FCC Test Report

FCC ID	:	**UDX-600100010**
Equipment	:	**Wi-Fi 6 Outdoor Access Point**
Brand Name	:	**CISCO**
Model Name	:	**MR76-HW**
Applicant	:	**Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134 USA**
Manufacturer	:	**Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134 USA**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Jul. 25, 2019, and testing was started from Aug. 05, 2019 and completed on Oct. 29, 2019. 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Report No.	Version	Description	Issued Date
FR972312AL	01	Initial issue of report	Nov. 21, 2019
FR972312AL	02	Modified Equipment name (This report is the latest version replacing for the report issued on Nov. 21, 2019)	Dec. 11, 2019
FR972312AL	02	Revise Typo(This report is the latest version replacing for the report issued on Dec. 11, 2019)	Mar. 12, 2020

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: Ben Tseng

Report Producer: Ann Hou

1 General Description

1.1 Information

1.1.1 RF General Information

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

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1.0	1TX
2.4-2.4835GHz	BT-LE(125kbps)	2.0	1TX
2.4-2.4835GHz	BT-LE(500kbps)	2.0	1TX
2.4-2.4835GHz	BT-LE(2Mbps)	2.0	1TX

Note:
- Bluetooth LE uses a GFSK (1Mbps/2Mbps/0.125Mbps/0.5Mbps) modulation for DSSS.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Group	Ant. No.		Brand	Model Name	Antenna Type	Connector
1	20	1	Meraki	MA-ANT-20	Omni	N-Type
		2	Meraki	MA-ANT-20	Omni	N-Type
		3	Meraki	MA-ANT-20	Omni	N-Type
		4	Meraki	MA-ANT-20	Omni	N-Type
2	21+23	1	Meraki	MA-ANT-23	Sector	N-Type
		2	Meraki	MA-ANT-23	Sector	N-Type
		3	Meraki	MA-ANT-21	Sector	N-Type
		4	Meraki	MA-ANT-21	Sector	N-Type
3	25	1	Meraki	MA-ANT-25	Sector	N-Type
		2	Meraki	MA-ANT-25	Sector	N-Type
		3	Meraki	MA-ANT-25	Sector	N-Type
		4	Meraki	MA-ANT-25	Sector	N-Type
4	27	1	Meraki	MA-ANT-27	Sector	N-Type
		2	Meraki	MA-ANT-27	Sector	N-Type
		3	Meraki	MA-ANT-27	Sector	N-Type
		4	Meraki	MA-ANT-27	Sector	N-Type
-	-	5	Meraki	MR76	PIFA	I-PEX
-	-	6	Meraki	MR76	PIFA	I-PEX

Group	Ant. No.		Gain (dBi)			Elevation angle above 30 degrees Gain (dBi)	Remark
			2.4G	5G	BT		
1	20	1	4	-	-	-	Radio 1
		2	4	-	-	-	Radio 1
		3	-	7	-	-1	Radio 2
		4	-	7	-	-1	Radio 2
2	21+23	1	11	-	-	-	Radio 1
		2	11	-	-	-	Radio 1
		3	-	13	-	11.2	Radio 2
		4	-	13	-	11.2	Radio 2
3	25	1	8.1	-	-	-	Radio 1
		2	8.1	-	-	-	Radio 1
		3	-	7.1	-	1.8	Radio 2
		4	-	7.1	-	1.8	Radio 2
4	27	1	9.8	-	-	-	Radio 1
		2	9.8	-	-	-	Radio 1
		3	-	11.3	-	9.7	Radio 2
		4	-	11.3	-	9.7	Radio 2
-	-	5	4.6	5.9	-	5.20	Radio 3 (Scanning Radio)
-	-	6	-	-	4.7	-	Radio 4 (BT LE)

Note 1: The EUT has six antennas.

For 2.4GHz function:

<Radio 1>

For IEEE 802.11 b/g/n/ac/ax mode (1TX/1RX)

Support diversity function and pre-tested on each single chain, the worst case was record in this test report.

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

Ant. 1 and Ant. 2 could transmit/receive simultaneously.

<Radio 3>

For IEEE 802.11 b/g/n/ac mode (1TX/1RX)

Ant. 5 could transmit/receive simultaneously.

For 5GHz function:

<Radio 2>

For IEEE 802.11 a/an/ac/ax mode (1TX/1RX)

Support diversity function and pre-tested on each single chain, the worst case was record in this test report.

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

Ant. 3 and Ant. 4 could transmit/receive simultaneously.

<Radio 3>

For IEEE 802.11 a/an/ac mode (1TX/1RX)

Ant. 5 could transmit/receive simultaneously.

For BT function:

<Radio 4>

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)
Ant. 6 could transmit/receive simultaneously.

1.1.3 EUT Information

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) ≥ 1/T
BT-LE(1Mbps)	0.085	10.71	106.25u	10k
BT-LE(125kbps)	0.299	5.24	746.875u	3k
BT-LE(500kbps)	0.195	7.1	487.5u	3k
BT-LE(2Mbps)	0.055	12.6	68.75u	10k

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

1.1.5 Table for Multiple Listing

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

Sample	Description
SKU1: Screened C-temp	All the Samples are identical, the difference samples for difference NAND, DDR, Security chip.
SKU2: unscreened C-temp	

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
- 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.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Edward	25.2~26.9°C / 60.1~63.3%	15/Aug/2019
AC Conduction (BF)	CO04-HY	Edward	25.5~26.2°C / 60.3~62.2%	08/Oct/2019
RF Conducted	TH01-HY	Andy	22.5~25.9°C / 59.5~66.8%	10/Aug/2019~ 29/Oct /2019
Radiated	03CH02-HY	Edward	23.5~24.3°C / 51.7~62.6%	05/Aug/2019~ 08/Oct/2019

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.54 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 ℃	Confidence levels of 95%
Humidity	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	200
2440MHz	200
2480MHz	70
BT-LE(2Mbps)	-
2402MHz	200
2440MHz	200
2480MHz	70
BT-LE(125kbps)	-
2402MHz	200
2440MHz	200
2480MHz	80
BT-LE(500kbps)	-
2402MHz	200
2440MHz	200
2480MHz	50

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

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

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

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	WLAN 2.4GHz+ WLAN 5GHz+ Scanning Radio WLAN 2.4GHz+Bluetooth
2	WLAN 2.4GHz+ WLAN 5GHz+ Scanning Radio WLAN 5GHz+Bluetooth
Refer to Sporton Test Report No.: FA972312 for Co-location RF Exposure Evaluation.	

2.4 Accessories and Support Equipment

Accessories				
Mounting bracket	Brand Name	CISCO	Model Name	MR76-HW

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

Support Equipment – AC Conduction				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	PoE	PHIHONG	POEA30U-1ATE	N/A
2	Power Cable	CHING CHANG	N/A	N/A
3	LAN Cable	Power sync	CAT-6E-01	N/A

Note: Support equipment No.1 and 2 was provided by customer.

