



FCC Test Report

FCC ID : Q9DAPEX0565567
Equipment : Wireless Access Point
Brand Name : aruba 、 Hewlett Packard Enterprise
Model Name : APEX0565,APEX0567
Applicant : Hewlett Packard Enterprise Company
3333 Scott Blvd Santa Clara, CA. 95054
Manufacturer : Hewlett Packard Enterprise Company
3333 Scott Blvd Santa Clara, CA. 95054
Standard : 47 CFR FCC Part 15.247

The product was received on Apr. 30, 2020, and testing was started from May 14, 2020 and completed on Jul. 21, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications 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. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

Table of Contents

HISTORY OF THIS TEST REPORT	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Information.....	5
1.2 Testing Applied Standards	8
1.3 Testing Location Information	8
1.4 Measurement Uncertainty	9
2 TEST CONFIGURATION OF EUT.....	10
2.1 Test Condition	10
2.2 Test Channel Mode	10
2.3 The Worst Case Measurement Configuration.....	11
2.4 Support Equipment.....	12
2.5 Test Setup Diagram	13
3 TRANSMITTER TEST RESULT	15
3.1 AC Power-line Conducted Emissions	15
3.2 DTS Bandwidth.....	17
3.3 Maximum Conducted Output Power	18
3.4 Power Spectral Density	20
3.5 Emissions in Non-restricted Frequency Bands	21
3.6 Emissions in Restricted Frequency Bands.....	22
4 TEST EQUIPMENT AND CALIBRATION DATA	26
APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APPENDIX B. TEST RESULTS OF DTS BANDWIDTH	
APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APPENDIX D. TEST RESULTS OF POWER SPECTRAL DENSITY	
APPENDIX E. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	
APPENDIX F. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS	
APPENDIX G. TEST PHOTOS	
PHOTOGRAPHS OF EUT V02	



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: Jenny Yang

1 General Description

1.1 Information

1.1.1 RF General Information

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

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

Note:

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

1.1.2 Antenna Information

Sample 1

Ant.	Brand	Model Name	Antenna Type	Connector
1	HL Technologies	N/A	Dipole (omnidirectional)	MMCX
2	HL Technologies	N/A	Dipole (omnidirectional)	MMCX
3	HL Technologies	N/A	PIFA	Mini Murata

Ant.	Gain (dBi)					
	2.4G		5G		BT	Zigbee
	Vertical polarized	Horizontal polarized	Vertical polarized	Horizontal polarized		
1	-	3.2 dBi	-	5.4 dBi	-	-
2	3.2 dBi	-	5.4 dBi	-	-	-
3	-	-	-	-	3.3 dBi	3.3 dBi

Sample 2

Ant.	Brand	Model Name	Antenna Type	Connector
4	Shanghai Amphenol Airwave Communication Electronics Co., Ltd.	N/A	Dipole (directivity)	MMCX
5	Shanghai Amphenol Airwave Communication Electronics Co., Ltd.	N/A	Dipole (directivity)	MMCX
6	Shanghai Amphenol Airwave Communication Electronics Co., Ltd.	N/A	monopole	Mini Murata

Ant.	Gain (dBi)					BT	Zigbee
	2.4G		5G				
	+45 degree	-45 degree	+45 degree	-45 degree			
4	-	6.8 dBi	-	7.1 dBi	-	-	
5	6.8 dBi	-	7.1 dBi	-	-	-	
6	-	-	-	-	3 dBi	3 dBi	

Ant.	Elevation angle above 30 degrees Gain (dBi)	
	5G	
1~2	3.3	
4~5	7.1	

Note 1: The EUT has six antennas.

Note 2: The antenna for each mode is cross polarized.

For 2.4GHz function:

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

Ant. 1 (Ant. 4) and Ant. 2 (Ant. 5) could transmit/receive simultaneously.

Cross-polarized antenna combination is Ant. 1 (Ant. 4) and Ant. 2 (Ant. 5).

For BT function:

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

Only Ant. 3 (Ant. 6) can be used as transmitting/receiving antenna.

For 5GHz function:

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

Ant. 1 (Ant. 4) and Ant. 2 (Ant. 5) could transmit/receive simultaneously.

Cross-polarized antenna combination is Ant. 1 (Ant. 4) and Ant. 2 (Ant. 5).

For Zigbee function:

Only Ant. 3 (Ant. 6) can be used as transmitting/receiving antenna.

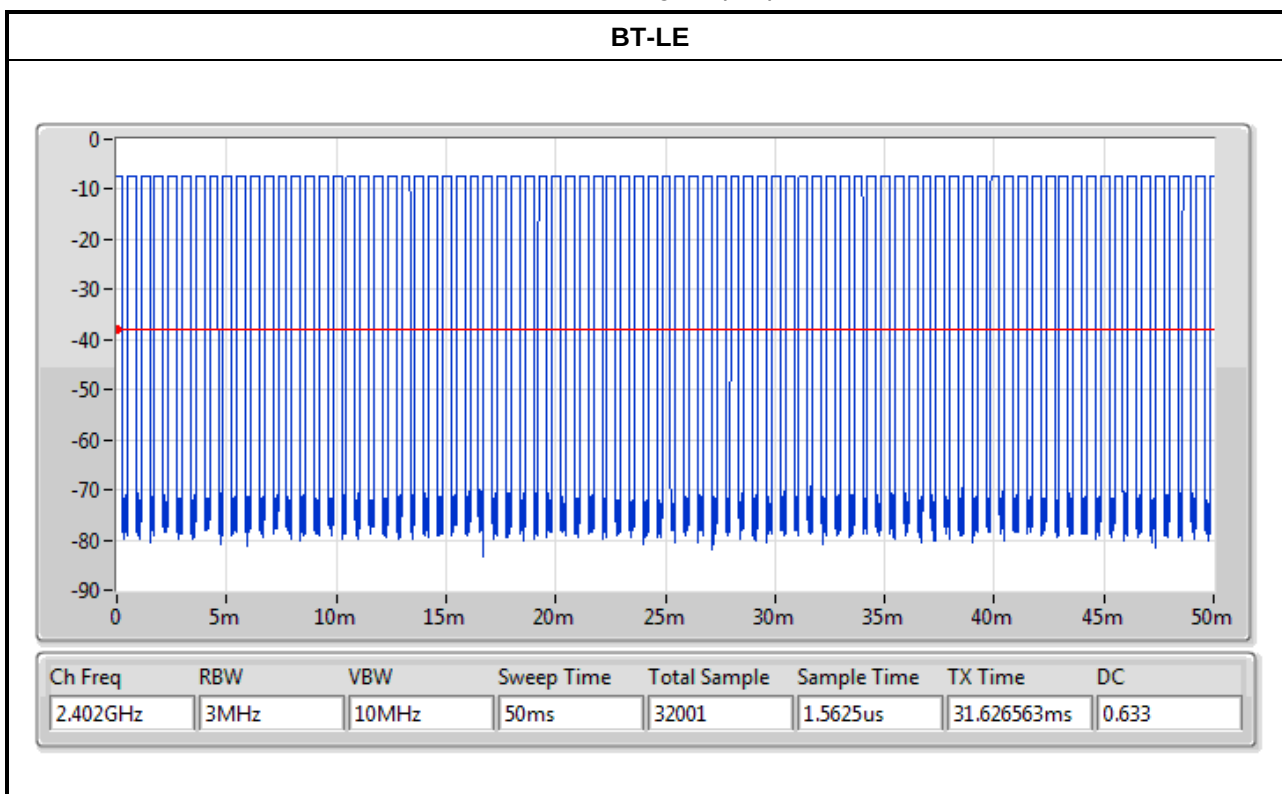
1.1.3 EUT Information

Identify EUT			
FW Version	RVAB-A65 V1.0		
Operational Condition			
EUT Power Type	From PoE		
EUT Function	☒ Point-to-multipoint	☐ Point-to-point	
Type of EUT			
☒	Stand-alone		
☐	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.: ...		
☐	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.: ...		
☐	Other:		

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq$ 1/T
BT-LE(1Mbps)	0.633	1.99	395.312u	3k

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



1.1.5 Table for Multiple Listing

Sample Number	Model Name	Description
1	APEX0565	There are two Samples for EUT. The only difference between Sample 1 and Sample 2 is the Antenna. For detailed specifications, please refer to section 1.1.2.
2	APEX0567	

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

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			
☒	Wen Shan	ADD : No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)	
		TEL : 886-3-318-0787	FAX : 886-3-318-0287
Test site Designation No. TW1097 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Edward Wang	21.4~23.2°C / 52~ 57%	03/Jun/2020~ 04/Jun/2020
RF Conducted	TH01-HY	Barry Hsiao	22.1~25.9°C / 54~60%	15/May/2020~ 30/Jun/2020
Radiated	03CH09-HY	Daniel Hsu	22.3~23.7°C / 53~ 59%	14/May/2020~ 01/Jun/2020

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 Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Test Software	Dos
---------------	-----

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

2.3 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
Operating Mode	CTX
1	PoE Mode; Sample 1
2	PoE Mode; Sample 2

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
Note: The test result of sample 2 was copied from sample 1, only the value of the antenna gain was changed.	

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

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	WLAN 2.4GHz + WLAN 5GHz + Bluetooth
Refer to Sporton Test Report No.: FA042903 for Co-location RF Exposure Evaluation.	

2.4 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	PoE	Microsemi	PD-9001GO/AC-INTL	-	Note 1
2	Ground Cable	SPORTON	SPORTON	-	-
3	RJ-45 Cable	Power Sync	CAT-6E-10	-	-

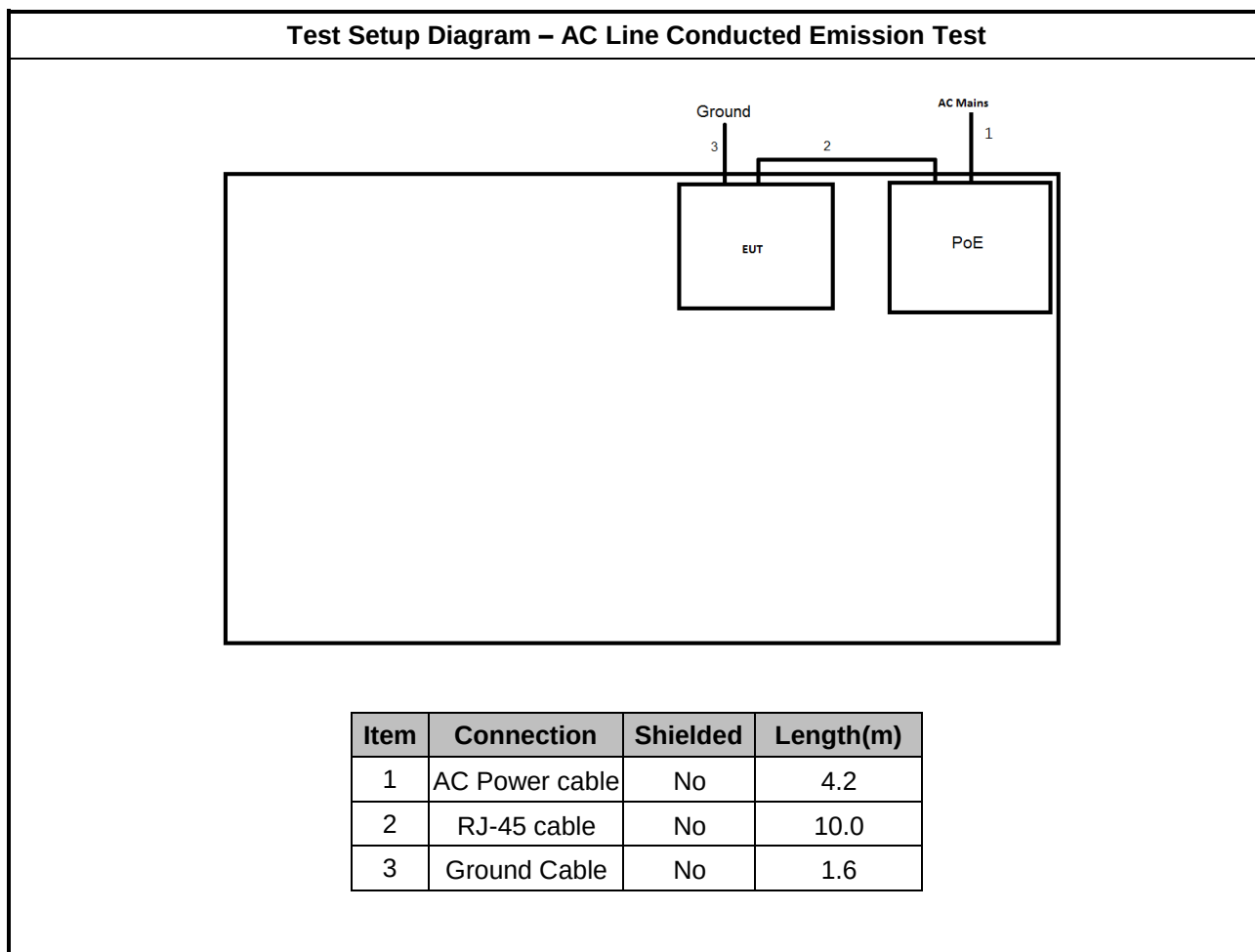
Note 1: Support equipment No.1 was provided by customer.

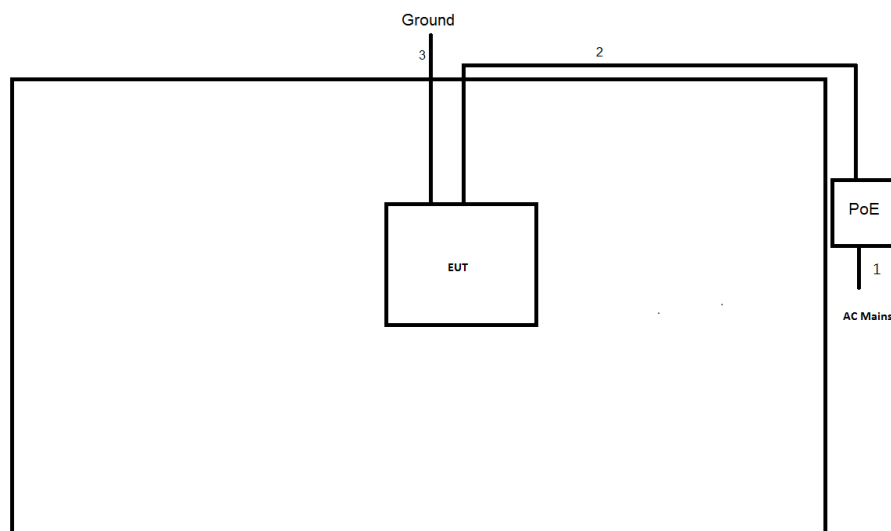
Support Equipment –Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-

Support Equipment –Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Ground Cable	SPORTON	SPORTON	-	-
2	RJ-45 Cable	Power Sync	CAT-6E-10	-	-
3	PoE	Microsemi	PD-9001GO/AC-INTL	-	Note 1 / Remote

Note 1: Support equipment No.3 was provided by customer.

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length(m)
1	AC Power cable	No	4.2
2	RJ-45 cable	No	10.0
3	Ground Cable	No	1.6

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.		

