

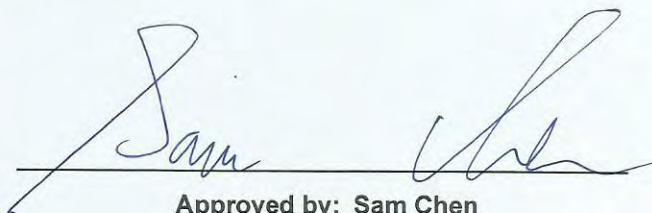


RADIO TEST REPORT

FCC ID : 2ARXK-VHC25
Equipment : Wireless Edge Server
Brand Name : Veeahub
Model Name : VHC25,VHC20
Applicant : Veea Inc.
164 E 83rd Street, NEW YORK,United States, 10028
Manufacturer : Veea Inc.
164 E 83rd Street, NEW YORK,United States, 10028
Standard : 47 CFR FCC Part 15.247

The product was received on Aug. 09, 2021, and testing was started from Aug. 11, 2021 and completed on Dec. 03, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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TEL : 886-3-656-9065
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Report Template No.: CB-A10_6 Ver1.3



Summary of Test Result

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

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:

1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
2. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Wendy Pan



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(500Kb/s)	1.0	1TX
2.4-2.4835GHz	BT-LE(125Kb/s)	1.0	1TX
2.4-2.4835GHz	BT-LE(2Mbps)	2.0	1TX

Note:

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

**1.1.2 Antenna Information**

Ant.	Brand Name	Model Name	Antenna Type	Connector	Gain (dBi)
1	WNC	VHC25	PIFA	I-PEX	Note 1
2	WNC	VHC25	PIFA	I-PEX	
3	WNC	VHC25	PIFA	I-PEX	
4	WNC	VHC25	PIFA	I-PEX	

Note 1:

Ant.	Port					Gain (dBi)				
	WLAN 2.4GHz	WLAN 5GHz UNII-3	WLAN 5GHz UNII-1	Bluetooth BR/EDR	Bluetooth LE or IEEE802. 15.4	WLAN 2.4GHz	WLAN 5GHz UNII-3	WLAN 5GHz UNII-1	Bluetooth BR/EDR	Bluetooth LE or IEEE802. 15.4
1	-	-	2	1	-	-	-	3.6	2.3	-
2	1	2	-	-	-	2.2	3.3	-	-	-
3	-	-	1	-	1	-	-	3.5	-	1.9
4	2	1	-	-	-	1.8	3.4	-	-	-

Note 2: The above information was declared by manufacturer.

Note 3: Directional gain information

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$	$Directional\ Gain = 10 \cdot \log \left[\frac{\sum_{i=1}^{N_{ss}} \left\{ \sum_{k=1}^{N_{ANT}} g_{i,k} \right\}^2}{N_{ANT}} \right]$
BF	$Directional\ Gain = 10 \cdot \log \left[\frac{\sum_{i=1}^{N_{ss}} \left\{ \sum_{k=1}^{N_{ANT}} g_{i,k} \right\}^2}{N_{ANT}} \right]$	$Directional\ Gain = 10 \cdot \log \left[\frac{\sum_{i=1}^{N_{ss}} \left\{ \sum_{k=1}^{N_{ANT}} g_{i,k} \right\}^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$Directional\ Gain = 10 \cdot \log \left[\frac{\sum_{i=1}^{N_{ss}} \left\{ \sum_{k=1}^{N_{ANT}} g_{i,k} \right\}^2}{N_{ANT}} \right]$$

$$NSS1(g1,1) = 10^{G1/20} ; NSS1(g1,2) = 10^{G2/20} ; NSS1(g1,3) = 10^{G3/20} ; NSS1(g1,4) = 10^{G4/20}$$

$$g_{j,k} = (NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2$$

$$DG = 10 \log[(NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2 / N_{ANT}] \Rightarrow 10$$

$$\log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / N_{ANT}]$$

Where ;

G1 = Ant 1 Gain ; G2 = Ant 2 Gain ; G3 = Ant 3 Gain ; G4 = Ant 4 Gain ;

2.4GHz DG = 5.01 dBi

5 GHz U-NII-1 DG = 6.56 dBi

5 GHz U-NII-3 DG = 6.36 dBi

For 2.4GHz:

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

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For 5GHz UNII-1 / UNII-3:

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

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

Bluetooth / IEEE802.15.4 (1TX/1RX):

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

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-LE(1Mbps)	0.846	0.73	2.115m	1k
BT-LE(2Mbps)	0.561	2.51	1.063m	1k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From adapter			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	DOS [ver 6.1.7601]			
Support Mode	☒	LE 1M PHY: 1 Mb/s		
	☒	LE Coded PHY (S=2): 500 Kb/s		
	☒	LE Coded PHY (S=8): 125 Kb/s		
	☒	LE 2M PHY: 2 Mb/s		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Model Name	Description
VHC25	All the model names are identical, the difference model names served as marketing strategy.
VHC20	

Note1: From the above models, model: VHC25 was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

1.1.6 Table for EUT Operation Information

Operation Mode	Description
1	WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band + Bluetooth BR/EDR + IEEE 802.15.4
2	WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band + Bluetooth BR/EDR + Bluetooth LE

Note: The above information was declared by manufacturer.

1.1.7 Table for EUT support function

Function
AP
Mesh

Note1: AP mode was selected as representative mode for AC power-line conducted emissions and Emissions in Restricted Frequency Bands below 1GHz test and its data was recorded in this report.

Note2: The above information was declared by manufacturer.



1.2 Applicable Standards

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

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

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

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

Testing Location Information

Test Lab. : Sporton International Inc. Hsinchu Laboratory

Hsinchu ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

(TAF: 3787) TEL: 886-3-656-9065 FAX: 886-3-656-9085

Test site Designation No. TW3787 with FCC.

Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH01-CB	Caster Chang	23.2~24.2 / 53~55	Aug. 13, 2021 ~ Sep. 18, 2021
Radiated<1GHz	10CH01-CB	Peter Wu	23~24 / 58~59	Aug. 30, 2021 ~ Dec. 03, 2021
Radiated>1GHz	03CH01-CB	RJ Huang	24.4-25.5 / 55-58	Aug. 11, 2021 ~ Sep. 09, 2021
Radiated Co-Location	03CH06-CB	RJ Huang	25.8-28.2 / 56-59	Aug. 11, 2021 ~ Sep. 09, 2021
AC Conduction	CO01-CB	Ryo Fan	22~23 / 65~67	Aug. 27, 2021

1.3 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)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emissions below 1GHz	4.2 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	2.5 dB	Confidence levels of 95%
Output Power Measurement	1.3 dB	Confidence levels of 95%
Power Density Measurement	2.5 dB	Confidence levels of 95%
Bandwidth Measurement	0.9%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	20
2440MHz	20
2478MHz	17
2480MHz	12
BT-LE(2Mbps)	-
2402MHz	20
2440MHz	20
2478MHz	20
2480MHz	11.5

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	Normal Link
1	Normal Link – AP mode (WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band) + CTX (Bluetooth BR/EDR + IEEE 802.15.4) + Adapter
2	Normal Link – AP mode (WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band) + CTX (Bluetooth BR/EDR + Bluetooth LE) + Adapter
For operating mode 1 is the worst case and it was record in this test report.	

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



The 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	Normal Link
1	EUT in Z axis Normal Link – AP mode (WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band) + CTX (Bluetooth BR/EDR + IEEE 802.15.4) + Adapter
2	EUT in Z axis Normal Link – AP mode (WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band) + CTX (Bluetooth BR/EDR + Bluetooth LE) + Adapter
Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 ~ 4 will follow this same test mode.	
3	EUT in Y axis Normal Link – AP mode (WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band) + CTX (Bluetooth BR/EDR + IEEE 802.15.4) + Adapter
4	EUT in X axis Normal Link – AP mode (WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band) + CTX (Bluetooth BR/EDR + IEEE 802.15.4) + Adapter
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	The EUT was performed at X axis, Y axis and Z axis position t, and the worst case was found at Z axis. So the measurement will follow this same test configuration.
	EUT in Z axis CTX

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
	The EUT was performed at X axis, Y axis and Z axis position t, and the worst case was found at Z axis. So the measurement will follow this same test configuration.
1	EUT in Z axis Normal Link – AP mode (WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band) + CTX (Bluetooth BR/EDR + IEEE 802.15.4) + Adapter
2	EUT in Z axis Normal Link – AP mode (WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band) + CTX (Bluetooth BR/EDR + Bluetooth LE) + Adapter
Refer to Appendix G for Radiated Emission Co-location.	



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band + Bluetooth BR/EDR + IEEE 802.15.4
2	WLAN 2.4GHz + 5GHz Low Band + 5GHz High Band + Bluetooth BR/EDR + Bluetooth LE
Refer to Sporton Test Report No.: FA172726 for Co-location RF Exposure Evaluation.	

Note: The EUT can only be used in Z axis position.

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Adapter	Veea	VHC25-30A	Input: 100-240V~50/60Hz, 1.0A Max Output: 12V, 2.5A
Other			
RJ-45 cable*1: Non-shielded, 1.8m			



2.5 Support Equipment

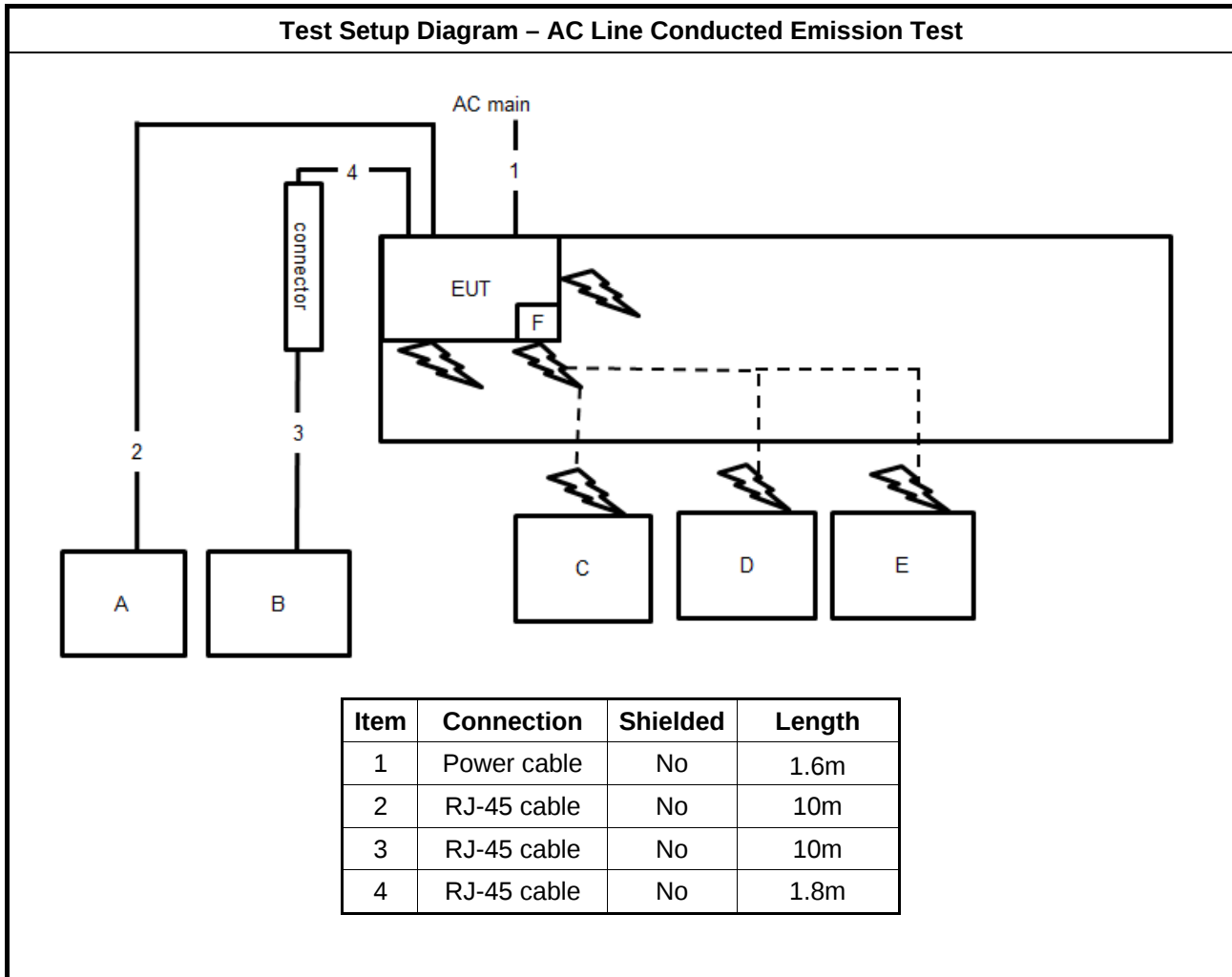
For AC Conduction and Radiated (below 1GHz):

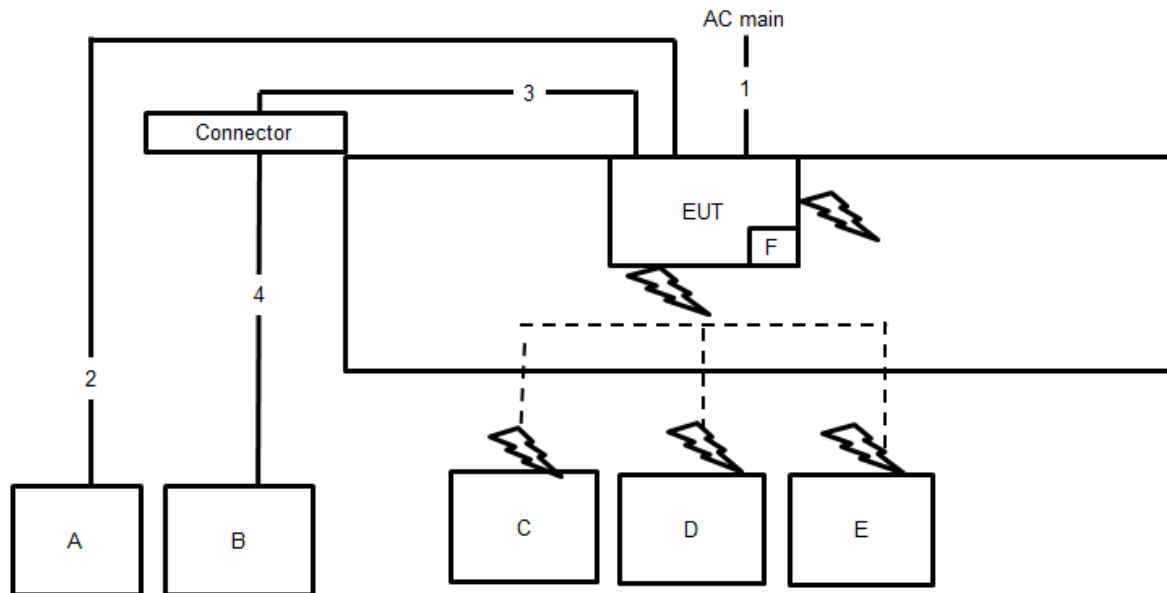
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	LAN NB	DELL	E6430	N/A
B	WAN NB	DELL	E6430	N/A
C	2.4G NB	DELL	E6430	N/A
D	5GL NB	DELL	E6430	N/A
E	5GH NB	DELL	E6431	N/A
F	Micro SD Card	Transcend	TS16GUSDHC10	N/A

For Radiated (above 1GHz) and RF Conducted:

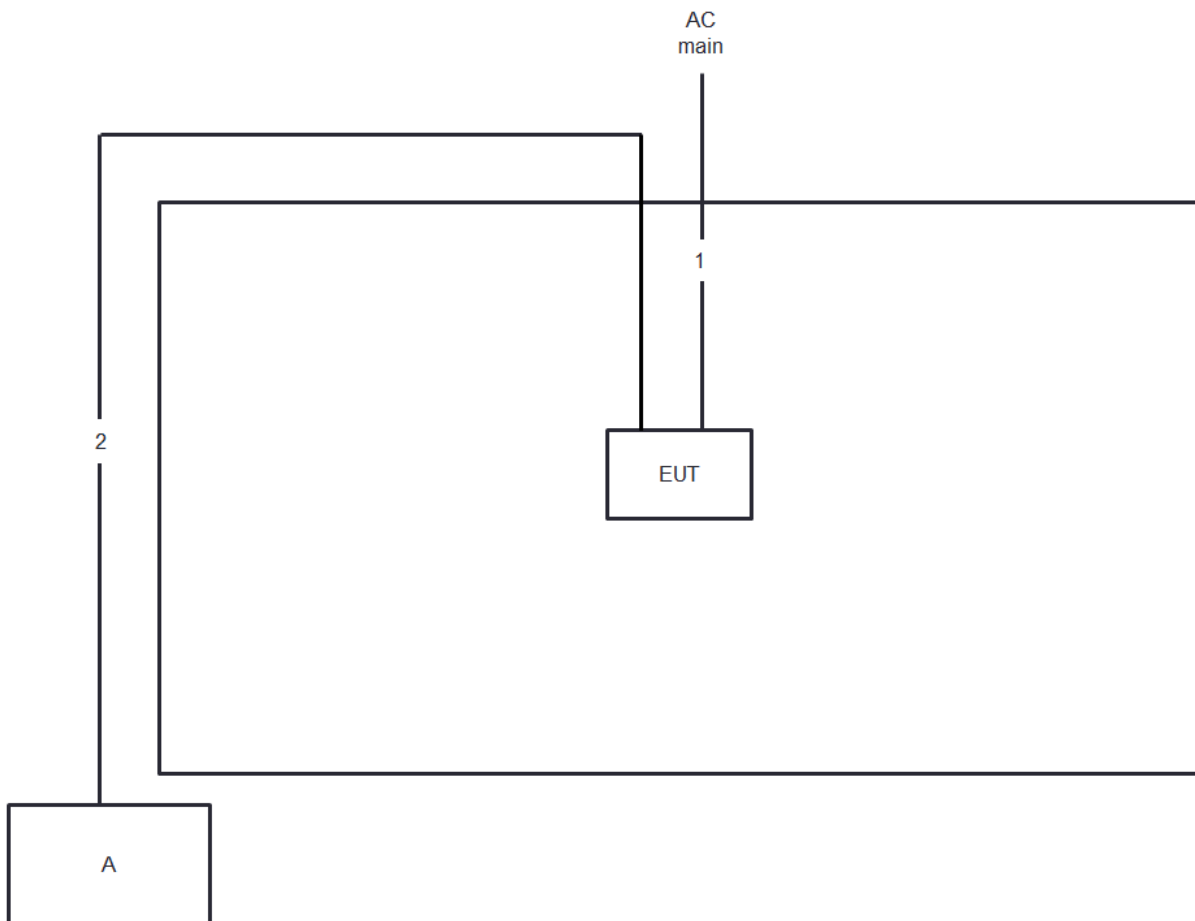
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	1.6m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.8m
4	RJ-45 cable	No	10m

Test Setup Diagram - Radiated Test > 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

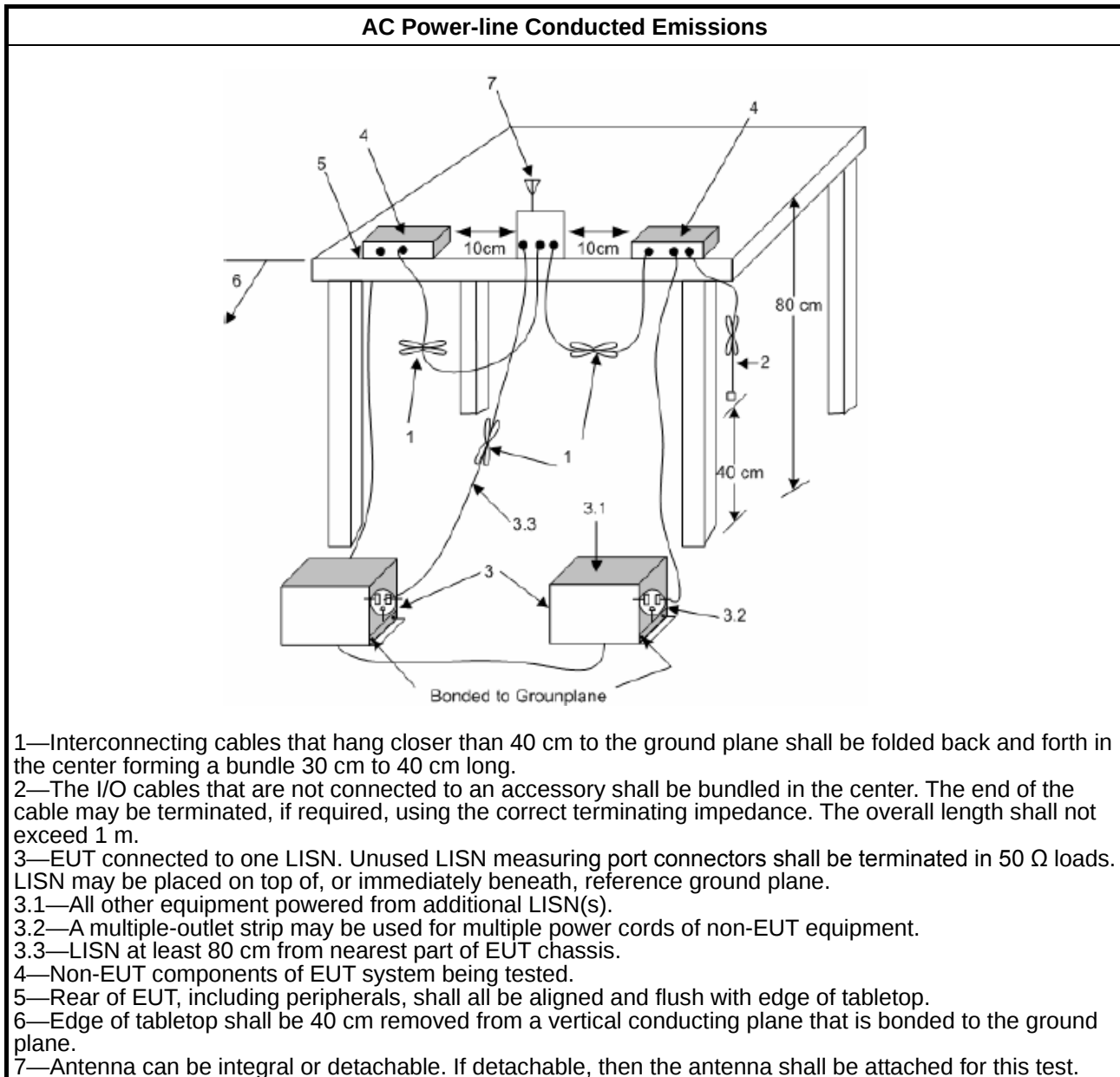
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