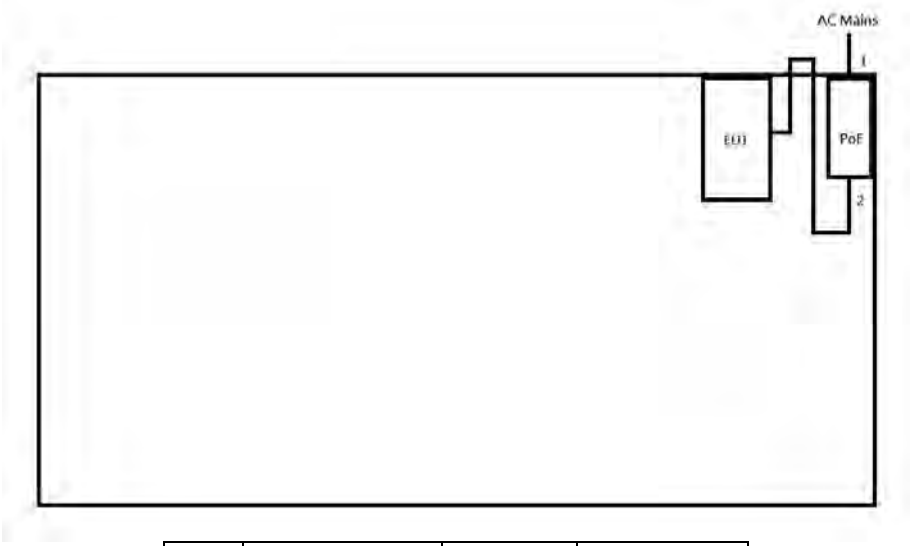
Support Equipment – RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	AC Power Source	G.W	APS-9102	N/A

Support Equipment – Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	LAN Cable	Power sync	CAT-6E-10	N/A
2	PoE(Remote)	PHIHONG	POEA30U-1ATE	N/A
3	Power Cable(Remote)	CHING CHANG	N/A	N/A
4	LAN Cable(Remote)	Power sync	N/A	N/A

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

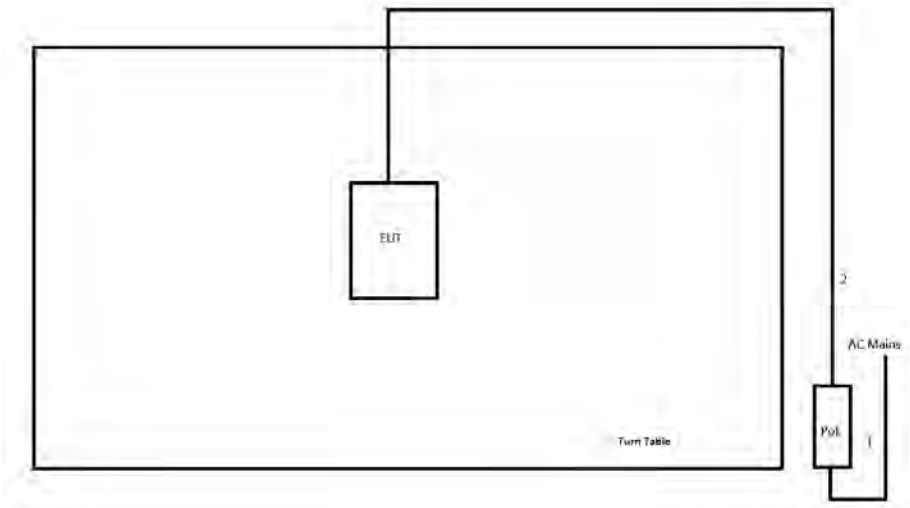
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length
1	Power Cable	No	1.8m
2	LAN Cable	No	1.0m

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length
1	Power Cable	No	1.8m
2	LAN 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

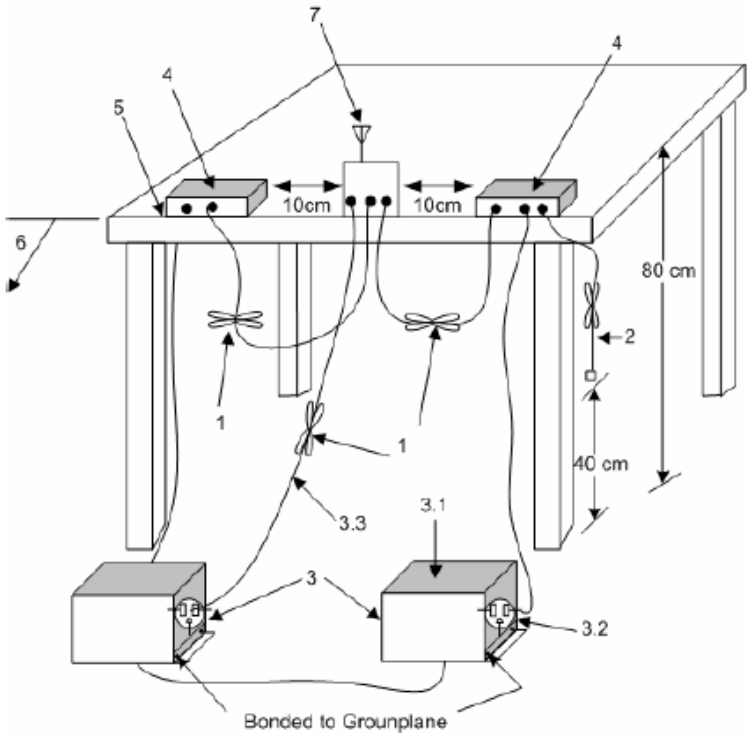
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

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 ≥ 500 kHz.

3.2.2 Measuring Instruments

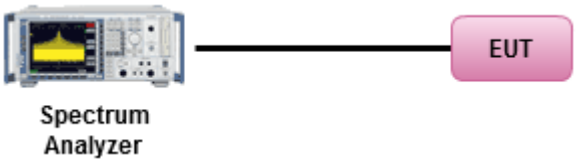
Refer a test equipment and calibration data table in this test report.

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 for occupied bandwidth testing.
	☐ Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth



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): $P_{eirp} \leq MAX(36, [P_{Out} + G_{TX}])$ dBm	
	▪ Smart antenna system (SAS)	
		- Single beam: $P_{eirp} \leq MAX(36, P_{Out} + G_{TX})$ dBm
		- Overlap beam: $P_{eirp} \leq MAX(36, P_{Out} + G_{TX})$ dBm
		- Aggregate power on all beams: $P_{eirp} \leq MAX(36, [P_{Out} + G_{TX} + 8])$ 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: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

Maximum Conducted Output Power (Power Meter)


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

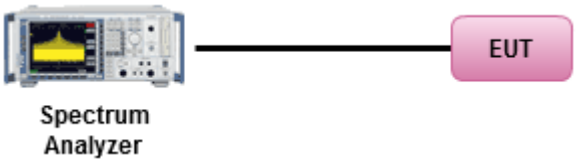
3.4.2 Measuring Instruments

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) Method PKPSD.	
▪ 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

Power Spectral Density
 Spectrum Analyzer

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.	