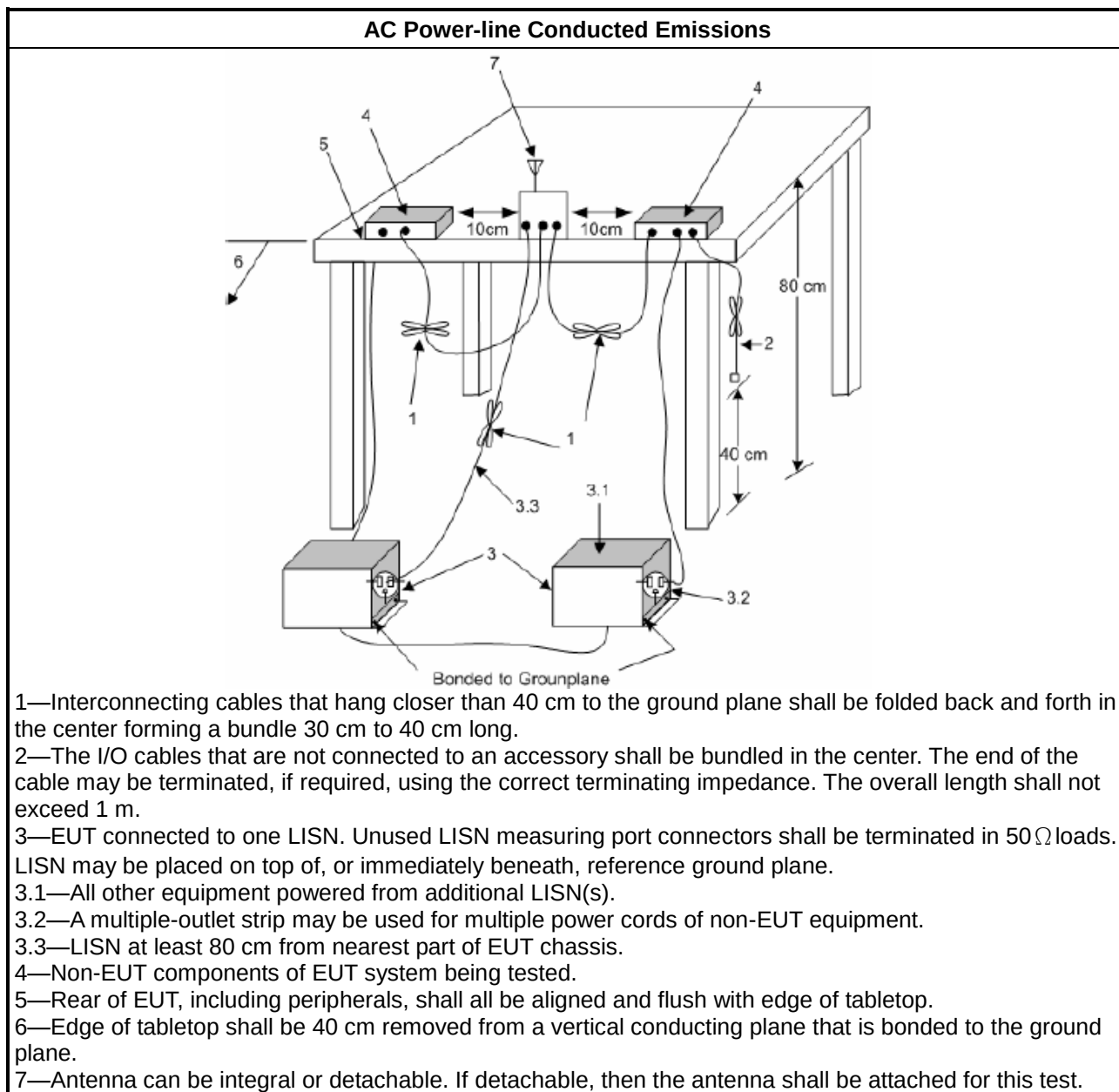
3.1.2 Measuring Instruments

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 Test Setup



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.

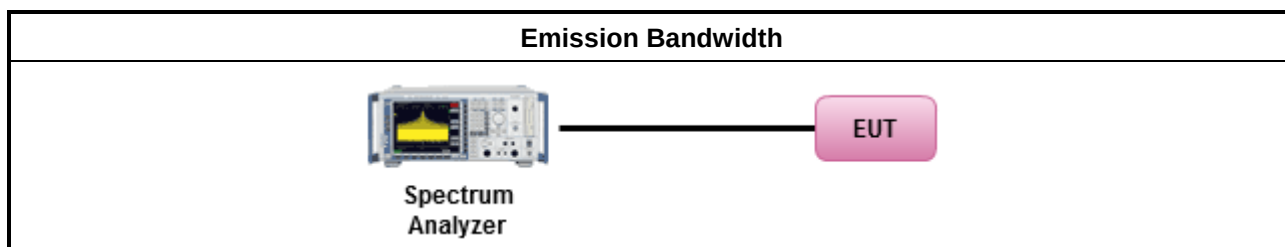
3.2.2 Measuring Instruments

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 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.	

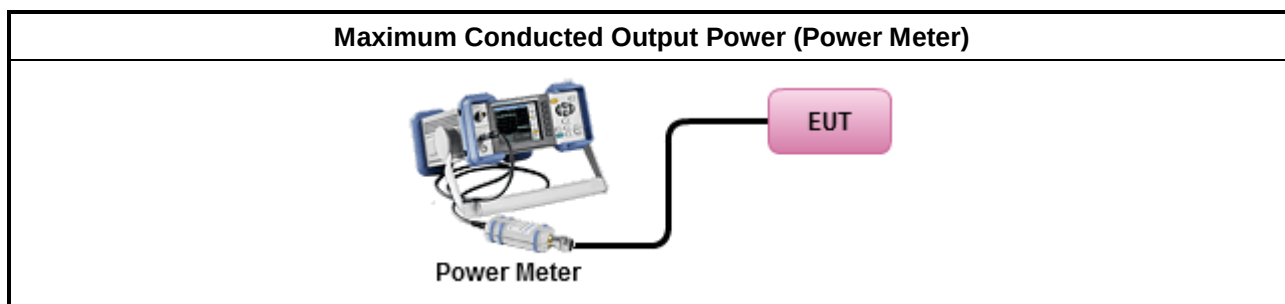
3.3.2 Measuring Instruments

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

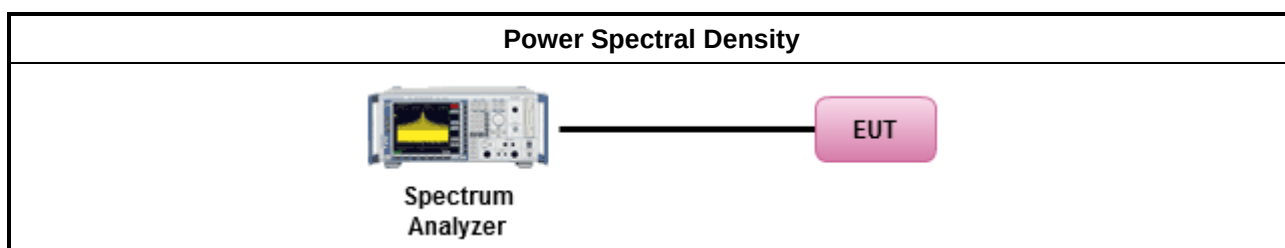
3.4.2 Measuring Instruments

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.	

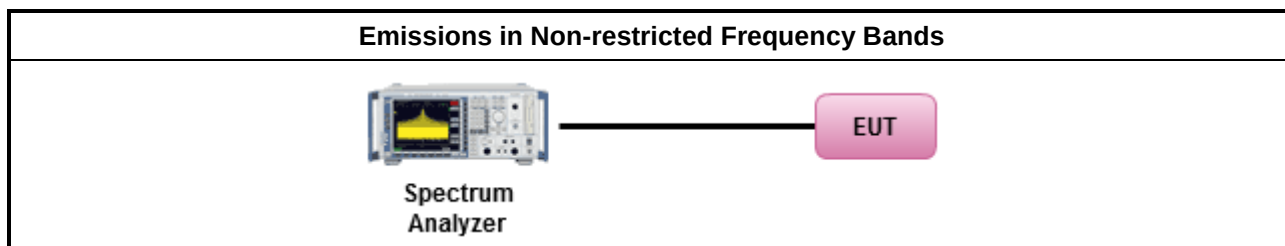
3.5.2 Measuring Instruments

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.

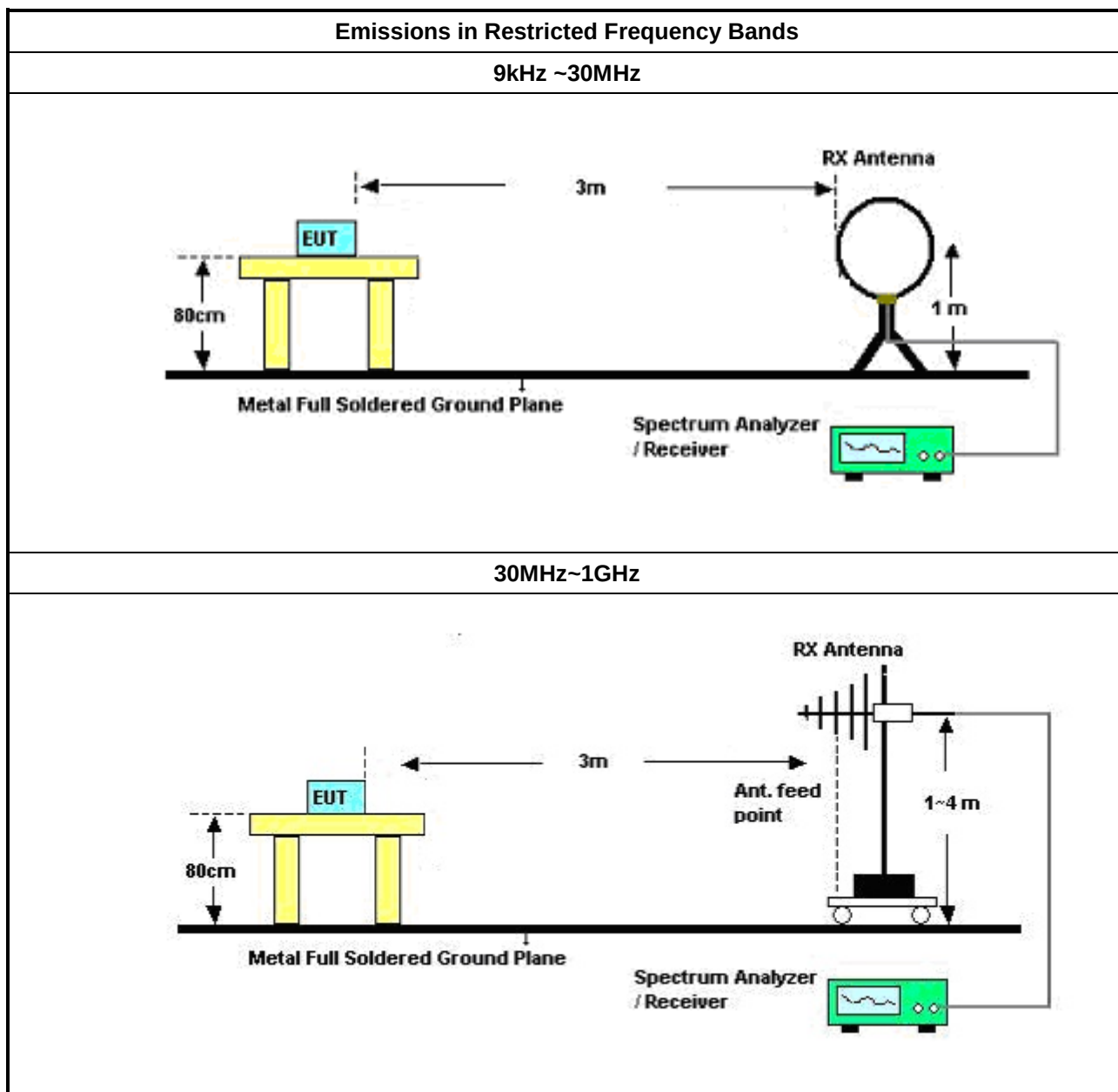
3.6.2 Measuring Instruments

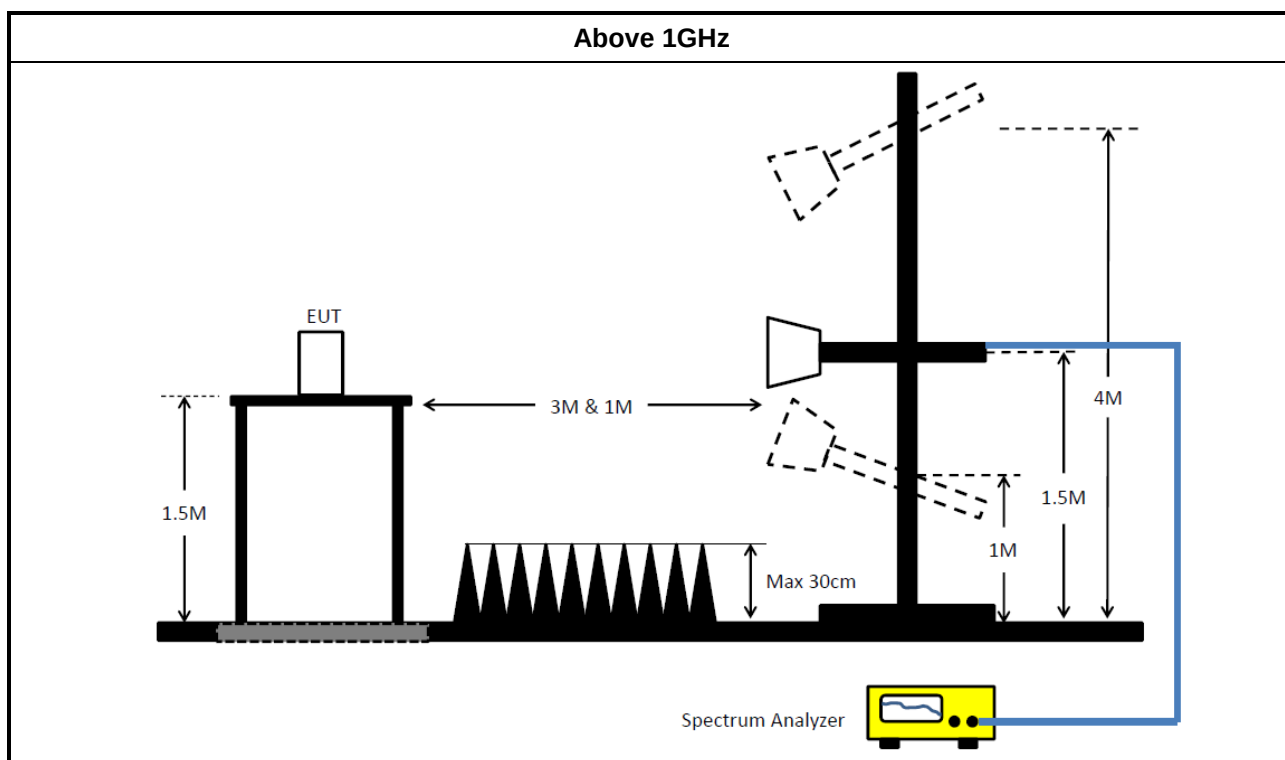
Refer a test equipment and calibration data table in this test report.

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 Test Setup





3.6.5 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.

3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR	102051	9kHz ~ 3.6GHz	29/May/2020	28/May/2021
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	04/Nov/2019	05/Nov/2020
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	12/Sep/2019	11/Sep/2020
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	24/Sep/2019	23/Sep/2020

NCR: Non-Calibration Require

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	19/Mar/2020	18/Mar/2021
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	17/Feb/2020	16/Feb/2021
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	17/Feb/2020	16/Feb/2021

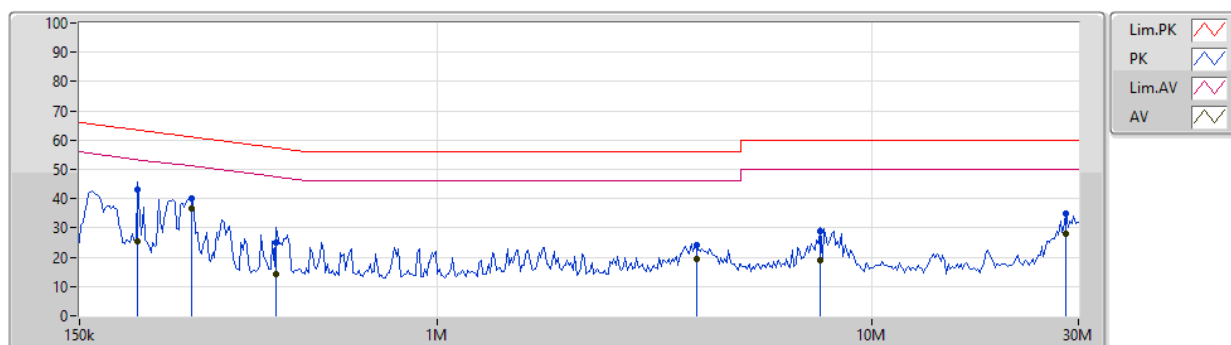
Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz~1GHz	27/Mar/2020	26/Mar/2021
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz~18GHz	19/Mar/2020	18/Mar/2021
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	04/Sep/2019	03/Sep/2020
Amplifier	EMC	EMC9135	980232	9kHz~1GHz	14/Apr/2020	13/Apr/2021
EMC Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	28/May/2019	27/May/2020
EMC Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	29/May/2020	28/May/2021
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	07/Aug/2019	06/Aug/2020
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D & MTJ6102-05	35418 / 3	30MHz~1GHz	11/Oct/2019	10/Oct/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120 D 1534	1GHz~18GHz	22/May/2019	21/May/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120 D 1534	1GHz~18GHz	28/May/2020	27/May/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	13/Mar/2020	12/Mar/2021
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz~40GHz	10/Mar/2020	09/Mar/2021
Loop Antenna	TESEQ	HLA 6120	31244	9kHz-30MHz	16/Mar/2020	15/Mar/2021
RF Cable-low	Jye Bao	RG142	CB031+324530/4	9kHz~1GHz	12/Feb/2020	11/Feb/2021
RF Cable-high	HUBER+SUHNER	SUCOFLEX104	324530/4+17173/4	1GHz~40GHz	12/Feb/2020	11/Feb/2021

