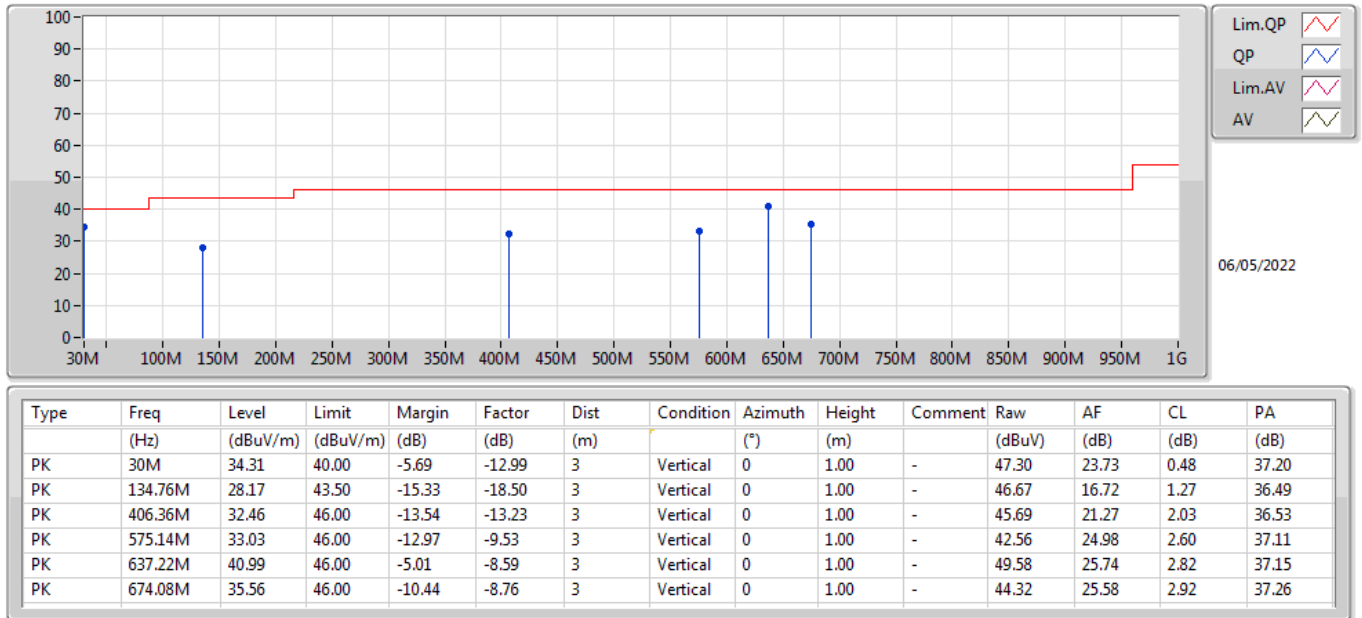
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	PK	635.28M	41.02	46.00	-4.98	3	Horizontal	360	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	30M	34.31	40.00	-5.69	3	Vertical	0	1.00	-
2440MHz	Pass	PK	134.76M	28.17	43.50	-15.33	3	Vertical	0	1.00	-
2440MHz	Pass	PK	406.36M	32.46	46.00	-13.54	3	Vertical	0	1.00	-
2440MHz	Pass	PK	575.14M	33.03	46.00	-12.97	3	Vertical	0	1.00	-
2440MHz	Pass	PK	637.22M	40.99	46.00	-5.01	3	Vertical	0	1.00	-
2440MHz	Pass	PK	674.08M	35.56	46.00	-10.44	3	Vertical	0	1.00	-
2440MHz	Pass	PK	30M	26.25	40.00	-13.75	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	134.76M	31.64	43.50	-11.86	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	375.32M	32.47	46.00	-13.53	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	406.36M	35.81	46.00	-10.19	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	635.28M	41.02	46.00	-4.98	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	670.2M	35.41	46.00	-10.59	3	Horizontal	360	1.00	-

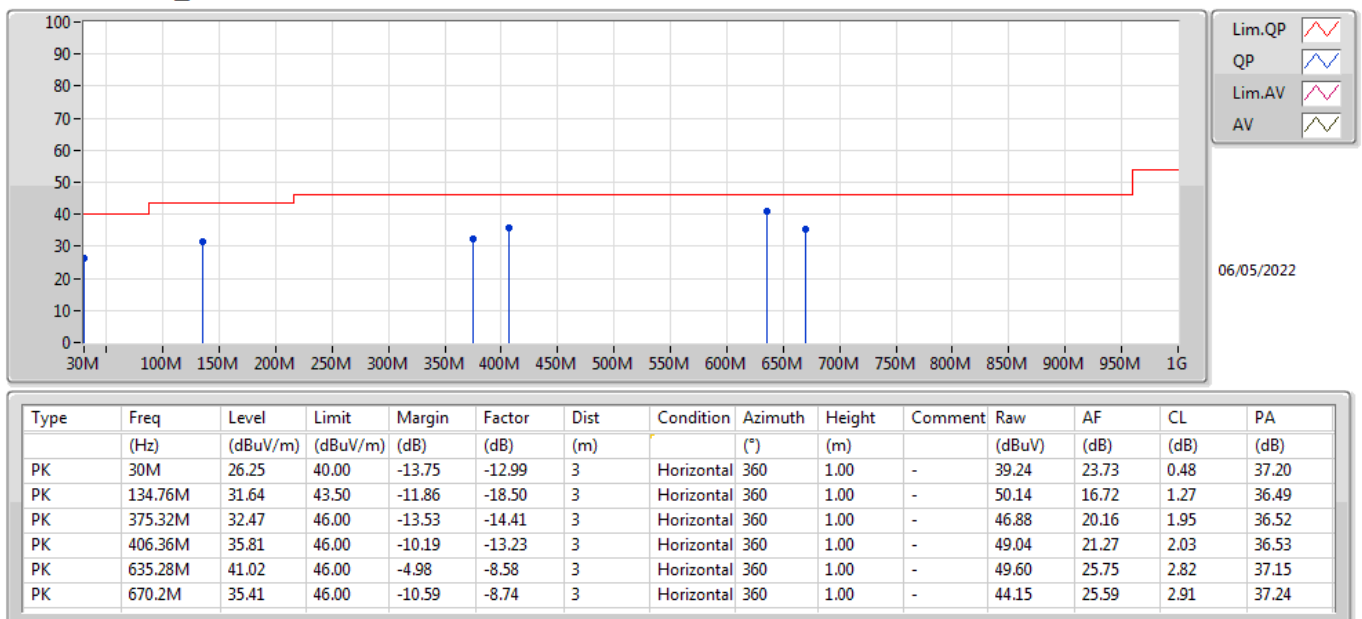
BT-LE(2Mbps)

2440MHz_Test fixture



BT-LE(2Mbps)

2440MHz_Test fixture





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	AV	2.4835G	46.97	54.00	-7.03	3	Vertical	161	1.50	-
BT-LE(2Mbps)	Pass	AV	2.5G	46.70	54.00	-7.30	3	Horizontal	286	1.11	-