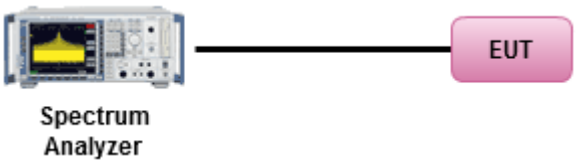
3.5.2 Measuring Instruments

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

Emissions in Non-restricted Frequency Bands


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 below30 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.

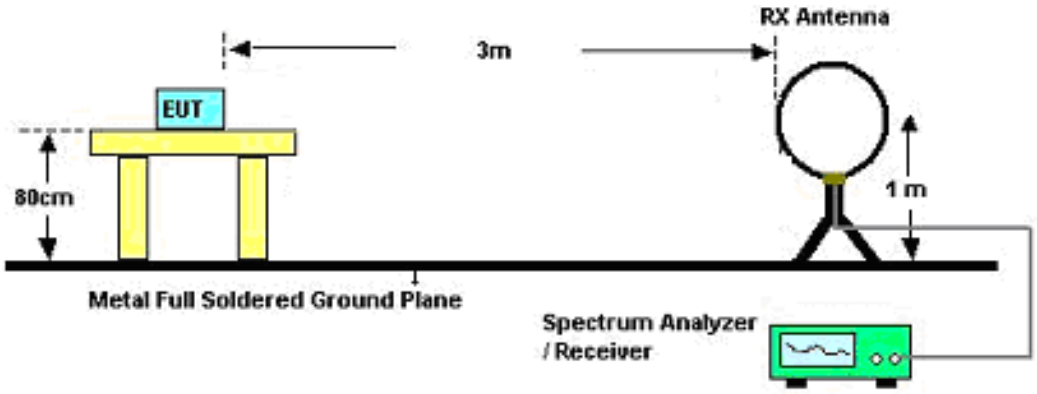
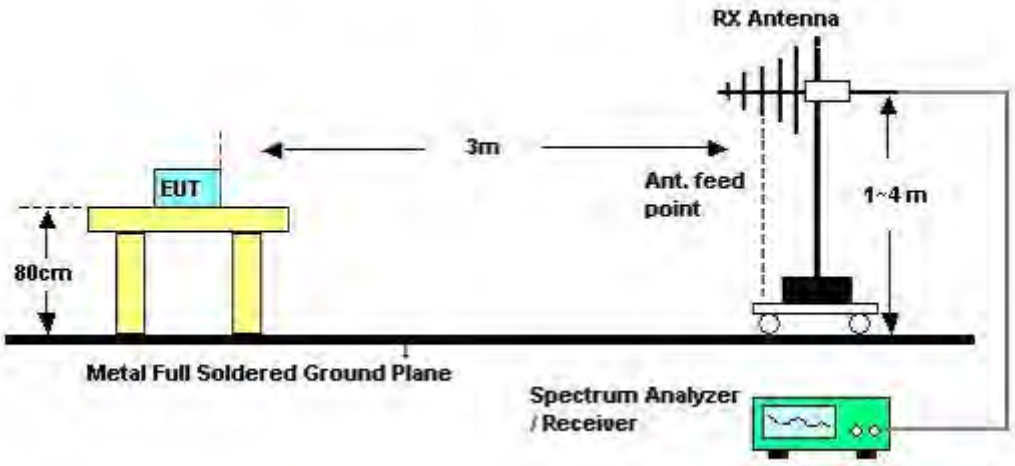
3.6.2 Measuring Instruments

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

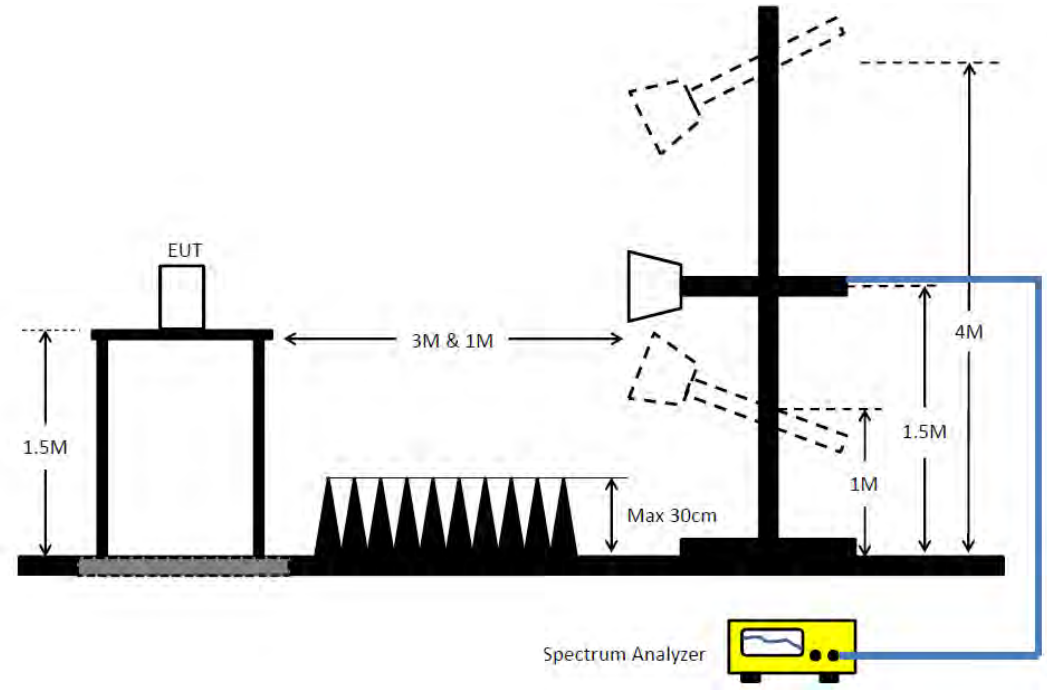
3.6.3 Test Procedures

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 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 ≥ 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

Emissions in Restricted Frequency Bands
9kHz ~30MHz

30MHz~1GHz


Above 1GHz



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	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	08/Nov/2018	07/Nov/2019
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	17/Sep/2018	16/Sep/2019
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	12/Oct/2018	11/Oct/2019