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	PoE mode; Sample 1		

04/06/2020

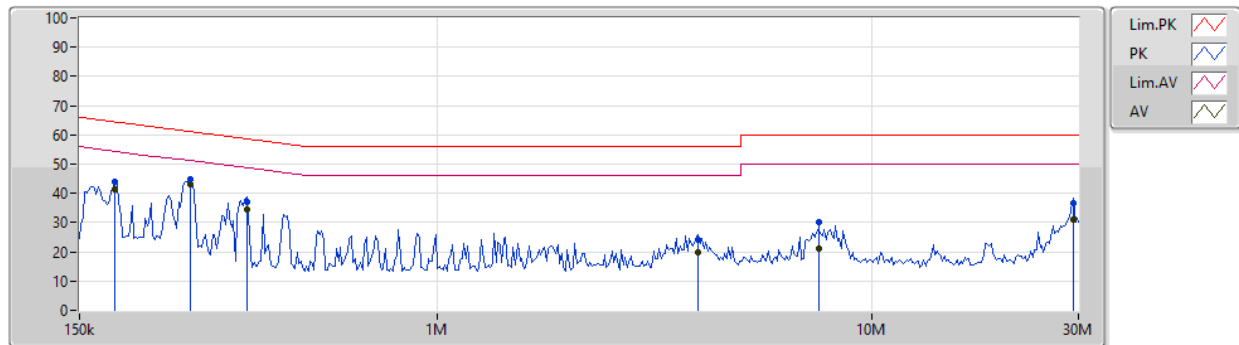


Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	204.199k	42.91	63.44	-20.53	19.62	Neutral	-	23.29	9.64	0.11	9.87			
AV	204.199k	25.44	53.44	-28.00	19.62	Neutral	-	5.82	9.64	0.11	9.87			
QP	272.505k	40.07	61.05	-20.98	19.63	Neutral	-	20.44	9.64	0.12	9.87			
AV	272.505k	36.61	51.05	-14.44	19.63	Neutral	"Worst"	16.98	9.64	0.12	9.87			
QP	426.418k	25.06	57.32	-32.26	19.63	Neutral	-	5.43	9.63	0.13	9.87			
AV	426.418k	14.25	47.32	-33.07	19.63	Neutral	-	-5.38	9.63	0.13	9.87			
QP	3.961M	24.01	56.00	-31.99	19.73	Neutral	-	4.28	9.66	0.19	9.88			
AV	3.961M	19.44	46.00	-26.56	19.73	Neutral	-	-0.29	9.66	0.19	9.88			
QP	7.639M	28.90	60.00	-31.10	19.81	Neutral	-	9.09	9.69	0.24	9.88			
AV	7.639M	18.98	50.00	-31.02	19.81	Neutral	-	-0.83	9.69	0.24	9.88			
QP	28.128M	34.83	60.00	-25.17	19.99	Neutral	-	14.84	9.67	0.44	9.88			
AV	28.128M	28.11	50.00	-21.89	19.99	Neutral	-	8.12	9.67	0.44	9.88			

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	PoE mode; Sample 1		

04/06/2020

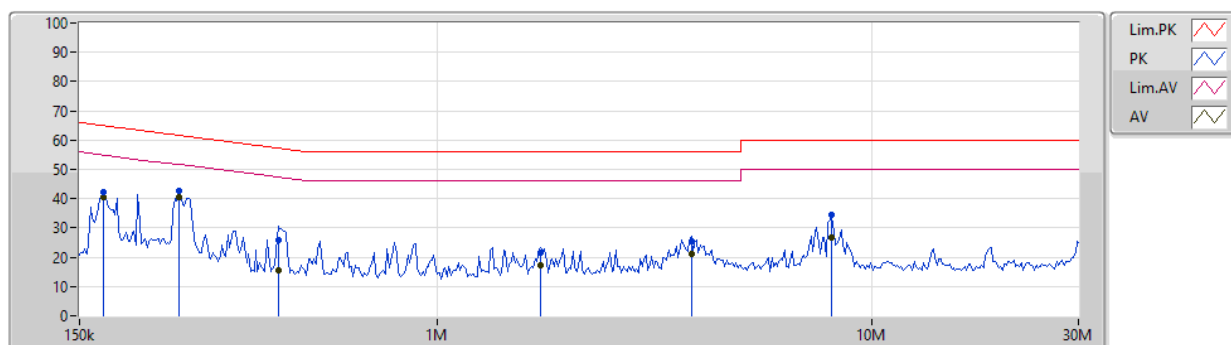


Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	181.216k	44.06	64.43	-20.37	19.63	Line	-	24.43	9.65	0.11	9.87			
AV	181.216k	41.26	54.43	-13.17	19.63	Line	-	21.63	9.65	0.11	9.87			
QP	269.806k	44.98	61.12	-16.14	19.64	Line	-	25.34	9.65	0.12	9.87			
AV	269.806k	43.01	51.12	-8.11	19.64	Line	"Worst"	23.37	9.65	0.12	9.87			
QP	363.658k	37.11	58.64	-21.53	19.63	Line	-	17.48	9.64	0.12	9.87			
AV	363.658k	34.39	48.64	-14.25	19.63	Line	-	14.76	9.64	0.12	9.87			
QP	4.001M	24.12	56.00	-31.88	19.73	Line	-	4.39	9.66	0.19	9.88			
AV	4.001M	19.78	46.00	-26.22	19.73	Line	-	0.05	9.66	0.19	9.88			
QP	7.563M	30.12	60.00	-29.88	19.80	Line	-	10.32	9.68	0.24	9.88			
AV	7.563M	20.94	50.00	-29.06	19.80	Line	-	1.14	9.68	0.24	9.88			
QP	29.27M	36.44	60.00	-23.56	19.83	Line	-	16.61	9.51	0.44	9.88			
AV	29.27M	31.07	50.00	-18.93	19.83	Line	-	11.24	9.51	0.44	9.88			

AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Neutral
Operating Function	PoE mode; Sample 2		

04/06/2020

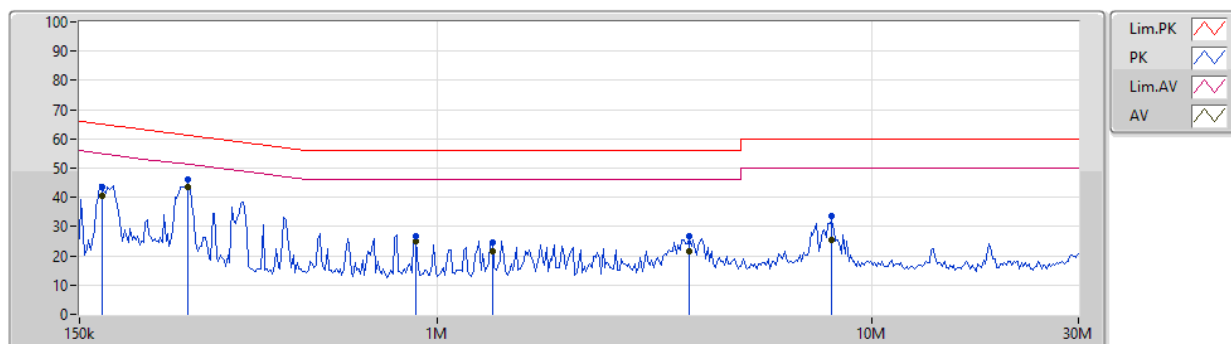


Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	170.714k	42.12	64.93	-22.81	19.63	Neutral	-	22.49	9.65	0.11	9.87			
AV	170.714k	40.34	54.93	-14.59	19.63	Neutral	-	20.71	9.65	0.11	9.87			
QP	254.17k	42.46	61.62	-19.16	19.63	Neutral	-	22.83	9.64	0.12	9.87			
AV	254.17k	40.32	51.62	-11.30	19.63	Neutral	"Worst"	20.69	9.64	0.12	9.87			
QP	430.682k	25.88	57.24	-31.36	19.63	Neutral	-	6.25	9.63	0.13	9.87			
AV	430.682k	15.36	47.24	-31.88	19.63	Neutral	-	-4.27	9.63	0.13	9.87			
QP	1.734M	21.73	56.00	-34.27	19.66	Neutral	-	2.07	9.65	0.14	9.87			
AV	1.734M	17.21	46.00	-28.79	19.66	Neutral	-	-2.45	9.65	0.14	9.87			
QP	3.845M	25.38	56.00	-30.62	19.73	Neutral	-	5.65	9.66	0.19	9.88			
AV	3.845M	21.33	46.00	-24.67	19.73	Neutral	-	1.60	9.66	0.19	9.88			
QP	8.109M	34.44	60.00	-25.56	19.82	Neutral	-	14.62	9.69	0.25	9.88			
AV	8.109M	26.77	50.00	-23.23	19.82	Neutral	-	6.95	9.69	0.25	9.88			

AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Line
Operating Function	PoE mode; Sample 2		

04/06/2020



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	169.024k	43.57	65.01	-21.44	19.64	Line	-	23.93	9.66	0.11	9.87			
AV	169.024k	40.49	55.01	-14.52	19.64	Line	-	20.85	9.66	0.11	9.87			
QP	267.135k	46.06	61.20	-15.14	19.64	Line	-	26.42	9.65	0.12	9.87			
AV	267.135k	43.36	51.20	-7.84	19.64	Line	"Worst"	23.72	9.65	0.12	9.87			
QP	890.466k	26.73	56.00	-29.27	19.62	Line	-	7.11	9.64	0.11	9.87			
AV	890.466k	24.97	46.00	-21.03	19.62	Line	-	5.35	9.64	0.11	9.87			
QP	1.339M	24.64	56.00	-31.36	19.65	Line	-	4.99	9.64	0.13	9.88			
AV	1.339M	21.46	46.00	-24.54	19.65	Line	-	1.81	9.64	0.13	9.88			
QP	3.807M	26.77	56.00	-29.23	19.72	Line	-	7.05	9.66	0.18	9.88			
AV	3.807M	21.49	46.00	-24.51	19.72	Line	-	1.77	9.66	0.18	9.88			
QP	8.109M	33.43	60.00	-26.57	19.81	Line	-	13.62	9.68	0.25	9.88			
AV	8.109M	25.52	50.00	-24.48	19.81	Line	-	5.71	9.68	0.25	9.88			

**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)	681.25k	1.03M	1M03F1D	678.75k	1.029M

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;

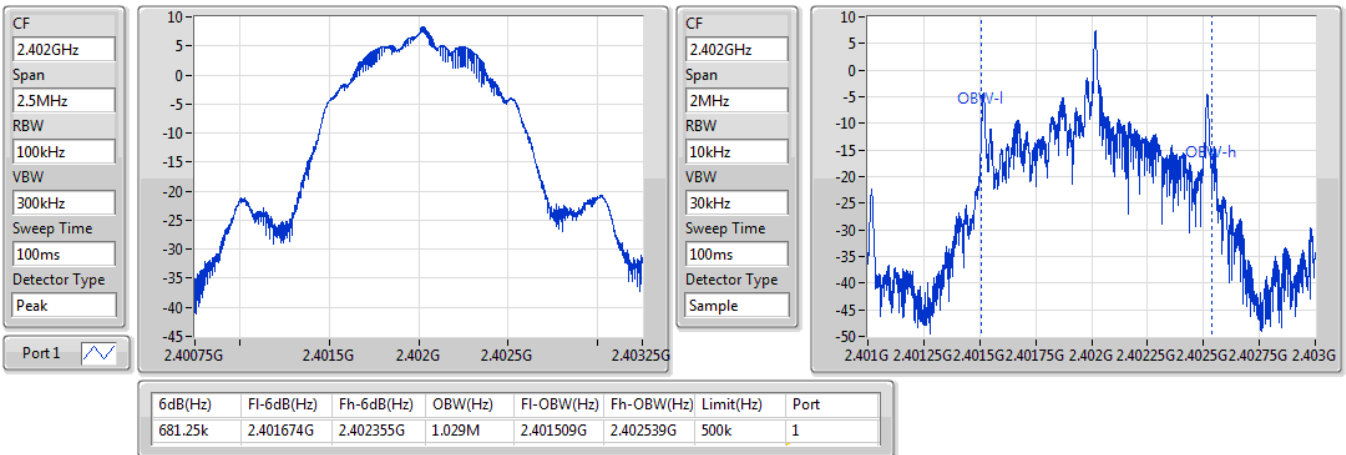
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	500k	681.25k	1.029M
2440MHz_TnomVnom	Pass	500k	678.75k	1.03M
2480MHz_TnomVnom	Pass	500k	678.75k	1.029M

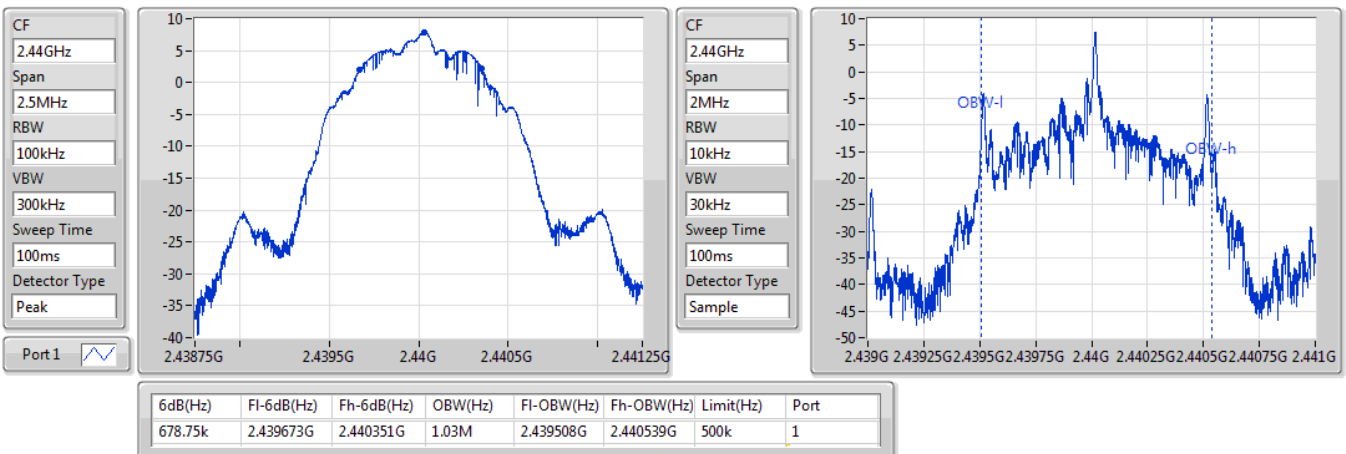
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-LE(1Mbps)
2402MHz
EBW

15/05/2020


BT-LE(1Mbps)
2440MHz
EBW

15/05/2020

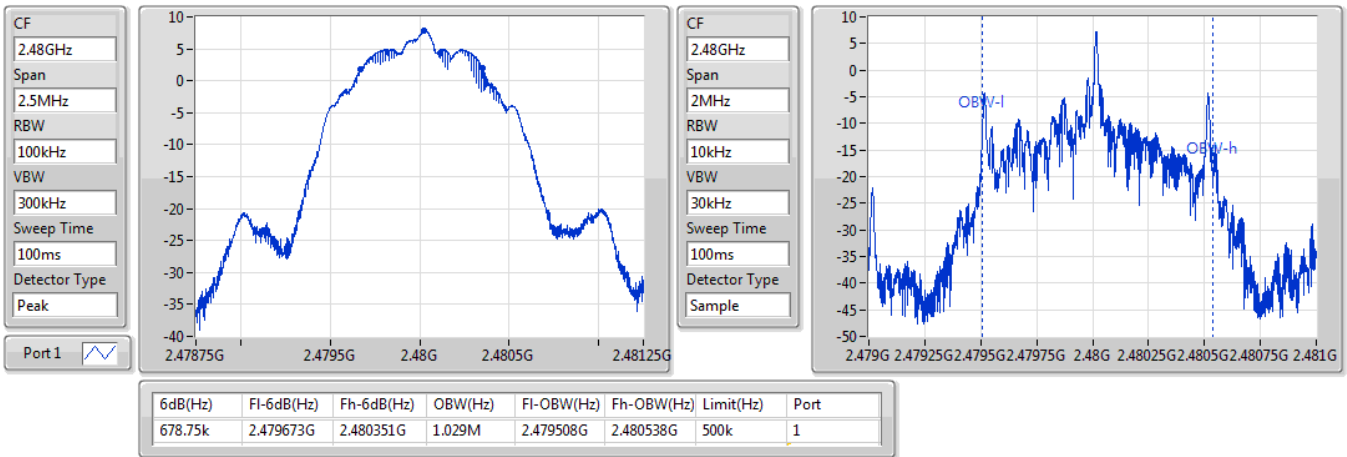


BT-LE(1Mbps)

2480MHz

EBW

15/05/2020





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	7.54	0.00568

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.30	7.41	30.00
2440MHz_TnomVnom	Pass	3.30	7.54	30.00
2480MHz_TnomVnom	Pass	3.30	7.50	30.00

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



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	7.54	0.00568

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.00	7.41	30.00
2440MHz_TnomVnom	Pass	3.00	7.54	30.00
2480MHz_TnomVnom	Pass	3.00	7.50	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	6.61

RBW=3 kHz.



Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.30	6.52	8.00
2440MHz_TnomVnom	Pass	3.30	6.61	8.00
2480MHz_TnomVnom	Pass	3.30	6.49	8.00

DG = Directional Gain; RBW=3 kHz;

PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

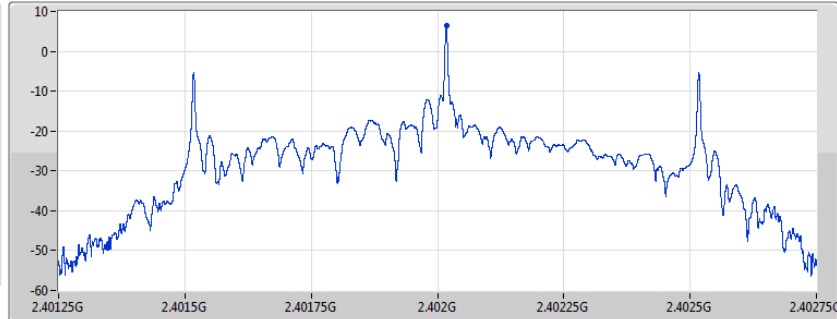
BT-LE(1Mbps)

PSD

2402MHz

15/05/2020

CF
2.402GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
632.18121us
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.52	6.52	6.52

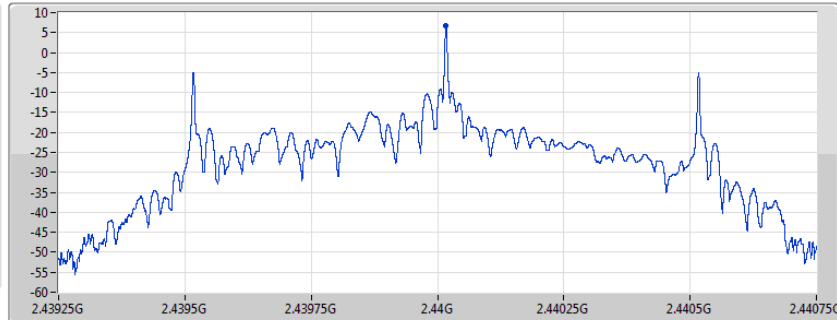
BT-LE(1Mbps)

PSD

2440MHz

15/05/2020

CF
2.44GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
632.18121us
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.61	6.61	6.61

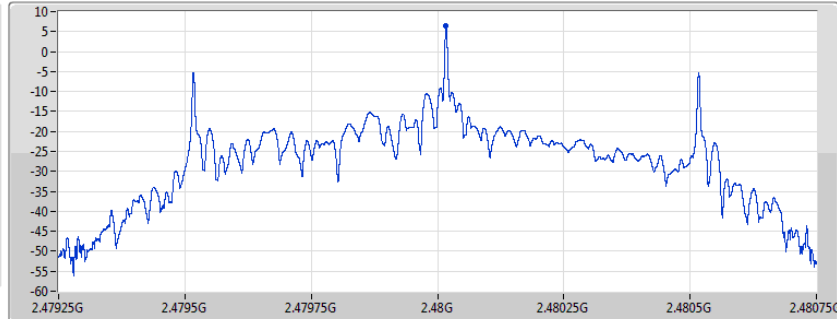
BT-LE(1Mbps)

PSD

2480MHz

15/05/2020

CF
2.48GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
632.18121us
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.49	6.49	6.49



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	6.61

RBW=3 kHz.



Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.00	6.52	8.00
2440MHz_TnomVnom	Pass	3.00	6.61	8.00
2480MHz_TnomVnom	Pass	3.00	6.49	8.00

DG = Directional Gain; RBW=3 kHz;

PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

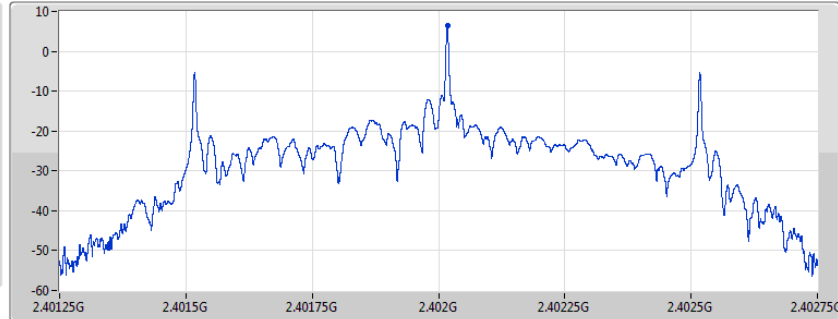
BT-LE(1Mbps)

PSD

2402MHz

15/05/2020

CF
2.402GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
632.18121us
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.52	6.52	6.52

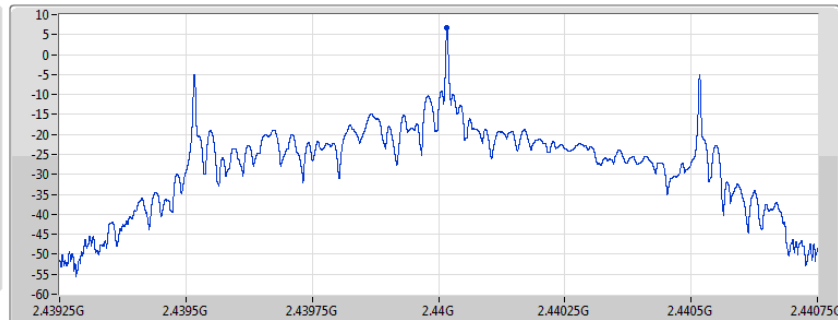
BT-LE(1Mbps)

PSD

2440MHz

15/05/2020

CF
2.44GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
632.18121us
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.61	6.61	6.61

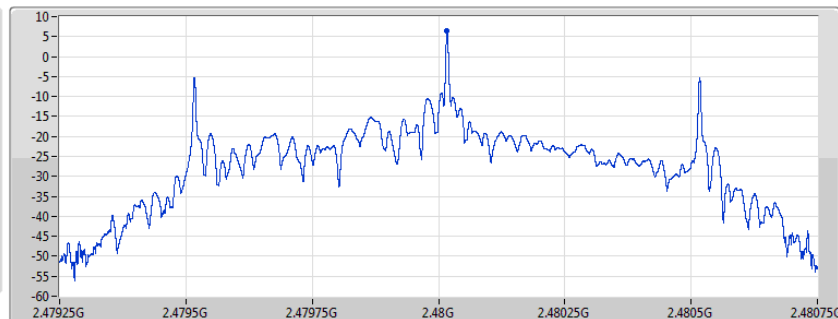
BT-LE(1Mbps)

PSD

2480MHz

15/05/2020

CF
2.48GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
632.18121us
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.49	6.49	6.49



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	2.44004G	7.82	-22.18	2.30891G	-53.99	2.39993G	-44.85	2.4G	-42.67	2.48393G	-51.73	23.50398G	-41.30	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_TnomVnom	Pass	2.44004G	7.82	-22.18	2.30891G	-53.99	2.39993G	-44.85	2.4G	-42.67	2.48393G	-51.73	23.50398G	-41.30	1
2440MHz_TnomVnom	Pass	2.44004G	7.82	-22.18	1.92968G	-53.92	2.39267G	-53.14	2.4835G	-52.76	2.4917G	-51.97	23.17216G	-40.48	1
2480MHz_TnomVnom	Pass	2.44004G	7.82	-22.18	1.95994G	-54.69	2.39163G	-53.31	2.4835G	-52.30	2.48364G	-49.97	24.88752G	-41.09	1

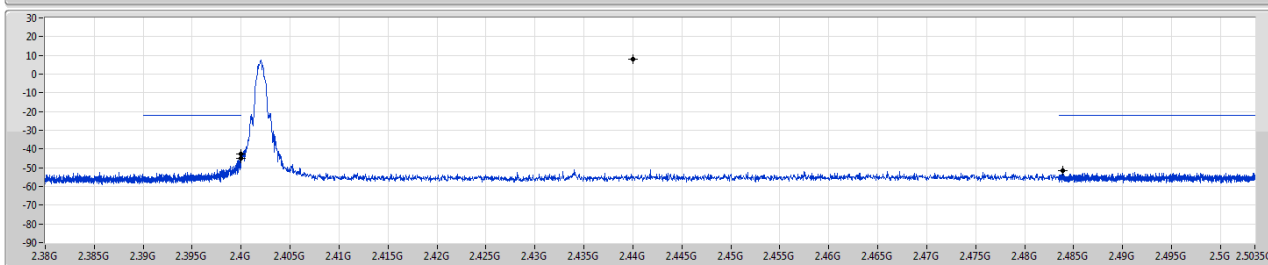
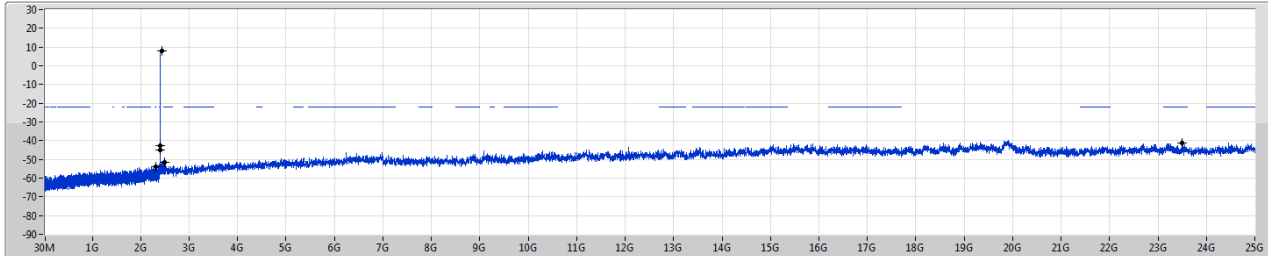
BT-LE(1Mbps)

2402MHz

CSE NdB

15/05/2020

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
2.44004G	7.82	-22.18	2.30891G	-53.99	2.39993G	-44.85	2.4G	-42.67	2.48393G	-51.73	2.50398G	-41.30	1

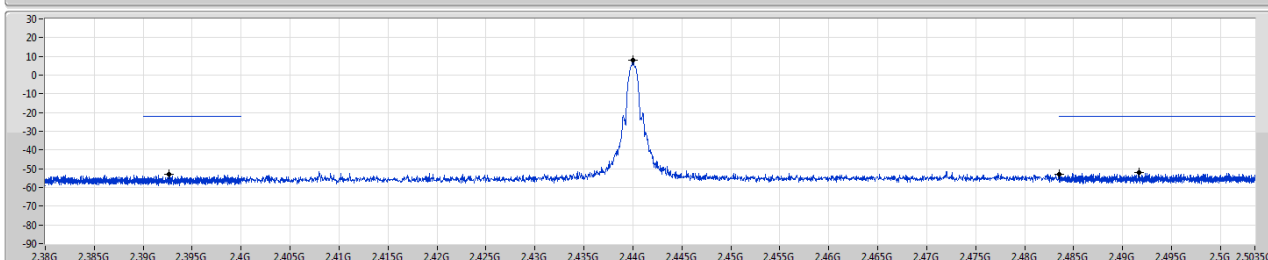
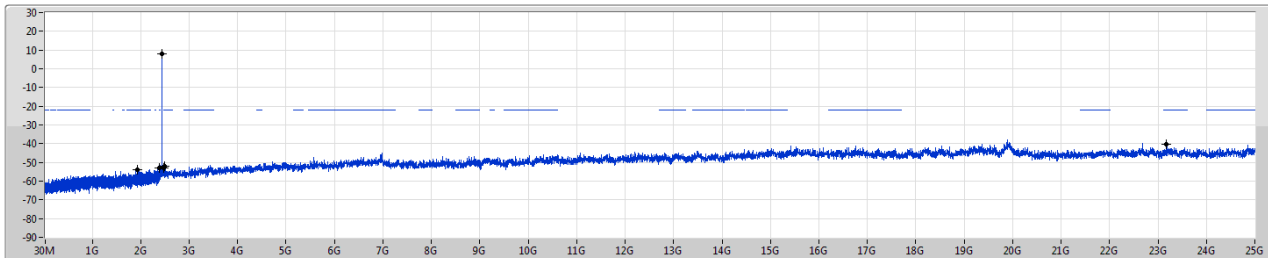
BT-LE(1Mbps)

2440MHz

CSE NdB

15/05/2020

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
2.44004G	7.82	-22.18	1.92968G	-53.92	2.39267G	-53.14	2.4835G	-52.76	2.4917G	-51.97	2.517216G	-40.48	1

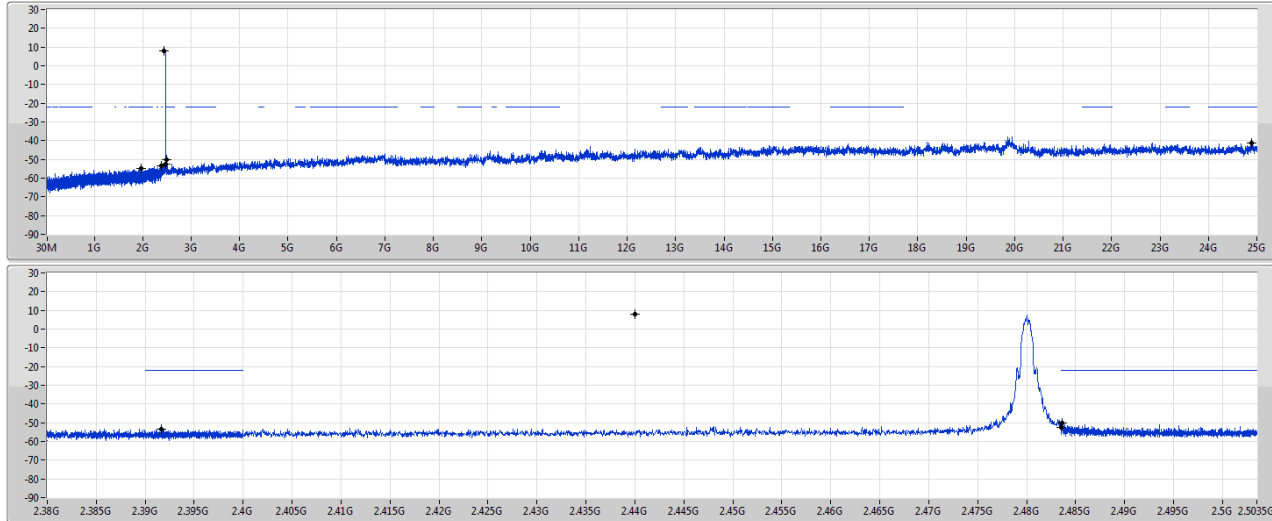
BT-LE(1Mbps)

2480MHz

CSE NdB

15/05/2020

Port 1



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
2.44004G	7.82	-22.18	1.95994G	-54.69	2.39163G	-53.31	2.4835G	-52.30	2.48364G	-49.97	2.48752G	-41.09	1



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	241.46M	39.52	46.00	-6.48	3	Vertical	360	1.00	-