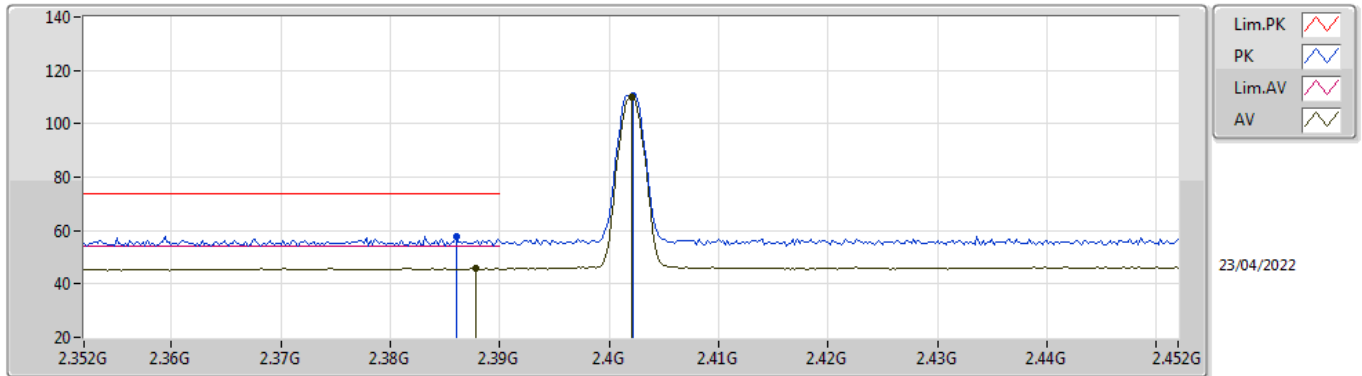
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3878G	45.82	54.00	-8.18	3	Vertical	120	1.50	-
2402MHz	Pass	AV	2.402G	110.01	Inf	-Inf	3	Vertical	120	1.50	-
2402MHz	Pass	PK	2.386G	57.72	74.00	-16.28	3	Vertical	120	1.50	-
2402MHz	Pass	PK	2.4022G	110.77	Inf	-Inf	3	Vertical	120	1.50	-
2402MHz	Pass	AV	2.3778G	45.85	54.00	-8.15	3	Horizontal	302	1.42	-
2402MHz	Pass	AV	2.402G	106.87	Inf	-Inf	3	Horizontal	302	1.42	-
2402MHz	Pass	PK	2.3864G	57.49	74.00	-16.51	3	Horizontal	302	1.42	-
2402MHz	Pass	PK	2.4022G	107.63	Inf	-Inf	3	Horizontal	302	1.42	-
2402MHz	Pass	AV	4.80394G	34.79	54.00	-19.21	3	Vertical	288	1.50	-
2402MHz	Pass	PK	4.80331G	46.36	74.00	-27.64	3	Vertical	288	1.50	-
2402MHz	Pass	AV	4.80406G	34.76	54.00	-19.24	3	Horizontal	2	1.50	-
2402MHz	Pass	PK	4.80374G	46.41	74.00	-27.59	3	Horizontal	2	1.50	-
2440MHz	Pass	AV	2.3784G	45.83	54.00	-8.17	3	Vertical	296	1.00	-
2440MHz	Pass	AV	2.44G	110.55	Inf	-Inf	3	Vertical	296	1.00	-
2440MHz	Pass	AV	2.496G	46.78	54.00	-7.22	3	Vertical	296	1.00	-
2440MHz	Pass	PK	2.3792G	56.54	74.00	-17.46	3	Vertical	296	1.00	-
2440MHz	Pass	PK	2.4404G	111.27	Inf	-Inf	3	Vertical	296	1.00	-
2440MHz	Pass	PK	2.5G	57.76	74.00	-16.24	3	Vertical	296	1.00	-
2440MHz	Pass	AV	2.3824G	45.95	54.00	-8.05	3	Horizontal	300	1.50	-
2440MHz	Pass	AV	2.44G	106.89	Inf	-Inf	3	Horizontal	300	1.50	-
2440MHz	Pass	AV	2.4984G	46.77	54.00	-7.23	3	Horizontal	300	1.50	-
2440MHz	Pass	PK	2.38G	57.72	74.00	-16.28	3	Horizontal	300	1.50	-
2440MHz	Pass	PK	2.4404G	107.65	Inf	-Inf	3	Horizontal	300	1.50	-
2440MHz	Pass	PK	2.4928G	58.56	74.00	-15.44	3	Horizontal	300	1.50	-
2440MHz	Pass	AV	4.87982G	34.59	54.00	-19.41	3	Vertical	10	1.50	-
2440MHz	Pass	AV	7.31918G	39.58	54.00	-14.42	3	Vertical	271	1.50	-
2440MHz	Pass	PK	4.87933G	46.31	74.00	-27.69	3	Vertical	10	1.50	-
2440MHz	Pass	PK	7.32047G	51.21	74.00	-22.79	3	Vertical	271	1.50	-
2440MHz	Pass	AV	4.87914G	34.59	54.00	-19.41	3	Horizontal	323	1.50	-
2440MHz	Pass	AV	7.31914G	39.34	54.00	-14.66	3	Horizontal	135	2.67	-
2440MHz	Pass	PK	4.8798G	46.52	74.00	-27.48	3	Horizontal	323	1.50	-
2440MHz	Pass	PK	7.3205G	50.78	74.00	-23.22	3	Horizontal	135	2.66	-
2480MHz	Pass	AV	2.48G	108.10	Inf	-Inf	3	Vertical	161	1.50	-
2480MHz	Pass	AV	2.4835G	46.97	54.00	-7.03	3	Vertical	161	1.50	-
2480MHz	Pass	PK	2.4802G	108.80	Inf	-Inf	3	Vertical	161	1.50	-
2480MHz	Pass	PK	2.4976G	57.89	74.00	-16.11	3	Vertical	161	1.50	-
2480MHz	Pass	AV	2.48G	105.41	Inf	-Inf	3	Horizontal	302	1.09	-
2480MHz	Pass	AV	2.4835G	46.87	54.00	-7.13	3	Horizontal	302	1.09	-
2480MHz	Pass	PK	2.4802G	106.19	Inf	-Inf	3	Horizontal	302	1.09	-
2480MHz	Pass	PK	2.4884G	57.76	74.00	-16.24	3	Horizontal	302	1.09	-
2480MHz	Pass	AV	4.96025G	35.34	54.00	-18.66	3	Vertical	89	1.49	-
2480MHz	Pass	AV	7.44018G	39.62	54.00	-14.38	3	Vertical	148	1.50	-
2480MHz	Pass	PK	4.96081G	46.49	74.00	-27.51	3	Vertical	89	1.49	-
2480MHz	Pass	PK	7.43955G	50.39	74.00	-23.61	3	Vertical	148	1.50	-
2480MHz	Pass	AV	4.96043G	35.44	54.00	-18.56	3	Horizontal	258	1.50	-
2480MHz	Pass	AV	7.43989G	39.31	54.00	-14.69	3	Horizontal	243	1.01	-
2480MHz	Pass	PK	4.95961G	46.62	74.00	-27.38	3	Horizontal	258	1.50	-
2480MHz	Pass	PK	7.43996G	50.76	74.00	-23.24	3	Horizontal	243	1.01	-
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3898G	45.83	54.00	-8.17	3	Vertical	168	2.62	-
2402MHz	Pass	AV	2.402G	109.87	Inf	-Inf	3	Vertical	168	2.62	-
2402MHz	Pass	PK	2.3626G	57.15	74.00	-16.85	3	Vertical	168	2.62	-
2402MHz	Pass	PK	2.4014G	112.27	Inf	-Inf	3	Vertical	168	2.62	-
2402MHz	Pass	AV	2.3768G	45.65	54.00	-8.35	3	Horizontal	349	1.50	-
2402MHz	Pass	AV	2.402G	104.13	Inf	-Inf	3	Horizontal	349	1.50	-
2402MHz	Pass	PK	2.3746G	56.90	74.00	-17.10	3	Horizontal	349	1.50	-
2402MHz	Pass	PK	2.4024G	106.58	Inf	-Inf	3	Horizontal	349	1.50	-
2402MHz	Pass	AV	4.80338G	34.93	54.00	-19.07	3	Vertical	185	1.50	-
2402MHz	Pass	PK	4.8034G	46.45	74.00	-27.55	3	Vertical	185	1.50	-
2402MHz	Pass	AV	4.80329G	35.04	54.00	-18.96	3	Horizontal	262	1.81	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2402MHz	Pass	PK	4.80326G	46.61	74.00	-27.39	3	Horizontal	262	1.81	-
2440MHz	Pass	AV	2.3784G	45.75	54.00	-8.25	3	Vertical	158	1.02	-
2440MHz	Pass	AV	2.44G	106.61	Inf	-Inf	3	Vertical	158	1.02	-
2440MHz	Pass	AV	2.4952G	46.66	54.00	-7.34	3	Vertical	158	1.02	-
2440MHz	Pass	PK	2.3824G	56.57	74.00	-17.43	3	Vertical	158	1.02	-
2440MHz	Pass	PK	2.4404G	109.02	Inf	-Inf	3	Vertical	158	1.02	-
2440MHz	Pass	PK	2.4896G	57.41	74.00	-16.59	3	Vertical	158	1.02	-
2440MHz	Pass	AV	2.3836G	45.68	54.00	-8.32	3	Horizontal	286	1.00	-
2440MHz	Pass	AV	2.44G	105.17	Inf	-Inf	3	Horizontal	286	1.00	-
2440MHz	Pass	AV	2.496G	46.61	54.00	-7.39	3	Horizontal	286	1.00	-
2440MHz	Pass	PK	2.3724G	56.59	74.00	-17.41	3	Horizontal	286	1.00	-
2440MHz	Pass	PK	2.4404G	107.73	Inf	-Inf	3	Horizontal	286	1.00	-
2440MHz	Pass	PK	2.4984G	57.61	74.00	-16.39	3	Horizontal	286	1.00	-
2440MHz	Pass	AV	4.87953G	34.67	54.00	-19.33	3	Vertical	58	1.50	-
2440MHz	Pass	AV	7.31917G	39.50	54.00	-14.50	3	Vertical	255	1.41	-
2440MHz	Pass	PK	4.87933G	46.28	74.00	-27.72	3	Vertical	58	1.50	-
2440MHz	Pass	PK	7.32083G	51.24	74.00	-22.76	3	Vertical	255	1.41	-
2440MHz	Pass	AV	4.87912G	34.91	54.00	-19.09	3	Horizontal	87	2.28	-
2440MHz	Pass	AV	7.32054G	39.55	54.00	-14.45	3	Horizontal	60	1.50	-
2440MHz	Pass	PK	4.88039G	45.78	74.00	-28.22	3	Horizontal	87	2.28	-
2440MHz	Pass	PK	7.32079G	51.42	74.00	-22.58	3	Horizontal	60	1.50	-
2480MHz	Pass	AV	2.48G	95.59	Inf	-Inf	3	Vertical	172	2.47	-
2480MHz	Pass	AV	2.498G	46.56	54.00	-7.44	3	Vertical	172	2.47	-
2480MHz	Pass	PK	2.4796G	98.10	Inf	-Inf	3	Vertical	172	2.47	-
2480MHz	Pass	PK	2.4994G	57.46	74.00	-16.54	3	Vertical	172	2.47	-
2480MHz	Pass	AV	2.48G	92.69	Inf	-Inf	3	Horizontal	286	1.11	-
2480MHz	Pass	AV	2.5G	46.70	54.00	-7.30	3	Horizontal	286	1.11	-
2480MHz	Pass	PK	2.4804G	95.17	Inf	-Inf	3	Horizontal	286	1.11	-
2480MHz	Pass	PK	2.4892G	58.18	74.00	-15.82	3	Horizontal	286	1.11	-
2480MHz	Pass	AV	4.95913G	35.52	54.00	-18.48	3	Vertical	77	1.81	-
2480MHz	Pass	AV	7.44017G	39.52	54.00	-14.48	3	Vertical	328	1.71	-
2480MHz	Pass	PK	4.96088G	46.84	74.00	-27.16	3	Vertical	77	1.81	-
2480MHz	Pass	PK	7.44056G	51.26	74.00	-22.74	3	Vertical	328	1.71	-
2480MHz	Pass	AV	4.96001G	35.50	54.00	-18.50	3	Horizontal	64	1.50	-
2480MHz	Pass	AV	7.44017G	39.56	54.00	-14.44	3	Horizontal	0	2.26	-
2480MHz	Pass	PK	4.95929G	46.71	74.00	-27.29	3	Horizontal	64	1.50	-
2480MHz	Pass	PK	7.43962G	50.87	74.00	-23.13	3	Horizontal	0	2.26	-

BT-LE(1Mbps)

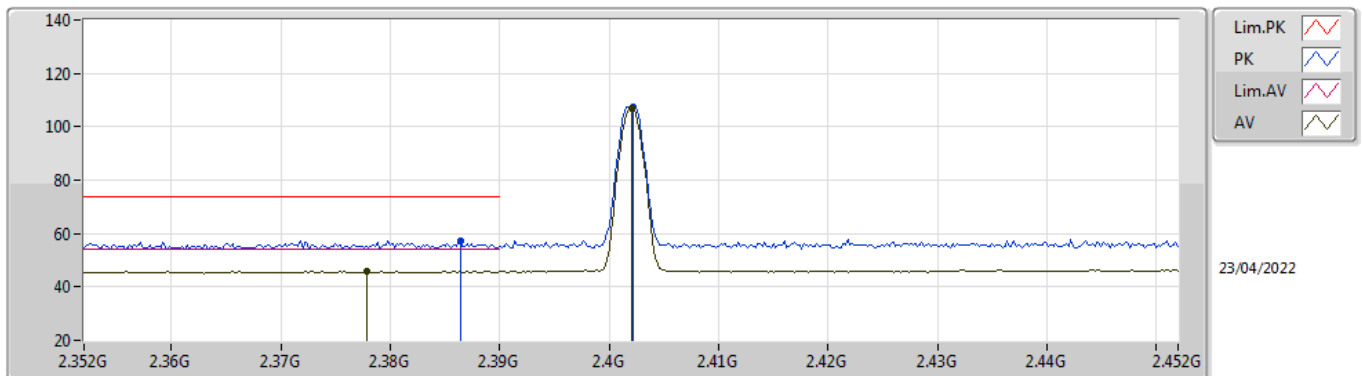
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3878G	45.82	54.00	-8.18	32.00	3	Vertical	120	1.50	-	13.82	27.43	4.57	-
AV	2.402G	110.01	Inf	-Inf	32.08	3	Vertical	120	1.50	-	77.93	27.50	4.58	-
PK	2.386G	57.72	74.00	-16.28	31.99	3	Vertical	120	1.50	-	25.73	27.42	4.57	-
PK	2.4022G	110.77	Inf	-Inf	32.08	3	Vertical	120	1.50	-	78.69	27.50	4.58	-