NCR : Non-Calibration Require

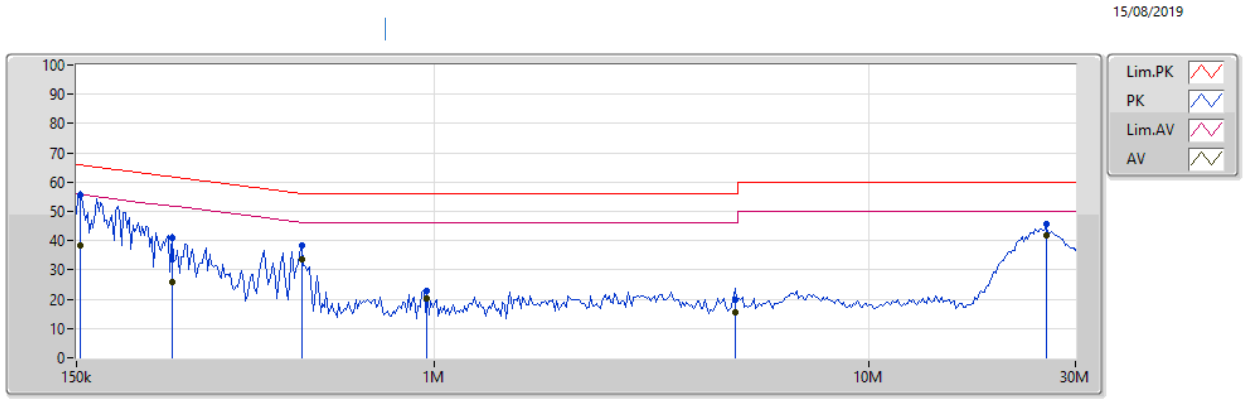
Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	13/Mar/2019	12/Mar/2020
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz ~18G	10/Jan/2019	09/Jan/2020
Cable 0.2m	HUBER	MY10711/4	RF Cable - 02	30MHz ~18G	10/Jan/2019	09/Jan/2020
Cable 0.5m	HUBER	MY39470/4	RF Cable - 29	30MHz ~18G	10/Jan/2019	09/Jan/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	19/Oct/2018	18/Oct/2019
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz 3m	17/Oct/2018	16/Oct/2019
Amplifier	Agilent	8447D	2944A11149	100kHz ~ 1.3GHz	02/Jul/2019	01/Jul/2020
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	02/Jun/2019	01/Jun/2020
Spectrum Analyzer	Rohde & Schwarz	FSP40	100593	9KHz - 40GHz	27/Dec/2018	26/Dec/2019
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz ~ 1GHz	26/Mar/2019	25/Mar/2020
RF Cable-high 6m	SUHNER	SUCOFLEX104	10567868 / SN805193/4	1GHz~40GHz	09/Apr/2019	08/Apr/2020
RF Cable-high 7m	SUHNER	SUCOFLEX104	10567868 / SN805192/4	1GHz~40GHz	09/Apr/2019	08/Apr/2020
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL6112B / MTJ6102-0	2722 / MTJ61202-06	30MHz ~ 1GHz	06/Jul/2019	05/Jul/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz ~ 40GHz	05/Feb/2019	04/Feb/2020
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	24/Aug/2018	23/Aug/2019
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	05/Aug/2019	04/Aug/2020
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	15/Mar/2019	14/Mar/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 01543	1GHz ~ 18GHz	03/Jun/2019	02/Jun/2020

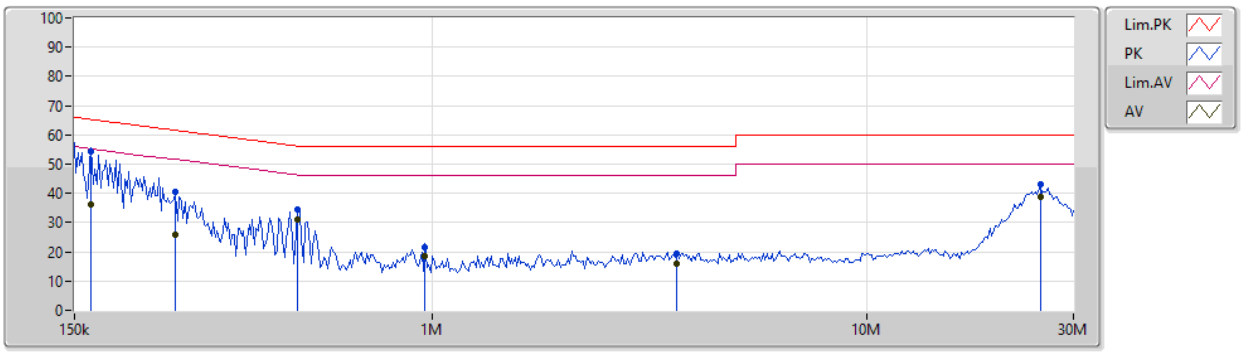
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	PoE mode		



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	153.015k	55.81	65.83	-10.02	19.48	Neutral	-	36.33	9.60	0.01	9.87
AV	153.015k	38.17	55.83	-17.66	19.48	Neutral	-	18.69	9.60	0.01	9.87
QP	249.162k	40.85	61.79	-20.94	19.47	Neutral	-	21.38	9.59	0.01	9.87
AV	249.162k	25.89	51.79	-25.90	19.47	Neutral	-	6.42	9.59	0.01	9.87
QP	495.058k	38.27	56.08	-17.81	19.48	Neutral	-	18.79	9.59	0.01	9.88
AV	495.058k	33.80	46.08	-12.28	19.48	Neutral	-	14.32	9.59	0.01	9.88
QP	964.247k	22.93	56.00	-33.07	19.49	Neutral	-	3.44	9.59	0.02	9.88
AV	964.247k	20.43	46.00	-25.57	19.49	Neutral	-	0.94	9.59	0.02	9.88
QP	4.931M	20.03	56.00	-35.97	19.56	Neutral	-	0.47	9.62	0.05	9.89
AV	4.931M	15.69	46.00	-30.31	19.56	Neutral	-	-3.87	9.62	0.05	9.89
QP	25.718M	45.87	60.00	-14.13	19.69	Neutral	-	26.18	9.67	0.12	9.90
AV	25.718M	41.63	50.00	-8.37	19.69	Neutral	"Worst"	21.94	9.67	0.12	9.90

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	PoE mode		

15/08/2019



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	164.053k	54.52	65.25	-10.73	19.48	Line	"Worst"	35.04	9.60	0.01	9.87
AV	164.053k	36.11	55.25	-19.14	19.48	Line	-	16.63	9.60	0.01	9.87
QP	256.712k	40.32	61.54	-21.22	19.48	Line	-	20.84	9.60	0.01	9.87
AV	256.712k	25.86	51.54	-25.68	19.48	Line	-	6.38	9.60	0.01	9.87
QP	490.156k	34.40	56.17	-21.77	19.48	Line	-	14.92	9.59	0.01	9.88
AV	490.156k	31.20	46.17	-14.97	19.48	Line	-	11.72	9.59	0.01	9.88
QP	964.247k	21.46	56.00	-34.54	19.50	Line	-	1.96	9.60	0.02	9.88
AV	964.247k	18.50	46.00	-27.50	19.50	Line	-	-1.00	9.60	0.02	9.88
QP	3.658M	19.40	56.00	-36.60	19.56	Line	-	-0.16	9.63	0.04	9.89
AV	3.658M	16.04	46.00	-29.96	19.56	Line	-	-3.52	9.63	0.04	9.89
QP	25.212M	43.27	60.00	-16.73	19.59	Line	-	23.68	9.57	0.12	9.90
AV	25.212M	38.98	50.00	-11.02	19.59	Line	-	19.39	9.57	0.12	9.90