1.1.1. Measurement Results Calculation

The measured Level is calculated using:

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

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

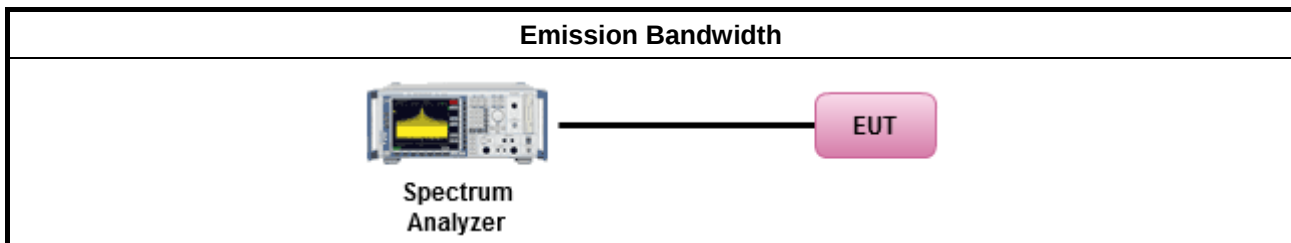
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

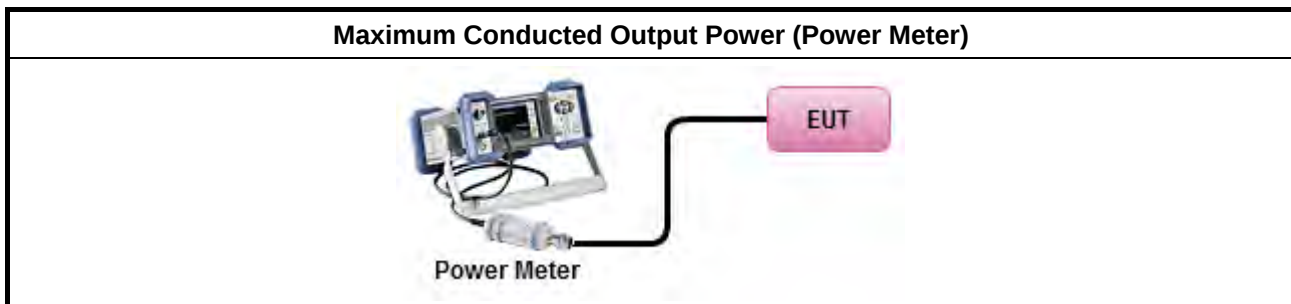
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

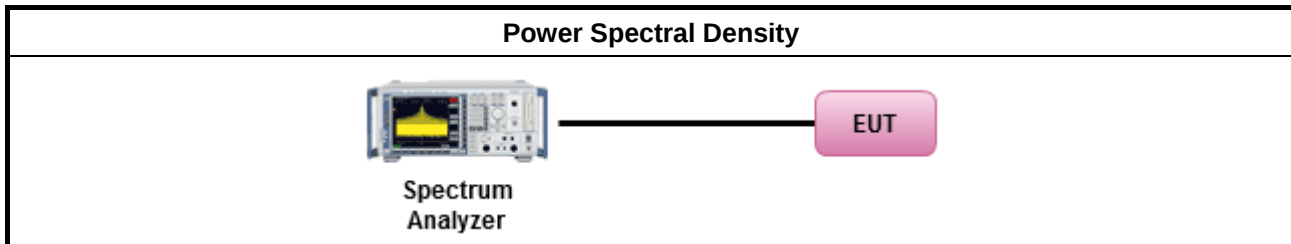
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

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

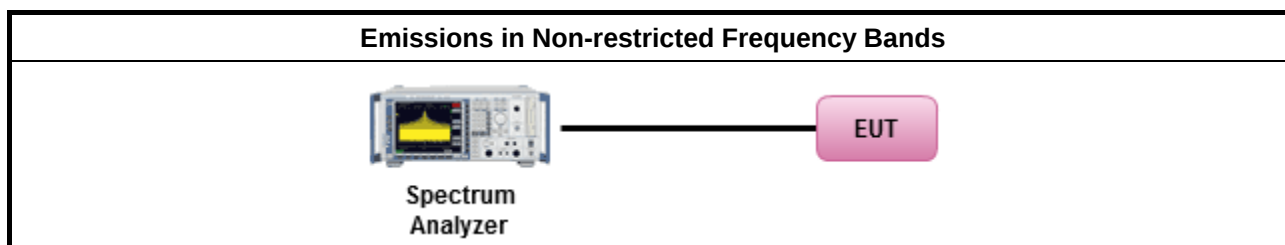
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.6.2 Measuring Instruments

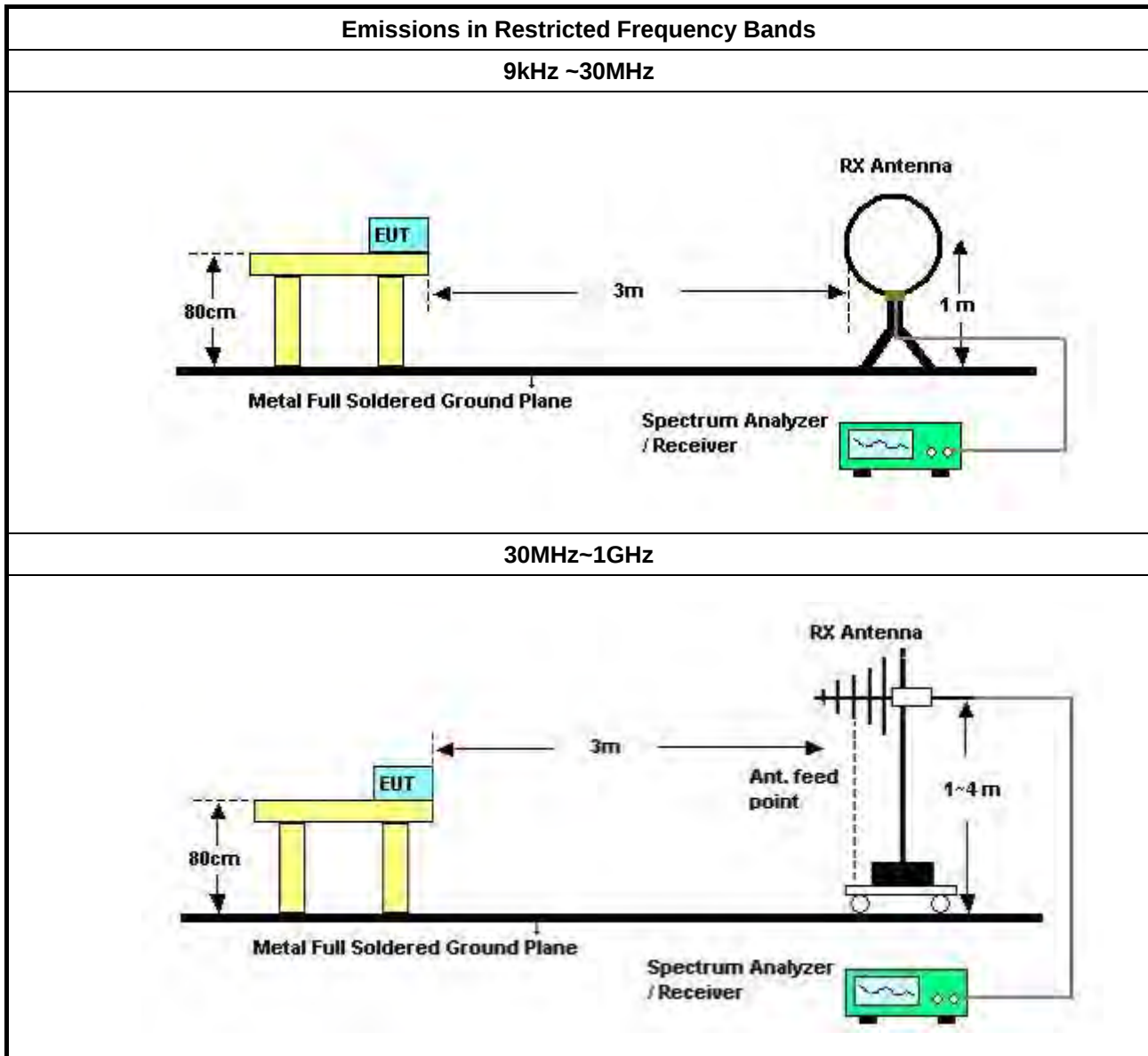
Refer a test equipment and calibration data table in this test report.

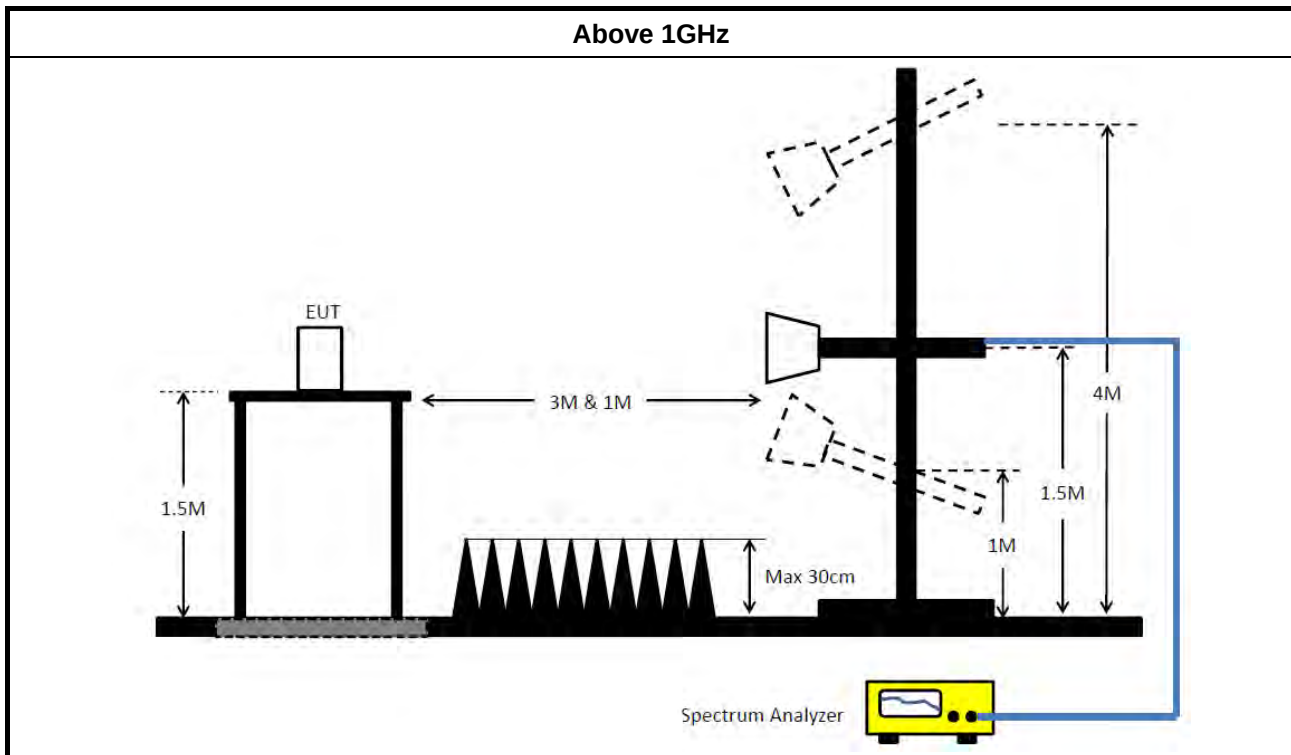


3.6.3 Test Procedures

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

3.6.4 Test Setup





3.6.5 Measurement Results Calculation

The measured Level is calculated using:

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

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

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

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

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 03, 2021	Mar. 02, 2022	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Jan. 06, 2021	Jan. 05, 2022	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Mar. 07, 2021	Mar. 06, 2022	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Jan. 30, 2021	Jan. 29, 2022	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 19, 2021	May 18, 2022	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
10m Semi Anechoic Chamber NSA	TDK	SAC-10M	10CH01-CB	30MHz~1GHz 10m,3m	Jan. 28, 2021	Jan. 27, 2022	Radiation (10CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10783	9kHz ~ 1.3GHz	Mar. 11, 2021	Mar. 10, 2022	Radiation (10CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10784	9kHz ~ 1.3GHz	Mar. 11, 2021	Mar. 10, 2022	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-01	25MHz ~ 1GHz	Oct. 20, 2020	Oct. 19, 2021	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-01	25MHz ~ 1GHz	Oct. 19, 2021	Oct. 18, 2022	Radiation (10CH01-CB)
High Cable	Woken	SUCOFLEX 104	low cable-02	25MHz ~ 1GHz	Oct. 20, 2020	Oct. 19, 2021	Radiation (10CH01-CB)
High Cable	Woken	SUCOFLEX 104	low cable-02	25MHz ~ 1GHz	Oct. 19, 2021	Oct. 18, 2022	Radiation (10CH01-CB)
Bilog Antenna with 6dB Attenuator	Chase & EMCI	CBL6111A &N-6-06	1543 &AT-N0609	30MHz ~ 1GHz	Jul. 01, 2021	Jun. 30, 2022	Radiation (10CH01-CB)
EMI Test Receiver	Rohde&Schwarz	ESCI	100186	9kHz ~ 3GHz	Jul. 12, 2021	Jul. 11, 2022	Radiation (10CH01-CB)
Spectrum Analyzer	Rohde&Schwarz	FSV30	101026	9kHz ~ 30GHz	Mar. 08, 2021	Mar. 07, 2022	Radiation (10CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (10CH01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (10CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 07, 2021	May 06, 2022	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 06, 2020	Nov. 05, 2021	Radiation (03CH01-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 18, 2021	Jun. 17, 2022	R Radiation (03CH01-CB)
Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	Jul. 02, 2021	Jul. 01, 2022	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	May 03, 2021	May 02, 2022	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Oct. 02, 2020	Oct. 01, 2021	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1370	1GHz~18GHz	Sep. 21, 2020	Sep. 20, 2021	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 18, 2021	Jun. 17, 2022	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	May 06, 2021	May 05, 2022	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Dec. 15, 2020	Dec. 14, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+24	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 21, 2021	May 20, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz ~ 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz ~ 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 23, 2021	Feb. 22, 2022	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 23, 2021	Feb. 22, 2022	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

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

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



Conducted Emissions at Powerline

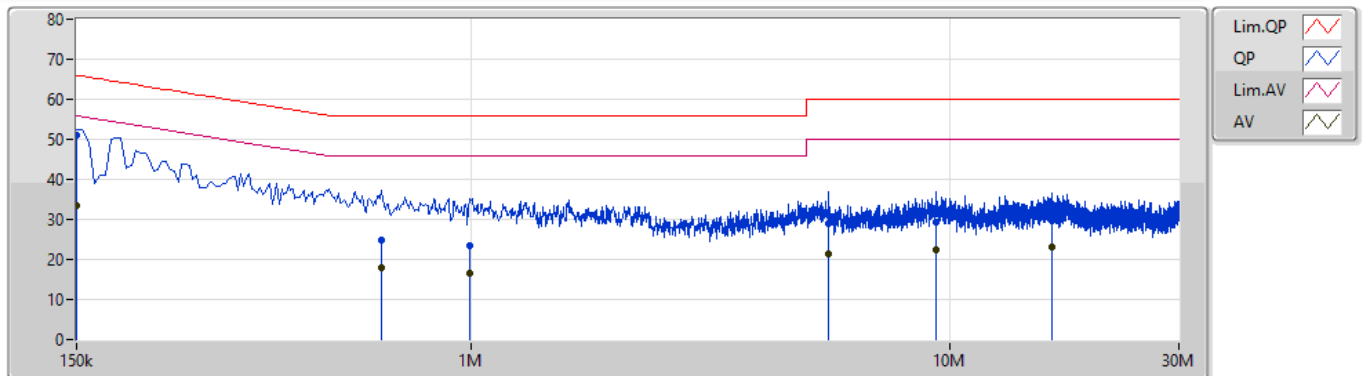
Appendix A

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	150k	50.89	66.00	-15.11	Line

Mode 1

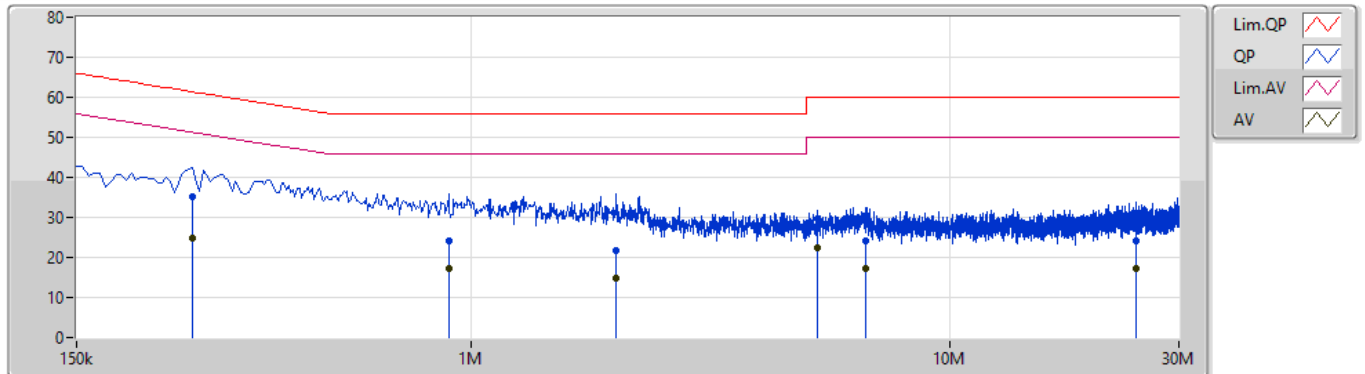
27/08/2021



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	150k	50.89	66.00	-15.11	9.89	Line	"Worst"	41.00	0.04	0.04	9.81			
AV	150k	33.54	56.00	-22.46	9.89	Line	-	23.65	0.04	0.04	9.81			
QP	649.5k	24.86	56.00	-31.14	9.92	Line	-	14.94	0.05	0.04	9.83			
AV	649.5k	18.06	46.00	-27.94	9.92	Line	-	8.14	0.05	0.04	9.83			
QP	996k	23.35	56.00	-32.65	9.93	Line	-	13.42	0.06	0.04	9.83			
AV	996k	16.65	46.00	-29.35	9.93	Line	-	6.72	0.06	0.04	9.83			
QP	5.568M	28.96	60.00	-31.04	10.17	Line	-	18.79	0.16	0.13	9.88			
AV	5.568M	21.51	50.00	-28.49	10.17	Line	-	11.34	0.16	0.13	9.88			
QP	9.339M	29.39	60.00	-30.61	10.27	Line	-	19.12	0.21	0.16	9.90			
AV	9.339M	22.25	50.00	-27.75	10.27	Line	-	11.98	0.21	0.16	9.90			
QP	16.292M	29.64	60.00	-30.36	10.41	Line	-	19.23	0.29	0.18	9.94			
AV	16.292M	22.95	50.00	-27.05	10.41	Line	-	12.54	0.29	0.18	9.94			

Mode 1

27/08/2021



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	262.5k	35.06	61.35	-26.29	9.88	Neutral	"Worst"	25.18	0.03	0.04	9.81			
AV	262.5k	24.88	51.35	-26.47	9.88	Neutral	-	15.00	0.03	0.04	9.81			
QP	897k	24.12	56.00	-31.88	9.92	Neutral	-	14.20	0.05	0.04	9.83			
AV	897k	17.31	46.00	-28.69	9.92	Neutral	-	7.39	0.05	0.04	9.83			
QP	2.009M	21.67	56.00	-34.33	9.96	Neutral	-	11.71	0.07	0.07	9.82			
AV	2.009M	14.72	46.00	-31.28	9.96	Neutral	-	4.76	0.07	0.07	9.82			
QP	5.289M	29.72	60.00	-30.28	10.14	Neutral	-	19.58	0.13	0.13	9.88			
AV	5.289M	22.33	50.00	-27.67	10.14	Neutral	-	12.19	0.13	0.13	9.88			
QP	6.644M	24.20	60.00	-35.80	10.19	Neutral	-	14.01	0.16	0.14	9.89			
AV	6.644M	17.11	50.00	-32.89	10.19	Neutral	-	6.92	0.16	0.14	9.89			
QP	24.468M	24.08	60.00	-35.92	10.64	Neutral	-	13.44	0.36	0.27	10.01			
AV	24.468M	17.24	50.00	-32.76	10.64	Neutral	-	6.60	0.36	0.27	10.01			