BT-LE(1Mbps)

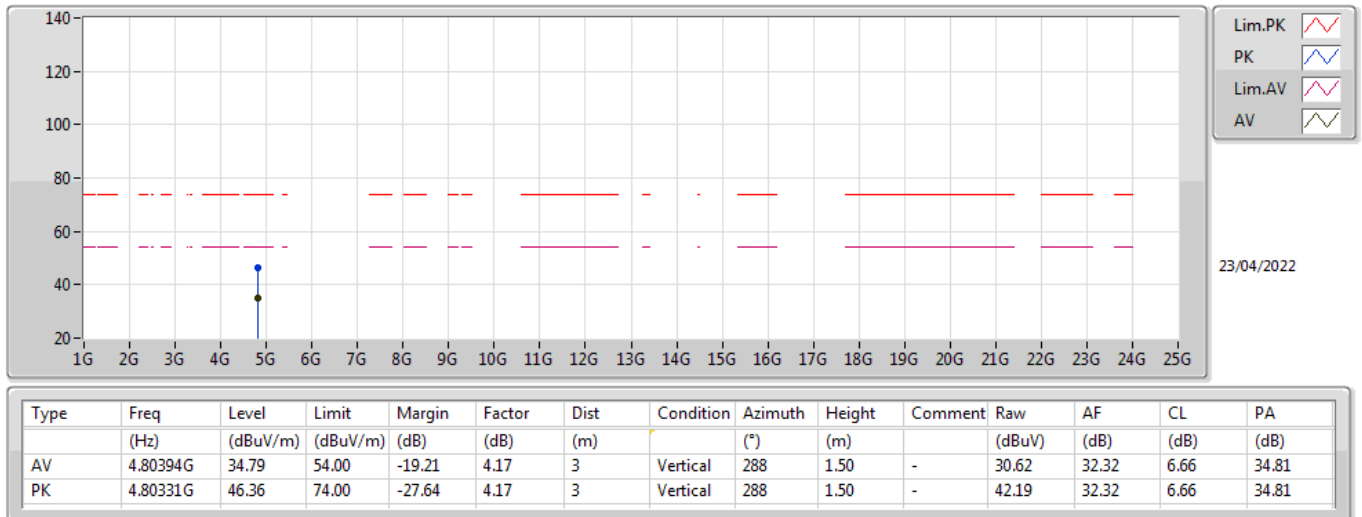
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3778G	45.85	54.00	-8.15	31.93	3	Horizontal	302	1.42	-	13.92	27.37	4.56	-
AV	2.402G	106.87	Inf	-Inf	32.08	3	Horizontal	302	1.42	-	74.79	27.50	4.58	-
PK	2.3864G	57.49	74.00	-16.51	31.99	3	Horizontal	302	1.42	-	25.50	27.42	4.57	-
PK	2.4022G	107.63	Inf	-Inf	32.08	3	Horizontal	302	1.42	-	75.55	27.50	4.58	-

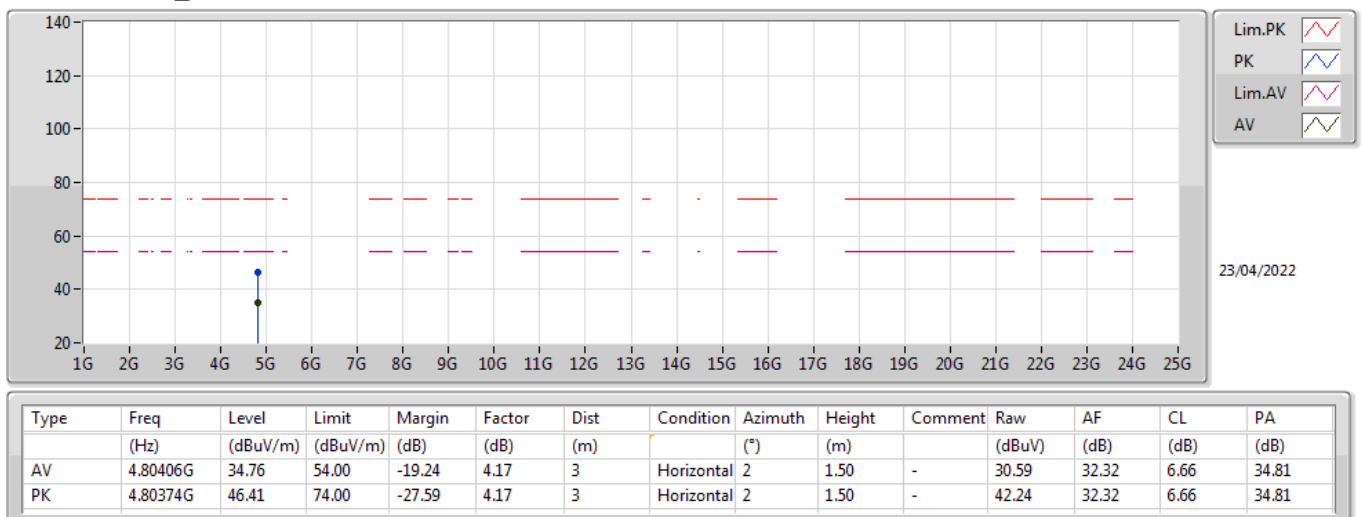
BT-LE(1Mbps)

2402MHz_TX



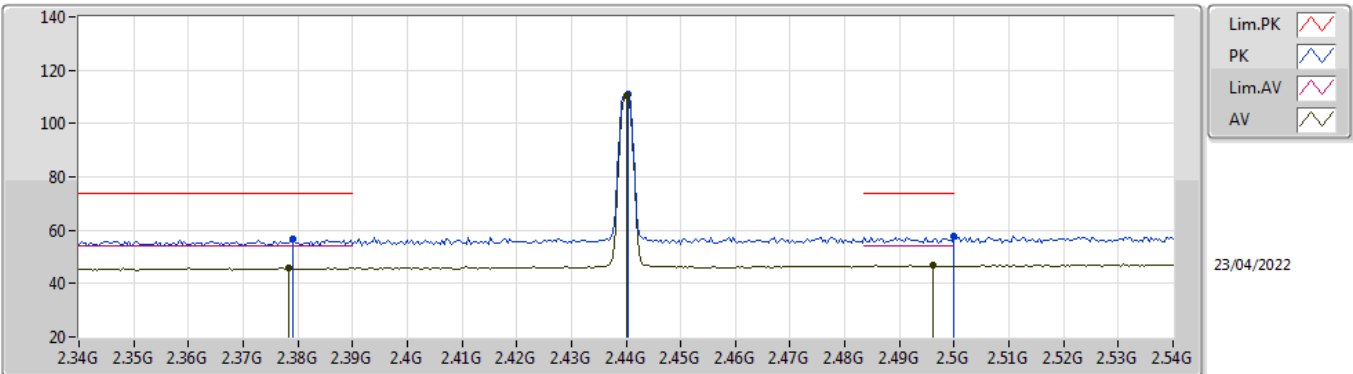
BT-LE(1Mbps)

2402MHz_TX



BT-LE(1Mbps)

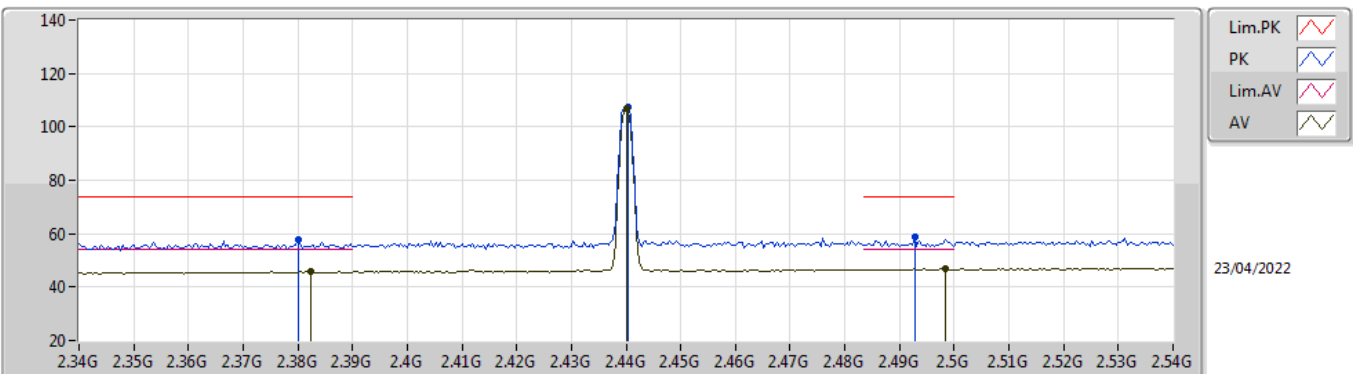
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3784G	45.83	54.00	-8.17	31.93	3	Vertical	296	1.00	-	13.90	27.37	4.56	-
AV	2.44G	110.55	Inf	-Inf	32.18	3	Vertical	296	1.00	-	78.37	27.58	4.60	-
AV	2.496G	46.78	54.00	-7.22	32.50	3	Vertical	296	1.00	-	14.28	27.88	4.62	-
PK	2.3792G	56.54	74.00	-17.46	31.94	3	Vertical	296	1.00	-	24.60	27.38	4.56	-
PK	2.4404G	111.27	Inf	-Inf	32.18	3	Vertical	296	1.00	-	79.09	27.58	4.60	-
PK	2.5G	57.76	74.00	-16.24	32.52	3	Vertical	296	1.00	-	25.24	27.90	4.62	-

BT-LE(1Mbps)

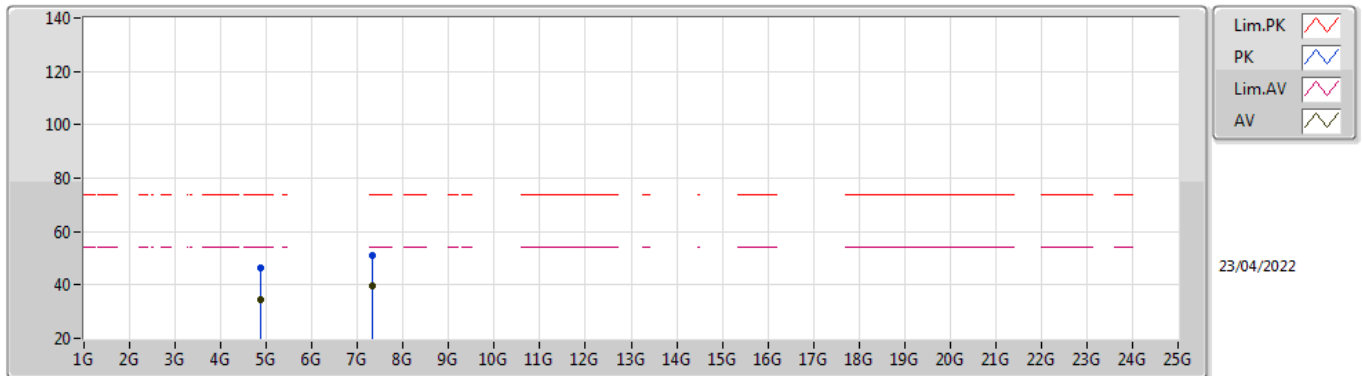
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3824G	45.95	54.00	-8.05	31.95	3	Horizontal	300	1.50	-	14.00	27.39	4.56	-
AV	2.44G	106.89	Inf	-Inf	32.18	3	Horizontal	300	1.50	-	74.71	27.58	4.60	-
AV	2.4984G	46.77	54.00	-7.23	32.51	3	Horizontal	300	1.50	-	14.26	27.89	4.62	-
PK	2.38G	57.72	74.00	-16.28	31.94	3	Horizontal	300	1.50	-	25.78	27.38	4.56	-
PK	2.4404G	107.65	Inf	-Inf	32.18	3	Horizontal	300	1.50	-	75.47	27.58	4.60	-
PK	2.4928G	58.56	74.00	-15.44	32.48	3	Horizontal	300	1.50	-	26.08	27.86	4.62	-