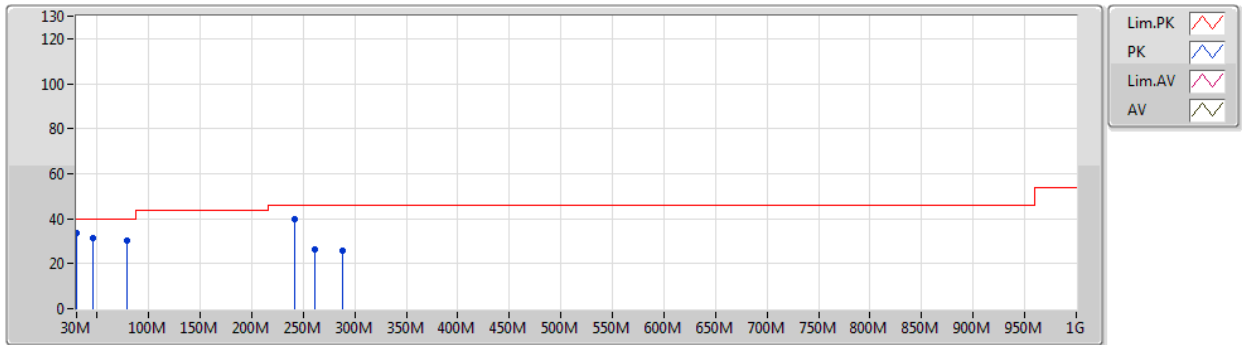
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	30M	33.41	40.00	-6.59	3	Vertical	360	1.00	-
2440MHz	Pass	PK	45.52M	31.19	40.00	-8.81	3	Vertical	360	1.00	-
2440MHz	Pass	PK	78.5M	30.16	40.00	-9.84	3	Vertical	360	1.00	-
2440MHz	Pass	PK	241.46M	39.52	46.00	-6.48	3	Vertical	360	1.00	-
2440MHz	Pass	PK	260.86M	26.10	46.00	-19.90	3	Vertical	360	1.00	-
2440MHz	Pass	PK	288.02M	25.91	46.00	-20.09	3	Vertical	360	1.00	-
2440MHz	Pass	PK	59.1M	27.02	40.00	-12.98	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	80.44M	24.62	40.00	-15.38	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	99.84M	23.18	43.50	-20.32	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	264.74M	29.14	46.00	-16.86	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	288.02M	32.06	46.00	-13.94	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	305.48M	29.45	46.00	-16.55	3	Horizontal	0	1.00	-

BT-LE(1Mbps)

2440MHz_PoE

01/06/2020

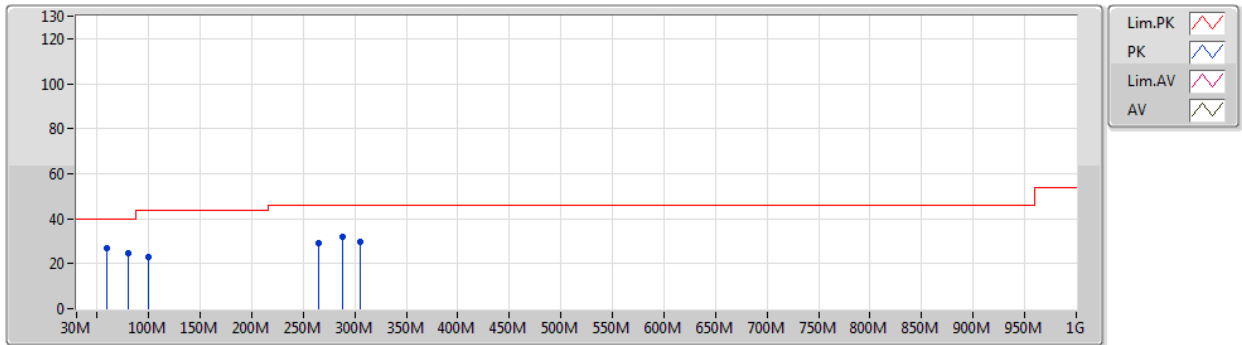


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	30M	33.41	40.00	-6.59	-12.94	3	Vertical	360	1.00	-	46.35	23.77	0.40	37.11
PK	45.52M	31.19	40.00	-8.81	-20.84	3	Vertical	360	1.00	-	52.03	15.76	0.50	37.10
PK	78.5M	30.16	40.00	-9.84	-24.04	3	Vertical	360	1.00	-	54.20	12.21	0.70	36.95
PK	241.46M	39.52	46.00	-6.48	-18.62	3	Vertical	360	1.00	-	58.14	16.52	1.27	36.41
PK	260.86M	26.10	46.00	-19.90	-15.94	3	Vertical	360	1.00	-	42.04	19.17	1.32	36.43
PK	288.02M	25.91	46.00	-20.09	-17.00	3	Vertical	360	1.00	-	42.91	18.09	1.38	36.47

BT-LE(1Mbps)

2440MHz_PoE

01/06/2020



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	59.1M	27.02	40.00	-12.98	-25.79	3	Horizontal	0	1.00	-	52.81	10.69	0.60	37.08
PK	80.44M	24.62	40.00	-15.38	-23.60	3	Horizontal	0	1.00	-	48.22	12.52	0.70	36.82
PK	99.84M	23.18	43.50	-20.32	-20.82	3	Horizontal	0	1.00	-	44.00	14.98	0.80	36.60
PK	264.74M	29.14	46.00	-16.86	-16.31	3	Horizontal	0	1.00	-	45.45	18.79	1.33	36.43
PK	288.02M	32.06	46.00	-13.94	-17.00	3	Horizontal	0	1.00	-	49.06	18.09	1.38	36.47
PK	305.48M	29.45	46.00	-16.55	-16.73	3	Horizontal	0	1.00	-	46.18	18.29	1.41	36.43

**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	2.4864G	49.55	54.00	-4.45	3	Horizontal	40	2.15	-



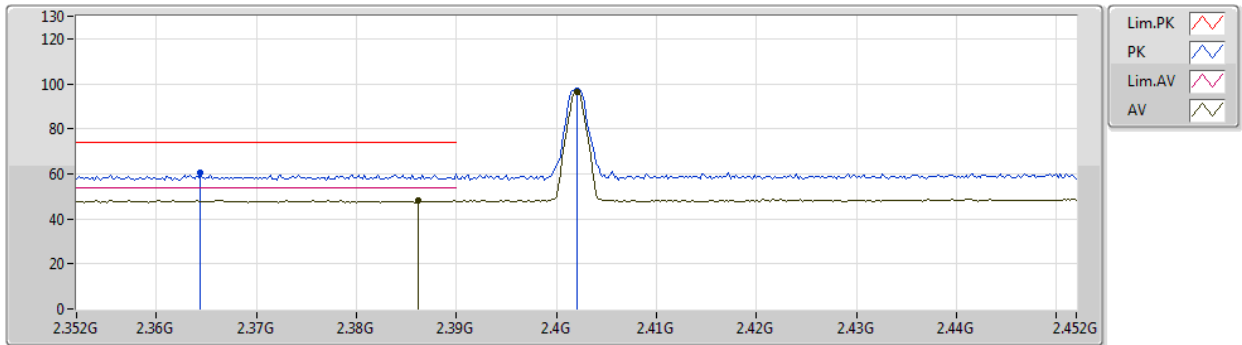
Result

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	2.48G	96.98	Inf	-Inf	3	Vertical	196	1.05	-
2402MHz	Pass	AV	2.4956G	49.05	54.00	-4.95	3	Vertical	196	1.05	-
2402MHz	Pass	PK	2.4798G	97.62	Inf	-Inf	3	Vertical	196	1.05	-
2402MHz	Pass	PK	2.4998G	60.96	74.00	-13.04	3	Vertical	196	1.05	-
2402MHz	Pass	AV	2.48G	103.88	Inf	-Inf	3	Horizontal	40	2.15	-
2402MHz	Pass	AV	2.4864G	49.55	54.00	-4.45	3	Horizontal	40	2.15	-
2402MHz	Pass	PK	2.4798G	104.44	Inf	-Inf	3	Horizontal	40	2.15	-
2402MHz	Pass	PK	2.4835G	61.50	74.00	-12.50	3	Horizontal	40	2.15	-
2402MHz	Pass	AV	4.95942G	37.37	54.00	-16.63	3	Vertical	168	1.50	-
2402MHz	Pass	PK	4.95943G	49.70	74.00	-24.30	3	Vertical	168	1.50	-
2402MHz	Pass	AV	4.95924G	37.41	54.00	-16.59	3	Horizontal	40	1.00	-
2402MHz	Pass	PK	4.96028G	49.71	74.00	-24.29	3	Horizontal	40	1.00	-
2440MHz	Pass	AV	2.3748G	48.14	54.00	-5.86	3	Vertical	197	1.50	-
2440MHz	Pass	AV	2.44G	96.25	Inf	-Inf	3	Vertical	197	1.50	-
2440MHz	Pass	AV	2.4996G	49.08	54.00	-4.92	3	Vertical	197	1.50	-
2440MHz	Pass	PK	2.3624G	59.66	74.00	-14.34	3	Vertical	197	1.50	-
2440MHz	Pass	PK	2.4404G	96.78	Inf	-Inf	3	Vertical	197	1.50	-
2440MHz	Pass	PK	2.4872G	61.89	74.00	-12.11	3	Vertical	197	1.50	-
2440MHz	Pass	AV	2.3684G	48.39	54.00	-5.61	3	Horizontal	42	1.53	-
2440MHz	Pass	AV	2.44G	102.02	Inf	-Inf	3	Horizontal	42	1.53	-
2440MHz	Pass	AV	2.4996G	49.28	54.00	-4.72	3	Horizontal	42	1.53	-
2440MHz	Pass	PK	2.3856G	59.78	74.00	-14.22	3	Horizontal	42	1.53	-
2440MHz	Pass	PK	2.4396G	102.56	Inf	-Inf	3	Horizontal	42	1.53	-
2440MHz	Pass	PK	2.4884G	60.17	74.00	-13.83	3	Horizontal	42	1.53	-
2440MHz	Pass	AV	4.87926G	37.29	54.00	-16.71	3	Vertical	106	1.48	-
2440MHz	Pass	PK	4.8795G	48.97	74.00	-25.03	3	Vertical	106	1.48	-
2440MHz	Pass	AV	4.87902G	37.05	54.00	-16.95	3	Horizontal	165	1.50	-
2440MHz	Pass	PK	4.87908G	49.40	74.00	-24.60	3	Horizontal	165	1.50	-
2480MHz	Pass	AV	2.48G	96.98	Inf	-Inf	3	Vertical	196	1.05	-
2480MHz	Pass	AV	2.4956G	49.05	54.00	-4.95	3	Vertical	196	1.05	-
2480MHz	Pass	PK	2.4798G	97.62	Inf	-Inf	3	Vertical	196	1.05	-
2480MHz	Pass	PK	2.4998G	60.96	74.00	-13.04	3	Vertical	196	1.05	-
2480MHz	Pass	AV	2.48G	103.88	Inf	-Inf	3	Horizontal	40	2.15	-
2480MHz	Pass	AV	2.4864G	49.55	54.00	-4.45	3	Horizontal	40	2.15	-
2480MHz	Pass	PK	2.4798G	104.44	Inf	-Inf	3	Horizontal	40	2.15	-
2480MHz	Pass	PK	2.4835G	61.50	74.00	-12.50	3	Horizontal	40	2.15	-
2480MHz	Pass	AV	4.95942G	37.37	54.00	-16.63	3	Vertical	168	1.50	-
2480MHz	Pass	PK	4.95943G	49.70	74.00	-24.30	3	Vertical	168	1.50	-
2480MHz	Pass	AV	4.95924G	37.41	54.00	-16.59	3	Horizontal	40	1.00	-
2480MHz	Pass	PK	4.96028G	49.71	74.00	-24.29	3	Horizontal	40	1.00	-

BT-LE(1Mbps)

2402MHz_TX

31/05/2020

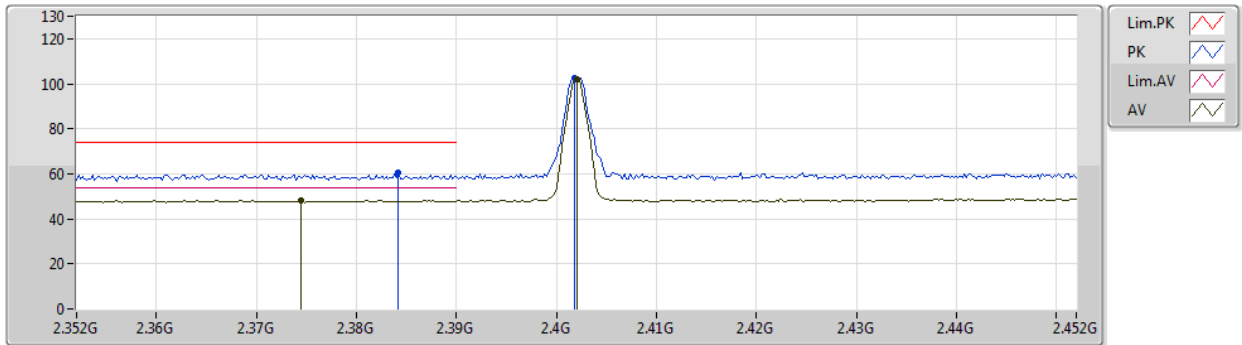


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3862G	48.17	54.00	-5.83	34.74	3	Vertical	194	1.65	-	13.43	29.67	5.07	-
AV	2.402G	96.40	Inf	-Inf	34.81	3	Vertical	194	1.65	-	61.59	29.71	5.10	-
PK	2.3644G	60.38	74.00	-13.62	34.66	3	Vertical	194	1.65	-	25.72	29.63	5.03	-
PK	2.402G	96.96	Inf	-Inf	34.81	3	Vertical	194	1.65	-	62.15	29.71	5.10	-

BT-LE(1Mbps)

2402MHz_TX

31/05/2020

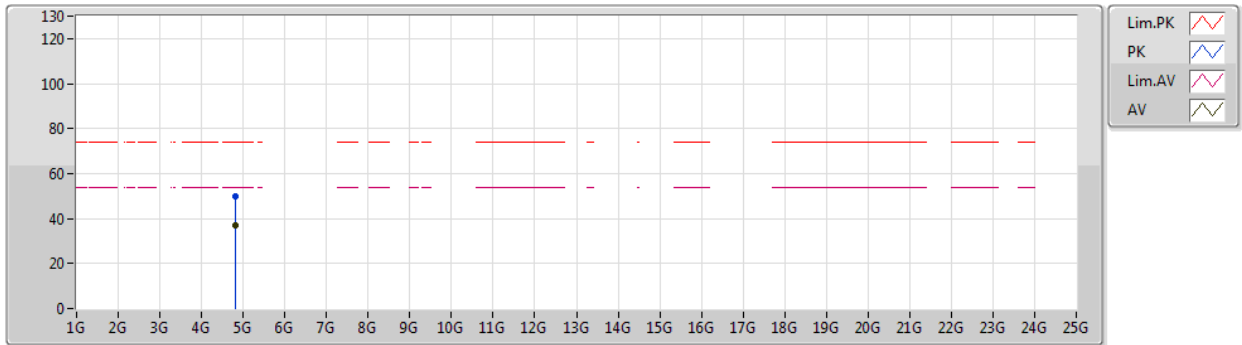


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3744G	48.32	54.00	-5.68	34.70	3	Horizontal	53	2.27	-	13.62	29.65	5.05	-
AV	2.402G	102.09	Inf	-Inf	34.81	3	Horizontal	53	2.27	-	67.28	29.71	5.10	-
PK	2.3842G	60.27	74.00	-13.73	34.74	3	Horizontal	53	2.27	-	25.53	29.67	5.07	-
PK	2.4018G	102.65	Inf	-Inf	34.81	3	Horizontal	53	2.27	-	67.84	29.71	5.10	-

BT-LE(1Mbps)

2402MHz_TX

31/05/2020

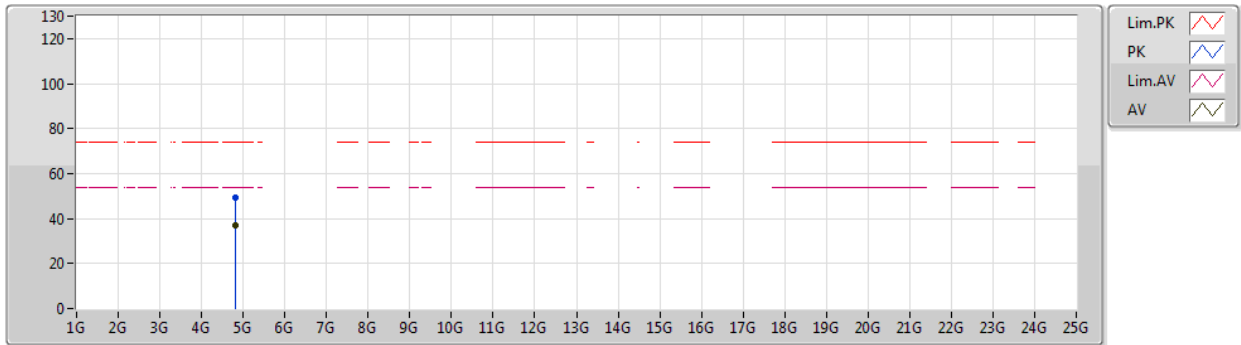


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80447G	36.86	54.00	-17.14	6.86	3	Vertical	333	2.89	-	30.00	33.61	7.30	34.05
PK	4.80326G	49.85	74.00	-24.15	6.86	3	Vertical	333	2.89	-	42.99	33.61	7.30	34.05