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)	637.5k	1.033M	1M03F1D	636.25k	1.032M
BT-LE(2Mbps)	1.195M	2.109M	2M11F1D	1.188M	2.104M

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

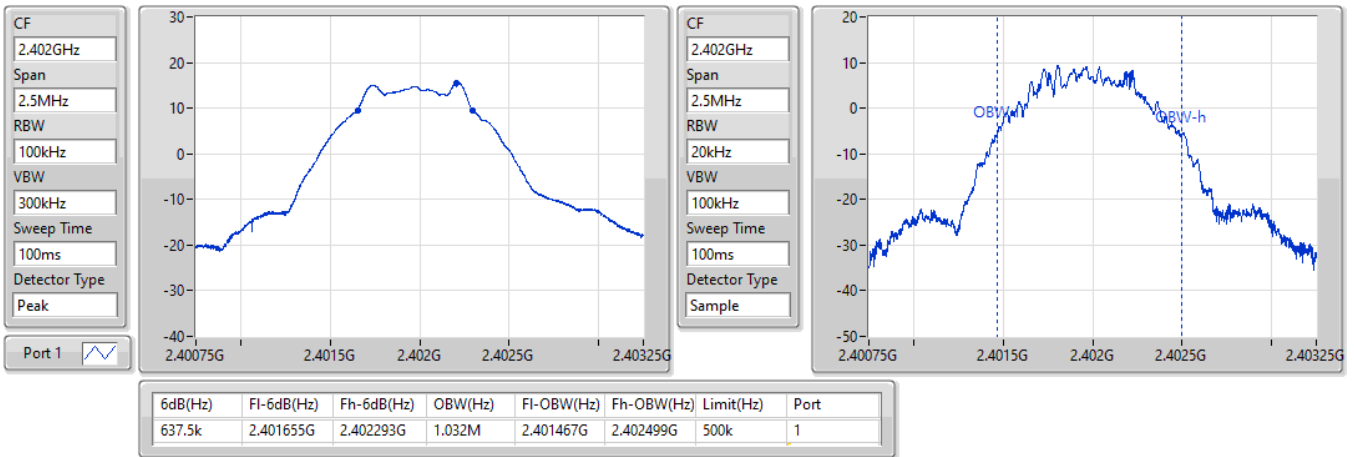
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	637.5k	1.032M
2440MHz	Pass	500k	636.25k	1.032M
2478MHz	Pass	500k	637.5k	1.033M
2480MHz	Pass	500k	637.5k	1.032M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.188M	2.104M
2440MHz	Pass	500k	1.193M	2.104M
2478MHz	Pass	500k	1.193M	2.104M
2480MHz	Pass	500k	1.195M	2.109M

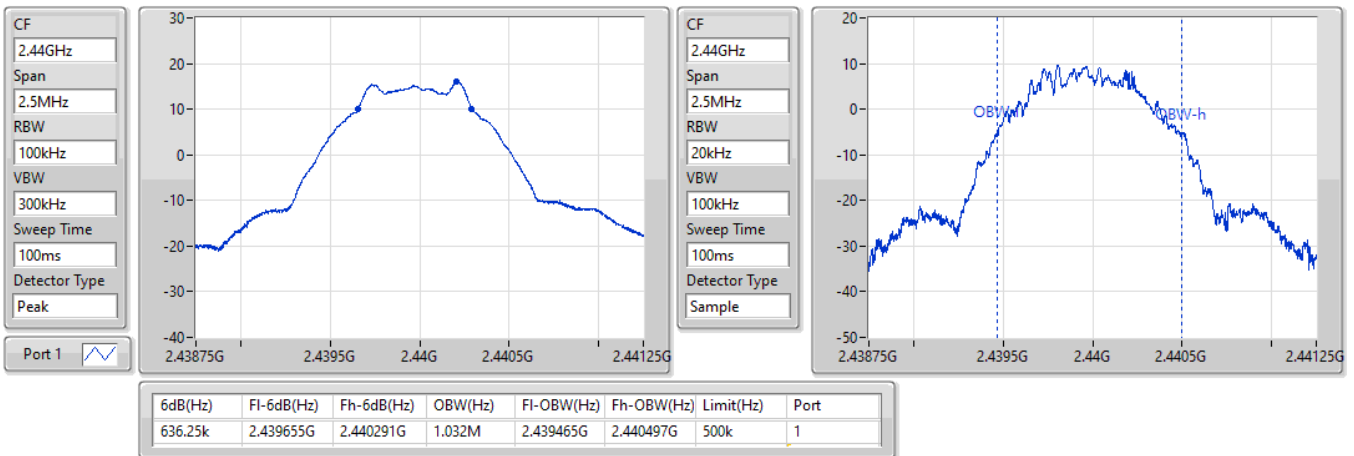
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

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

16/08/2021

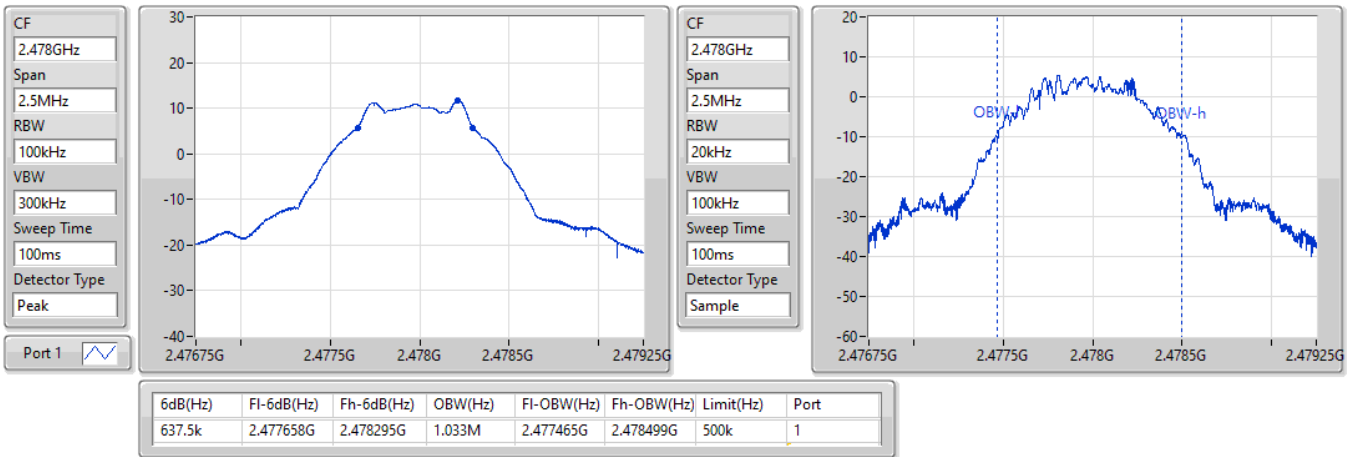

BT-LE(1Mbps)
2440MHz
EBW-DTS

16/08/2021

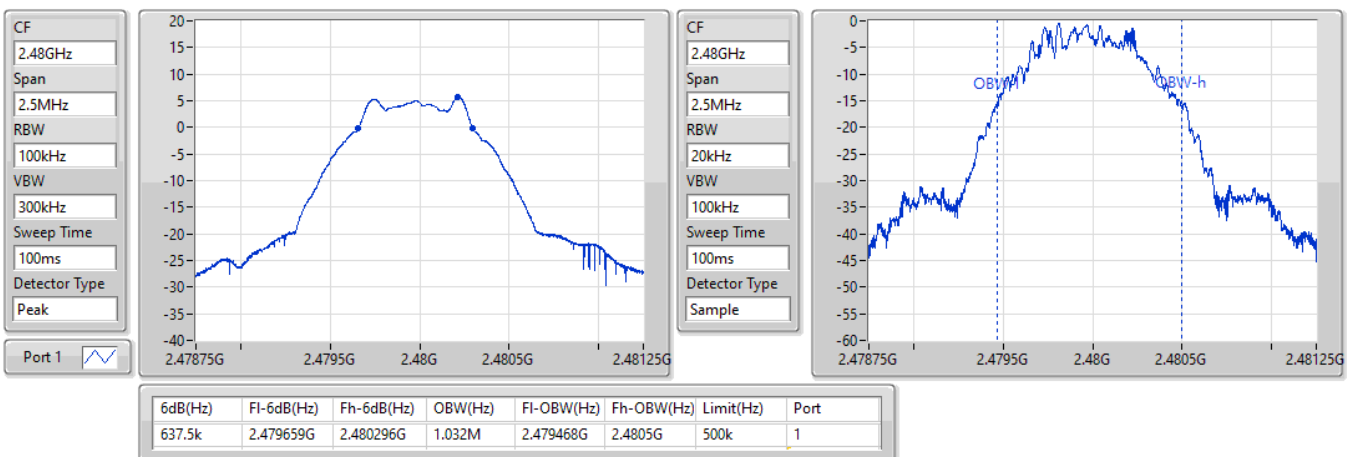


BT-LE(1Mbps)
2478MHz
EBW-DTS

16/08/2021

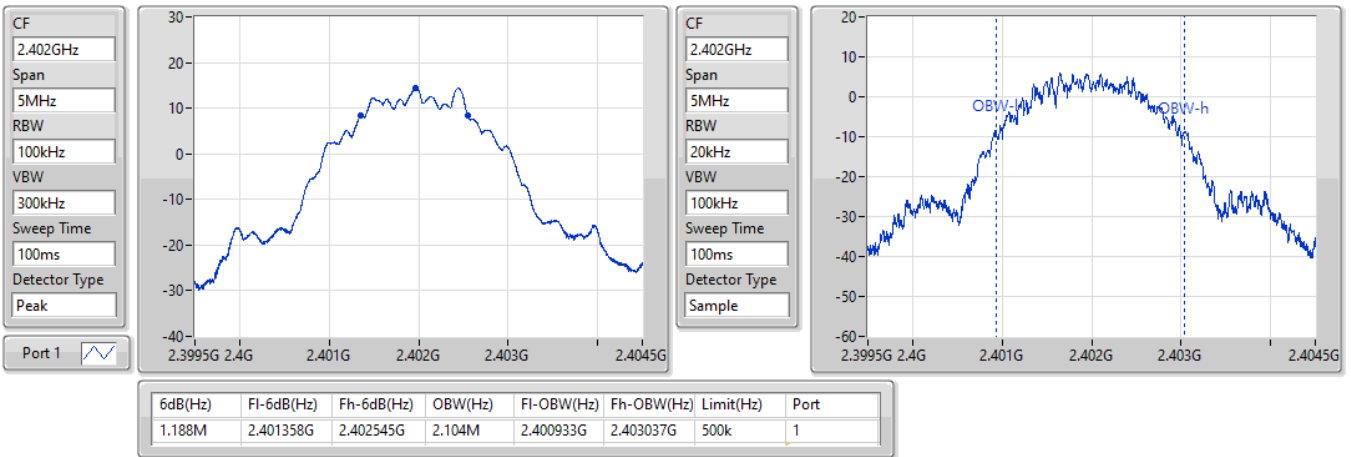

BT-LE(1Mbps)
2480MHz
EBW-DTS

16/08/2021

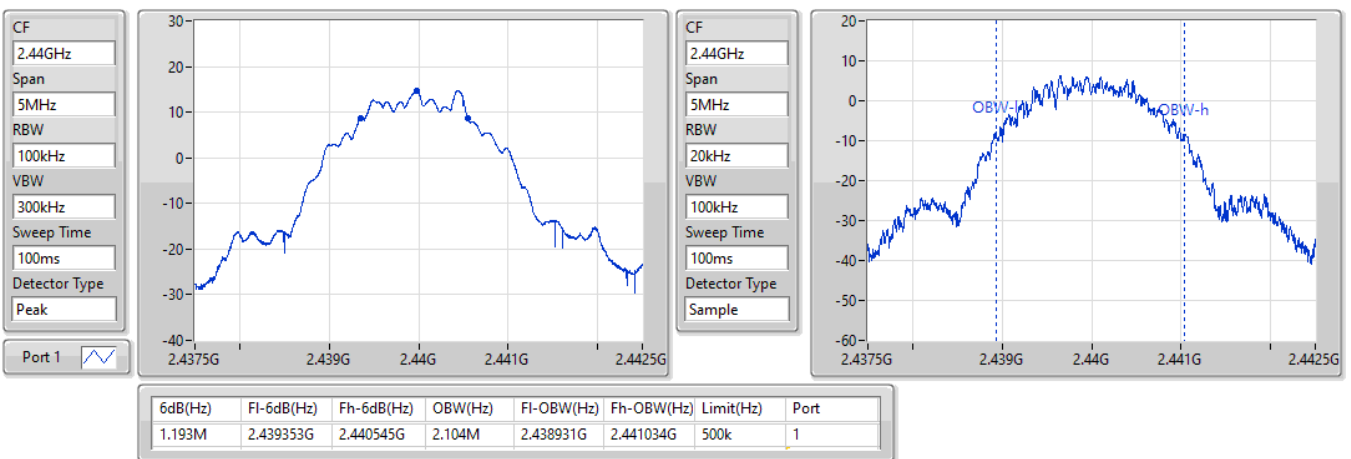


BT-LE(2Mbps)
2402MHz
EBW-DTS

16/08/2021


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

16/08/2021

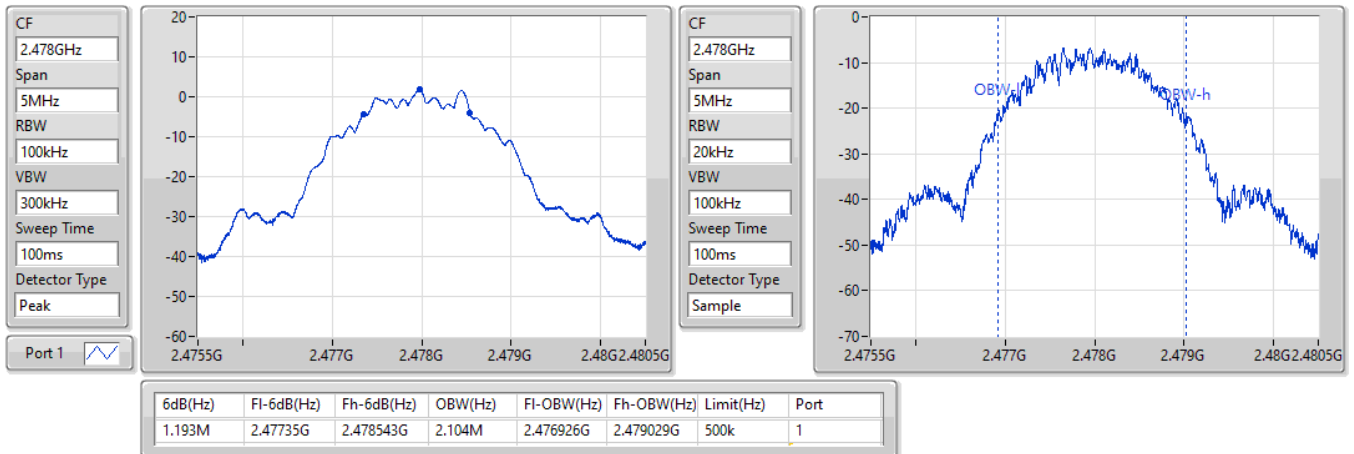


BT-LE(2Mbps)

2478MHz

EBW-DTS

16/08/2021

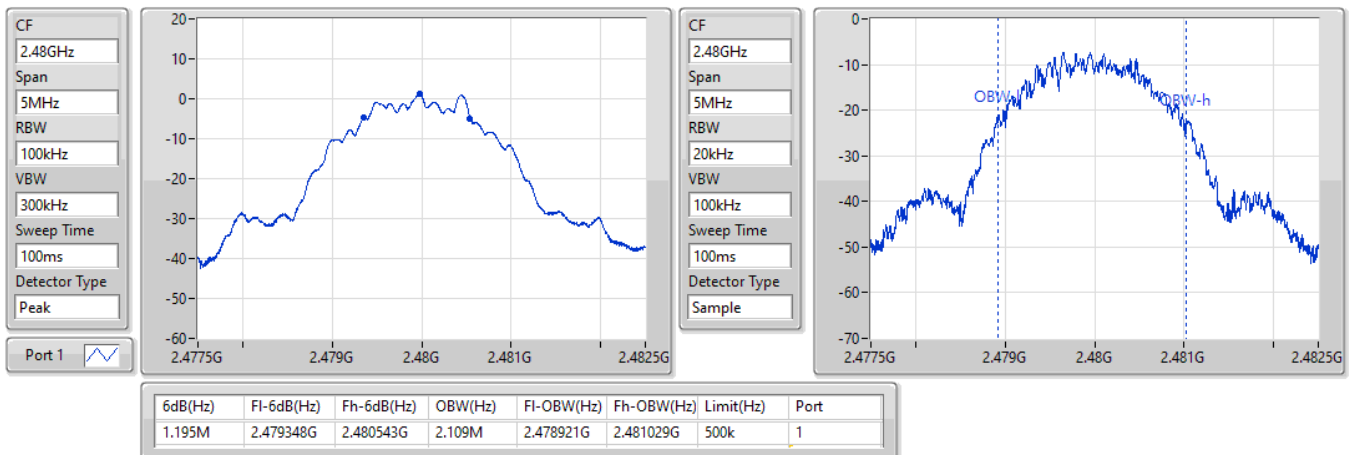


BT-LE(2Mbps)

2480MHz

EBW-DTS

16/08/2021





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	15.71	0.03724
BT-LE(2Mbps)	15.78	0.03784

**Result**

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	1.90	15.36	30.00
2440MHz	Pass	1.90	15.71	30.00
2478MHz	Pass	1.90	11.58	30.00
2480MHz	Pass	1.90	5.69	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	1.90	15.41	30.00
2440MHz	Pass	1.90	15.78	30.00
2478MHz	Pass	1.90	2.89	30.00
2480MHz	Pass	1.90	5.49	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LF(1Mbps)	-0.14
BT-LF(2Mbps)	-1.72

RBW = 3kHz;

Result

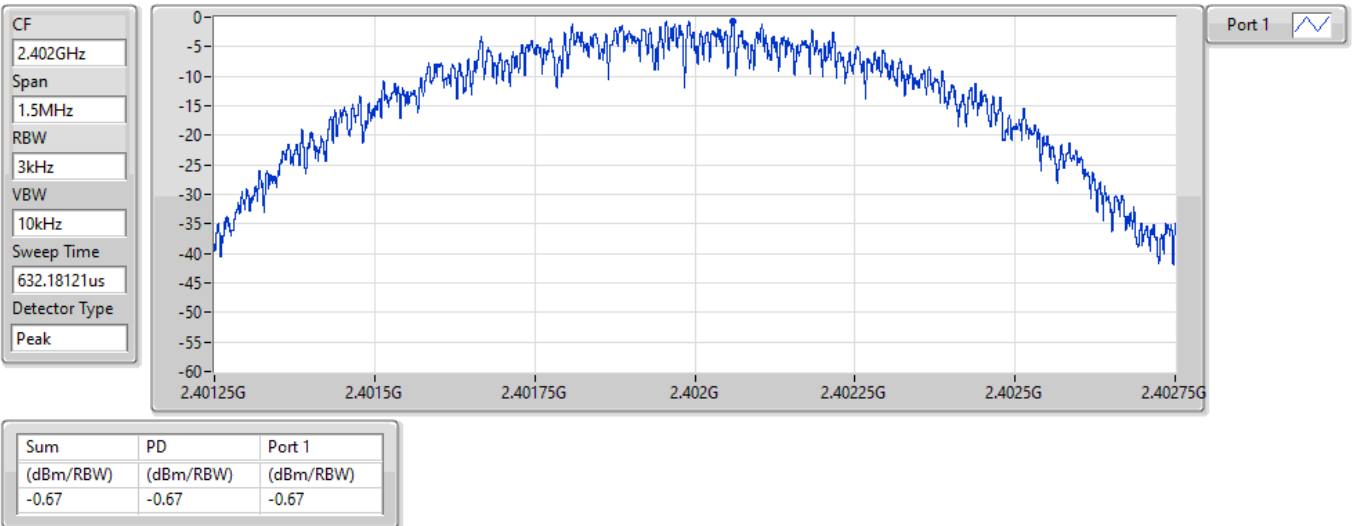
Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	1.90	-0.67	8.00
2440MHz	Pass	1.90	-0.14	8.00
2478MHz	Pass	1.90	-4.18	8.00
2480MHz	Pass	1.90	-10.34	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	1.90	-2.16	8.00
2440MHz	Pass	1.90	-1.72	8.00
2478MHz	Pass	1.90	-14.87	8.00
2480MHz	Pass	1.90	-12.33	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