BT-LE(1Mbps)

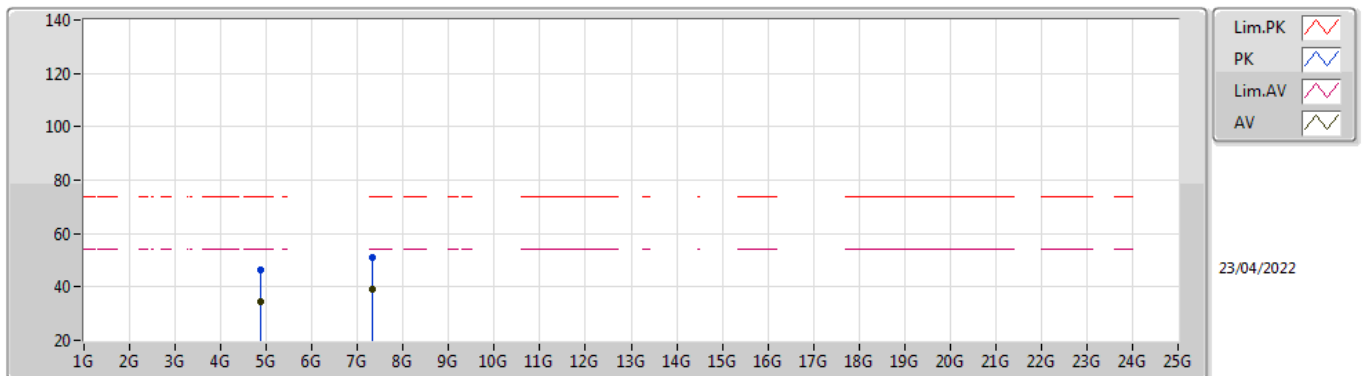
2440MHz_TX



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	4.87982G	34.59	54.00	-19.41	4.65	3	Vertical	10	1.50	-	29.94	32.72	6.72	34.79
AV	7.31918G	39.58	54.00	-14.42	9.73	3	Vertical	271	1.50	-	29.85	36.68	7.87	34.82
PK	4.87933G	46.31	74.00	-27.69	4.65	3	Vertical	10	1.50	-	41.66	32.72	6.72	34.79
PK	7.32047G	51.21	74.00	-22.79	9.73	3	Vertical	271	1.50	-	41.48	36.68	7.87	34.82

BT-LE(1Mbps)

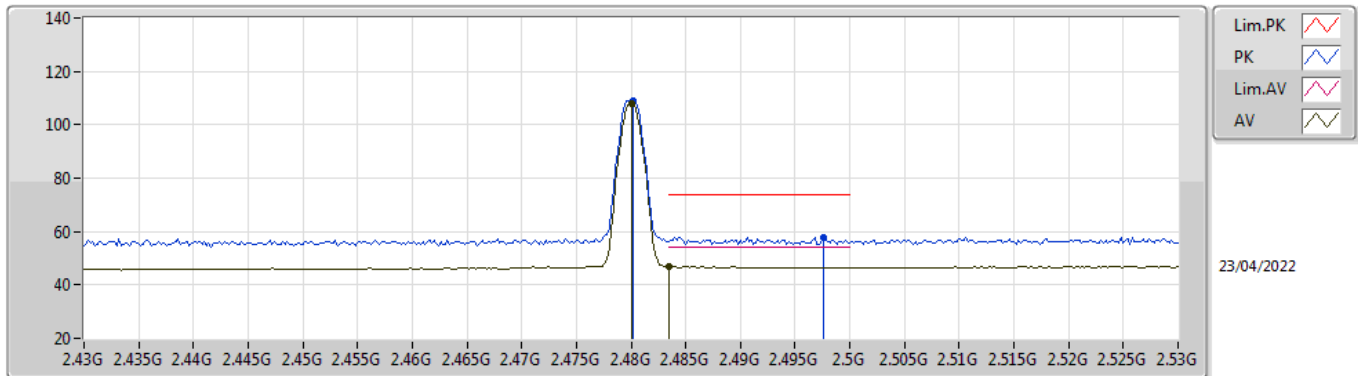
2440MHz_TX



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	4.87914G	34.59	54.00	-19.41	4.65	3	Horizontal	323	1.50	-	29.94	32.72	6.72	34.79
AV	7.31914G	39.34	54.00	-14.66	9.74	3	Horizontal	135	2.67	-	29.60	36.69	7.87	34.82
PK	4.8798G	46.52	74.00	-27.48	4.65	3	Horizontal	323	1.50	-	41.87	32.72	6.72	34.79
PK	7.3205G	50.78	74.00	-23.22	9.73	3	Horizontal	135	2.66	-	41.05	36.68	7.87	34.82

BT-LE(1Mbps)

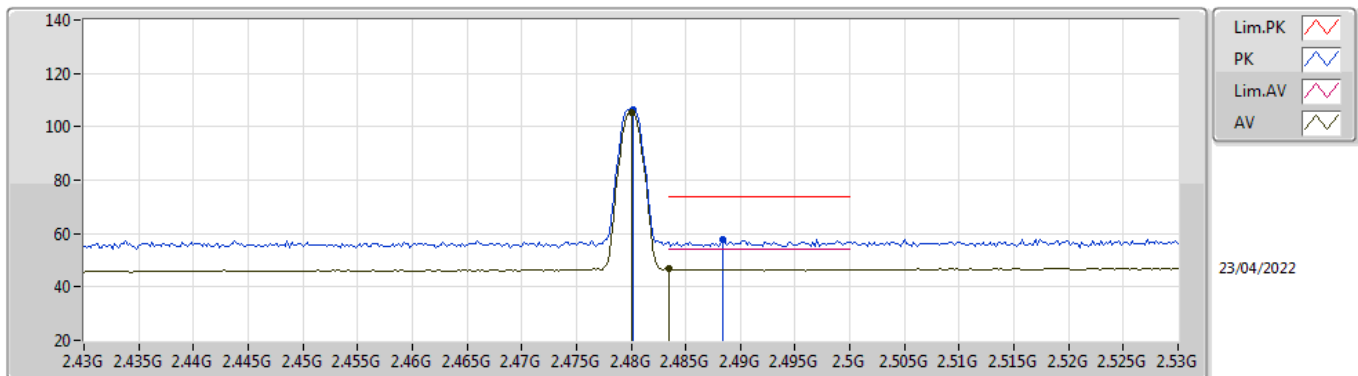
2480MHz_TX



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	2.48G	108.10	Inf	-Inf	32.39	3	Vertical	161	1.50	-	75.71	27.78	4.61	-
AV	2.4835G	46.97	54.00	-7.03	32.41	3	Vertical	161	1.50	-	14.56	27.80	4.61	-
PK	2.4802G	108.80	Inf	-Inf	32.39	3	Vertical	161	1.50	-	76.41	27.78	4.61	-
PK	2.4976G	57.89	74.00	-16.11	32.51	3	Vertical	161	1.50	-	25.38	27.89	4.62	-

BT-LE(1Mbps)

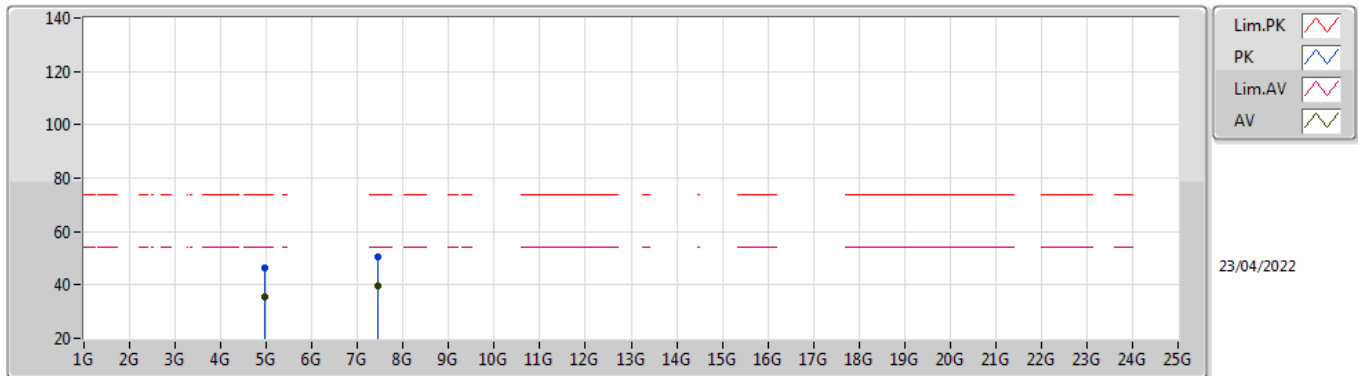
2480MHz_TX



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	105.41	Inf	-Inf	32.39	3	Horizontal	302	1.09	-	73.02	27.78	4.61	-
AV	2.4835G	46.87	54.00	-7.13	32.41	3	Horizontal	302	1.09	-	14.46	27.80	4.61	-
PK	2.4802G	106.19	Inf	-Inf	32.39	3	Horizontal	302	1.09	-	73.80	27.78	4.61	-
PK	2.4884G	57.76	74.00	-16.24	32.45	3	Horizontal	302	1.09	-	25.31	27.83	4.62	-

BT-LE(1Mbps)