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)	511.25k	1.022M	1M02F1D	503.75k	1.017M
BT-LE(2Mbps)	855k	2.054M	2M05F1D	850k	2.041M
BT-LE(125kbps)	617.5k	1.039M	1M04F1D	612.5k	1.032M
BT-LE(500kbps)	652.5k	1.017M	1M02F1D	650k	1.014M

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;

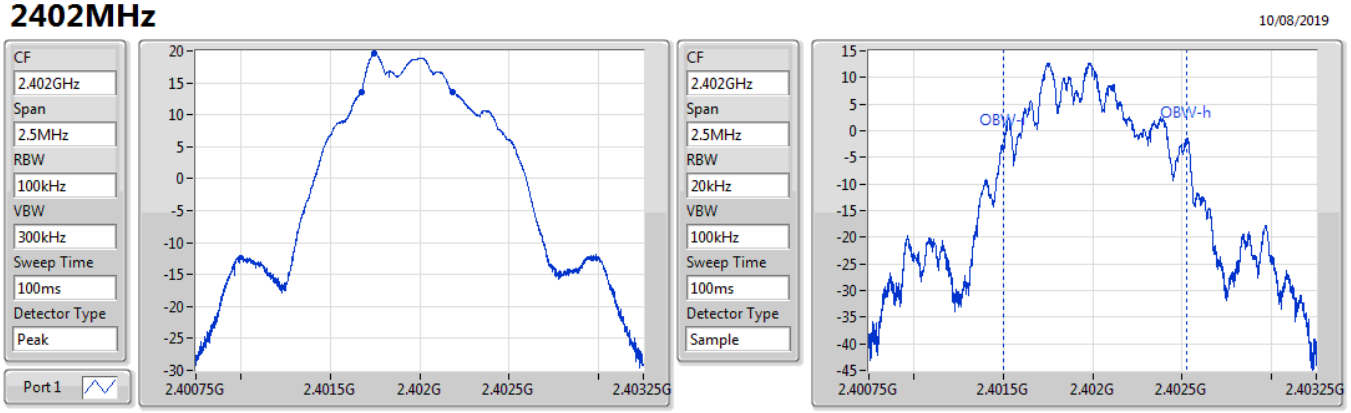
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	511.25k	1.022M
2440MHz	Pass	500k	506.25k	1.022M
2480MHz	Pass	500k	503.75k	1.017M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	855k	2.044M
2440MHz	Pass	500k	850k	2.041M
2480MHz	Pass	500k	855k	2.054M
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	500k	617.5k	1.039M
2440MHz	Pass	500k	615k	1.034M
2480MHz	Pass	500k	612.5k	1.032M
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	500k	652.5k	1.017M
2440MHz	Pass	500k	652.5k	1.014M
2480MHz	Pass	500k	650k	1.017M

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

BT-LE(1Mbps) EBW

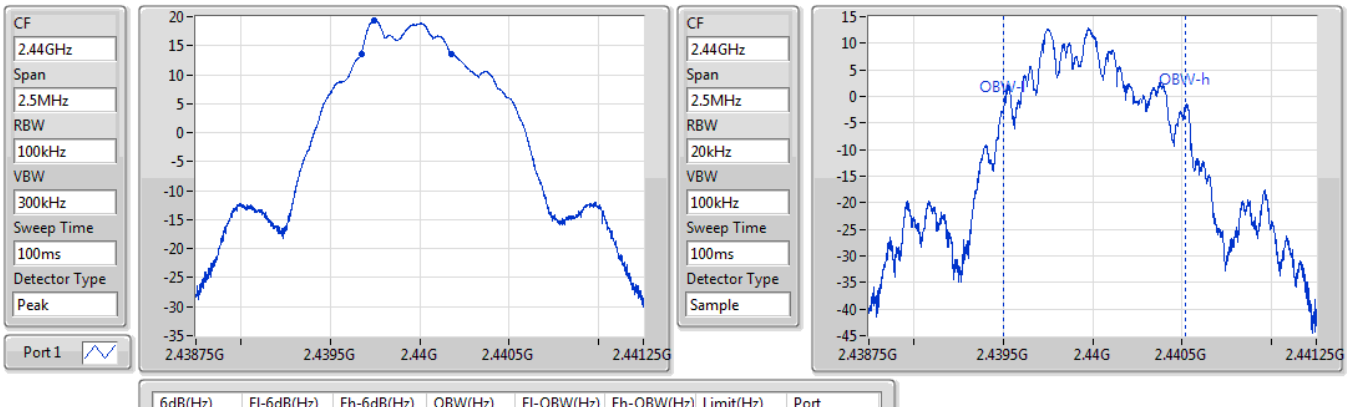
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
511.25k	2.401675G	2.402186G	1.022M	2.401501G	2.402523G	500k	1

BT-LE(1Mbps) EBW

2440MHz

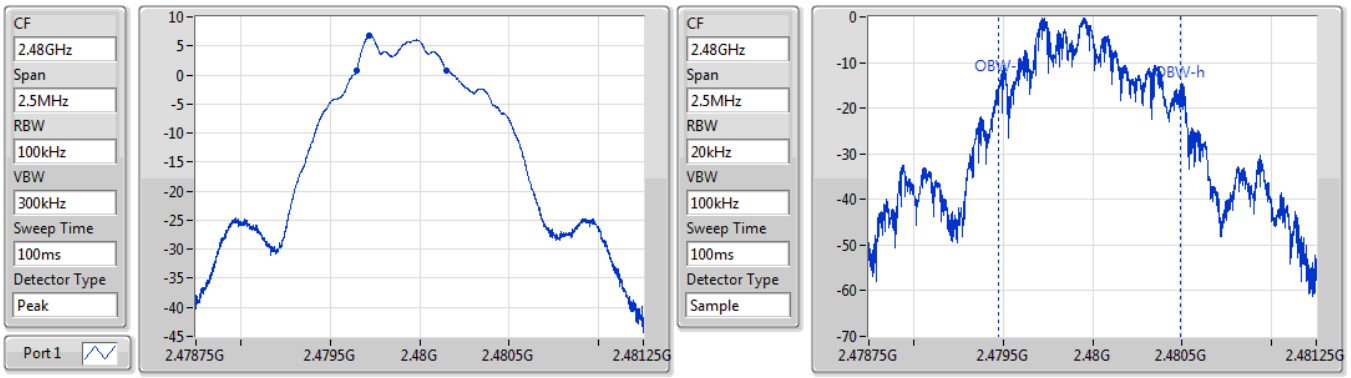


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
506.25k	2.439674G	2.44018G	1.022M	2.439499G	2.440521G	500k	1