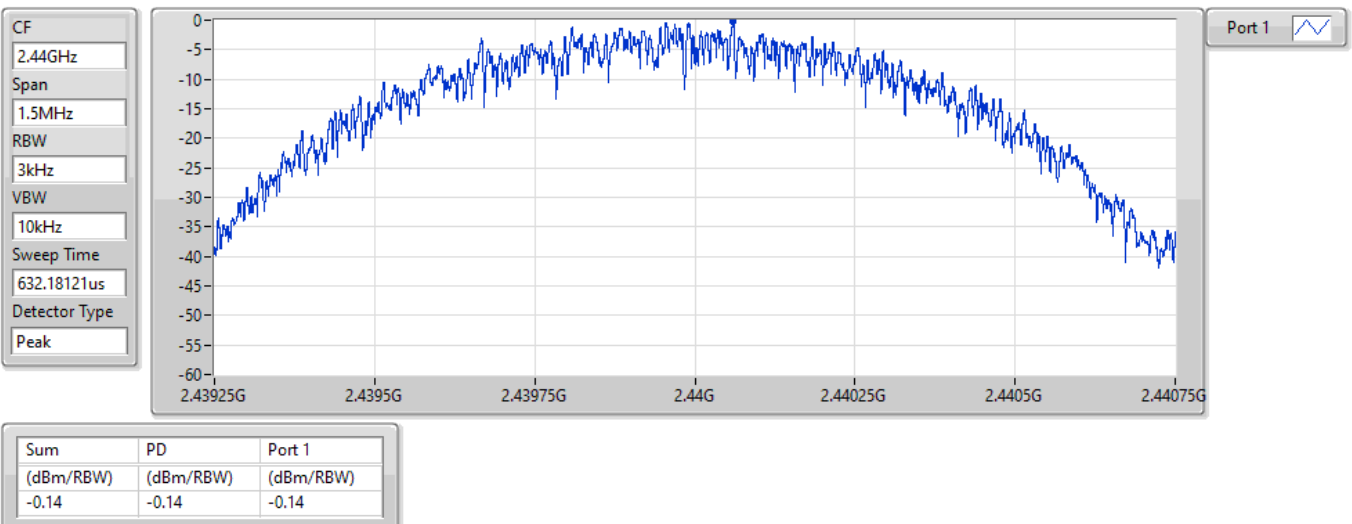
16/08/2021



BT-LE(1Mbps)

2440MHz

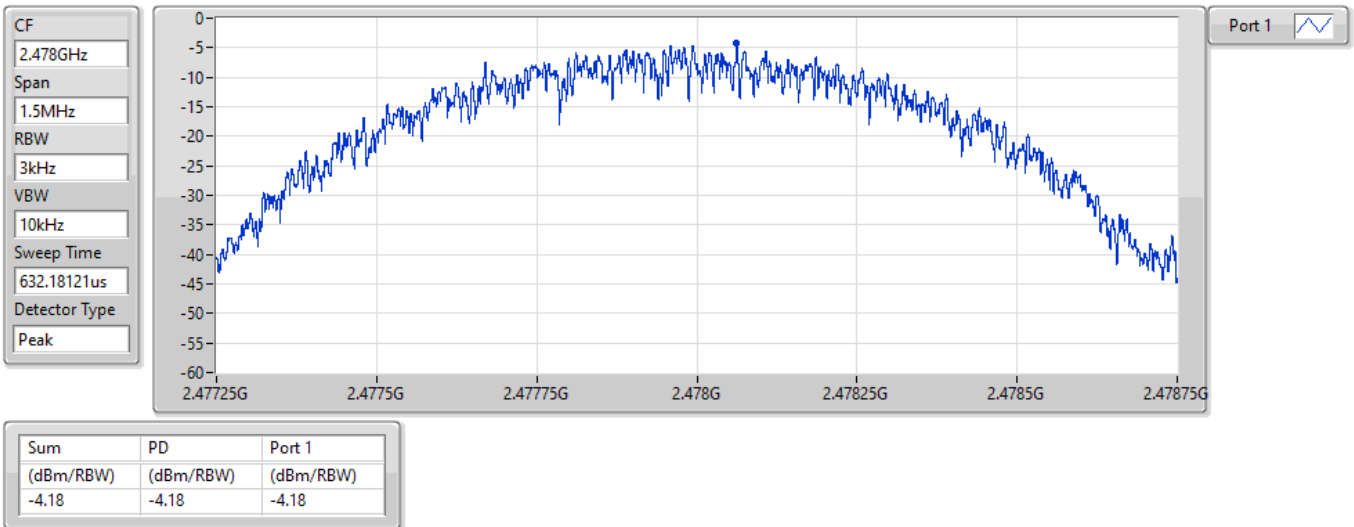
16/08/2021



BT-LE(1Mbps)

2478MHz

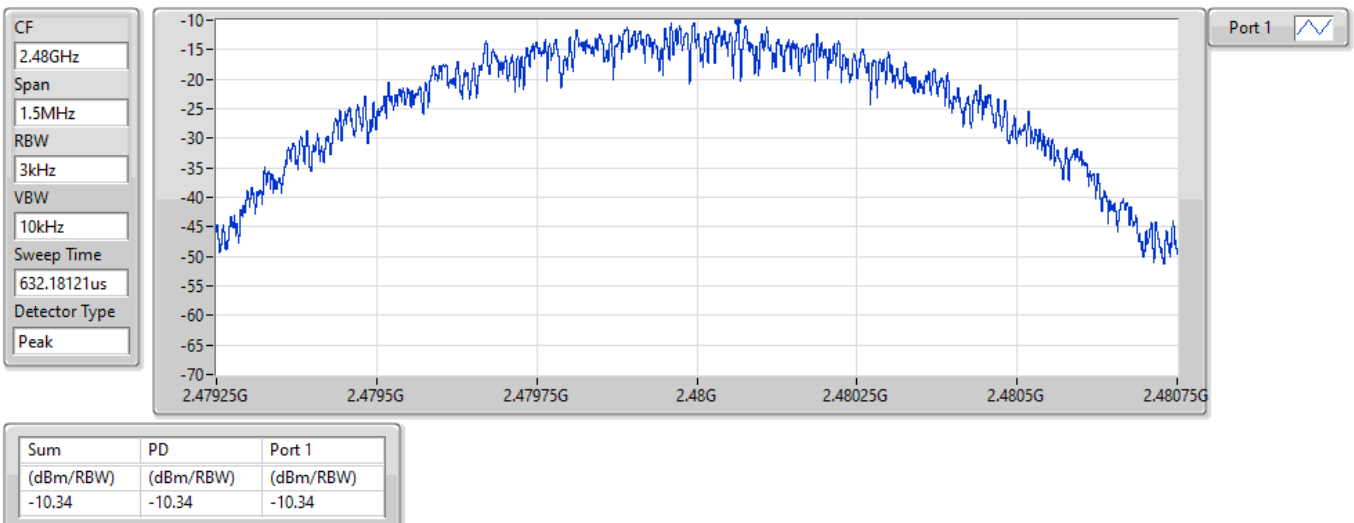
16/08/2021



BT-LE(1Mbps)

2480MHz

16/08/2021

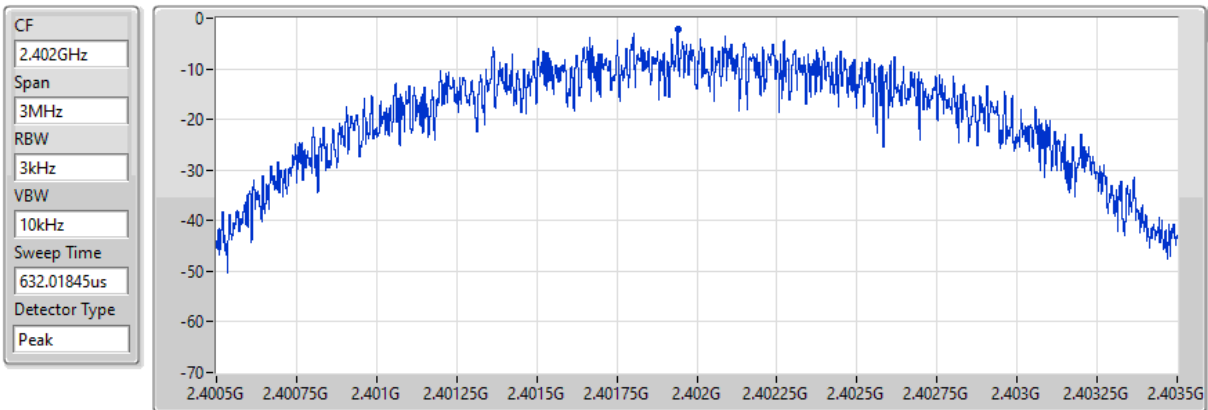


BT-LE(2Mbps)

PSD

2402MHz

16/08/2021



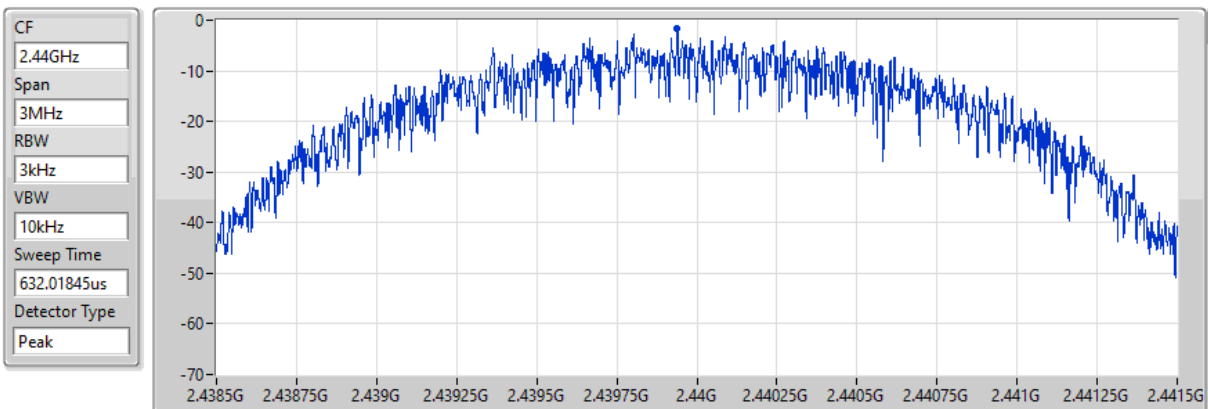
Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-2.16	-2.16	-2.16

BT-LE(2Mbps)

PSD

2440MHz

16/08/2021

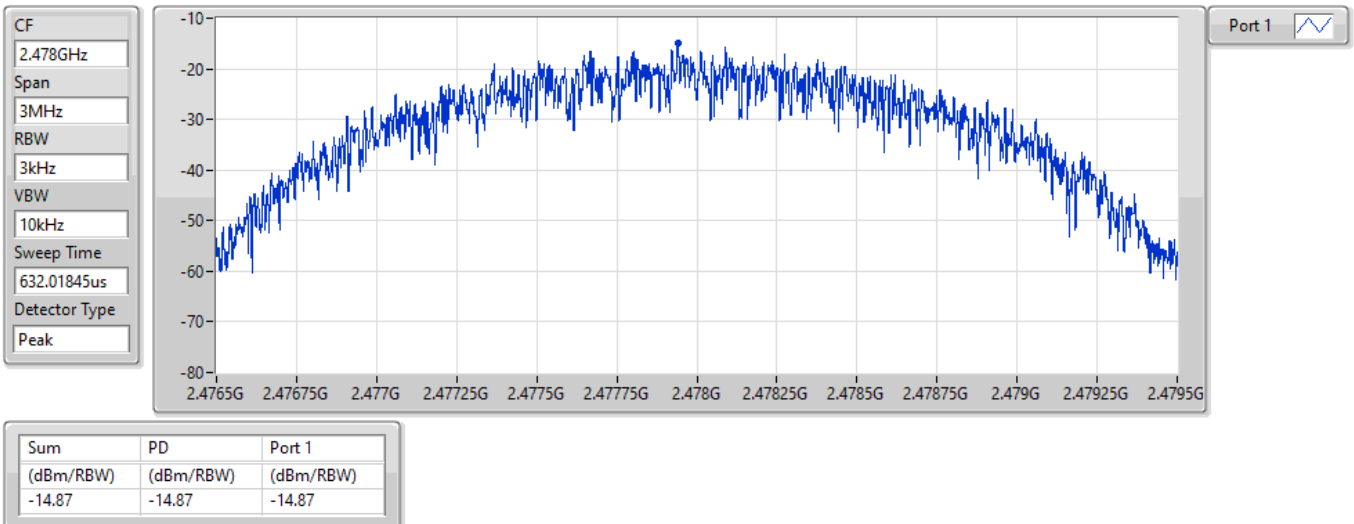


Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-1.72	-1.72	-1.72

BT-LE(2Mbps)

2478MHz

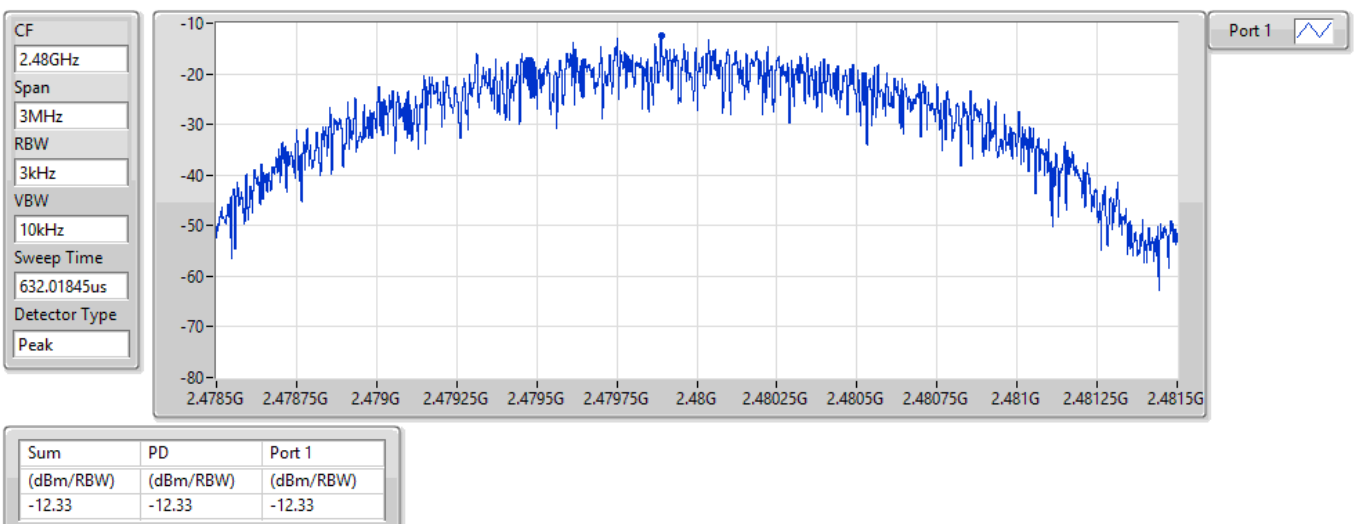
16/08/2021



BT-LE(2Mbps)

2480MHz

08/09/2021



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	2.44021G	15.08	-14.92	159.84M	-21.86	2.39999G	-24.48	2.4G	-24.42	2.48402G	-50.52	24.49664G	-46.50	1
BT-LE(2Mbps)	Pass	2.43995G	14.62	-15.38	159.84M	-22.40	2.39997G	-16.74	2.4G	-19.70	2.50068G	-51.47	15.13247G	-46.20	1

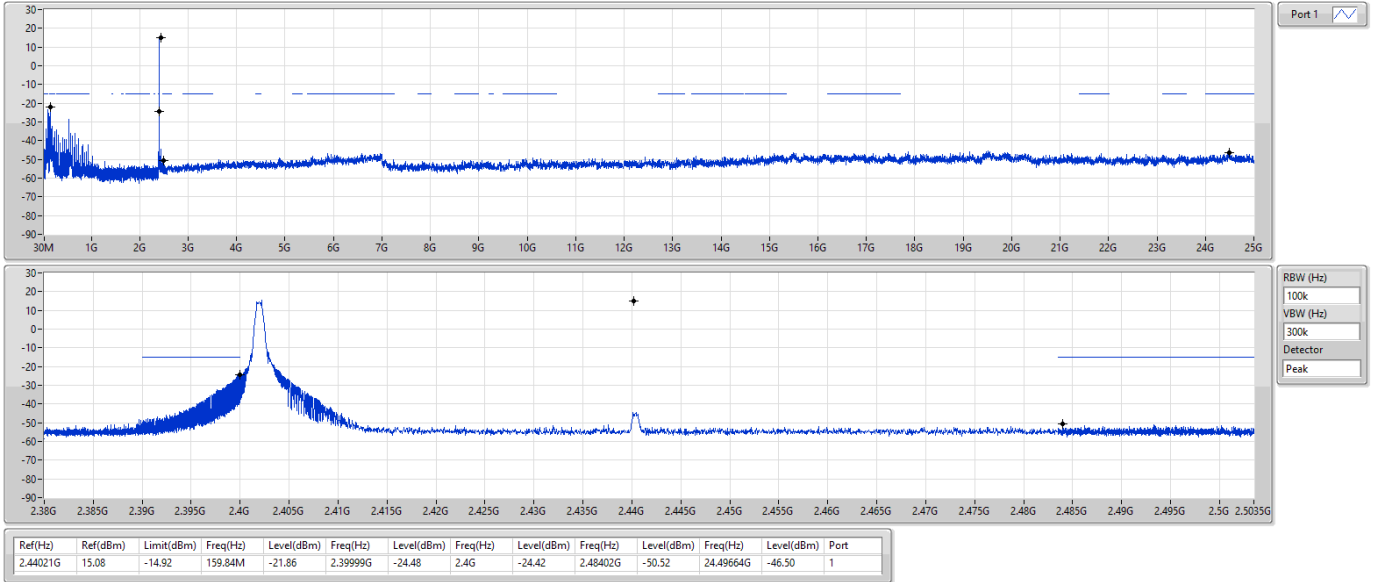
Result

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	2.44021G	15.08	-14.92	159.84M	-21.86	2.39999G	-24.48	2.4G	-24.42	2.48402G	-50.52	24.49664G	-46.50	1
2440MHz	Pass	2.44021G	15.08	-14.92	159.84M	-22.30	2.39635G	-52.03	2.4835G	-54.62	2.4993G	-51.01	15.19996G	-45.96	1
2478MHz	Pass	2.44021G	15.08	-14.92	95.8M	-23.04	2.39218G	-51.27	2.4835G	-49.96	2.48352G	-37.63	15.19434G	-45.76	1
2480MHz	Pass	2.44021G	15.08	-14.92	159.84M	-22.28	2.39784G	-52.37	2.4835G	-46.27	2.4837G	-37.85	6.96624G	-45.70	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.43995G	14.62	-15.38	159.84M	-22.40	2.39997G	-16.74	2.4G	-19.70	2.50068G	-51.47	15.13247G	-46.20	1
2440MHz	Pass	2.43995G	14.62	-15.38	159.84M	-24.10	2.39712G	-51.82	2.4G	-55.38	2.50264G	-51.18	24.53882G	-45.29	1
2478MHz	Pass	2.43995G	14.62	-15.38	159.84M	-21.88	2.39968G	-51.84	2.4835G	-54.42	2.4837G	-45.63	17.10373G	-44.84	1
2480MHz	Pass	2.43995G	14.62	-15.38	159.84M	-21.91	2.3965G	-51.52	2.4835G	-50.71	2.48364G	-40.66	24.43196G	-46.18	1

BT-LE(1Mbps)

CSEndB-DTS

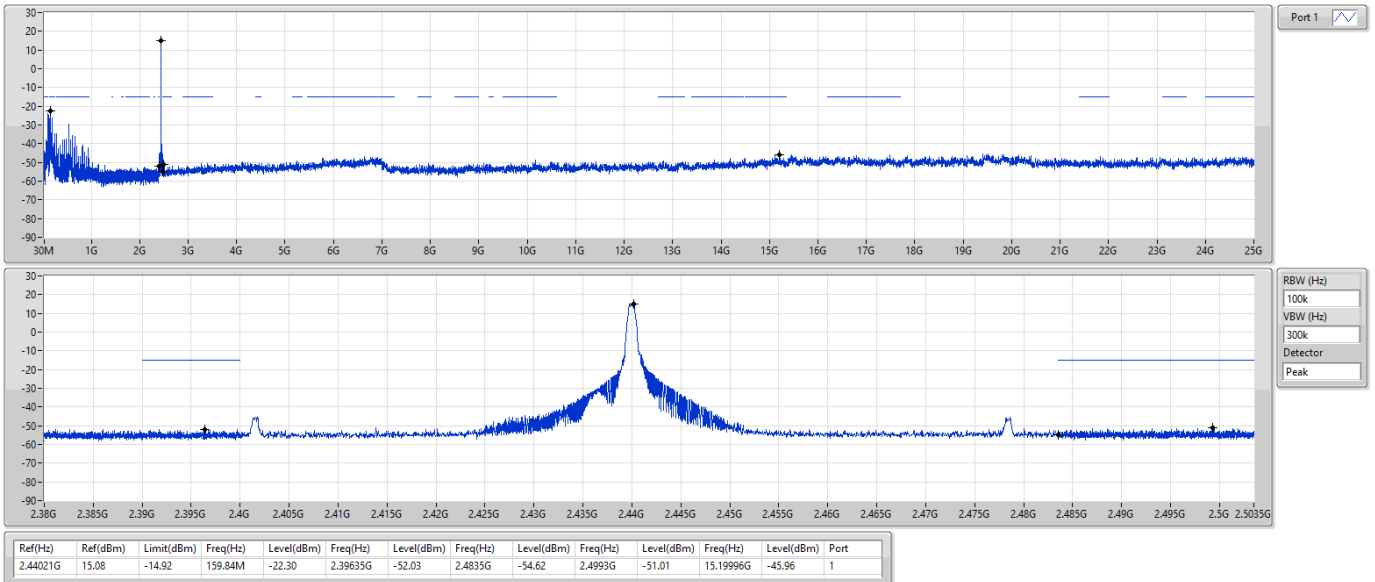
2402MHz



BT-LE(1Mbps)