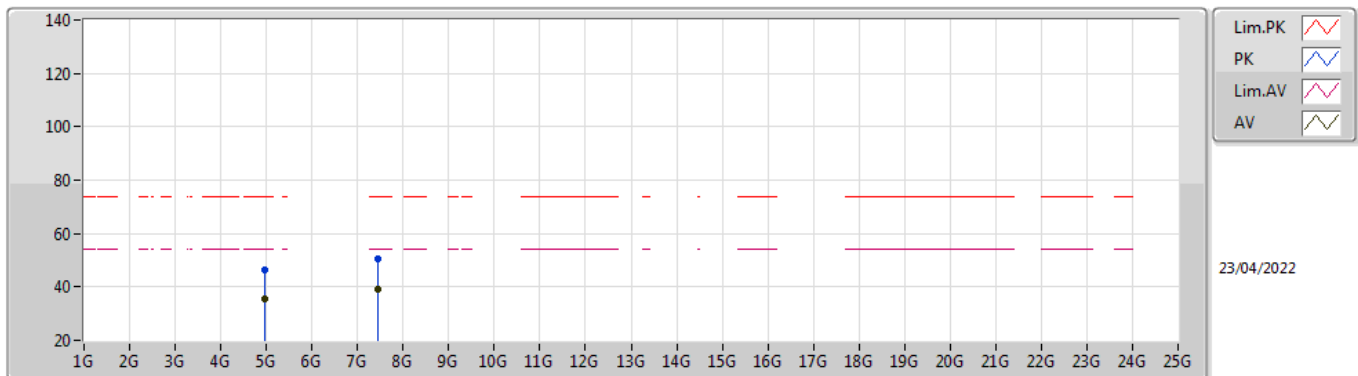
2480MHz_TX



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	4.96025G	35.34	54.00	-18.66	5.03	3	Vertical	89	1.49	-	30.31	33.02	6.78	34.77
AV	7.44018G	39.62	54.00	-14.38	9.52	3	Vertical	148	1.50	-	30.10	36.30	8.06	34.84
PK	4.96081G	46.49	74.00	-27.51	5.03	3	Vertical	89	1.49	-	41.46	33.02	6.78	34.77
PK	7.43955G	50.39	74.00	-23.61	9.52	3	Vertical	148	1.50	-	40.87	36.30	8.06	34.84

BT-LE(1Mbps)

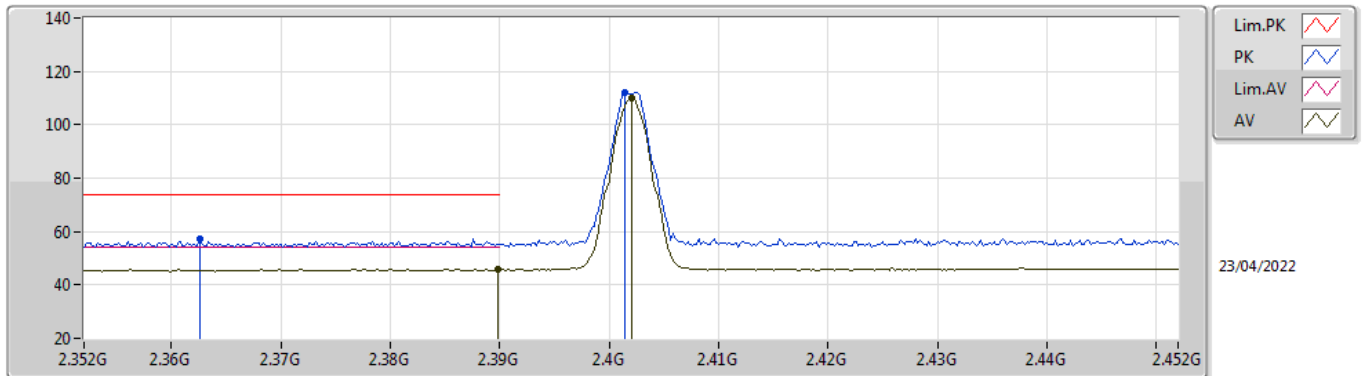
2480MHz_TX



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	4.96043G	35.44	54.00	-18.56	5.03	3	Horizontal	258	1.50	-	30.41	33.02	6.78	34.77
AV	7.43989G	39.31	54.00	-14.69	9.52	3	Horizontal	243	1.01	-	29.79	36.30	8.06	34.84
PK	4.95961G	46.62	74.00	-27.38	5.03	3	Horizontal	258	1.50	-	41.59	33.02	6.78	34.77
PK	7.43996G	50.76	74.00	-23.24	9.52	3	Horizontal	243	1.01	-	41.24	36.30	8.06	34.84

BT-LE(2Mbps)

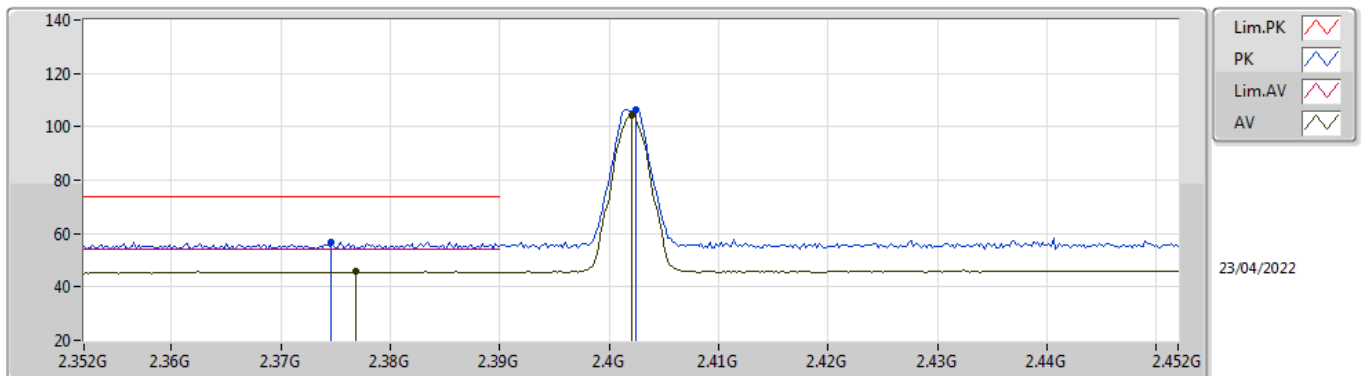
2402MHz_TX



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	2.3898G	45.83	54.00	-8.17	32.01	3	Vertical	168	2.62	-	13.82	27.44	4.57	-
AV	2.402G	109.87	Inf	-Inf	32.08	3	Vertical	168	2.62	-	77.79	27.50	4.58	-
PK	2.3626G	57.15	74.00	-16.85	31.82	3	Vertical	168	2.62	-	25.33	27.28	4.54	-
PK	2.4014G	112.27	Inf	-Inf	32.08	3	Vertical	168	2.62	-	80.19	27.50	4.58	-

BT-LE(2Mbps)

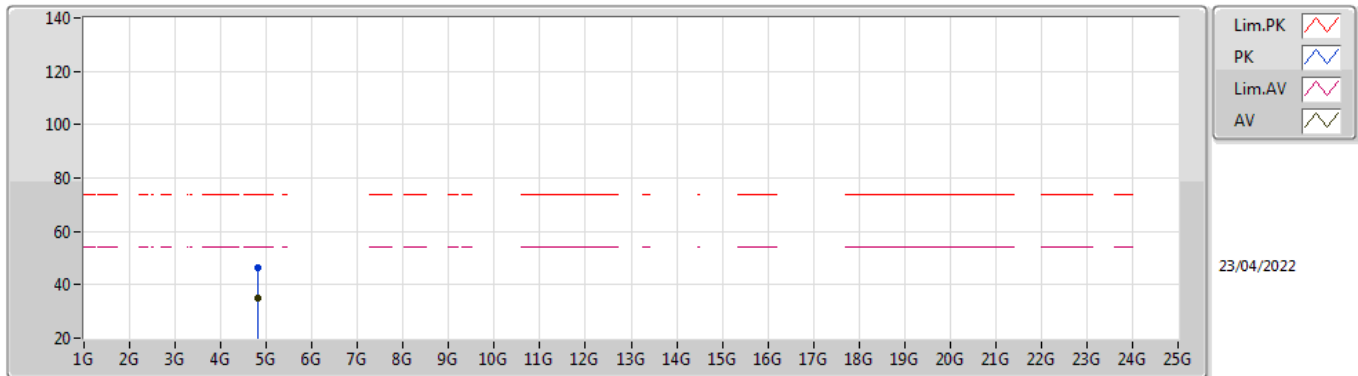
2402MHz_TX



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	2.3768G	45.65	54.00	-8.35	31.92	3	Horizontal	349	1.50	-	13.73	27.36	4.56	-
AV	2.402G	104.13	Inf	-Inf	32.08	3	Horizontal	349	1.50	-	72.05	27.50	4.58	-
PK	2.3746G	56.90	74.00	-17.10	31.91	3	Horizontal	349	1.50	-	24.99	27.35	4.56	-
PK	2.4024G	106.58	Inf	-Inf	32.08	3	Horizontal	349	1.50	-	74.50	27.50	4.58	-

BT-LE(2Mbps)

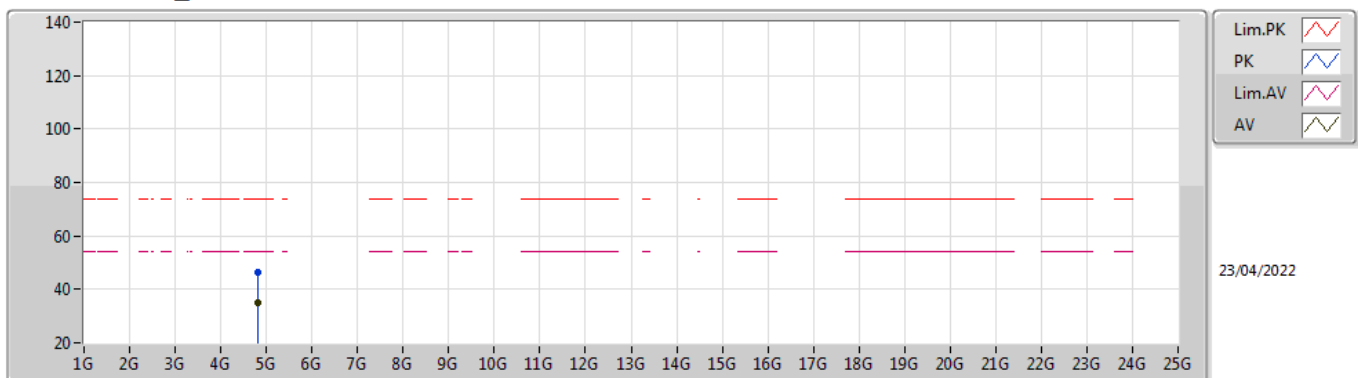
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80338G	34.93	54.00	-19.07	4.17	3	Vertical	185	1.50	-	30.76	32.32	6.66	34.81
PK	4.8034G	46.45	74.00	-27.55	4.17	3	Vertical	185	1.50	-	42.28	32.32	6.66	34.81

BT-LE(2Mbps)