BT-LE(1Mbps) EBW

2480MHz

29/10/2019

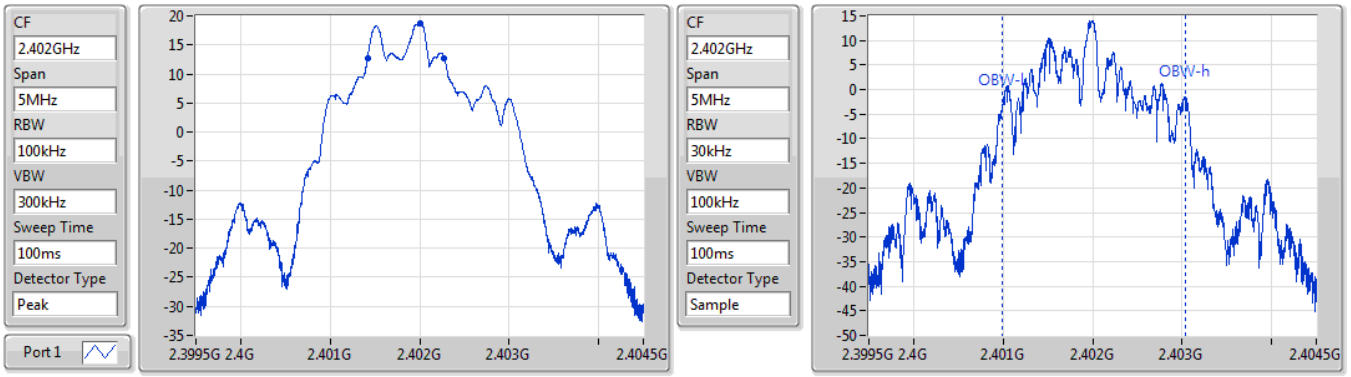


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
503.75k	2.479649G	2.480153G	1.017M	2.479475G	2.480492G	500k	1

BT-LE(2Mbps) EBW

2402MHz

10/08/2019

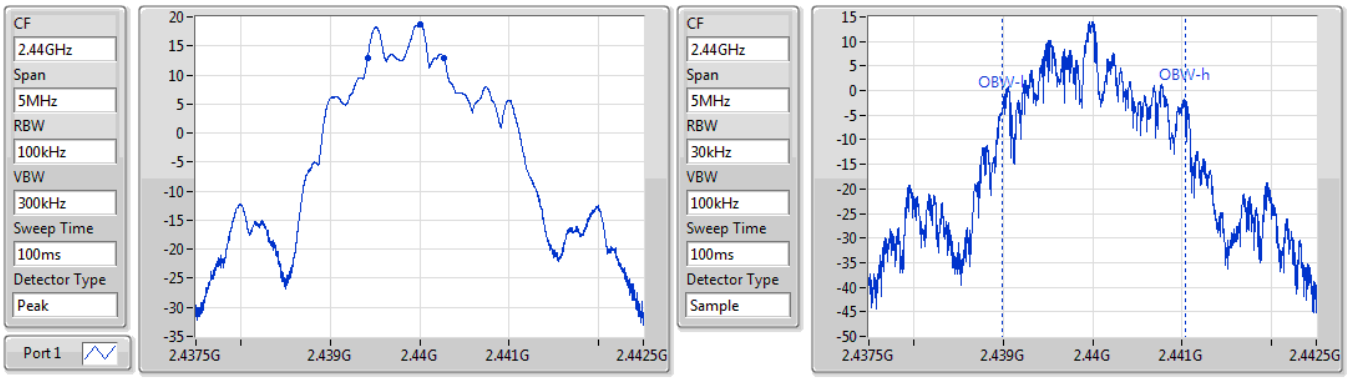


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
855k	2.40142G	2.402275G	2.044M	2.400996G	2.403039G	500k	1

BT-LE(2Mbps) EBW

2440MHz

10/08/2019

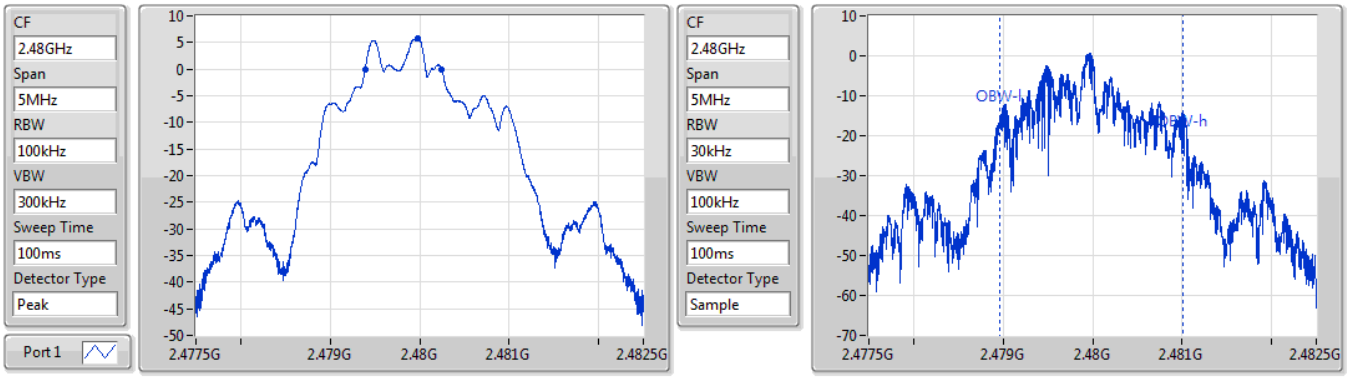


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
850k	2.43942G	2.44027G	2.041M	2.438993G	2.441034G	500k	1