CSEndB-DTS

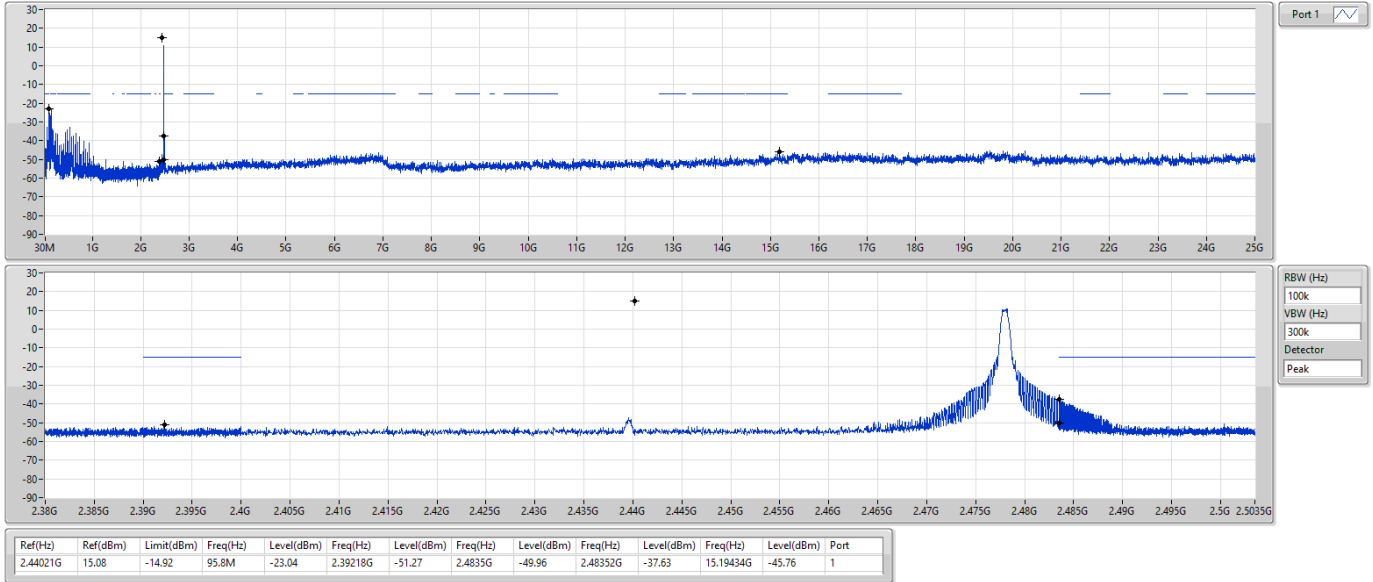
2440MHz



BT-LE(1Mbps)

CSEndB-DTS

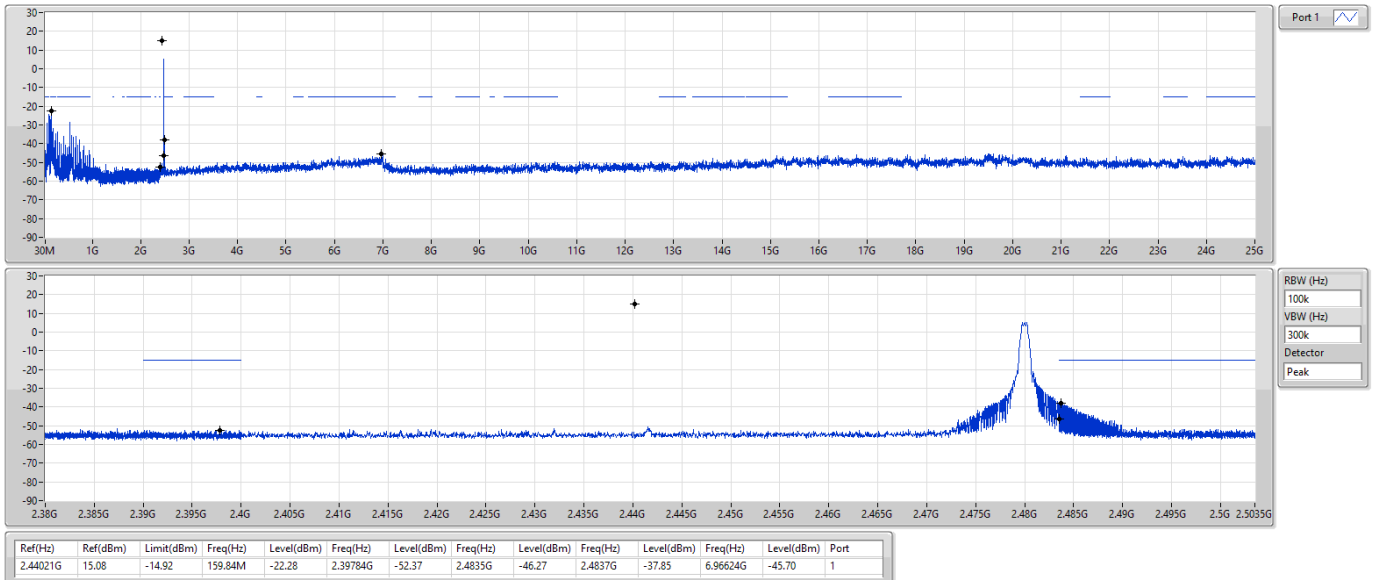
2478MHz



BT-LE(1Mbps)

CSEndB-DTS

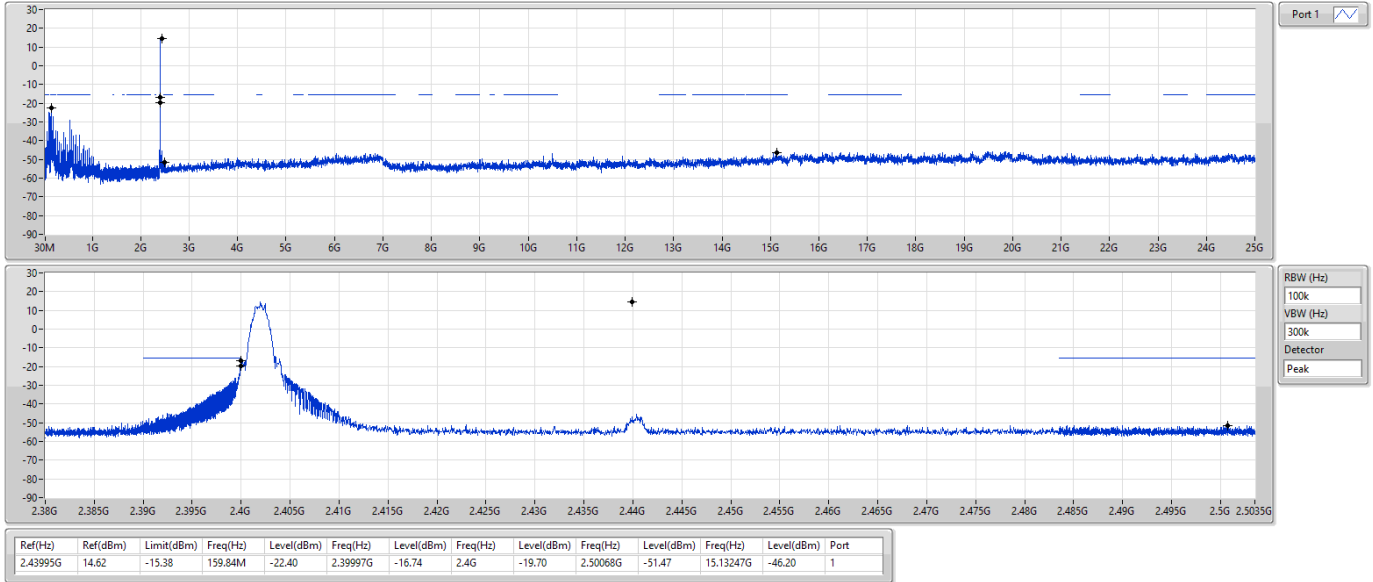
2480MHz



BT-LE(2Mbps)

CSEndB-DTS

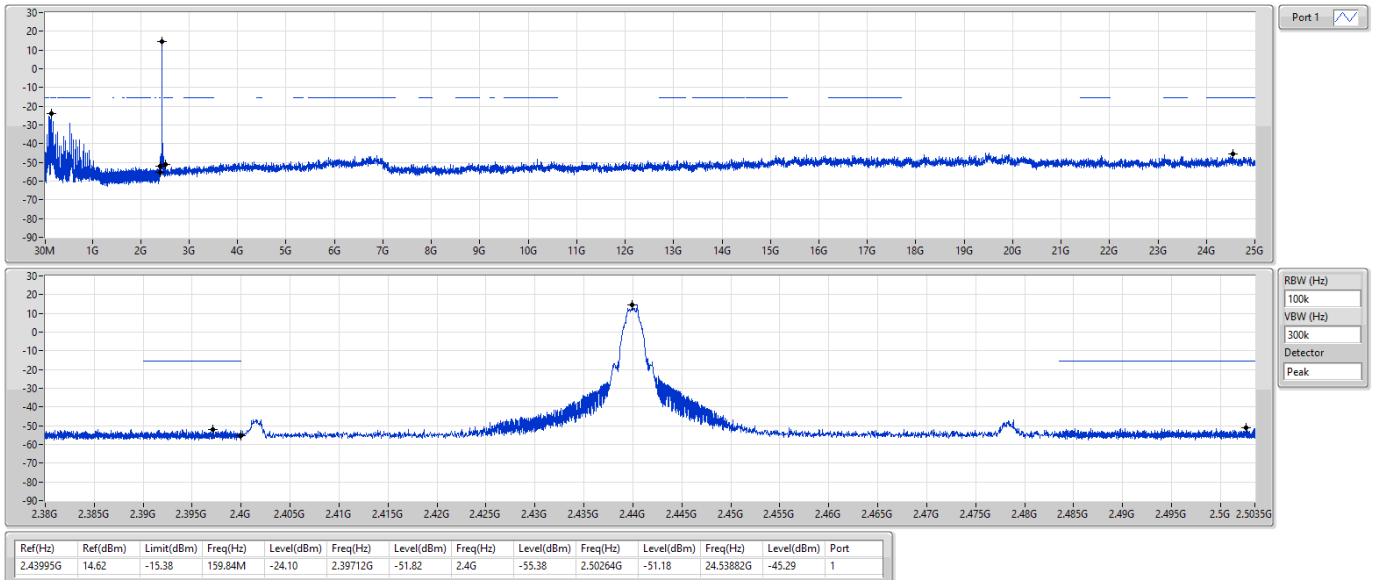
2402MHz



BT-LE(2Mbps)

CSEndB-DTS

2440MHz

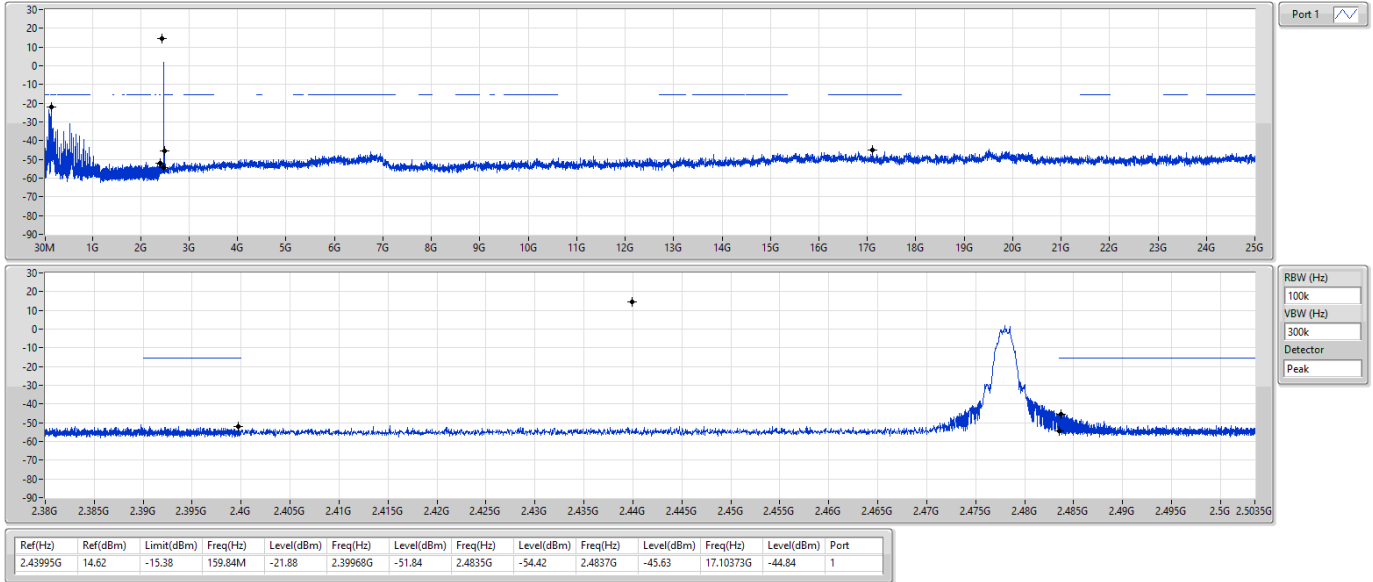


BT-LE(2Mbps)

CSEndB-DTS

2478MHz

16/08/2021

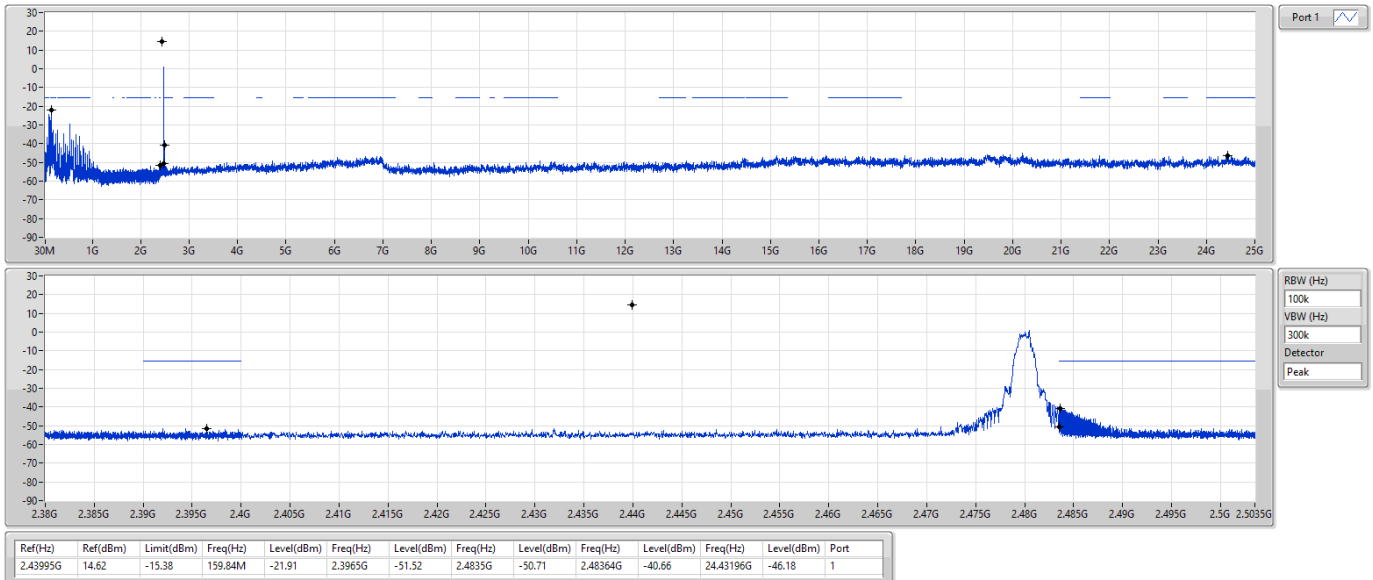


BT-LE(2Mbps)

CSEndB-DTS

2480MHz

16/08/2021





Radiated Emissions below 1GHz

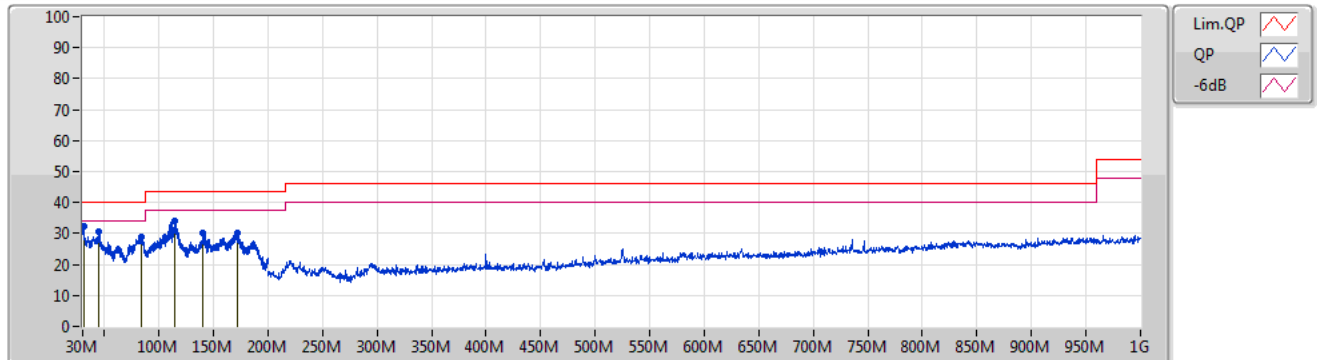
Appendix F.1

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	30.68M	32.24	40.00	-7.76	Vertical

30/08/2021

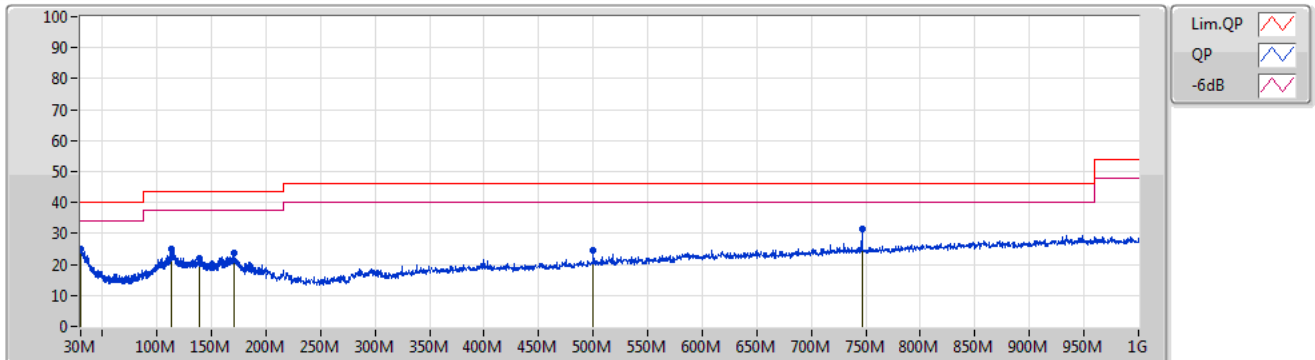
Mode 1



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)
PK	30.68M	32.24	40.00	-7.76	-3.26	3	Vertical	300	1.00	"Worst"	35.50	23.60	1.03	27.89
PK	45.05M	30.70	40.00	-9.30	-10.66	3	Vertical	293	1.00	-	41.36	15.87	1.40	27.93
PK	84.32M	28.84	40.00	-11.16	-12.11	3	Vertical	32	2.00	-	40.95	13.55	2.19	27.85
PK	113.9M	33.94	43.50	-9.56	-7.00	3	Vertical	246	1.00	-	40.94	18.08	2.61	27.69
PK	140.33M	30.36	43.50	-13.14	-7.42	3	Vertical	36	1.00	-	37.78	17.12	3.00	27.54
PK	172.46M	30.33	43.50	-13.17	-8.48	3	Vertical	48	4.00	-	38.81	15.56	3.39	27.43

30/08/2021

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)
PK	30.17M	24.88	40.00	-15.12	-3.13	3	Horizontal	255	1.00	-	28.01	23.74	1.01	27.88
PK	112.71M	24.91	43.50	-18.59	-7.08	3	Horizontal	331	2.00	-	31.99	18.03	2.59	27.70
PK	138.89M	22.07	43.50	-21.43	-7.35	3	Horizontal	1	1.00	-	29.42	17.22	2.98	27.55
PK	171.1M	23.62	43.50	-19.88	-8.46	3	Horizontal	8	1.00	-	32.08	15.61	3.37	27.44
PK	500M	24.53	46.00	-21.47	-5.58	3	Horizontal	342	2.00	-	30.11	17.52	4.80	27.90
PK	746.4M	31.28	46.00	-14.72	-1.20	3	Horizontal	55	1.00	"Worst"	32.48	20.41	5.99	27.60