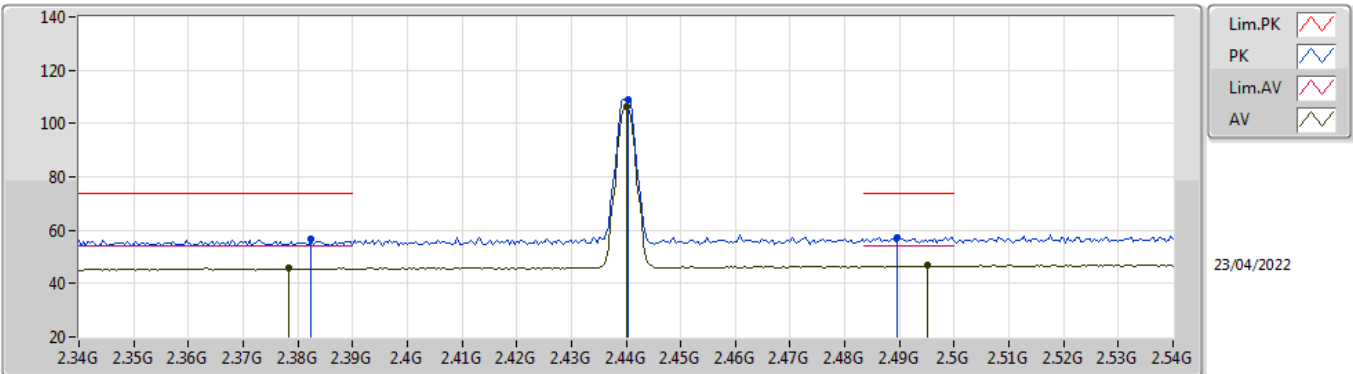
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80329G	35.04	54.00	-18.96	4.17	3	Horizontal	262	1.81	-	30.87	32.32	6.66	34.81
PK	4.80326G	46.61	74.00	-27.39	4.17	3	Horizontal	262	1.81	-	42.44	32.32	6.66	34.81

BT-LE(2Mbps)

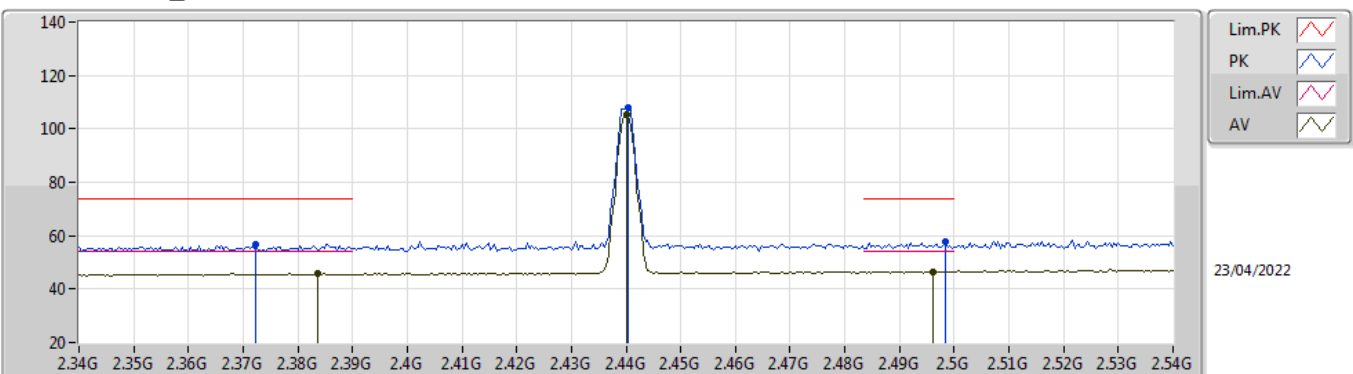
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3784G	45.75	54.00	-8.25	31.93	3	Vertical	158	1.02	-	13.82	27.37	4.56	-
AV	2.44G	106.61	Inf	-Inf	32.18	3	Vertical	158	1.02	-	74.43	27.58	4.60	-
AV	2.4952G	46.66	54.00	-7.34	32.49	3	Vertical	158	1.02	-	14.17	27.87	4.62	-
PK	2.3824G	56.57	74.00	-17.43	31.95	3	Vertical	158	1.02	-	24.62	27.39	4.56	-
PK	2.4404G	109.02	Inf	-Inf	32.18	3	Vertical	158	1.02	-	76.84	27.58	4.60	-
PK	2.4896G	57.41	74.00	-16.59	32.46	3	Vertical	158	1.02	-	24.95	27.84	4.62	-

BT-LE(2Mbps)

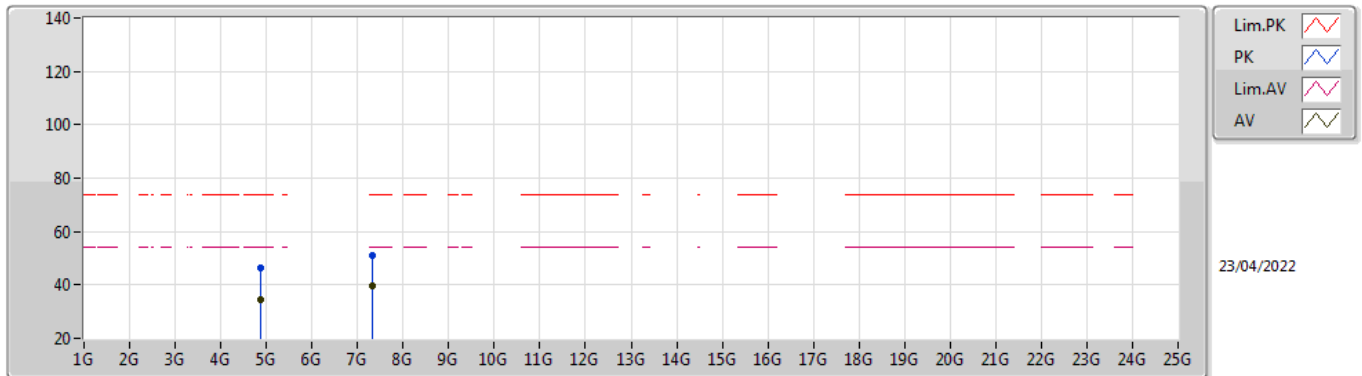
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3836G	45.68	54.00	-8.32	31.96	3	Horizontal	286	1.00	-	13.72	27.40	4.56	-
AV	2.44G	105.17	Inf	-Inf	32.18	3	Horizontal	286	1.00	-	72.99	27.58	4.60	-
AV	2.496G	46.61	54.00	-7.39	32.50	3	Horizontal	286	1.00	-	14.11	27.88	4.62	-
PK	2.3724G	56.59	74.00	-17.41	31.88	3	Horizontal	286	1.00	-	24.71	27.33	4.55	-
PK	2.4404G	107.73	Inf	-Inf	32.18	3	Horizontal	286	1.00	-	75.55	27.58	4.60	-
PK	2.4984G	57.61	74.00	-16.39	32.51	3	Horizontal	286	1.00	-	25.10	27.89	4.62	-

BT-LE(2Mbps)

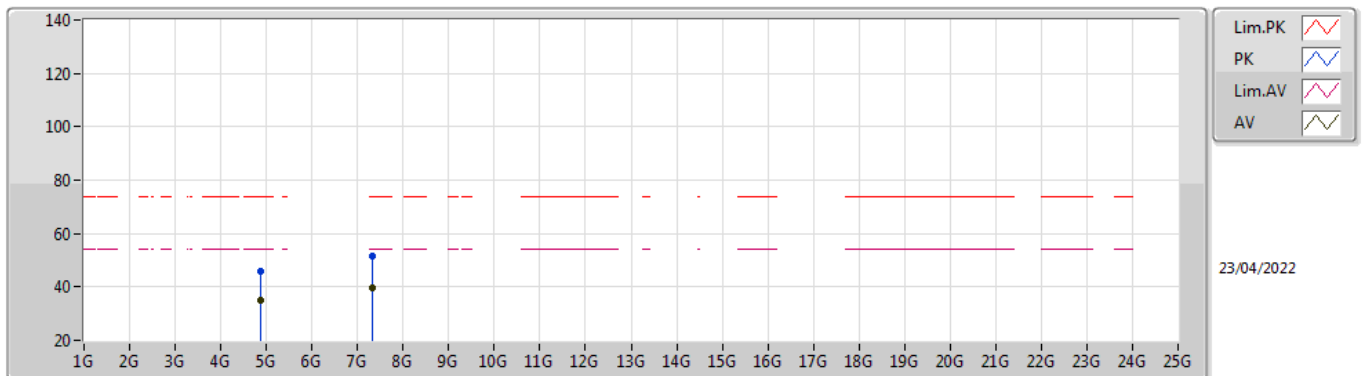
2440MHz_TX



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	4.87953G	34.67	54.00	-19.33	4.65	3	Vertical	58	1.50	-	30.02	32.72	6.72	34.79
AV	7.31917G	39.50	54.00	-14.50	9.73	3	Vertical	255	1.41	-	29.77	36.68	7.87	34.82
PK	4.87933G	46.28	74.00	-27.72	4.65	3	Vertical	58	1.50	-	41.63	32.72	6.72	34.79
PK	7.32083G	51.24	74.00	-22.76	9.73	3	Vertical	255	1.41	-	41.51	36.68	7.87	34.82

BT-LE(2Mbps)

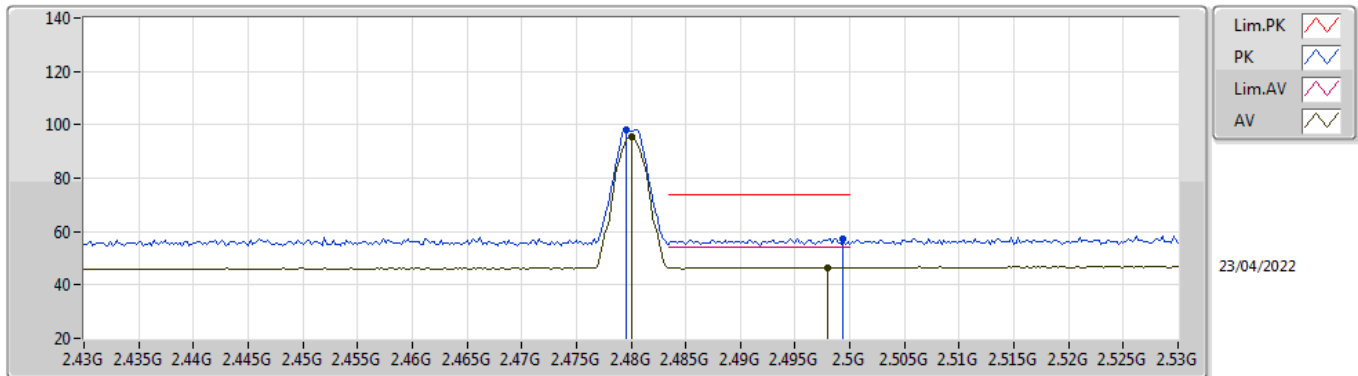
2440MHz_TX



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	4.87912G	34.91	54.00	-19.09	4.65	3	Horizontal	87	2.28	-	30.26	32.72	6.72	34.79
AV	7.32054G	39.55	54.00	-14.45	9.73	3	Horizontal	60	1.50	-	29.82	36.68	7.87	34.82
PK	4.88039G	45.78	74.00	-28.22	4.65	3	Horizontal	87	2.28	-	41.13	32.72	6.72	34.79
PK	7.32079G	51.42	74.00	-22.58	9.73	3	Horizontal	60	1.50	-	41.69	36.68	7.87	34.82