BT-LE(1Mbps)

2402MHz_TX

31/05/2020

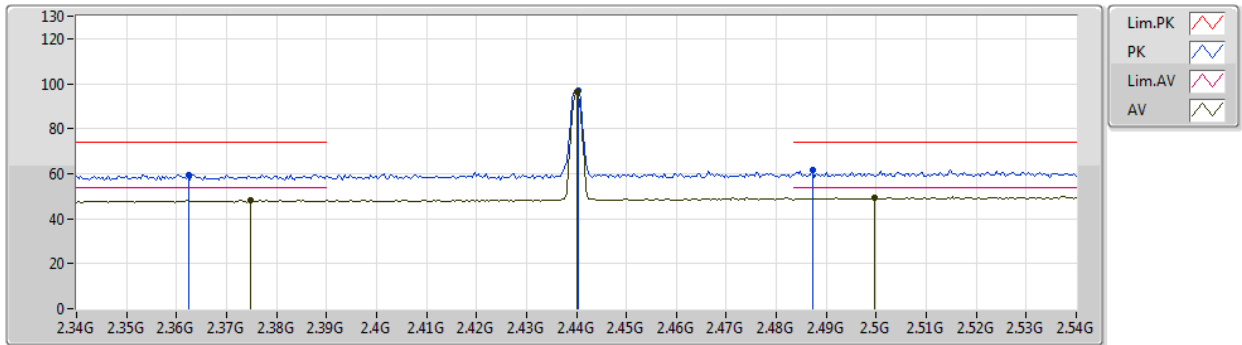


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	4.8043G	49.30	74.00	-24.70	6.86	3	Horizontal	98	2.97	-	42.44	33.61	7.30	34.05
AV	4.803G	36.93	54.00	-17.07	6.86	3	Horizontal	98	2.97	-	30.07	33.61	7.30	34.05

BT-LE(1Mbps)

2440MHz_TX

31/05/2020

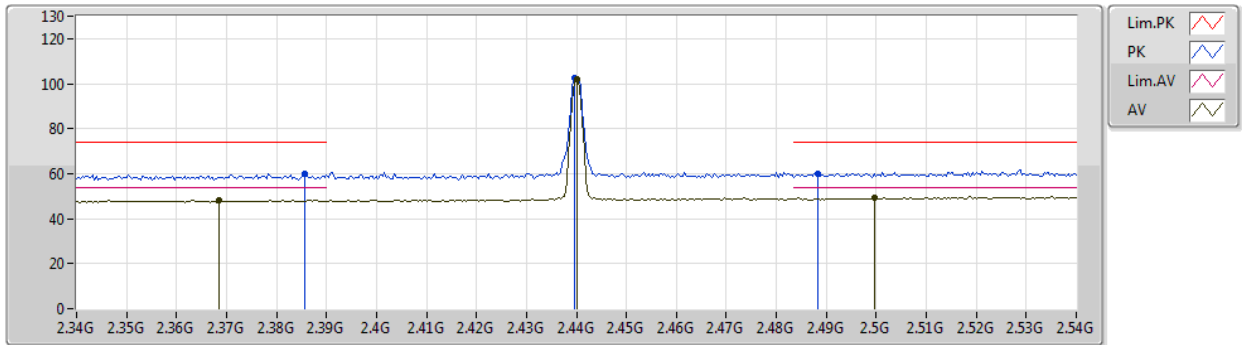


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3748G	48.14	54.00	-5.86	34.70	3	Vertical	197	1.50	-	13.44	29.65	5.05	-
AV	2.44G	96.25	Inf	-Inf	35.06	3	Vertical	197	1.50	-	61.19	29.90	5.16	-
AV	2.4996G	49.08	54.00	-4.92	35.45	3	Vertical	197	1.50	-	13.63	30.20	5.25	-
PK	2.3624G	59.66	74.00	-14.34	34.64	3	Vertical	197	1.50	-	25.02	29.62	5.02	-
PK	2.4404G	96.78	Inf	-Inf	35.06	3	Vertical	197	1.50	-	61.72	29.90	5.16	-
PK	2.4872G	61.89	74.00	-12.11	35.37	3	Vertical	197	1.50	-	26.52	30.14	5.23	-

BT-LE(1Mbps)

2440MHz_TX

31/05/2020

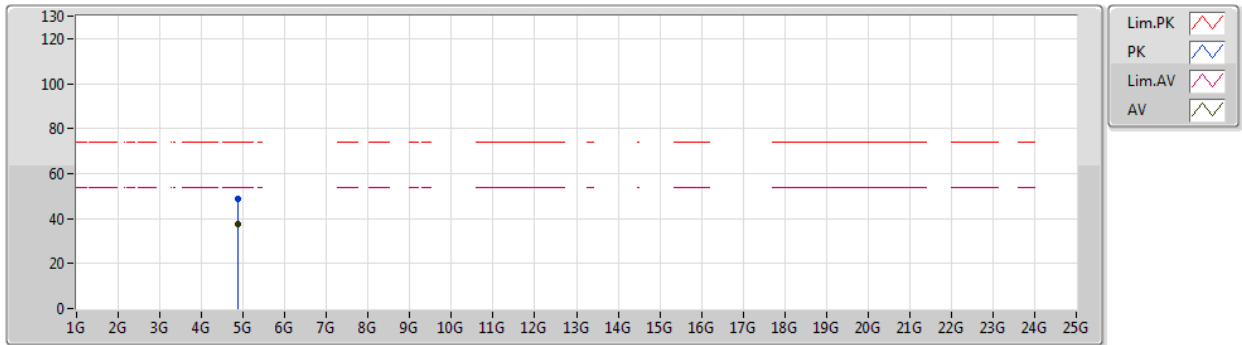


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3684G	48.39	54.00	-5.61	34.68	3	Horizontal	42	1.53	-	13.71	29.64	5.04	-
AV	2.44G	102.02	Inf	-Inf	35.06	3	Horizontal	42	1.53	-	66.96	29.90	5.16	-
AV	2.4996G	49.28	54.00	-4.72	35.45	3	Horizontal	42	1.53	-	13.83	30.20	5.25	-
PK	2.3856G	59.78	74.00	-14.22	34.74	3	Horizontal	42	1.53	-	25.04	29.67	5.07	-
PK	2.4396G	102.56	Inf	-Inf	35.06	3	Horizontal	42	1.53	-	67.50	29.90	5.16	-
PK	2.4884G	60.17	74.00	-13.83	35.37	3	Horizontal	42	1.53	-	24.80	30.14	5.23	-

BT-LE(1Mbps)

2440MHz_TX

31/05/2020

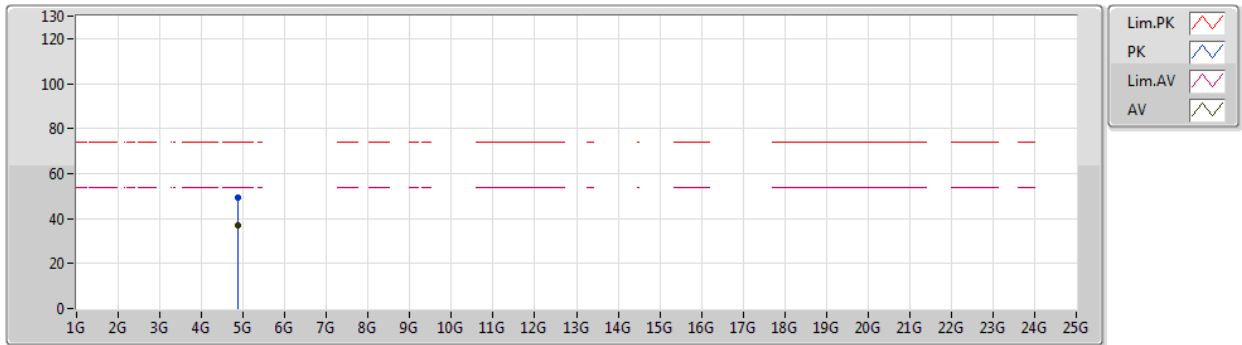


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87926G	37.29	54.00	-16.71	7.09	3	Vertical	106	1.48	-	30.20	33.76	7.38	34.05
PK	4.8795G	48.97	74.00	-25.03	7.09	3	Vertical	106	1.48	-	41.88	33.76	7.38	34.05

BT-LE(1Mbps)

2440MHz_TX

31/05/2020

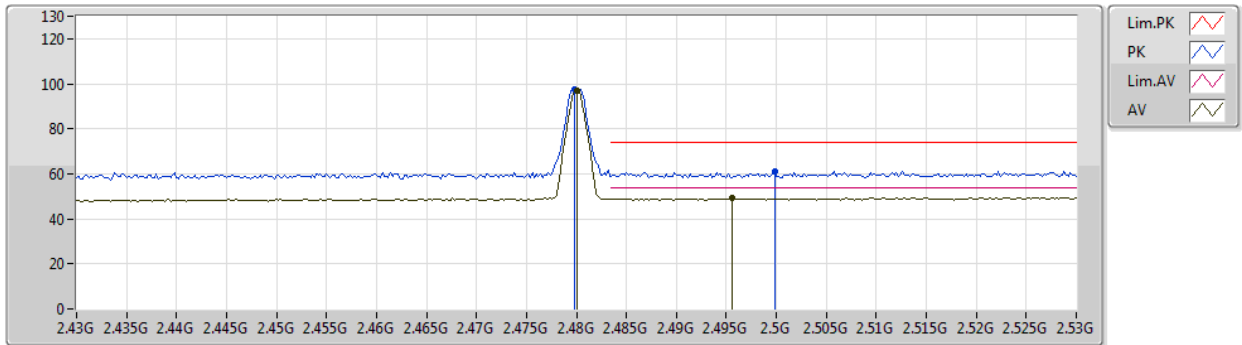


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87902G	37.05	54.00	-16.95	7.09	3	Horizontal	165	1.50	-	29.96	33.76	7.38	34.05
PK	4.87908G	49.40	74.00	-24.60	7.09	3	Horizontal	165	1.50	-	42.31	33.76	7.38	34.05

BT-LE(1Mbps)

2480MHz_TX

31/05/2020

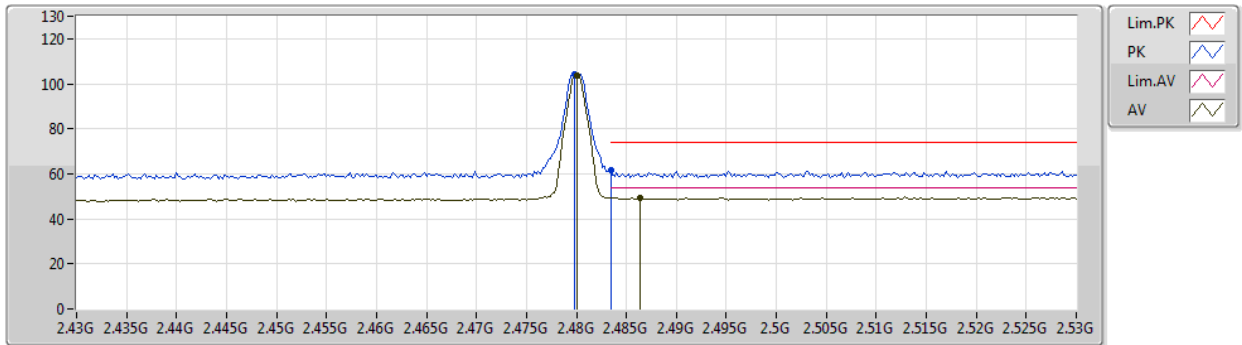


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	96.98	Inf	-Inf	35.32	3	Vertical	196	1.05	-	61.66	30.10	5.22	-
AV	2.4956G	49.05	54.00	-4.95	35.42	3	Vertical	196	1.05	-	13.63	30.18	5.24	-
PK	2.4798G	97.62	Inf	-Inf	35.32	3	Vertical	196	1.05	-	62.30	30.10	5.22	-
PK	2.4998G	60.96	74.00	-13.04	35.45	3	Vertical	196	1.05	-	25.51	30.20	5.25	-

BT-LE(1Mbps)

2480MHz_TX

31/05/2020

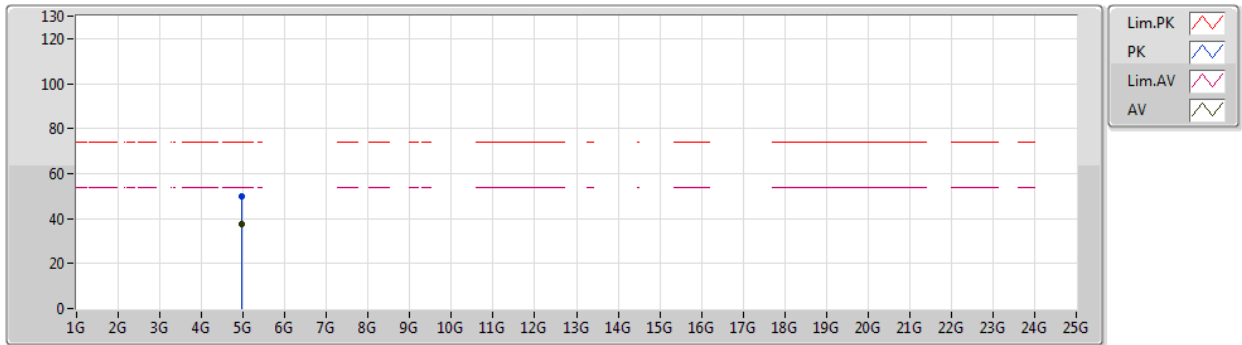


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	103.88	Inf	-Inf	35.32	3	Horizontal	40	2.15	-	68.56	30.10	5.22	-
AV	2.4864G	49.55	54.00	-4.45	35.36	3	Horizontal	40	2.15	-	14.19	30.13	5.23	-
PK	2.4798G	104.44	Inf	-Inf	35.32	3	Horizontal	40	2.15	-	69.12	30.10	5.22	-
PK	2.4835G	61.50	74.00	-12.50	35.35	3	Horizontal	40	2.15	-	26.15	30.12	5.23	-

BT-LE(1Mbps)

2480MHz_TX

31/05/2020

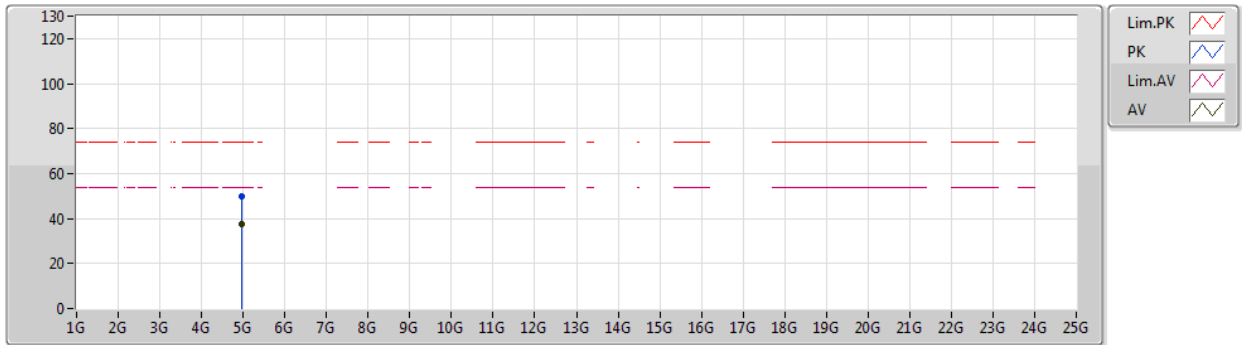


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95942G	37.37	54.00	-16.63	7.34	3	Vertical	168	1.50	-	30.03	33.92	7.46	34.04
PK	4.95943G	49.70	74.00	-24.30	7.34	3	Vertical	168	1.50	-	42.36	33.92	7.46	34.04

BT-LE(1Mbps)

2480MHz_TX

31/05/2020



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	4.95924G	37.41	54.00	-16.59	7.34	3	Horizontal	40	1.00	-	30.07	33.92	7.46	34.04
PK	4.96028G	49.71	74.00	-24.29	7.34	3	Horizontal	40	1.00	-	42.37	33.92	7.46	34.04



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	745.86M	34.73	46.00	-11.27	3	Vertical	360	1.00	-