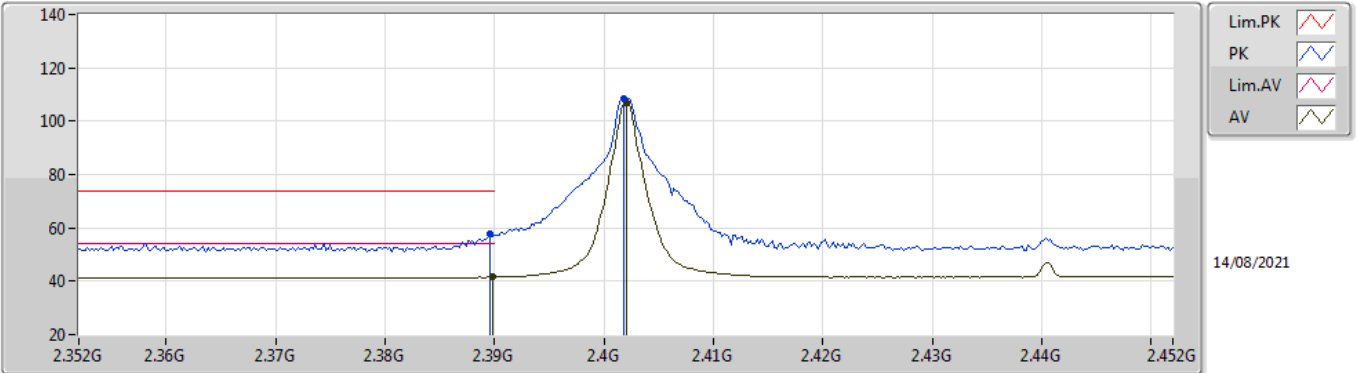


Summary

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	2.4835G	73.89	74.00	-0.11	3	Horizontal	308	1.18	-

BT-LE(1Mbps)

2402MHz_TX

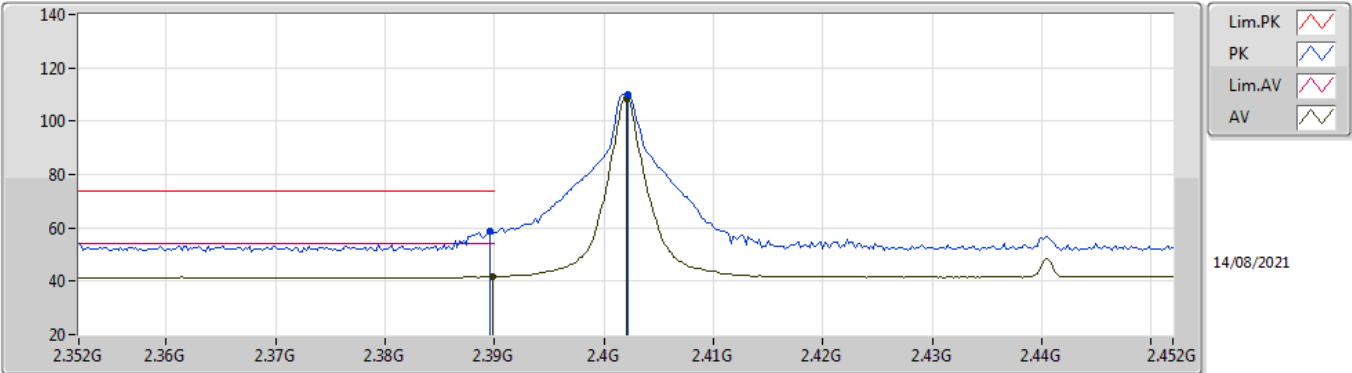


EUT Z_1TX
Setting 20
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3896G	57.69	74.00	-16.31	28.12	3	Vertical	227	3.00	-	27.38	2.19	-	
AV	2.3898G	41.54	54.00	-12.46	11.97	3	Vertical	227	3.00	-	27.38	2.19	-	
PK	2.4018G	108.29	Inf	-Inf	78.69	3	Vertical	227	3.00	-	27.40	2.20	-	
AV	2.402G	106.88	Inf	-Inf	77.28	3	Vertical	227	3.00	-	27.40	2.20	-	

BT-LE(1Mbps)

2402MHz_TX

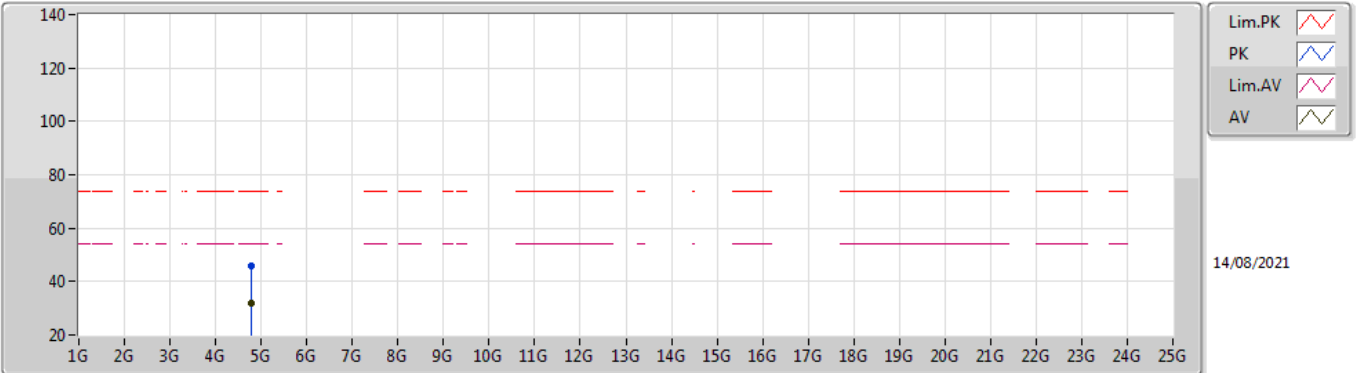


EUT_Z_1TX
Setting 20
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3896G	58.81	74.00	-15.19	29.24	3	Horizontal	139	1.37	-	27.38	2.19	-	
AV	2.3898G	41.73	54.00	-12.27	12.16	3	Horizontal	139	1.37	-	27.38	2.19	-	
PK	2.4022G	109.91	Inf	-Inf	80.31	3	Horizontal	139	1.37	-	27.40	2.20	-	
AV	2.402G	108.52	Inf	-Inf	78.92	3	Horizontal	139	1.37	-	27.40	2.20	-	

BT-LE(1Mbps)

2402MHz_TX

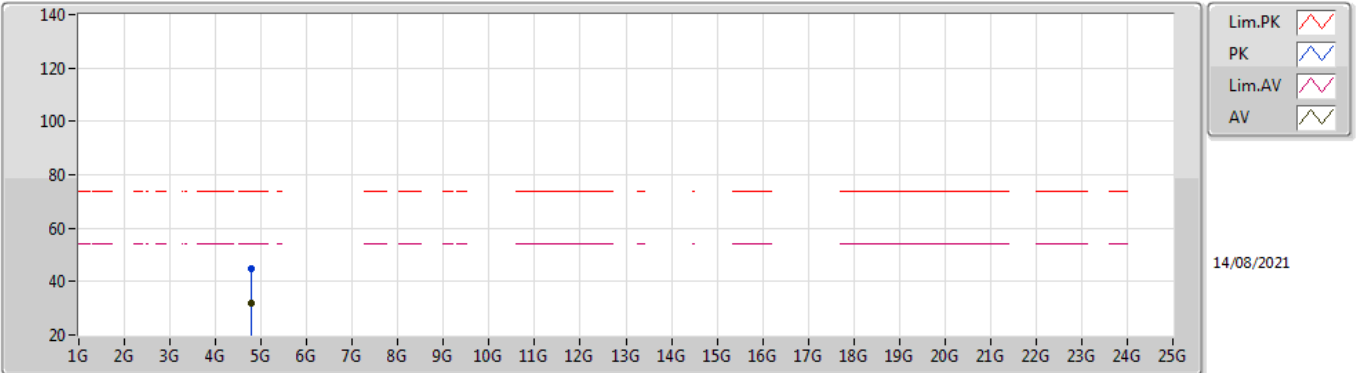


EUT_Z_1TX
Setting 20
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.79326G	45.71	74.00	-28.29	41.60	3	Vertical	149	1.80	-	32.11	4.99	32.99
AV	4.79482G	32.08	54.00	-21.92	27.97	3	Vertical	149	1.80	-	32.11	4.99	32.99

BT-LE(1Mbps)

2402MHz_TX

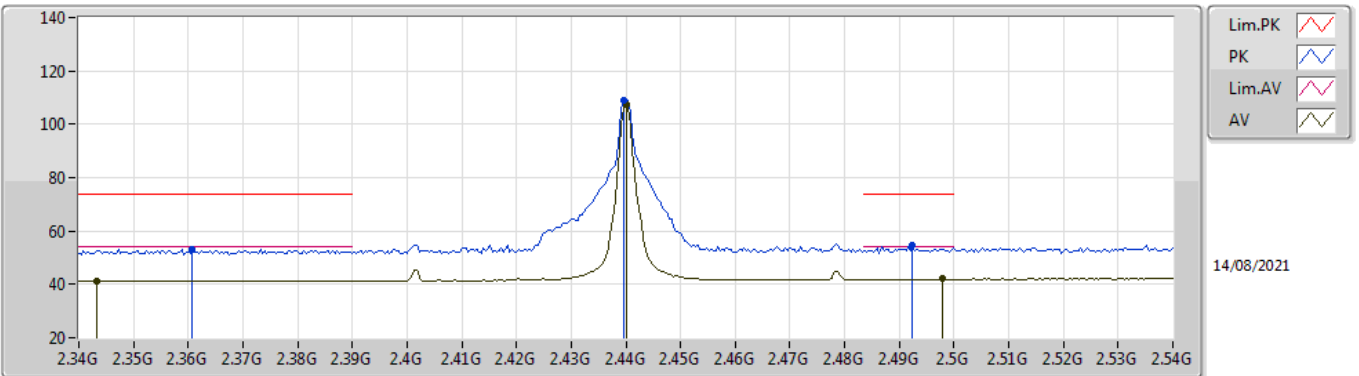


EUT_Z_1TX
Setting 20
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.79068G	44.94	74.00	-29.06	40.82	3	Horizontal	190	1.50	-	32.12	4.99	32.99
AV	4.79434G	32.05	54.00	-21.95	27.94	3	Horizontal	190	1.50	-	32.11	4.99	32.99

BT-LE(1Mbps)

2440MHz_TX

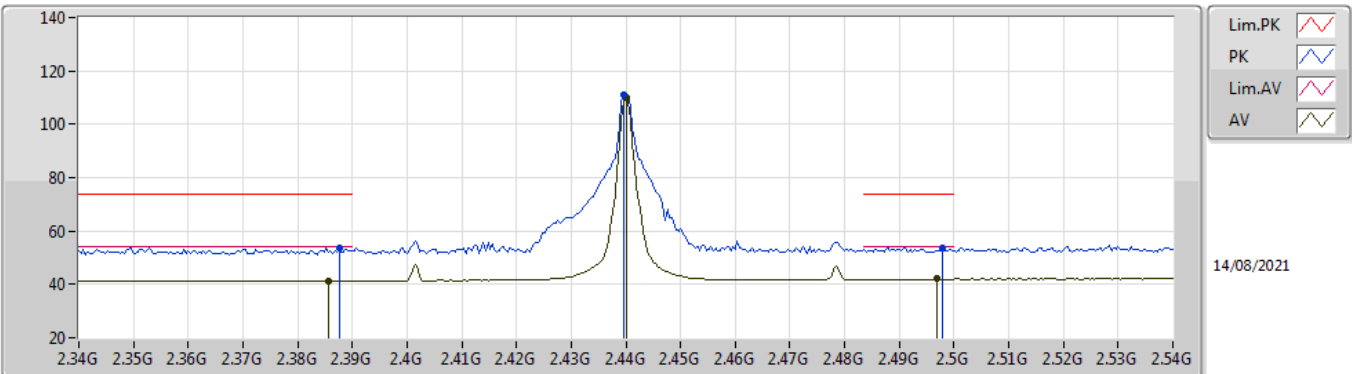


EUT_Z_1TX
Setting 20
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3608G	53.03	74.00	-20.97	23.55	3	Vertical	234	2.96	-	27.32	2.16	-
AV	2.3432G	41.38	54.00	-12.62	11.94	3	Vertical	234	2.96	-	27.30	2.14	-
PK	2.4396G	108.96	Inf	-Inf	79.24	3	Vertical	234	2.96	-	27.48	2.24	-
AV	2.44G	107.59	Inf	-Inf	77.87	3	Vertical	234	2.96	-	27.48	2.24	-
PK	2.4924G	54.44	74.00	-19.56	24.40	3	Vertical	234	2.96	-	27.75	2.29	-
AV	2.498G	42.00	54.00	-12.00	11.91	3	Vertical	234	2.96	-	27.79	2.30	-

BT-LE(1Mbps)

2440MHz_TX

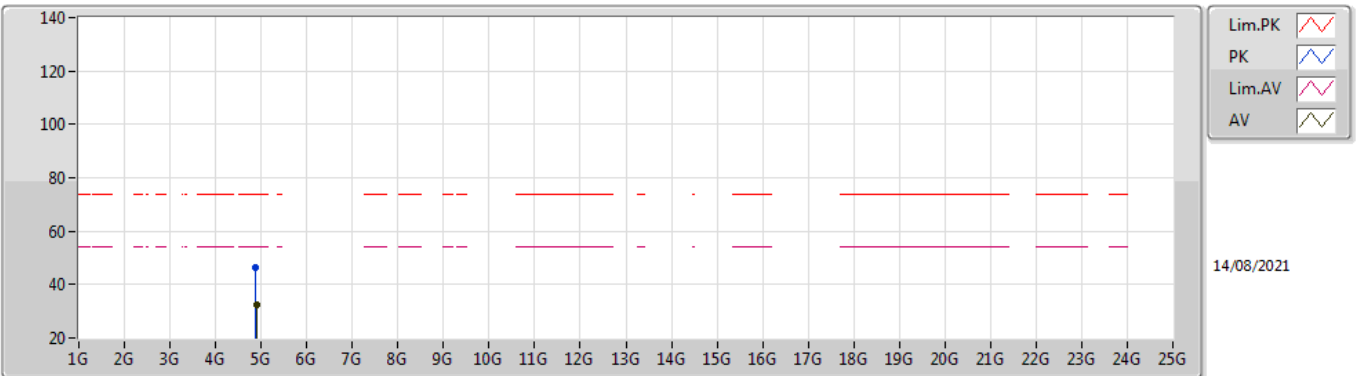


EUT_Z_1TX
Setting 20
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3876G	53.83	74.00	-20.17	24.26	3	Horizontal	140	1.21	-	27.38	2.19	-
AV	2.3856G	41.40	54.00	-12.60	11.84	3	Horizontal	140	1.21	-	27.37	2.19	-
PK	2.4396G	111.17	Inf	-Inf	81.45	3	Horizontal	140	1.21	-	27.48	2.24	-
AV	2.44G	109.78	Inf	-Inf	80.06	3	Horizontal	140	1.21	-	27.48	2.24	-
PK	2.498G	53.66	74.00	-20.34	23.57	3	Horizontal	140	1.21	-	27.79	2.30	-
AV	2.4968G	41.99	54.00	-12.01	11.91	3	Horizontal	140	1.21	-	27.78	2.30	-

BT-LE(1Mbps)

2440MHz_TX

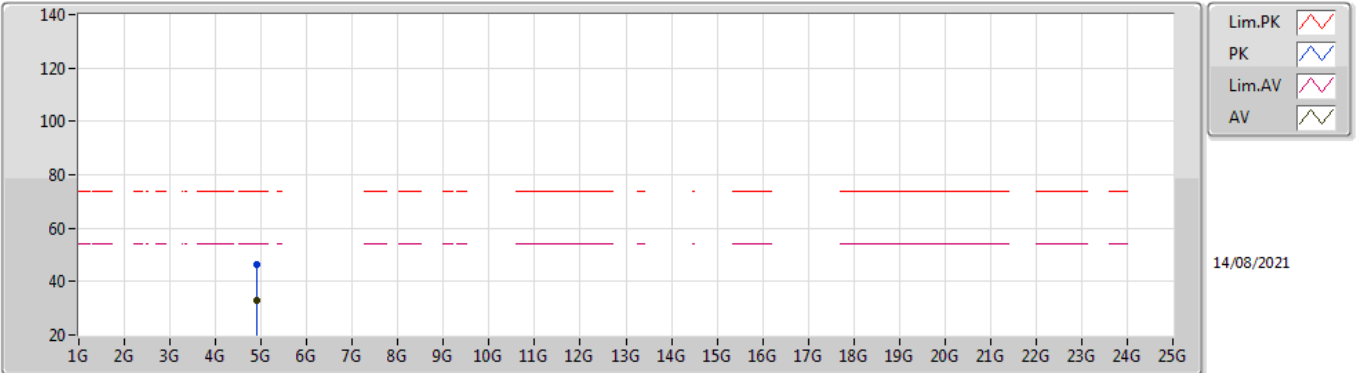


EUT_Z_1TX
Setting 20
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.88438G	46.34	74.00	-27.66	41.81	3	Vertical	144	1.76	-	32.47	5.04	32.98	
AV	4.88942G	32.65	54.00	-21.35	28.11	3	Vertical	144	1.76	-	32.48	5.04	32.98	

BT-LE(1Mbps)

2440MHz_TX

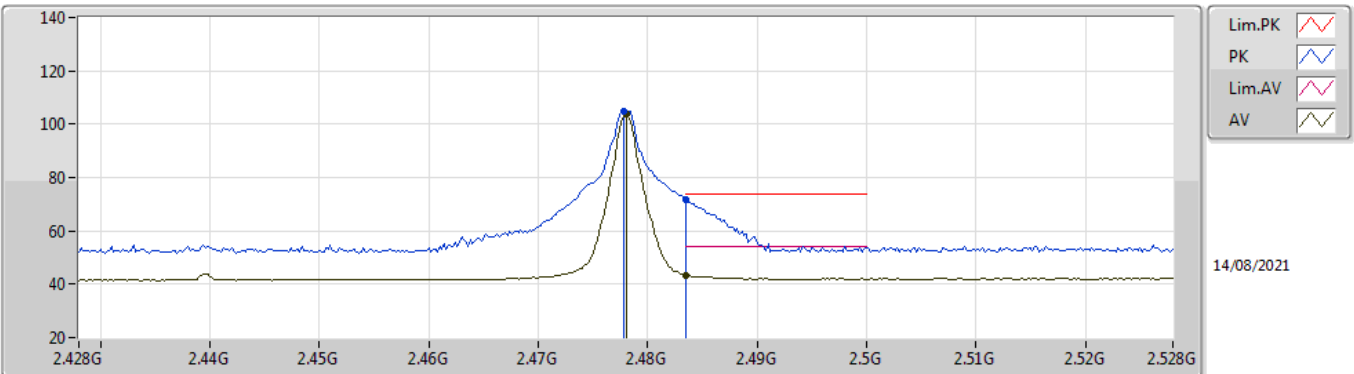


EUT_Z_1TX
Setting 20
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.89428G	46.30	74.00	-27.70	41.73	3	Horizontal	56	1.80	-	32.49	5.05	32.97	
AV	4.89296G	32.82	54.00	-21.18	28.25	3	Horizontal	56	1.80	-	32.49	5.05	32.97	

BT-LE(1Mbps)

2478MHz_TX

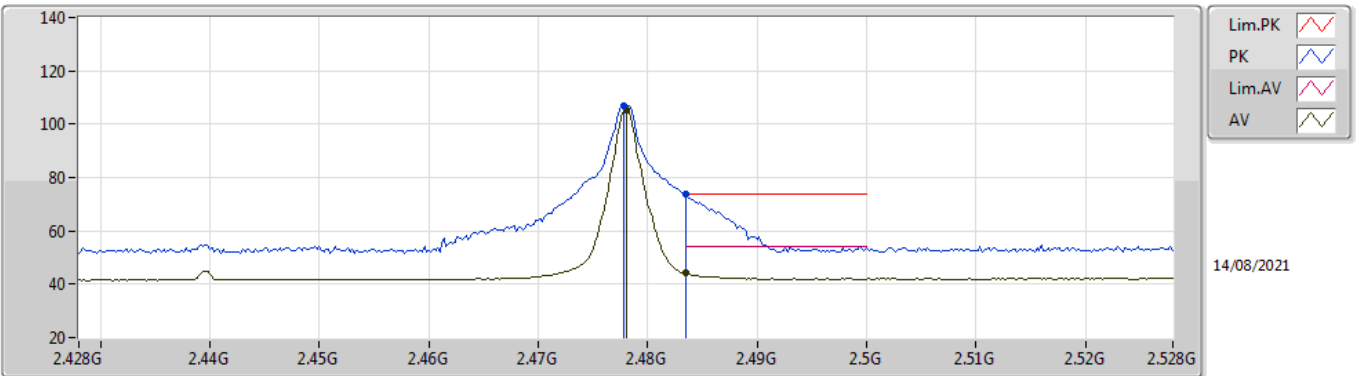


EUT_Z_1TX
Setting 17
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4778G	105.03	Inf	-Inf	75.08	3	Vertical	231	2.59	-	27.67	2.28	-	
AV	2.478G	103.58	Inf	-Inf	73.63	3	Vertical	231	2.59	-	27.67	2.28	-	
PK	2.4835G	71.94	74.00	-2.06	41.96	3	Vertical	231	2.59	-	27.70	2.28	-	
AV	2.4835G	43.38	54.00	-10.62	13.40	3	Vertical	231	2.59	-	27.70	2.28	-	

BT-LE(1Mbps)