BT-LE(2Mbps)

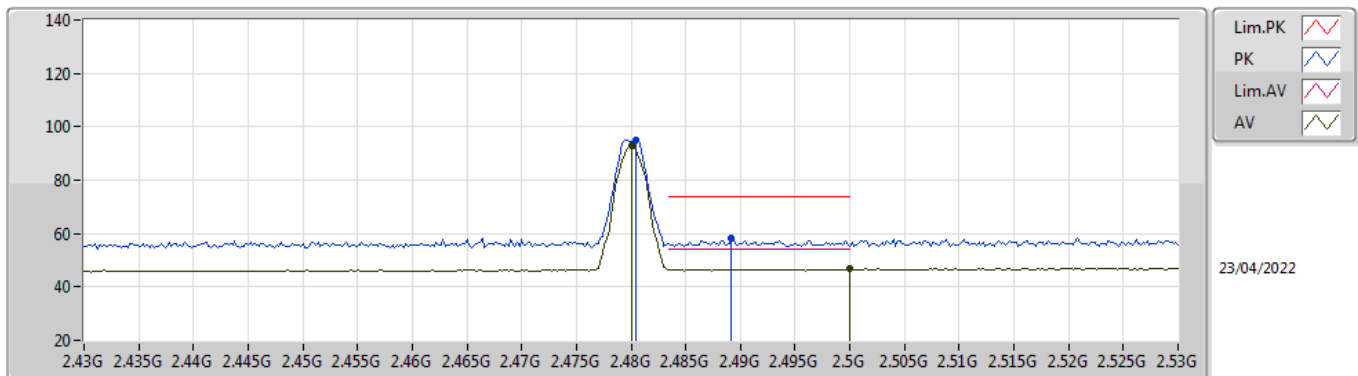
2480MHz_TX



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	95.59	Inf	-Inf	32.39	3	Vertical	172	2.47	-	63.20	27.78	4.61	-
AV	2.498G	46.56	54.00	-7.44	32.51	3	Vertical	172	2.47	-	14.05	27.89	4.62	-
PK	2.4796G	98.10	Inf	-Inf	32.39	3	Vertical	172	2.47	-	65.71	27.78	4.61	-
PK	2.4994G	57.46	74.00	-16.54	32.52	3	Vertical	172	2.47	-	24.94	27.90	4.62	-

BT-LE(2Mbps)

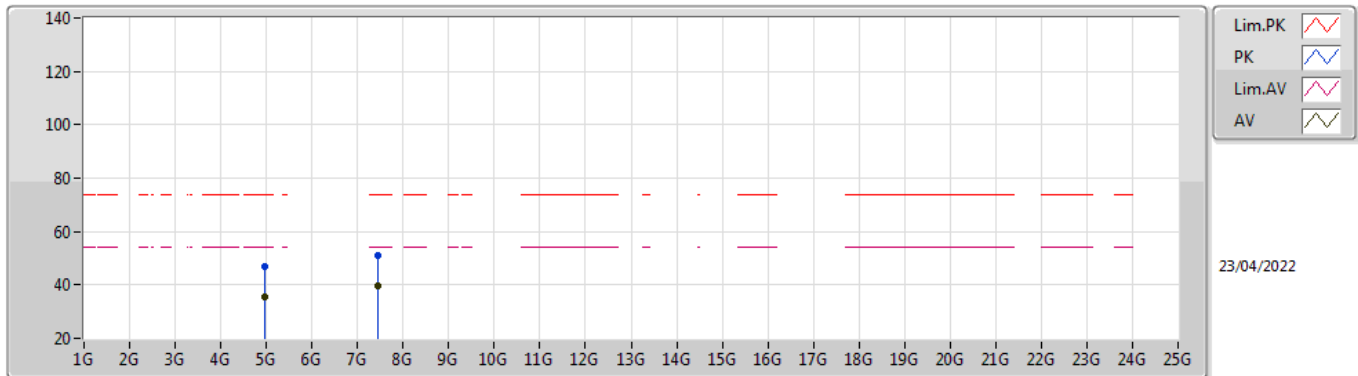
2480MHz_TX



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	92.69	Inf	-Inf	32.39	3	Horizontal	286	1.11	-	60.30	27.78	4.61	-
AV	2.5G	46.70	54.00	-7.30	32.52	3	Horizontal	286	1.11	-	14.18	27.90	4.62	-
PK	2.4804G	95.17	Inf	-Inf	32.39	3	Horizontal	286	1.11	-	62.78	27.78	4.61	-
PK	2.4892G	58.18	74.00	-15.82	32.46	3	Horizontal	286	1.11	-	25.72	27.84	4.62	-

BT-LE(2Mbps)

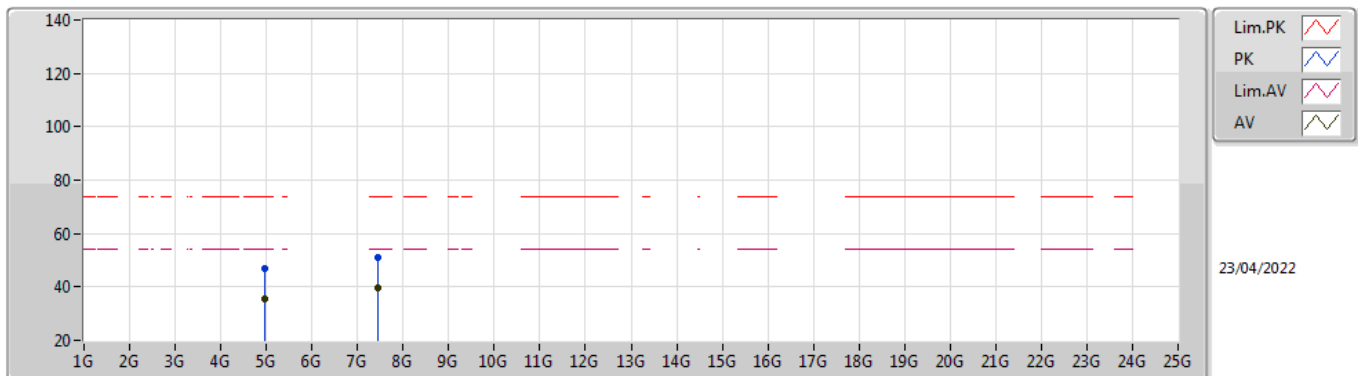
2480MHz_TX



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	4.95913G	35.52	54.00	-18.48	5.03	3	Vertical	77	1.81	-	30.49	33.02	6.78	34.77
AV	7.44017G	39.52	54.00	-14.48	9.52	3	Vertical	328	1.71	-	30.00	36.30	8.06	34.84
PK	4.96088G	46.84	74.00	-27.16	5.03	3	Vertical	77	1.81	-	41.81	33.02	6.78	34.77
PK	7.44056G	51.26	74.00	-22.74	9.52	3	Vertical	328	1.71	-	41.74	36.30	8.06	34.84

BT-LE(2Mbps)

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	4.96001G	35.50	54.00	-18.50	5.03	3	Horizontal	64	1.50	-	30.47	33.02	6.78	34.77
AV	7.44017G	39.56	54.00	-14.44	9.52	3	Horizontal	0	2.26	-	30.04	36.30	8.06	34.84
PK	4.95929G	46.71	74.00	-27.29	5.03	3	Horizontal	64	1.50	-	41.68	33.02	6.78	34.77
PK	7.43962G	50.87	74.00	-23.13	9.52	3	Horizontal	0	2.26	-	41.35	36.30	8.06	34.84



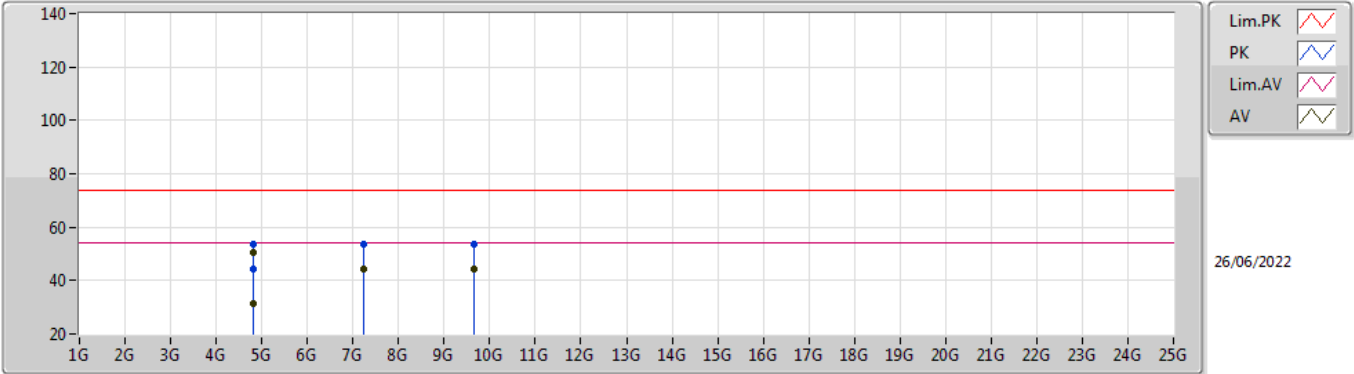
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	4.82397G	52.37	54.00	-1.63	Horizontal
Mode 2	Pass	AV	11.4877G	49.05	54.00	-4.95	Vertical