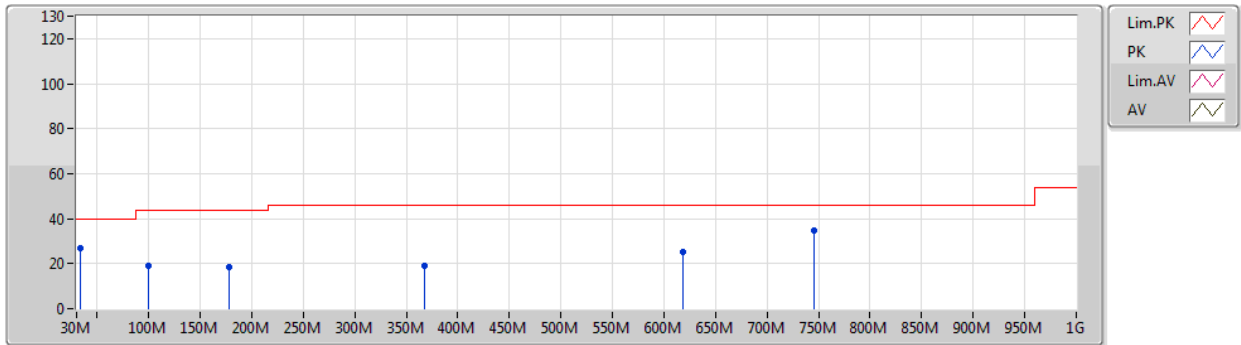
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	33.88M	26.84	40.00	-13.16	3	Vertical	360	1.00	-
2440MHz	Pass	PK	99.84M	19.31	43.50	-24.19	3	Vertical	360	1.00	-
2440MHz	Pass	PK	177.44M	18.25	43.50	-25.25	3	Vertical	360	1.00	-
2440MHz	Pass	PK	367.56M	18.83	46.00	-27.17	3	Vertical	360	1.00	-
2440MHz	Pass	PK	617.82M	25.34	46.00	-20.66	3	Vertical	360	1.00	-
2440MHz	Pass	PK	745.86M	34.73	46.00	-11.27	3	Vertical	360	1.00	-
2440MHz	Pass	PK	59.1M	14.68	40.00	-25.32	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	111.48M	19.29	43.50	-24.21	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	237.58M	25.15	46.00	-20.85	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	350.1M	19.63	46.00	-26.37	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	596.48M	23.62	46.00	-22.38	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	747.8M	31.63	46.00	-14.37	3	Horizontal	0	1.00	-

BT-LE(1Mbps)

2440MHz_PoE

20/05/2020

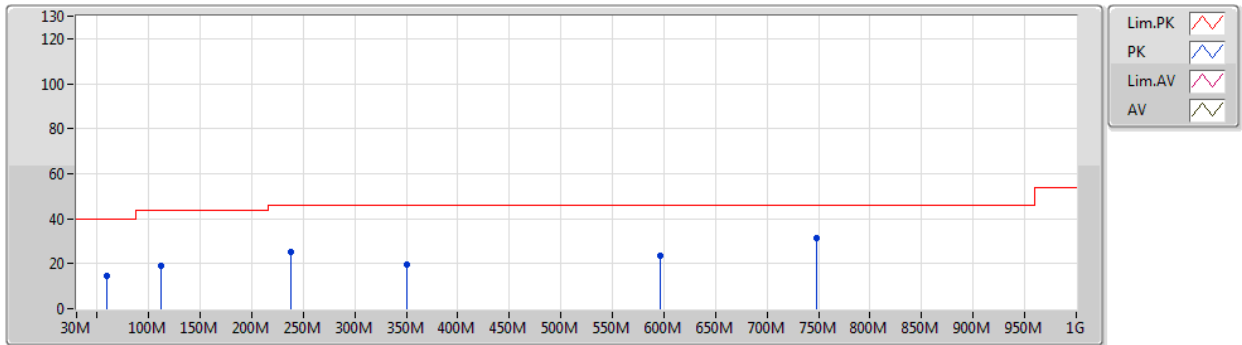


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	26.84	40.00	-13.16	-15.04	3	Vertical	360	1.00	-	41.88	21.87	0.40	37.31
PK	99.84M	19.31	43.50	-24.19	-20.82	3	Vertical	360	1.00	-	40.13	14.98	0.80	36.60
PK	177.44M	18.25	43.50	-25.25	-21.08	3	Vertical	360	1.00	-	39.33	14.25	1.09	36.42
PK	367.56M	18.83	46.00	-27.17	-15.23	3	Vertical	360	1.00	-	34.06	19.79	1.57	36.59
PK	617.82M	25.34	46.00	-20.66	-10.20	3	Vertical	360	1.00	-	35.54	24.85	2.20	37.25
PK	745.86M	34.73	46.00	-11.27	-7.77	3	Vertical	360	1.00	-	42.50	27.03	2.49	37.29

BT-LE(1Mbps)

2440MHz_PoE

20/05/2020



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	59.1M	14.68	40.00	-25.32	-25.79	3	Horizontal	0	1.00	-	40.47	10.69	0.60	37.08
PK	111.48M	19.29	43.50	-24.21	-19.87	3	Horizontal	0	1.00	-	39.16	16.03	0.80	36.70
PK	237.58M	25.15	46.00	-20.85	-19.09	3	Horizontal	0	1.00	-	44.24	16.07	1.25	36.41
PK	350.1M	19.63	46.00	-26.37	-15.58	3	Horizontal	0	1.00	-	35.21	19.42	1.50	36.50
PK	596.48M	23.62	46.00	-22.38	-10.25	3	Horizontal	0	1.00	-	33.87	24.73	2.19	37.17
PK	747.8M	31.63	46.00	-14.37	-7.71	3	Horizontal	0	1.00	-	39.34	27.04	2.50	37.25



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	47.63	54.00	-6.37	3	Horizontal	314	2.00	-

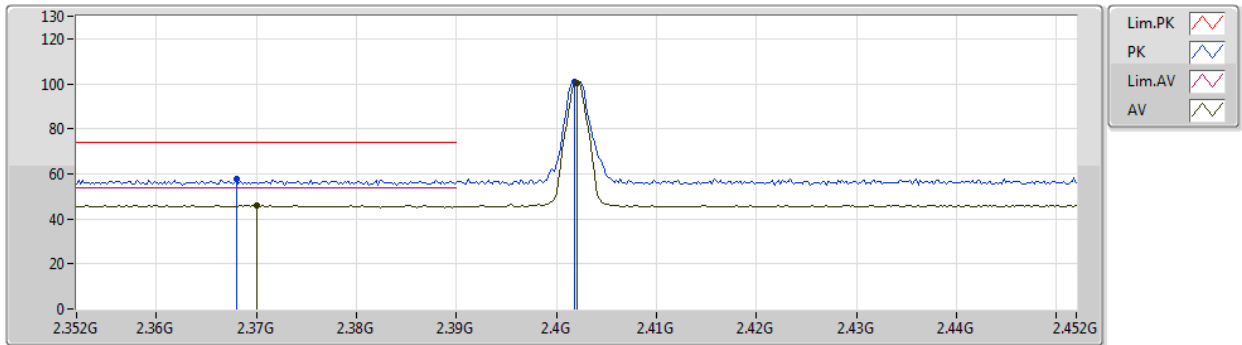
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.37G	46.05	54.00	-7.95	3	Vertical	360	1.14	-
2402MHz	Pass	AV	2.402G	100.53	Inf	-Inf	3	Vertical	360	1.14	-
2402MHz	Pass	PK	2.368G	57.92	74.00	-16.08	3	Vertical	360	1.14	-
2402MHz	Pass	PK	2.4018G	101.08	Inf	-Inf	3	Vertical	360	1.14	-
2402MHz	Pass	AV	2.371G	46.20	54.00	-7.80	3	Horizontal	311	1.91	-
2402MHz	Pass	AV	2.402G	105.62	Inf	-Inf	3	Horizontal	311	1.91	-
2402MHz	Pass	PK	2.3762G	57.85	74.00	-16.15	3	Horizontal	311	1.91	-
2402MHz	Pass	PK	2.4018G	106.15	Inf	-Inf	3	Horizontal	311	1.91	-
2402MHz	Pass	AV	4.80229G	34.81	54.00	-19.19	3	Vertical	278	1.50	-
2402MHz	Pass	PK	4.80152G	46.85	74.00	-27.15	3	Vertical	278	1.50	-
2402MHz	Pass	AV	4.80167G	35.14	54.00	-18.86	3	Horizontal	273	1.50	-
2402MHz	Pass	PK	4.80371G	46.83	74.00	-27.17	3	Horizontal	273	1.50	-
2440MHz	Pass	AV	2.3728G	46.03	54.00	-7.97	3	Vertical	360	1.51	-
2440MHz	Pass	AV	2.44G	99.62	Inf	-Inf	3	Vertical	360	1.51	-
2440MHz	Pass	AV	2.4884G	46.36	54.00	-7.64	3	Vertical	360	1.51	-
2440MHz	Pass	PK	2.3552G	57.50	74.00	-16.50	3	Vertical	360	1.51	-
2440MHz	Pass	PK	2.4396G	100.16	Inf	-Inf	3	Vertical	360	1.51	-
2440MHz	Pass	PK	2.496G	58.01	74.00	-15.99	3	Vertical	360	1.51	-
2440MHz	Pass	AV	2.358G	46.03	54.00	-7.97	3	Horizontal	318	1.89	-
2440MHz	Pass	AV	2.44G	103.98	Inf	-Inf	3	Horizontal	318	1.89	-
2440MHz	Pass	AV	2.4992G	46.22	54.00	-7.78	3	Horizontal	318	1.89	-
2440MHz	Pass	PK	2.3624G	57.08	74.00	-16.92	3	Horizontal	318	1.89	-
2440MHz	Pass	PK	2.4396G	104.77	Inf	-Inf	3	Horizontal	318	1.89	-
2440MHz	Pass	PK	2.4952G	57.23	74.00	-16.77	3	Horizontal	318	1.89	-
2440MHz	Pass	AV	4.87975G	34.65	54.00	-19.35	3	Vertical	52	1.50	-
2440MHz	Pass	PK	4.87836G	46.28	74.00	-27.72	3	Vertical	52	1.50	-
2440MHz	Pass	AV	4.87944G	34.54	54.00	-19.46	3	Horizontal	303	1.50	-
2440MHz	Pass	PK	4.87825G	46.31	74.00	-27.69	3	Horizontal	303	1.50	-
2480MHz	Pass	AV	2.48G	97.99	Inf	-Inf	3	Vertical	360	1.69	-
2480MHz	Pass	AV	2.484G	46.46	54.00	-7.54	3	Vertical	360	1.69	-
2480MHz	Pass	PK	2.4798G	98.56	Inf	-Inf	3	Vertical	360	1.69	-
2480MHz	Pass	PK	2.4968G	58.37	74.00	-15.63	3	Vertical	360	1.69	-
2480MHz	Pass	AV	2.48G	103.08	Inf	-Inf	3	Horizontal	314	2.00	-
2480MHz	Pass	AV	2.4835G	47.63	54.00	-6.37	3	Horizontal	314	2.00	-
2480MHz	Pass	PK	2.4802G	103.63	Inf	-Inf	3	Horizontal	314	2.00	-
2480MHz	Pass	PK	2.4835G	59.08	74.00	-14.92	3	Horizontal	314	2.00	-
2480MHz	Pass	AV	4.96G	34.50	54.00	-19.50	3	Vertical	53	1.50	-
2480MHz	Pass	PK	4.96216G	46.55	74.00	-27.45	3	Vertical	53	1.50	-
2480MHz	Pass	AV	4.9599G	34.96	54.00	-19.04	3	Horizontal	158	1.98	-
2480MHz	Pass	PK	4.95984G	46.89	74.00	-27.11	3	Horizontal	158	1.98	-

BT-LE(1Mbps)

2402MHz_TX

14/05/2020

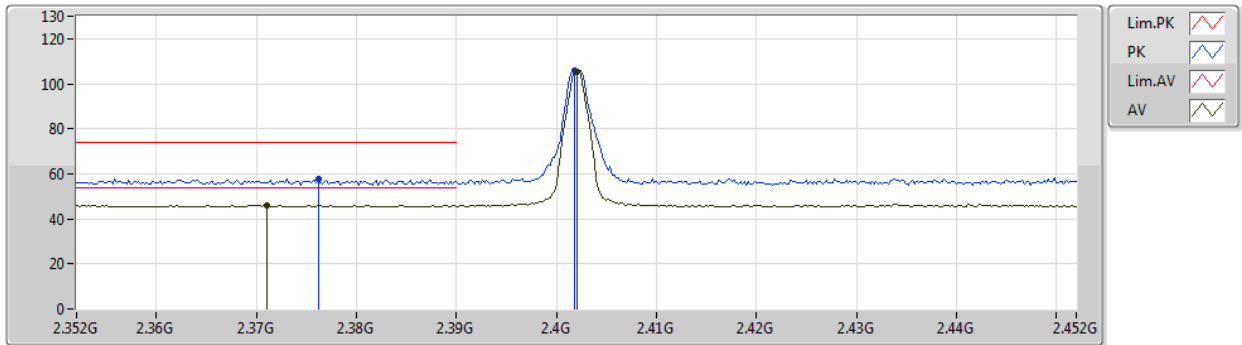


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.37G	46.05	54.00	-7.95	32.76	3	Vertical	360	1.14	-	13.29	27.72	5.04	-
AV	2.402G	100.53	Inf	-Inf	32.70	3	Vertical	360	1.14	-	67.83	27.60	5.10	-
PK	2.368G	57.92	74.00	-16.08	32.77	3	Vertical	360	1.14	-	25.15	27.73	5.04	-
PK	2.4018G	101.08	Inf	-Inf	32.70	3	Vertical	360	1.14	-	68.38	27.60	5.10	-

BT-LE(1Mbps)

2402MHz_TX

14/05/2020

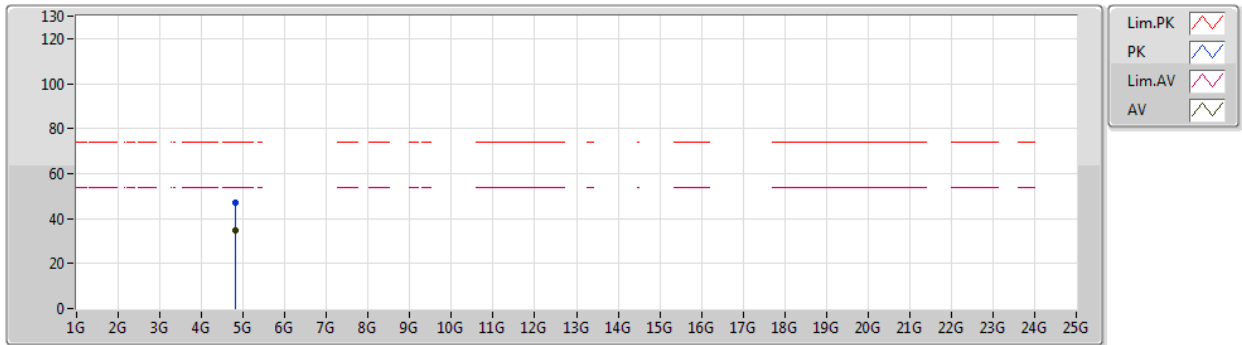


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.371G	46.20	54.00	-7.80	32.76	3	Horizontal	311	1.91	-	13.44	27.72	5.04	-
AV	2.402G	105.62	Inf	-Inf	32.70	3	Horizontal	311	1.91	-	72.92	27.60	5.10	-
PK	2.3762G	57.85	74.00	-16.15	32.75	3	Horizontal	311	1.91	-	25.10	27.70	5.05	-
PK	2.4018G	106.15	Inf	-Inf	32.70	3	Horizontal	311	1.91	-	73.45	27.60	5.10	-

BT-LE(1Mbps)

2402MHz_TX

14/05/2020

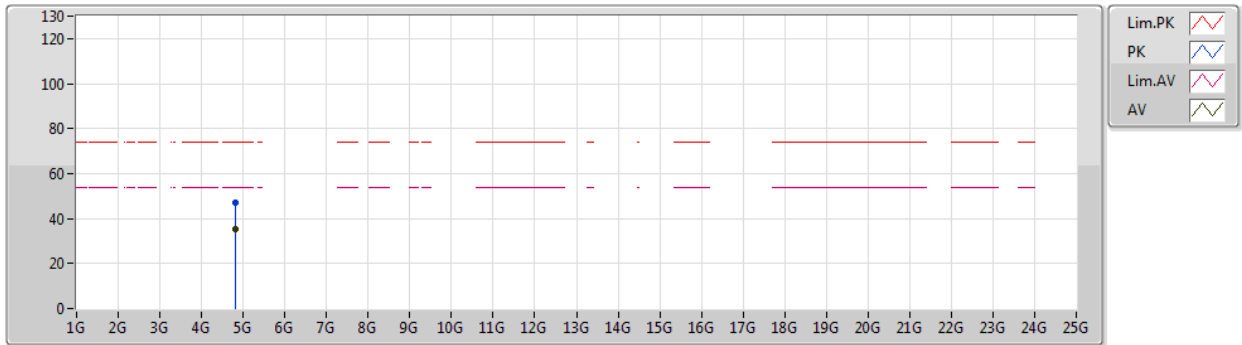


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80229G	34.81	54.00	-19.19	4.35	3	Vertical	278	1.50	-	30.46	31.10	7.30	34.05
PK	4.80152G	46.85	74.00	-27.15	4.35	3	Vertical	278	1.50	-	42.50	31.10	7.30	34.05