2478MHz_TX

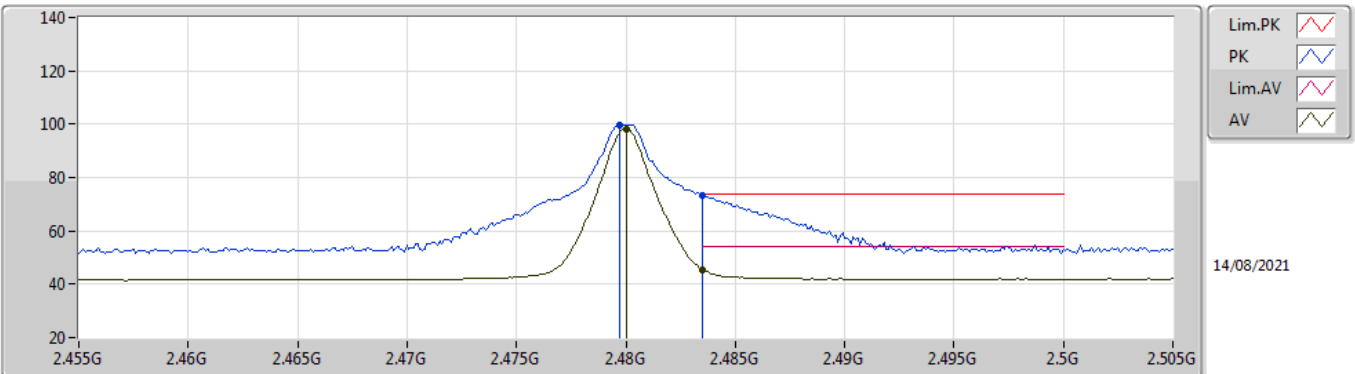


EUT_Z_1TX
Setting 17
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4778G	106.92	Inf	-Inf	76.97	3	Horizontal	139	1.18	-	27.67	2.28	-	
AV	2.478G	105.48	Inf	-Inf	75.53	3	Horizontal	139	1.18	-	27.67	2.28	-	
PK	2.4835G	73.65	74.00	-0.35	43.67	3	Horizontal	139	1.18	-	27.70	2.28	-	
AV	2.4835G	44.08	54.00	-9.92	14.10	3	Horizontal	139	1.18	-	27.70	2.28	-	

BT-LE(1Mbps)

2480MHz_TX

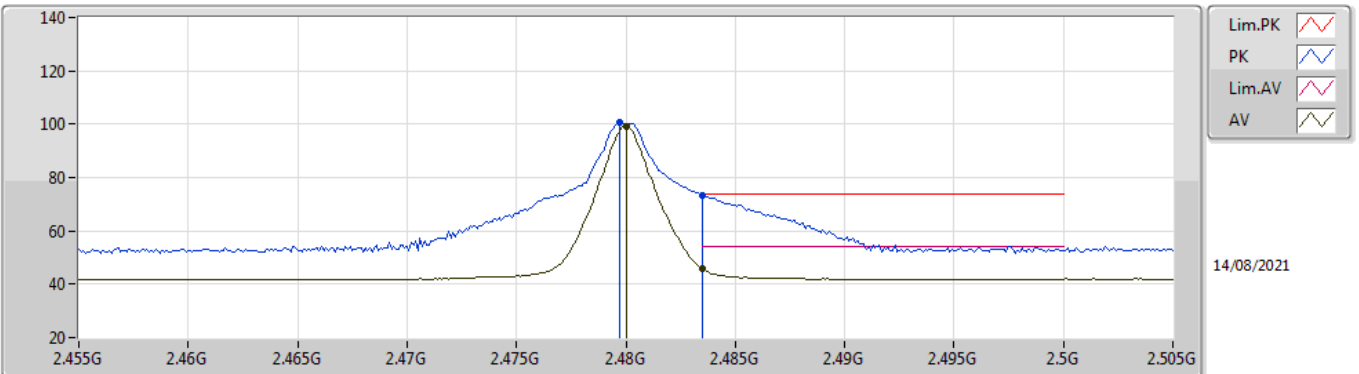


EUT_Z_1TX
Setting 12
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4797G	99.82	Inf	-Inf	69.86	3	Vertical	232	2.84	-	27.68	2.28	-	
AV	2.48G	98.36	Inf	-Inf	68.40	3	Vertical	232	2.84	-	27.68	2.28	-	
PK	2.4835G	73.23	74.00	-0.77	43.25	3	Vertical	232	2.84	-	27.70	2.28	-	
AV	2.4835G	45.53	54.00	-8.47	15.55	3	Vertical	232	2.84	-	27.70	2.28	-	

BT-LE(1Mbps)

2480MHz_TX

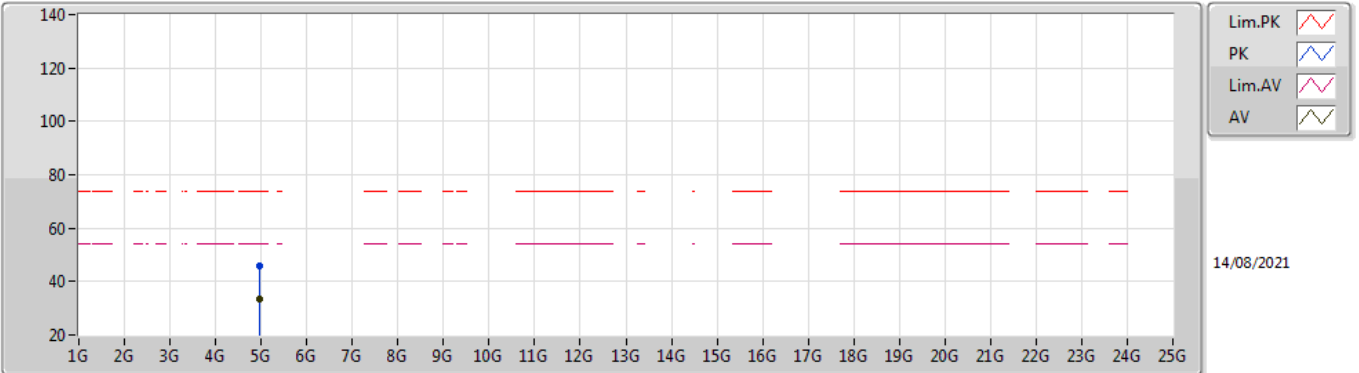


EUT_Z_1TX
Setting 12
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4797G	100.55	Inf	-Inf	70.59	3	Horizontal	134	1.00	-	27.68	2.28	-	
AV	2.48G	99.05	Inf	-Inf	69.09	3	Horizontal	134	1.00	-	27.68	2.28	-	
PK	2.4835G	73.51	74.00	-0.49	43.53	3	Horizontal	134	1.00	-	27.70	2.28	-	
AV	2.4835G	45.70	54.00	-8.30	15.72	3	Horizontal	134	1.00	-	27.70	2.28	-	

BT-LE(1Mbps)

2480MHz_TX

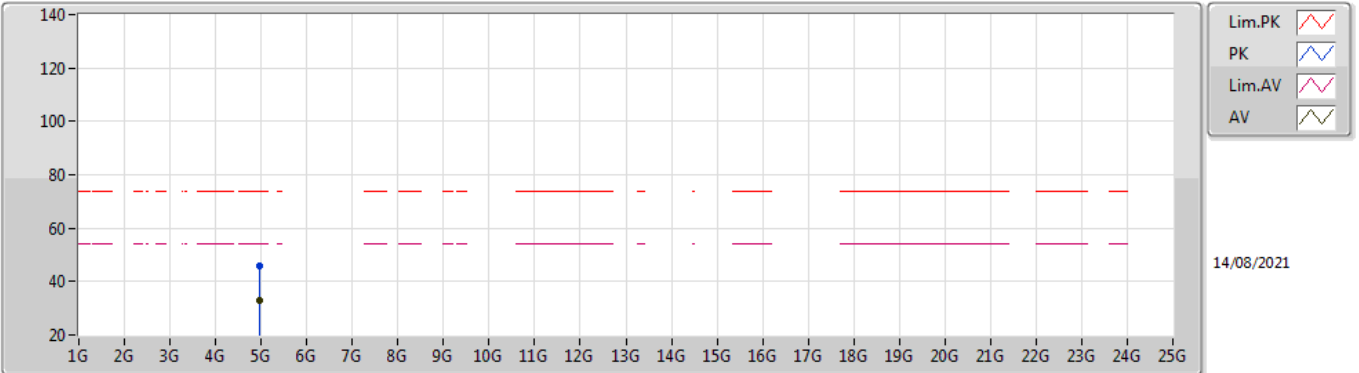


EUT_Z_1TX
Setting 12
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.97326G	45.88	74.00	-28.12	41.00	3	Vertical	15	1.24	-	32.75	5.09	32.96
AV	4.97266G	33.25	54.00	-20.75	28.37	3	Vertical	15	1.24	-	32.75	5.09	32.96

BT-LE(1Mbps)

2480MHz_TX

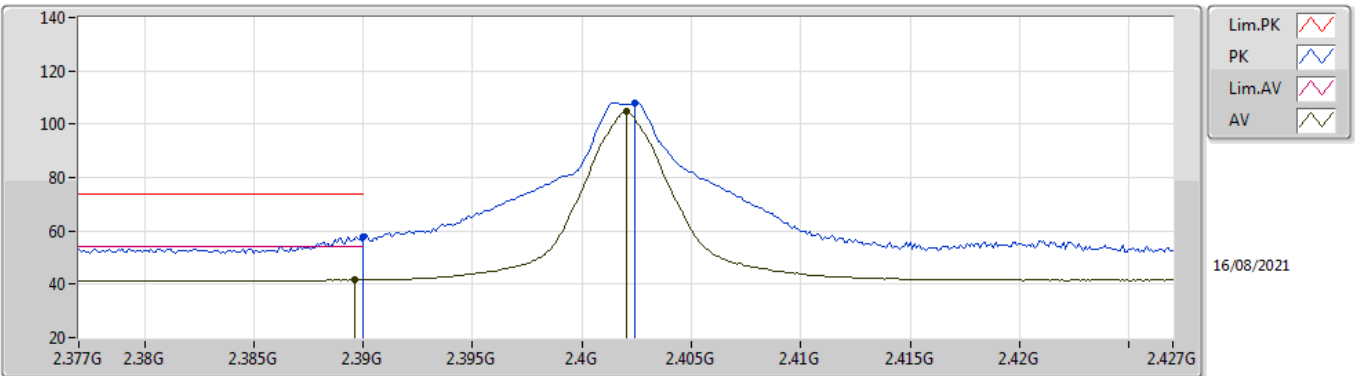


EUT_Z_1TX
Setting 12
01-A-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.9639G	46.04	74.00	-27.96	41.16	3	Horizontal	16	1.62	-	32.77	5.08	32.97	
AV	4.97308G	33.08	54.00	-20.92	28.20	3	Horizontal	16	1.62	-	32.75	5.09	32.96	

BT-LE(2Mbps)

2402MHz_TX

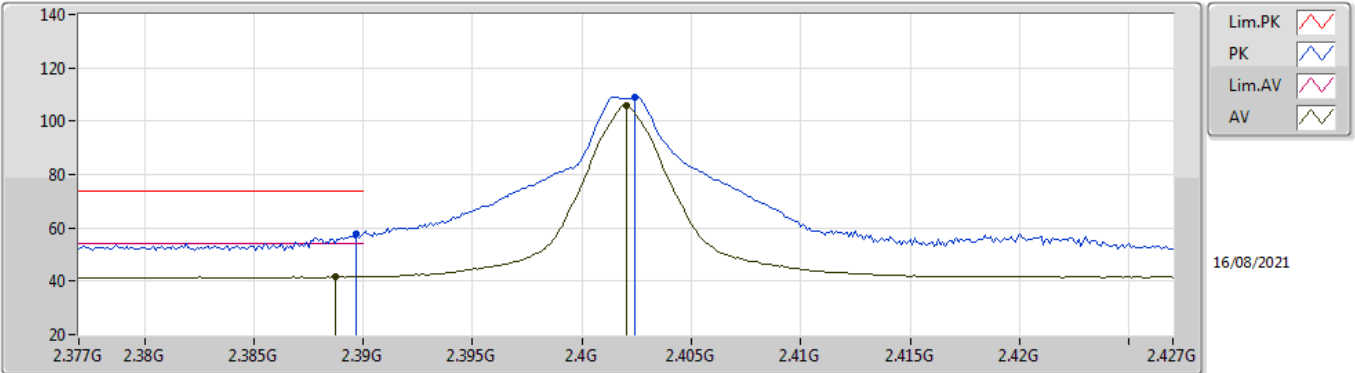


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA	
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)	
PK	2.39G	57.92	74.00	-16.08	28.35	3	Vertical	235	2.76	-	27.38	2.19	-	
AV	2.3896G	41.60	54.00	-12.40	12.03	3	Vertical	235	2.76	-	27.38	2.19	-	
PK	2.4024G	108.05	Inf	-Inf	78.45	3	Vertical	235	2.76	-	27.40	2.20	-	
AV	2.402G	104.58	Inf	-Inf	74.98	3	Vertical	235	2.76	-	27.40	2.20	-	

BT-LE(2Mbps)

2402MHz_TX

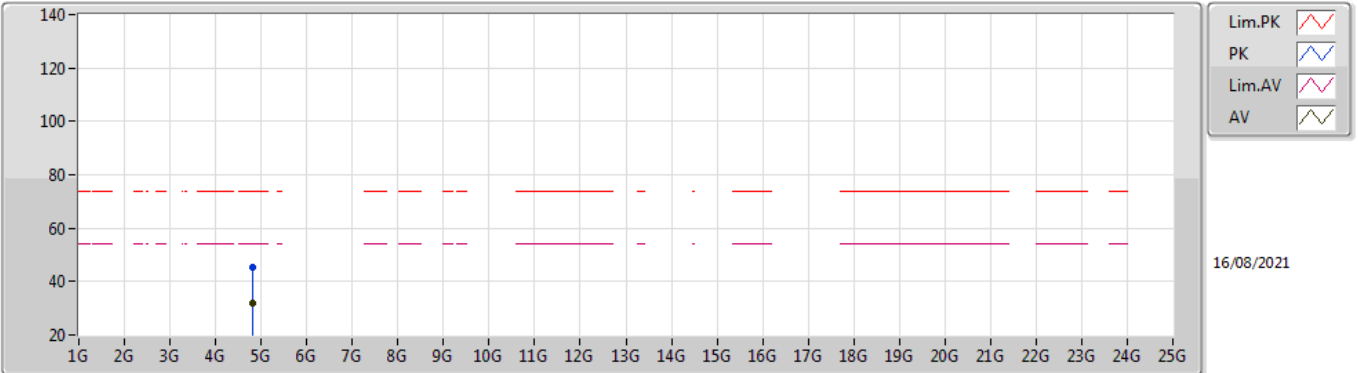


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3897G	58.01	74.00	-15.99	28.44	3	Horizontal	259	1.20	-	27.38	2.19	-	
AV	2.3887G	41.64	54.00	-12.36	12.07	3	Horizontal	259	1.20	-	27.38	2.19	-	
PK	2.4024G	109.20	Inf	-Inf	79.60	3	Horizontal	259	1.20	-	27.40	2.20	-	
AV	2.402G	105.74	Inf	-Inf	76.14	3	Horizontal	259	1.20	-	27.40	2.20	-	

BT-LE(2Mbps)

2402MHz_TX

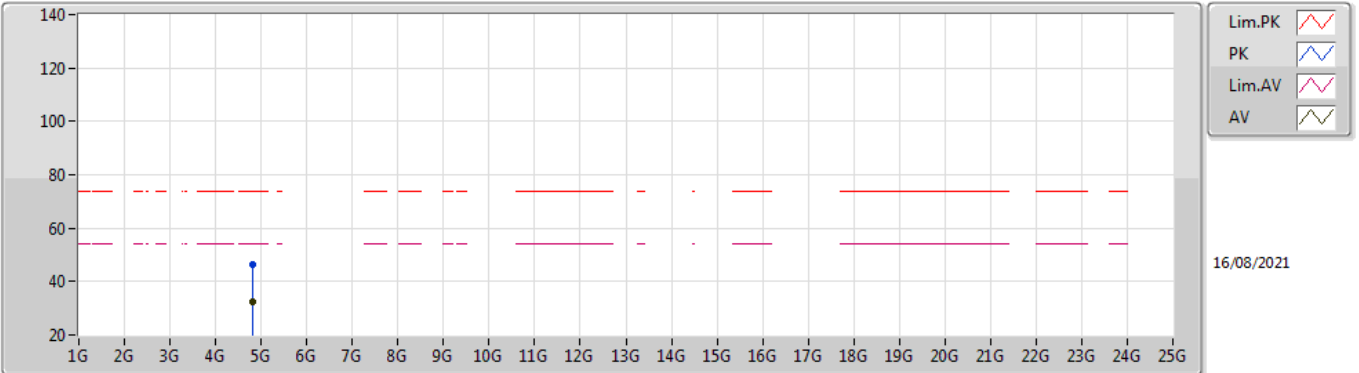


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.80303G	45.28	74.00	-28.72	41.15	3	Vertical	311	1.94	-	32.12	5.00	32.99
AV	4.80334G	32.00	54.00	-22.00	27.87	3	Vertical	311	1.94	-	32.12	5.00	32.99

BT-LE(2Mbps)

2402MHz_TX

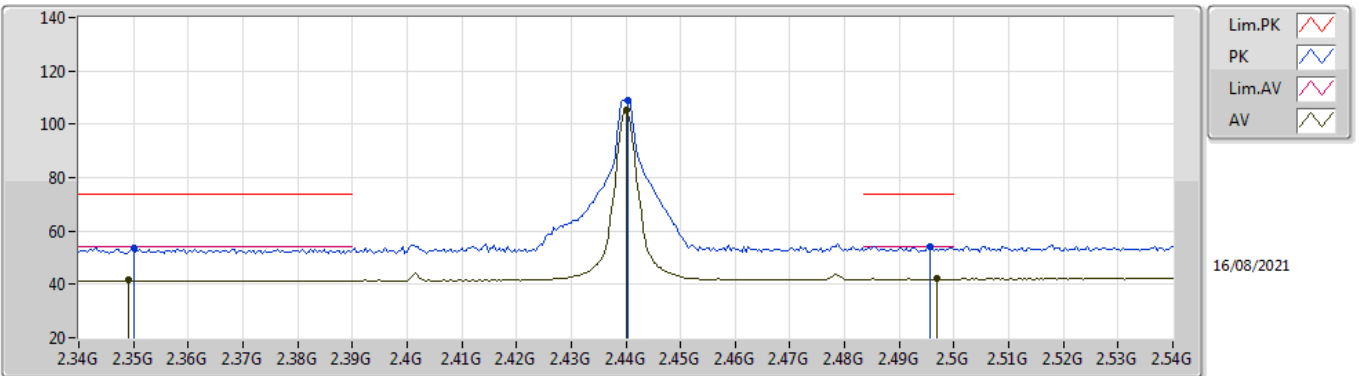


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.80394G	46.15	74.00	-27.85	42.02	3	Horizontal	272	1.80	-	32.12	5.00	32.99
AV	4.80403G	32.20	54.00	-21.80	28.07	3	Horizontal	272	1.80	-	32.12	5.00	32.99

BT-LE(2Mbps)

2440MHz_TX

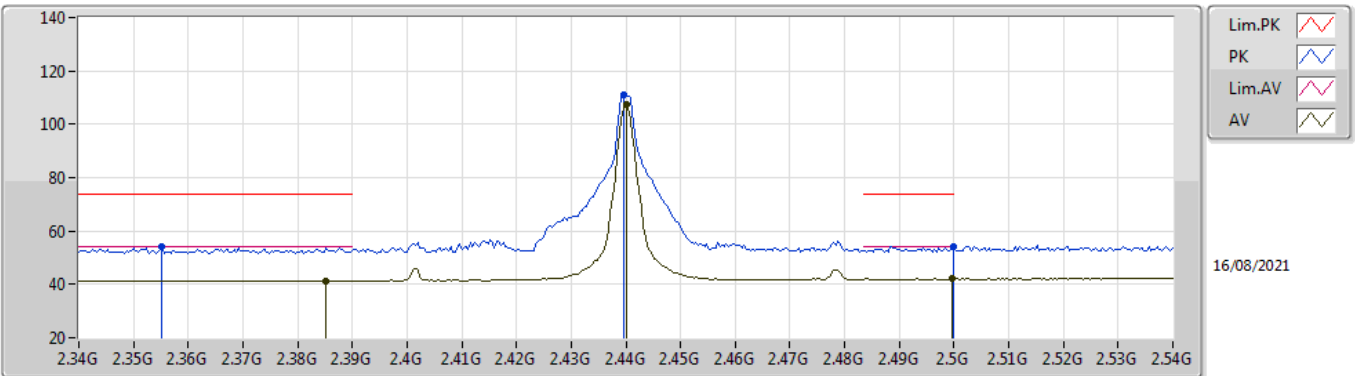


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.35G	53.50	74.00	-20.50	24.05	3	Vertical	222	2.39	-	27.30	2.15	-	
AV	2.3492G	41.47	54.00	-12.53	12.02	3	Vertical	222	2.39	-	27.30	2.15	-	
PK	2.4404G	108.92	Inf	-Inf	79.20	3	Vertical	222	2.39	-	27.48	2.24	-	
AV	2.44G	105.53	Inf	-Inf	75.81	3	Vertical	222	2.39	-	27.48	2.24	-	
PK	2.4956G	54.07	74.00	-19.93	24.00	3	Vertical	222	2.39	-	27.77	2.30	-	
AV	2.4968G	42.04	54.00	-11.96	11.96	3	Vertical	222	2.39	-	27.78	2.30	-	

BT-LE(2Mbps)