BT-LE(2Mbps) EBW

2480MHz

29/10/2019



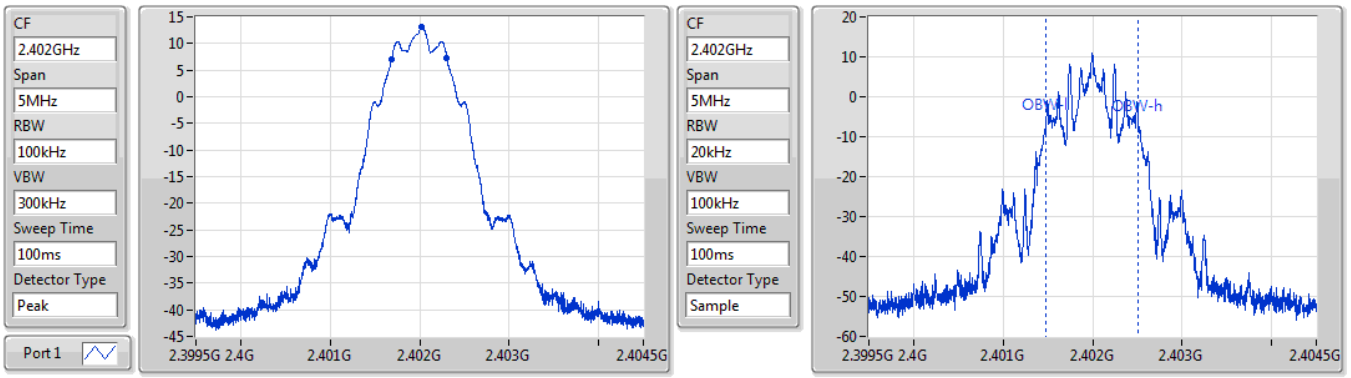
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
855k	2.479393G	2.480248G	2.054M	2.478961G	2.481014G	500k	1

BT-LE(125kbps)

EBW

2402MHz

10/08/2019



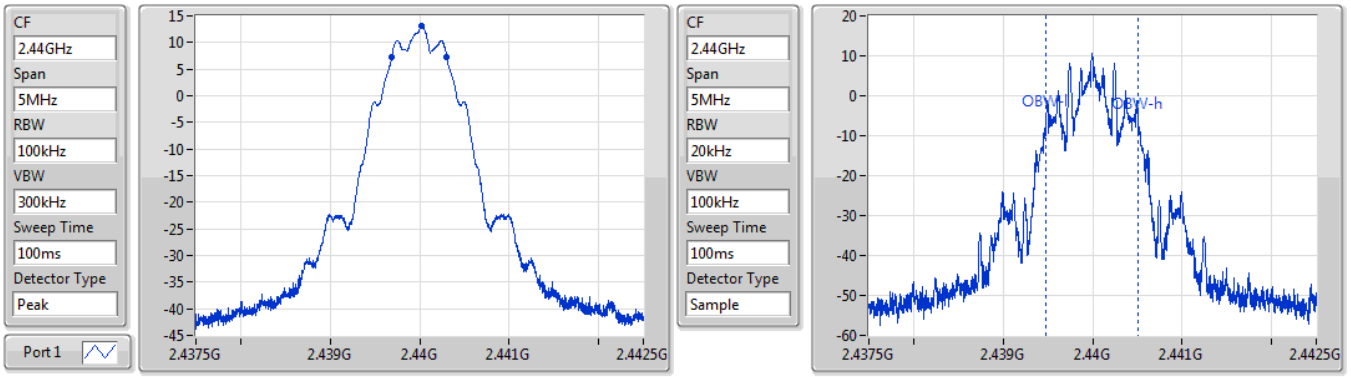
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
617.5k	2.401688G	2.402305G	1.039M	2.401475G	2.402515G	500k	1

BT-LE(125kbps)

EBW

2440MHz

10/08/2019



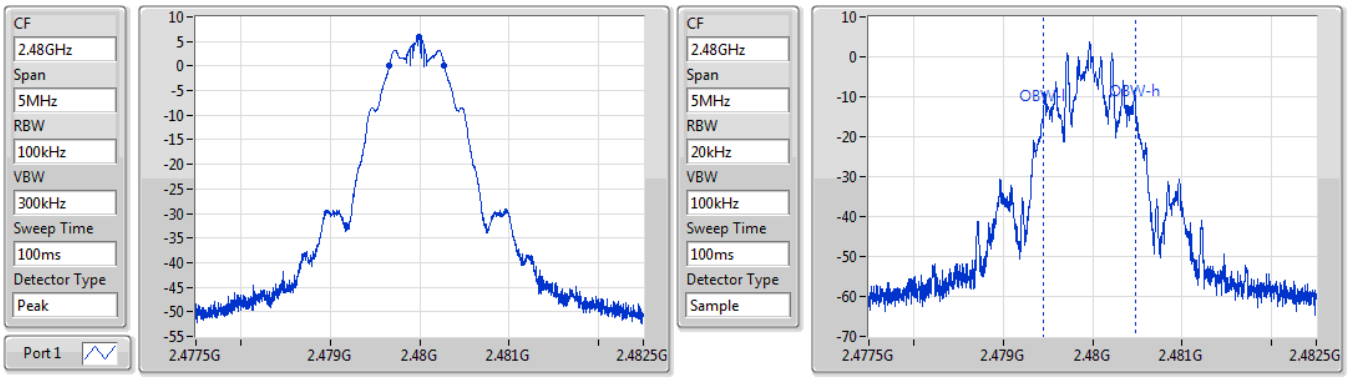
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
615k	2.439688G	2.440303G	1.034M	2.439478G	2.440512G	500k	1

BT-LE(125kbps)

EBW

2480MHz

29/10/2019



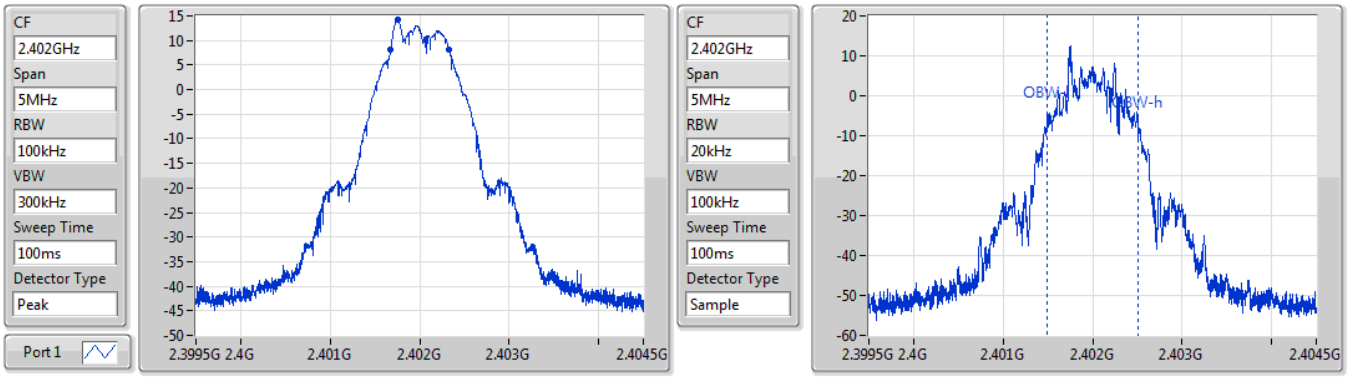
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
612.5k	2.479663G	2.480275G	1.032M	2.47945G	2.480482G	500k	1

BT-LE(500kbps)