BT-LE(1Mbps)

2402MHz_TX

14/05/2020

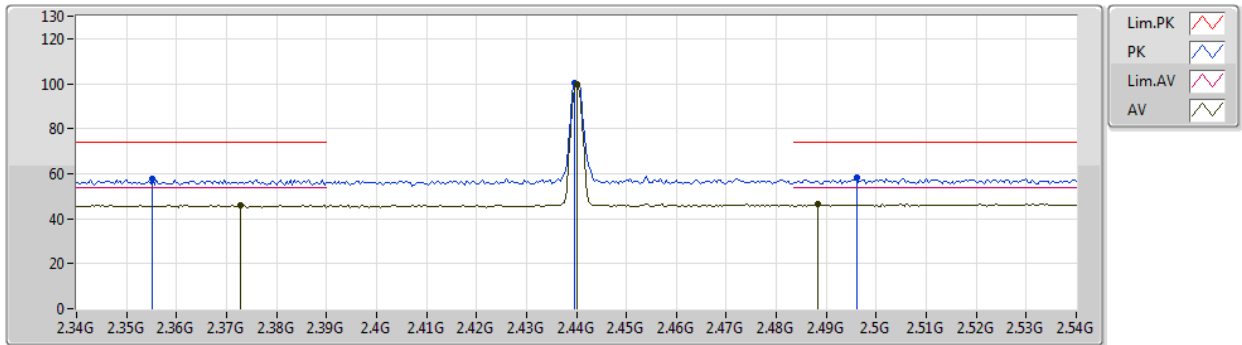


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80167G	35.14	54.00	-18.86	4.35	3	Horizontal	273	1.50	-	30.79	31.10	7.30	34.05
PK	4.80371G	46.83	74.00	-27.17	4.35	3	Horizontal	273	1.50	-	42.48	31.10	7.30	34.05

BT-LE(1Mbps)

2440MHz_TX

14/05/2020

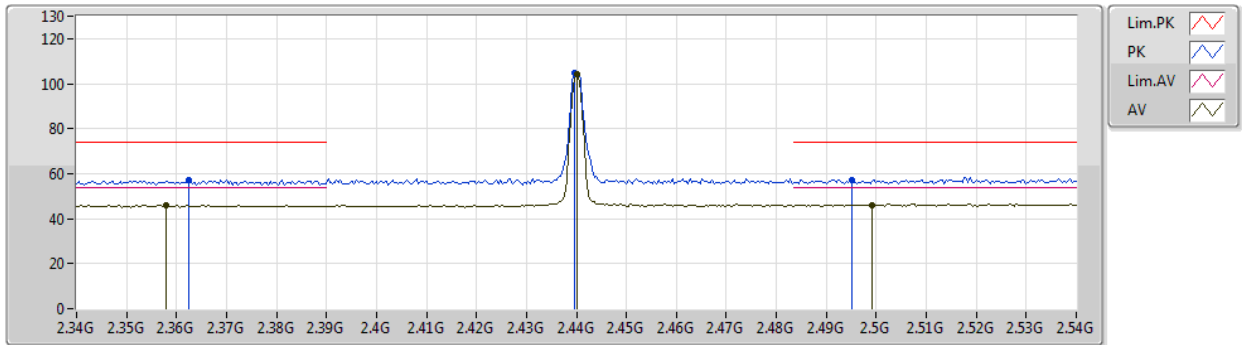


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3728G	46.03	54.00	-7.97	32.76	3	Vertical	360	1.51	-	13.27	27.71	5.05	-
AV	2.44G	99.62	Inf	-Inf	32.72	3	Vertical	360	1.51	-	66.90	27.56	5.16	-
AV	2.4884G	46.36	54.00	-7.64	32.74	3	Vertical	360	1.51	-	13.62	27.51	5.23	-
PK	2.3552G	57.50	74.00	-16.50	32.79	3	Vertical	360	1.51	-	24.71	27.78	5.01	-
PK	2.4396G	100.16	Inf	-Inf	32.72	3	Vertical	360	1.51	-	67.44	27.56	5.16	-
PK	2.496G	58.01	74.00	-15.99	32.74	3	Vertical	360	1.51	-	25.27	27.50	5.24	-

BT-LE(1Mbps)

2440MHz_TX

14/05/2020

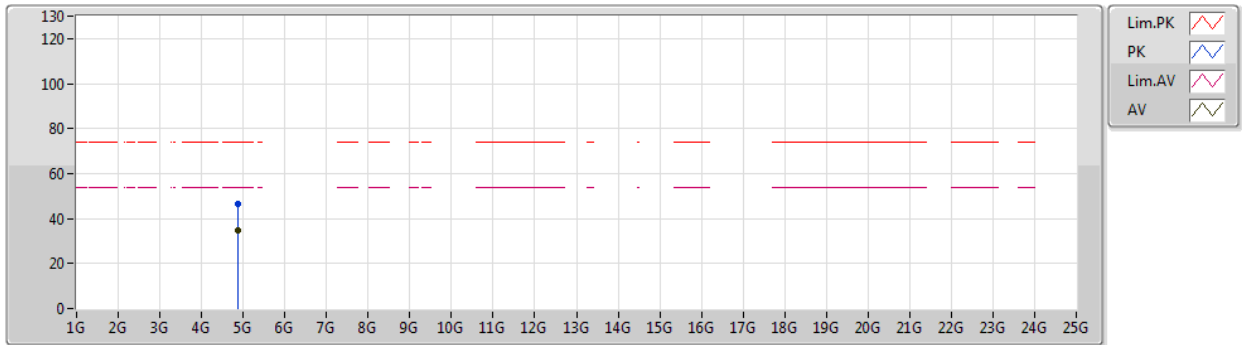


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.358G	46.03	54.00	-7.97	32.79	3	Horizontal	318	1.89	-	13.24	27.77	5.02	-
AV	2.44G	103.98	Inf	-Inf	32.72	3	Horizontal	318	1.89	-	71.26	27.56	5.16	-
AV	2.4992G	46.22	54.00	-7.78	32.75	3	Horizontal	318	1.89	-	13.47	27.50	5.25	-
PK	2.3624G	57.08	74.00	-16.92	32.77	3	Horizontal	318	1.89	-	24.31	27.75	5.02	-
PK	2.4396G	104.77	Inf	-Inf	32.72	3	Horizontal	318	1.89	-	72.05	27.56	5.16	-
PK	2.4952G	57.23	74.00	-16.77	32.74	3	Horizontal	318	1.89	-	24.49	27.50	5.24	-

BT-LE(1Mbps)

2440MHz_TX

14/05/2020

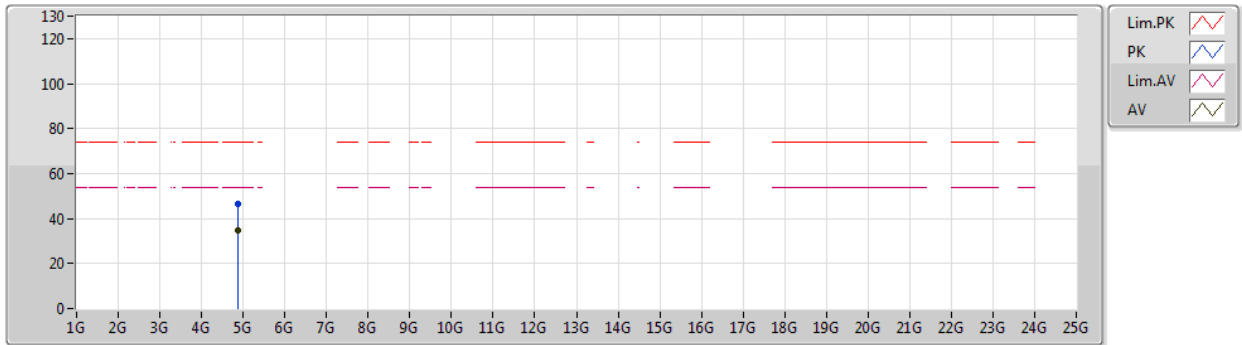


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87975G	34.65	54.00	-19.35	4.43	3	Vertical	52	1.50	-	30.22	31.10	7.38	34.05
PK	4.87836G	46.28	74.00	-27.72	4.43	3	Vertical	52	1.50	-	41.85	31.10	7.38	34.05

BT-LE(1Mbps)

2440MHz_TX

14/05/2020

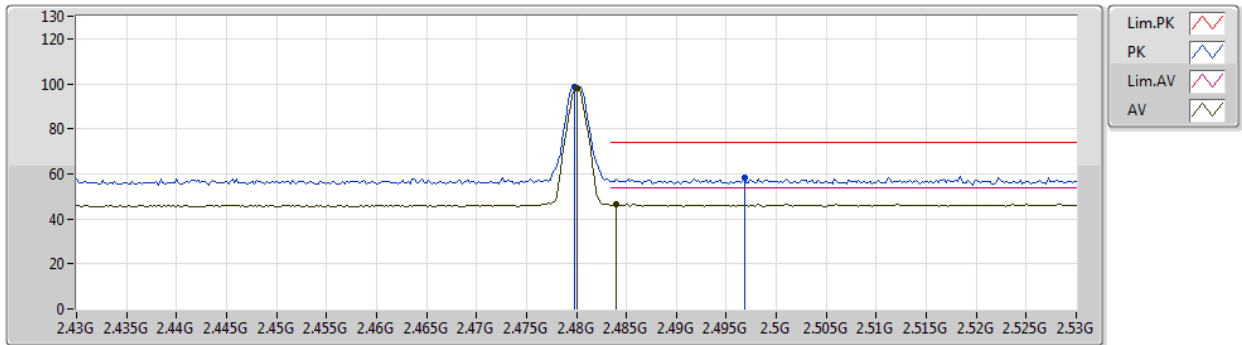


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87944G	34.54	54.00	-19.46	4.43	3	Horizontal	303	1.50	-	30.11	31.10	7.38	34.05
PK	4.87825G	46.31	74.00	-27.69	4.43	3	Horizontal	303	1.50	-	41.88	31.10	7.38	34.05

BT-LE(1Mbps)

2480MHz_TX

14/05/2020

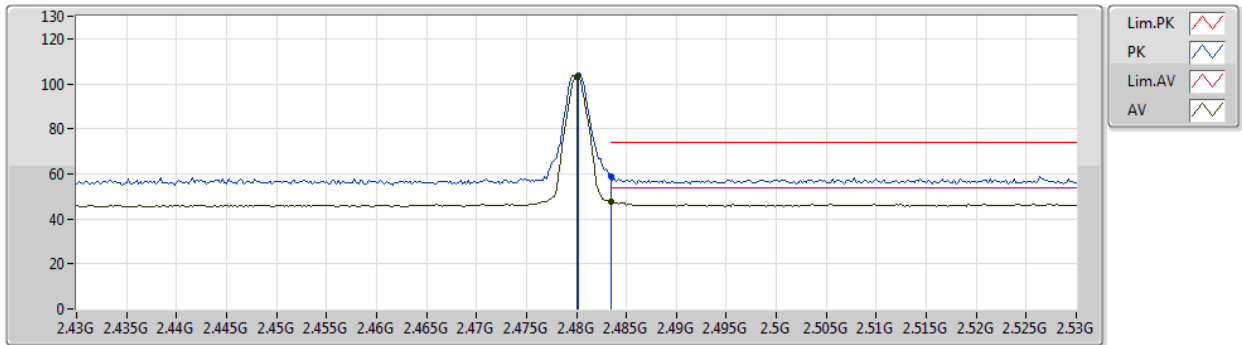


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	97.99	Inf	-Inf	32.74	3	Vertical	360	1.69	-	65.25	27.52	5.22	-
AV	2.484G	46.46	54.00	-7.54	32.75	3	Vertical	360	1.69	-	13.71	27.52	5.23	-
PK	2.4798G	98.56	Inf	-Inf	32.74	3	Vertical	360	1.69	-	65.82	27.52	5.22	-
PK	2.4968G	58.37	74.00	-15.63	32.75	3	Vertical	360	1.69	-	25.62	27.50	5.25	-

BT-LE(1Mbps)

2480MHz_TX

14/05/2020

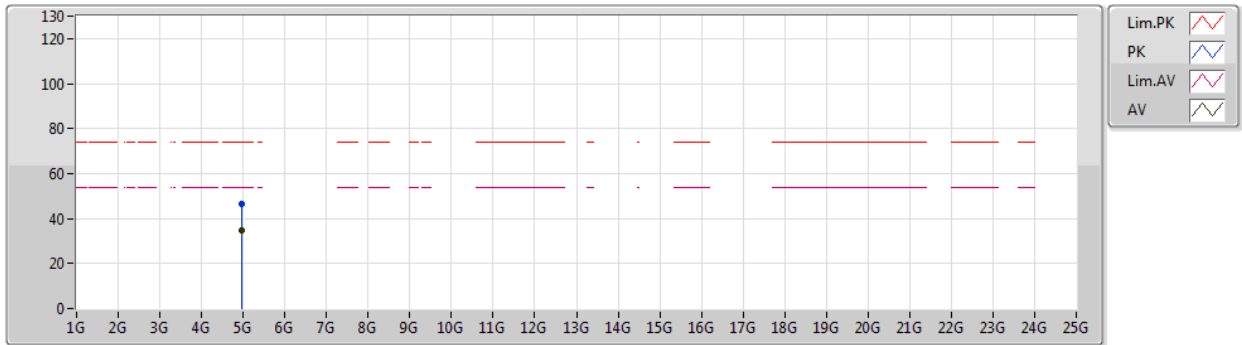


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	103.08	Inf	-Inf	32.74	3	Horizontal	314	2.00	-	70.34	27.52	5.22	-
AV	2.4835G	47.63	54.00	-6.37	32.75	3	Horizontal	314	2.00	-	14.88	27.52	5.23	-
PK	2.4802G	103.63	Inf	-Inf	32.74	3	Horizontal	314	2.00	-	70.89	27.52	5.22	-
PK	2.4835G	59.08	74.00	-14.92	32.75	3	Horizontal	314	2.00	-	26.33	27.52	5.23	-

BT-LE(1Mbps)

2480MHz_TX

14/05/2020

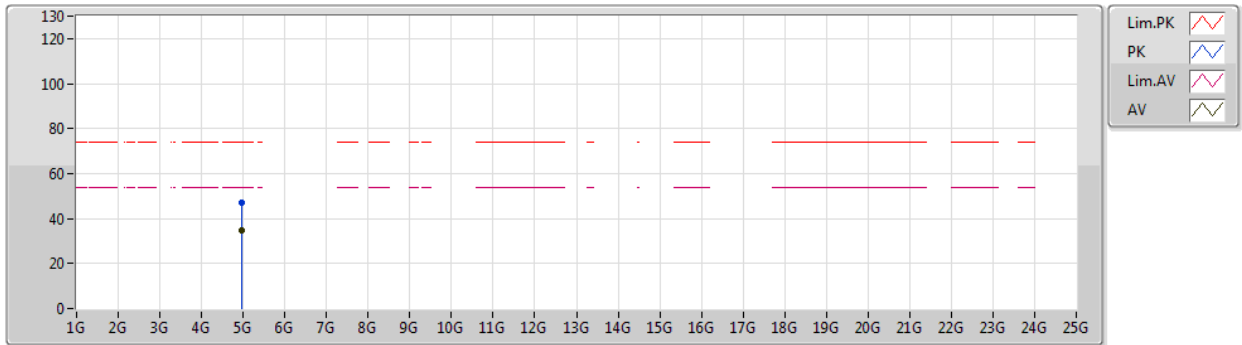


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96G	34.50	54.00	-19.50	4.76	3	Vertical	53	1.50	-	29.74	31.34	7.46	34.04
PK	4.96216G	46.55	74.00	-27.45	4.77	3	Vertical	53	1.50	-	41.78	31.35	7.46	34.04

BT-LE(1Mbps)

2480MHz_TX

14/05/2020



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	4.9599G	34.96	54.00	-19.04	4.76	3	Horizontal	158	1.98	-	30.20	31.34	7.46	34.04
PK	4.95984G	46.89	74.00	-27.11	4.76	3	Horizontal	158	1.98	-	42.13	31.34	7.46	34.04