Result

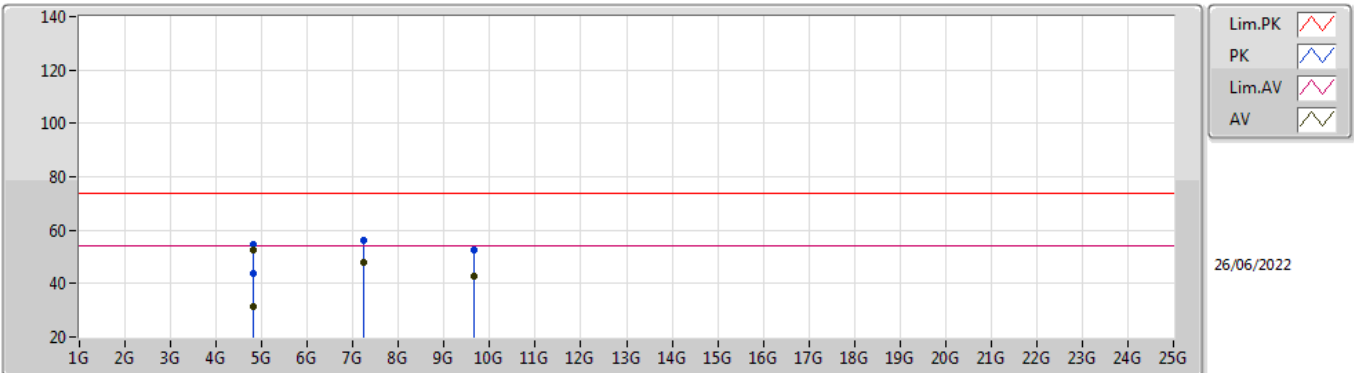
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	4.79973G	31.20	54.00	-22.80	3	Vertical	134	1.50	-
Mode 1	Pass	AV	4.8239G	50.69	54.00	-3.31	3	Vertical	295	1.33	-
Mode 1	Pass	AV	7.23668G	44.13	54.00	-9.87	3	Vertical	267	1.27	-
Mode 1	Pass	AV	9.64786G	44.43	54.00	-9.57	3	Vertical	151	1.06	-
Mode 1	Pass	PK	4.80869G	44.18	74.00	-29.82	3	Vertical	134	1.50	-
Mode 1	Pass	PK	4.8239G	53.46	74.00	-20.54	3	Vertical	295	1.33	-
Mode 1	Pass	PK	7.23696G	53.67	74.00	-20.33	3	Vertical	267	1.27	-
Mode 1	Pass	PK	9.64794G	53.56	74.00	-20.44	3	Vertical	151	1.06	-
Mode 1	Pass	AV	4.8016G	31.26	54.00	-22.74	3	Horizontal	195	1.50	-
Mode 1	Pass	AV	4.82397G	52.37	54.00	-1.63	3	Horizontal	185	2.26	-
Mode 1	Pass	AV	7.23504G	47.72	54.00	-6.28	3	Horizontal	39	2.00	-
Mode 1	Pass	AV	9.64794G	42.54	54.00	-11.46	3	Horizontal	14	1.01	-
Mode 1	Pass	PK	4.80549G	43.63	74.00	-30.37	3	Horizontal	195	1.50	-
Mode 1	Pass	PK	4.82403G	54.77	74.00	-19.23	3	Horizontal	185	2.26	-
Mode 1	Pass	PK	7.235G	56.24	74.00	-17.76	3	Horizontal	39	2.00	-
Mode 1	Pass	PK	9.64758G	52.81	74.00	-21.19	3	Horizontal	14	1.01	-
Mode 2	Pass	AV	4.79909G	42.13	54.00	-11.87	3	Vertical	214	1.30	-
Mode 2	Pass	PK	4.80147G	54.57	74.00	-19.43	3	Vertical	214	1.30	-
Mode 2	Pass	AV	17.2334G	47.17	68.20	-21.03	3	Vertical	190	2.00	-
Mode 2	Pass	PK	17.22582G	58.73	68.20	-9.47	3	Vertical	190	2.00	-
Mode 2	Pass	AV	11.4877G	49.05	54.00	-4.95	3	Vertical	185	1.20	-
Mode 2	Pass	PK	11.48251G	60.56	74.00	-13.44	3	Vertical	185	1.20	-
Mode 2	Pass	AV	4.79951G	42.14	54.00	-11.86	3	Horizontal	43	1.50	-
Mode 2	Pass	PK	4.8044G	54.80	74.00	-19.20	3	Horizontal	43	1.50	-
Mode 2	Pass	PK	11.49449G	61.39	74.00	-12.61	3	Horizontal	45	1.06	-
Mode 2	Pass	AV	11.492G	48.76	54.00	-5.24	3	Horizontal	45	1.06	-
Mode 2	Pass	AV	17.2358G	45.61	68.20	-22.59	3	Horizontal	0	1.16	-
Mode 2	Pass	PK	17.22472G	56.78	68.20	-11.42	3	Horizontal	0	1.16	-

Radiated Emissions above 1GHz_Mode 1



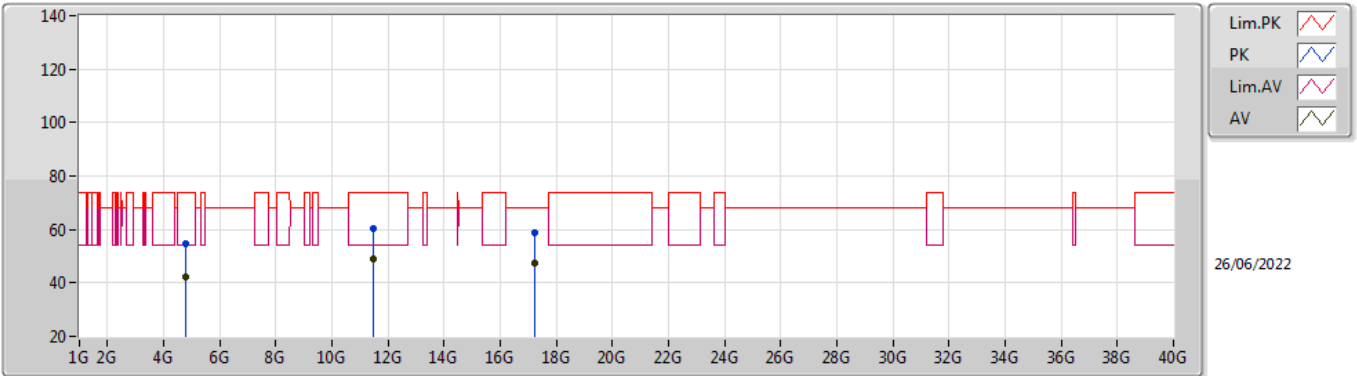
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.79973G	31.20	54.00	-22.80	4.31	3	Vertical	134	1.50	-	26.89	32.50	6.26	34.45
AV	4.8239G	50.69	54.00	-3.31	4.42	3	Vertical	295	1.33	-	46.27	32.60	6.27	34.45
AV	7.23668G	44.13	54.00	-9.87	10.25	3	Vertical	267	1.27	-	33.88	36.87	8.17	34.79
AV	9.64786G	44.43	54.00	-9.57	12.25	3	Vertical	151	1.06	-	32.18	38.40	9.07	35.22
PK	4.80869G	44.18	74.00	-29.82	4.35	3	Vertical	134	1.50	-	39.83	32.53	6.27	34.45
PK	4.8239G	53.46	74.00	-20.54	4.42	3	Vertical	295	1.33	-	49.04	32.60	6.27	34.45
PK	7.23696G	53.67	74.00	-20.33	10.25	3	Vertical	267	1.27	-	43.42	36.87	8.17	34.79
PK	9.64794G	53.56	74.00	-20.44	12.25	3	Vertical	151	1.06	-	41.31	38.40	9.07	35.22

Radiated Emissions above 1GHz_Mode 1



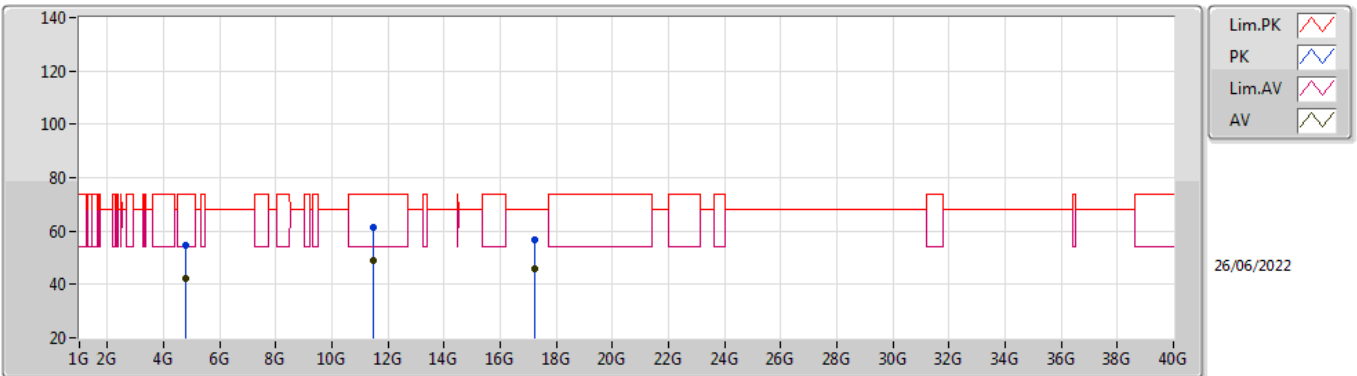
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.8016G	31.26	54.00	-22.74	4.32	3	Horizontal	195	1.50	-	26.94	32.51	6.26	34.45
AV	4.82397G	52.37	54.00	-1.63	4.42	3	Horizontal	185	2.26	-	47.95	32.60	6.27	34.45
AV	7.23504G	47.72	54.00	-6.28	10.25	3	Horizontal	39	2.00	-	37.47	36.87	8.17	34.79
AV	9.64794G	42.54	54.00	-11.46	12.25	3	Horizontal	14	1.01	-	30.29	38.40	9.07	35.22
PK	4.80549G	43.63	74.00	-30.37	4.33	3	Horizontal	195	1.50	-	39.30	32.52	6.26	34.45
PK	4.82403G	54.77	74.00	-19.23	4.42	3	Horizontal	185	2.26	-	50.35	32.60	6.27	34.45
PK	7.235G	56.24	74.00	-17.76	10.25	3	Horizontal	39	2.00	-	45.99	36.87	8.17	34.79
PK	9.64758G	52.81	74.00	-21.19	12.25	3	Horizontal	14	1.01	-	40.56	38.40	9.07	35.22

Radiated Emissions above 1GHz_Mode 2



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	4.79909G	42.13	54.00	-11.87	4.30	3	Vertical	214	1.30	-	37.83	32.49	6.26	34.45
PK	4.80147G	54.57	74.00	-19.43	4.32	3	Vertical	214	1.30	-	50.25	32.51	6.26	34.45
AV	17.2334G	47.17	68.20	-21.03	16.72	3	Vertical	190	2.00	-	30.45	38.43	12.33	34.04
PK	17.22582G	58.73	68.20	-9.47	16.72	3	Vertical	190	2.00	-	42.01	38.43	12.33	34.04
AV	11.4877G	49.05	54.00	-4.95	14.95	3	Vertical	185	1.20	-	34.10	39.00	9.91	33.96
PK	11.48251G	60.56	74.00	-13.44	14.95	3	Vertical	185	1.20	-	45.61	39.00	9.91	33.96

Radiated Emissions above 1GHz_Mode 2



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	4.79951G	42.14	54.00	-11.86	4.31	3	Horizontal	43	1.50	-	37.83	32.50	6.26	34.45
PK	4.8044G	54.80	74.00	-19.20	4.33	3	Horizontal	43	1.50	-	50.47	32.52	6.26	34.45
PK	11.49449G	61.39	74.00	-12.61	14.96	3	Horizontal	45	1.06	-	46.43	39.00	9.91	33.95
AV	11.492G	48.76	54.00	-5.24	14.95	3	Horizontal	45	1.06	-	33.81	39.00	9.91	33.96
AV	17.2358G	45.61	68.20	-22.59	16.73	3	Horizontal	0	1.16	-	28.88	38.44	12.33	34.04
PK	17.22472G	56.78	68.20	-11.42	16.71	3	Horizontal	0	1.16	-	40.07	38.42	12.33	34.04