2440MHz_TX

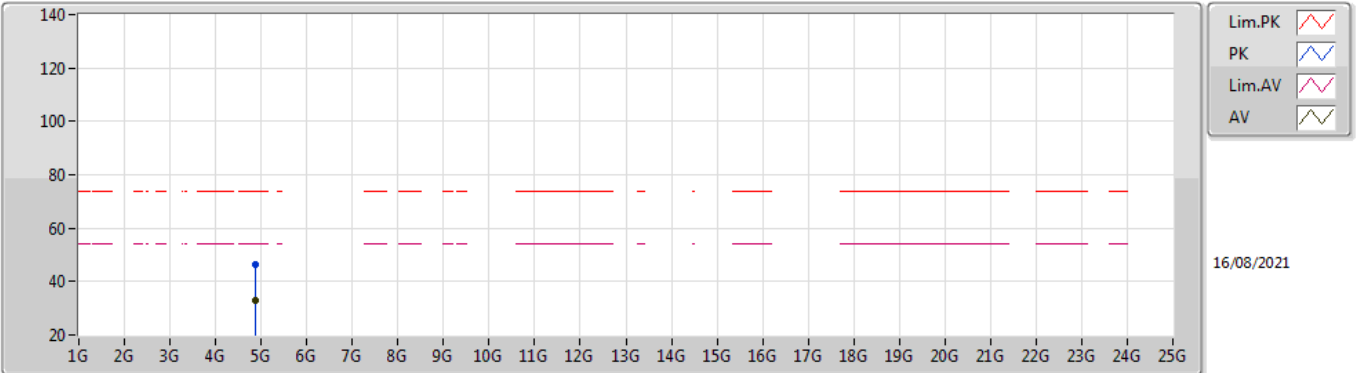


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3552G	53.95	74.00	-20.05	24.48	3	Horizontal	307	1.20	-	27.31	2.16	-
AV	2.3852G	41.41	54.00	-12.59	11.85	3	Horizontal	307	1.20	-	27.37	2.19	-
PK	2.4396G	110.79	Inf	-Inf	81.07	3	Horizontal	307	1.20	-	27.48	2.24	-
AV	2.44G	107.36	Inf	-Inf	77.64	3	Horizontal	307	1.20	-	27.48	2.24	-
PK	2.5G	54.28	74.00	-19.72	24.18	3	Horizontal	307	1.20	-	27.80	2.30	-
AV	2.4996G	42.05	54.00	-11.95	11.95	3	Horizontal	307	1.20	-	27.80	2.30	-

BT-LE(2Mbps)

2440MHz_TX

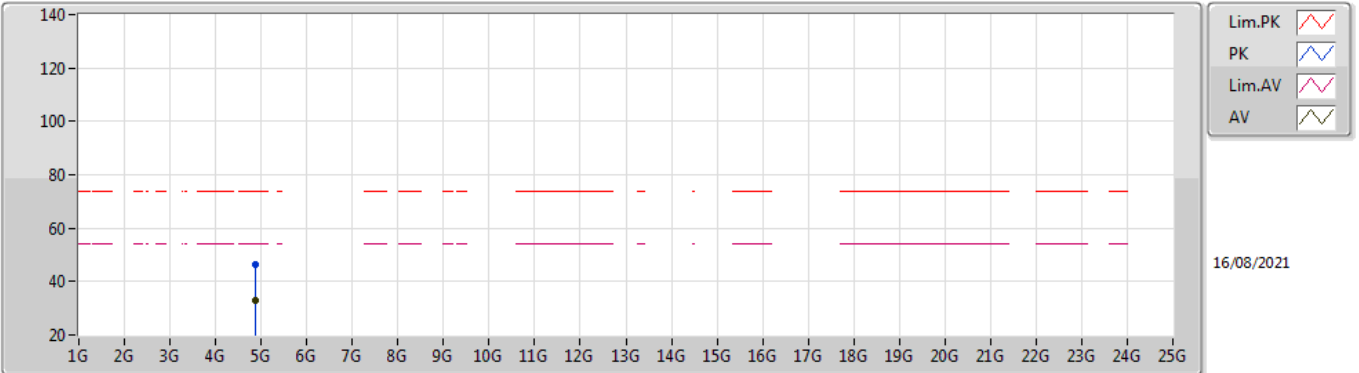


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.87906G	46.55	74.00	-27.45	42.03	3	Vertical	94	2.57	-	32.46	5.04	32.98
AV	4.87993G	32.88	54.00	-21.12	28.36	3	Vertical	94	2.57	-	32.46	5.04	32.98

BT-LE(2Mbps)

2440MHz_TX

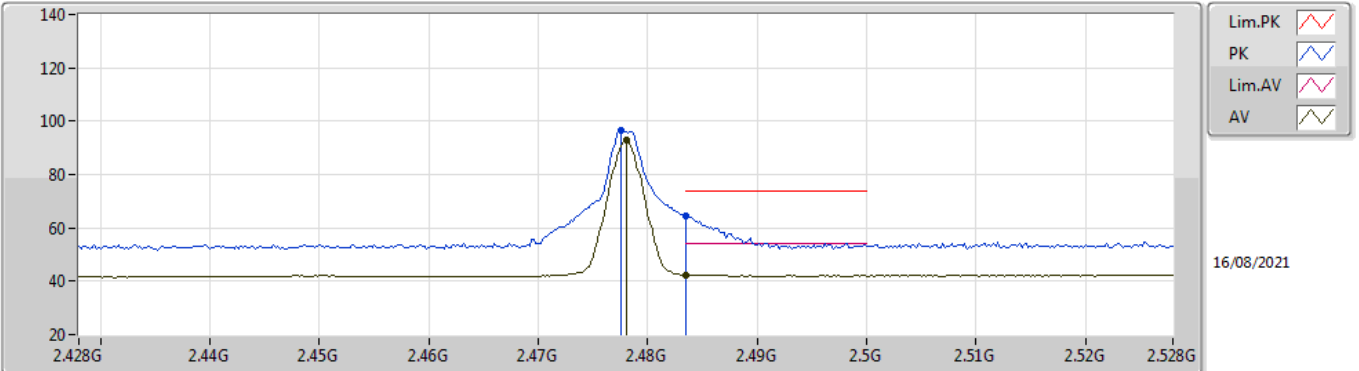


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.88012G	46.37	74.00	-27.63	41.85	3	Horizontal	358	1.59	-	32.46	5.04	32.98
AV	4.8802G	32.84	54.00	-21.16	28.32	3	Horizontal	358	1.59	-	32.46	5.04	32.98

BT-LE(2Mbps)

2478MHz_TX

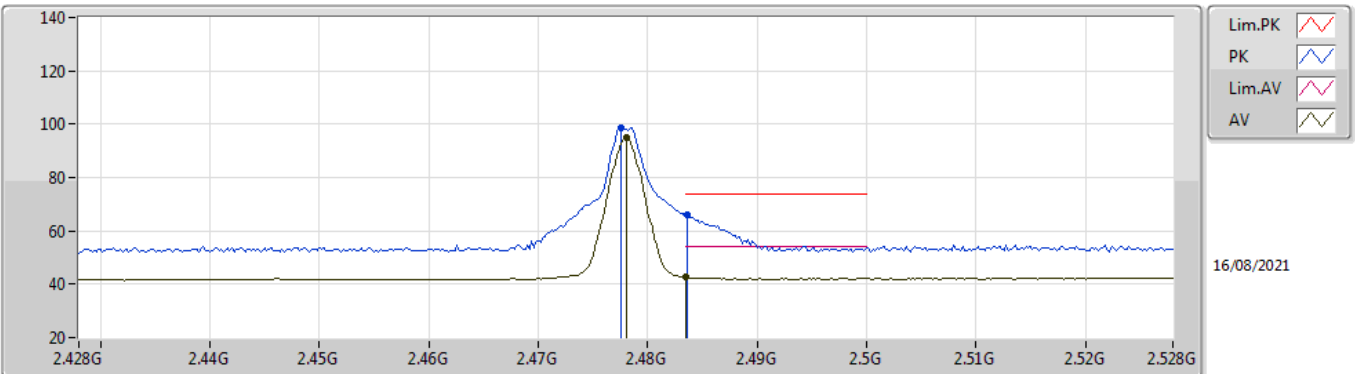


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4776G	96.64	Inf	-Inf	66.69	3	Vertical	220	2.61	-	27.67	2.28	-	
AV	2.478G	93.10	Inf	-Inf	63.15	3	Vertical	220	2.61	-	27.67	2.28	-	
PK	2.4835G	64.64	74.00	-9.36	34.66	3	Vertical	220	2.61	-	27.70	2.28	-	
AV	2.4835G	42.34	54.00	-11.66	12.36	3	Vertical	220	2.61	-	27.70	2.28	-	

BT-LE(2Mbps)

2478MHz_TX

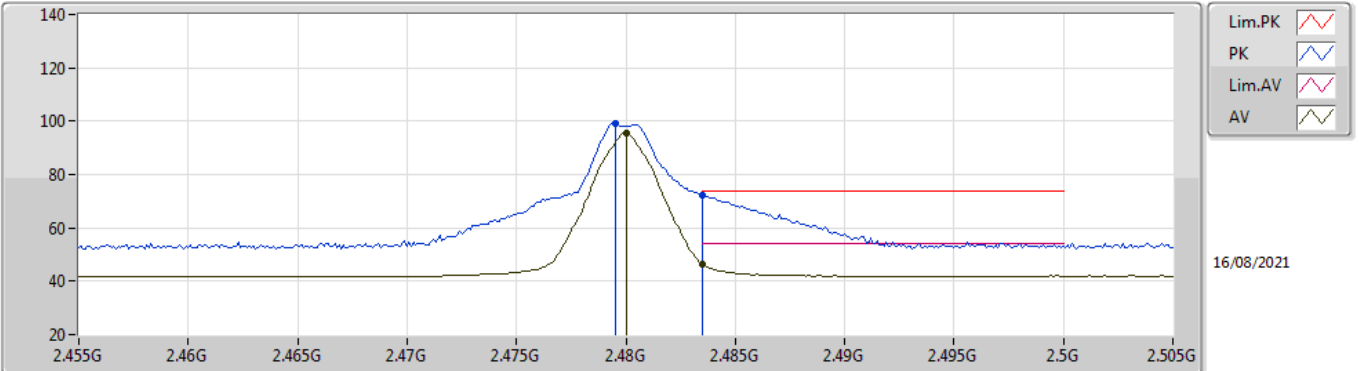


EUT_Z_1TX
Setting 20
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4776G	98.71	Inf	-Inf	68.76	3	Horizontal	309	1.17	-	27.67	2.28	-	
AV	2.478G	95.12	Inf	-Inf	65.17	3	Horizontal	309	1.17	-	27.67	2.28	-	
PK	2.4836G	65.87	74.00	-8.13	35.89	3	Horizontal	309	1.17	-	27.70	2.28	-	
AV	2.4835G	42.52	54.00	-11.48	12.54	3	Horizontal	309	1.17	-	27.70	2.28	-	

BT-LE(2Mbps)

2480MHz_TX

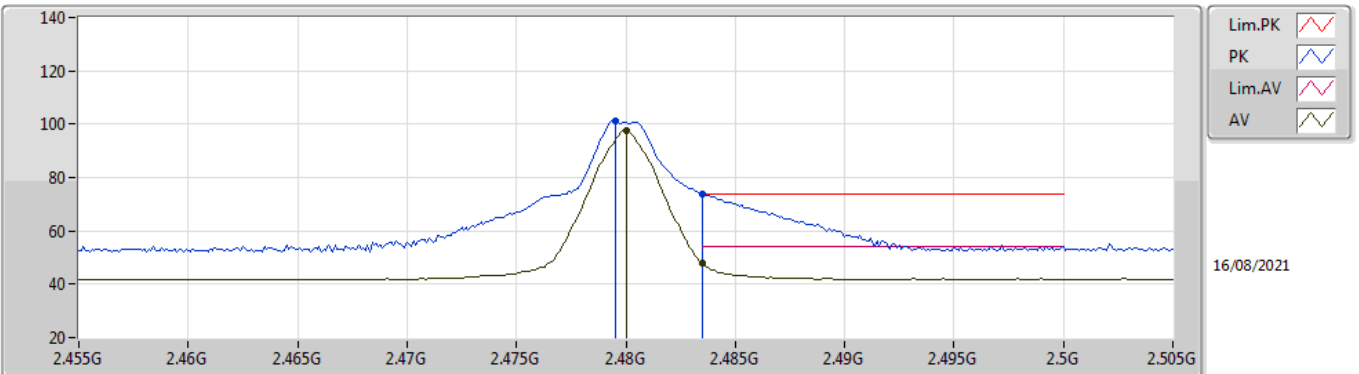


EUT_Z_1TX
Setting 11.5
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4795G	99.01	Inf	-Inf	69.05	3	Vertical	219	2.59	-	27.68	2.28	-	
AV	2.48G	95.41	Inf	-Inf	65.45	3	Vertical	219	2.59	-	27.68	2.28	-	
PK	2.4835G	72.17	74.00	-1.83	42.19	3	Vertical	219	2.59	-	27.70	2.28	-	
AV	2.4835G	46.50	54.00	-7.50	16.52	3	Vertical	219	2.59	-	27.70	2.28	-	

BT-LE(2Mbps)

2480MHz_TX

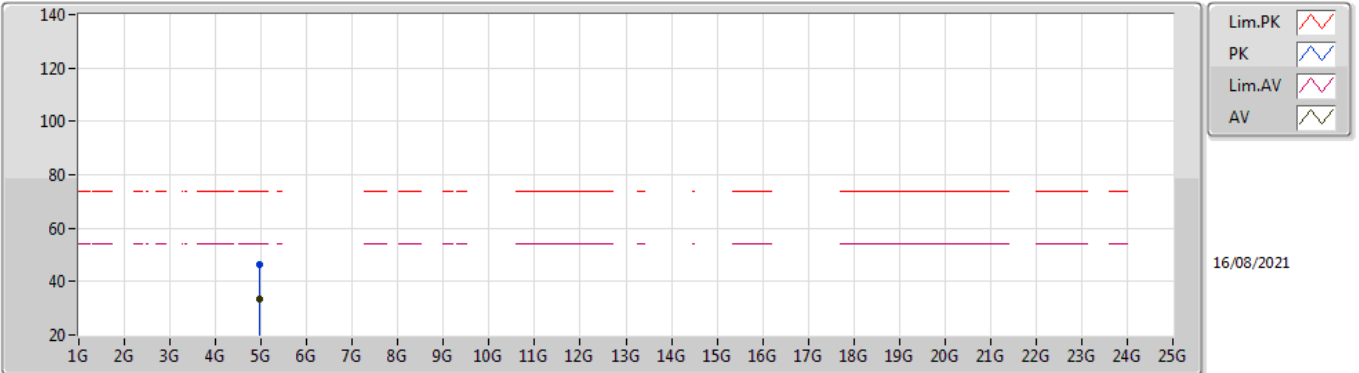


EUT_Z_1TX
Setting 11.5
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4795G	101.12	Inf	-Inf	71.16	3	Horizontal	308	1.18	-	27.68	2.28	-	
AV	2.48G	97.50	Inf	-Inf	67.54	3	Horizontal	308	1.18	-	27.68	2.28	-	
PK	2.4835G	73.89	74.00	-0.11	43.91	3	Horizontal	308	1.18	-	27.70	2.28	-	
AV	2.4835G	47.78	54.00	-6.22	17.80	3	Horizontal	308	1.18	-	27.70	2.28	-	

BT-LE(2Mbps)

2480MHz_TX

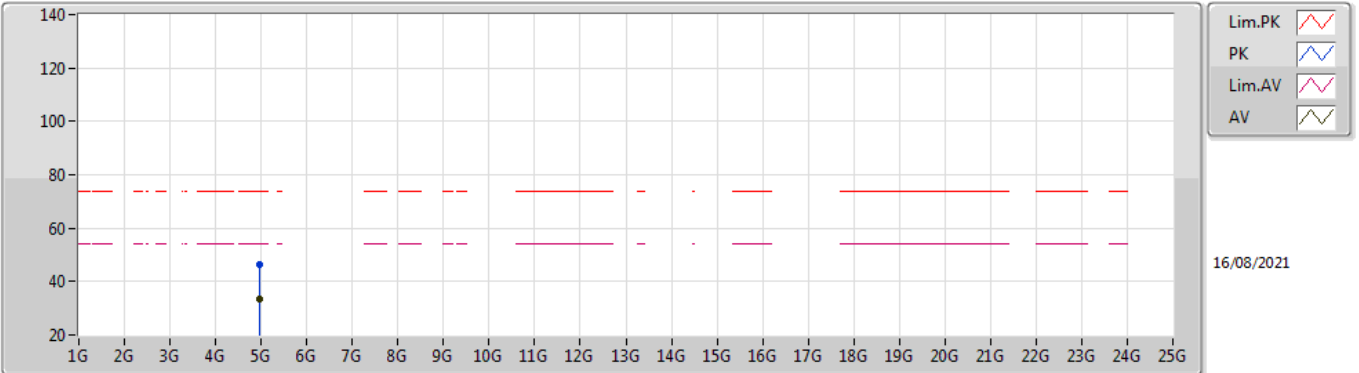


EUT_Z_1TX
Setting 11.5
01-A-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.9591G	46.45	74.00	-27.55	41.56	3	Vertical	21	2.32	-	32.78	5.08	32.97	
AV	4.96021G	33.23	54.00	-20.77	28.34	3	Vertical	21	2.32	-	32.78	5.08	32.97	

BT-LE(2Mbps)

2480MHz_TX



EUT_Z_1TX
Setting 11.5
01-A-B-2

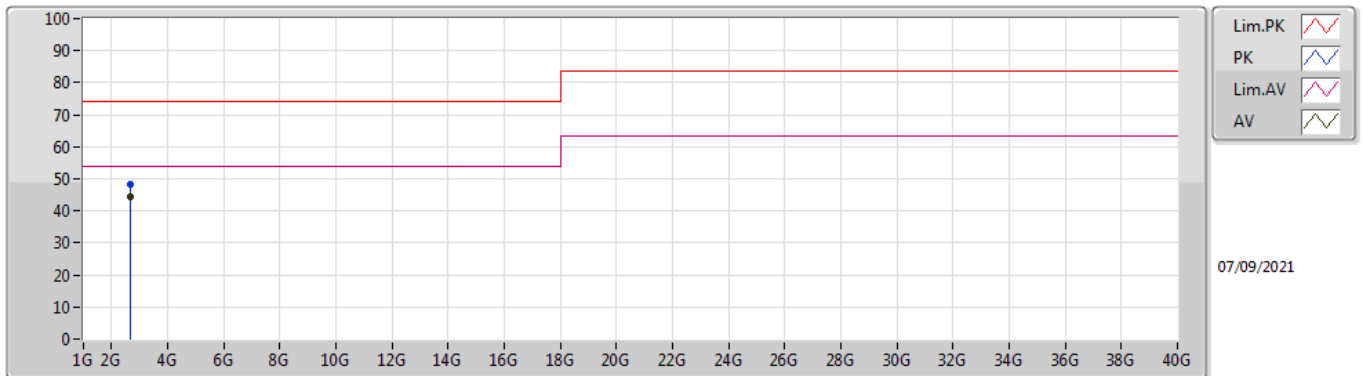
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.96059G	46.54	74.00	-27.46	41.65	3	Horizontal	7	2.67	-	32.78	5.08	32.97
AV	4.96064G	33.26	54.00	-20.74	28.37	3	Horizontal	7	2.67	-	32.78	5.08	32.97



Summary

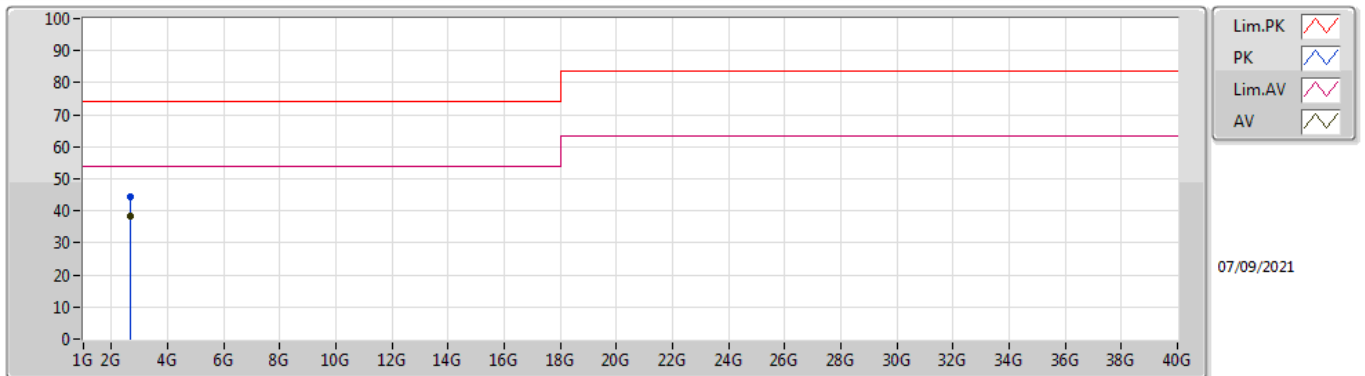
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	2.68801G	44.36	54.00	-9.64	Vertical

Mode 1



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV/m)	(dB/m)	(dB)	(dB)
PK	2.68808G	48.38	74.00	-25.62	-2.30	3	Vertical	199	1.54	-	50.68	27.73	3.48	33.51
AV	2.68801G	44.36	54.00	-9.64	-2.30	3	Vertical	199	1.54	"Worst"	46.66	27.73	3.48	33.51

Mode 1



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV/m)	(dB/m)	(dB)	(dB)
PK	2.68797G	44.47	74.00	-29.53	-2.30	3	Horizontal	144	1.00	-	46.77	27.73	3.48	33.51
AV	2.68801G	38.20	54.00	-15.80	-2.30	3	Horizontal	144	1.00	"Worst"	40.50	27.73	3.48	33.51