EBW

2402MHz

10/08/2019

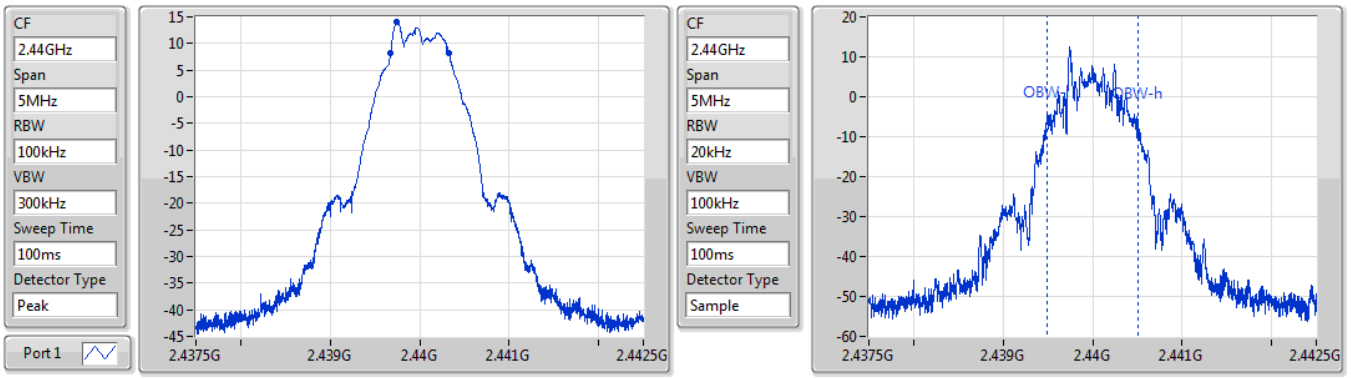


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
652.5k	2.401678G	2.40233G	1.017M	2.401488G	2.402505G	500k	1

BT-LE(500kbps) EBW

2440MHz

10/08/2019

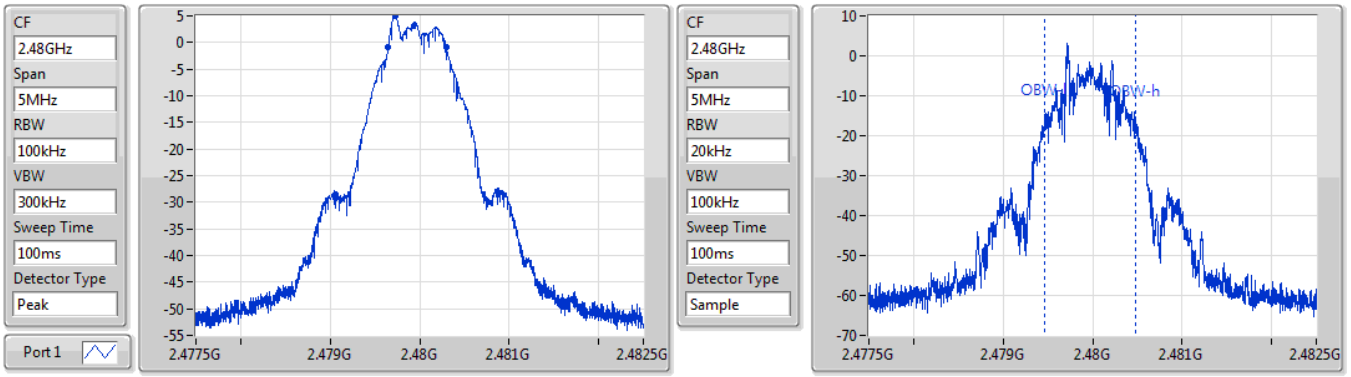


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
652.5k	2.439675G	2.440328G	1.014M	2.439488G	2.440502G	500k	1

BT-LE(500kbps) EBW

2480MHz

29/10/2019



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
650k	2.47965G	2.4803G	1.017M	2.47946G	2.480477G	500k	1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	19.22	0.08356
BT-LE(2Mbps)	19.02	0.07980
BT-LE(125kbps)	14.41	0.02761
BT-LE(500kbps)	14.43	0.02773

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	4.70	19.22	30.00
2440MHz	Pass	4.70	18.85	30.00
2480MHz	Pass	4.70	6.41	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	4.70	19.02	30.00
2440MHz	Pass	4.70	18.56	30.00
2480MHz	Pass	4.70	6.26	30.00
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	4.70	14.41	30.00
2440MHz	Pass	4.70	14.15	30.00
2480MHz	Pass	4.70	6.94	30.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	4.70	14.43	30.00
2440MHz	Pass	4.70	14.21	30.00
2480MHz	Pass	4.70	4.90	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	2.65
BT-LE(2Mbps)	0.68
BT-LE(125kbps)	7.99
BT-LE(500kbps)	7.94

RBW=3 kHz.

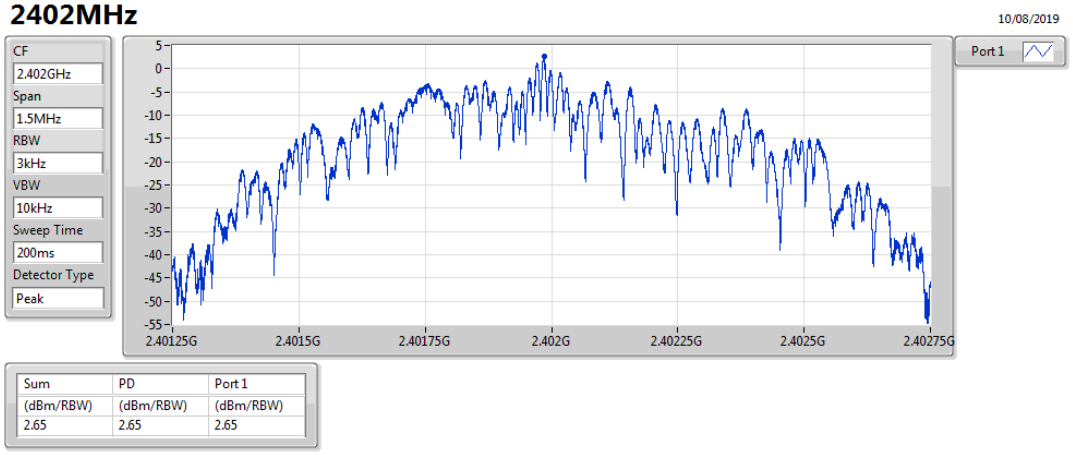
Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	4.70	2.65	8.00
2440MHz	Pass	4.70	2.62	8.00
2480MHz	Pass	4.70	-10.48	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	4.70	0.68	8.00
2440MHz	Pass	4.70	0.68	8.00
2480MHz	Pass	4.70	-12.52	8.00
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	4.70	7.99	8.00
2440MHz	Pass	4.70	7.97	8.00
2480MHz	Pass	4.70	0.66	8.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	4.70	7.94	8.00
2440MHz	Pass	4.70	7.71	8.00
2480MHz	Pass	4.70	-1.45	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**

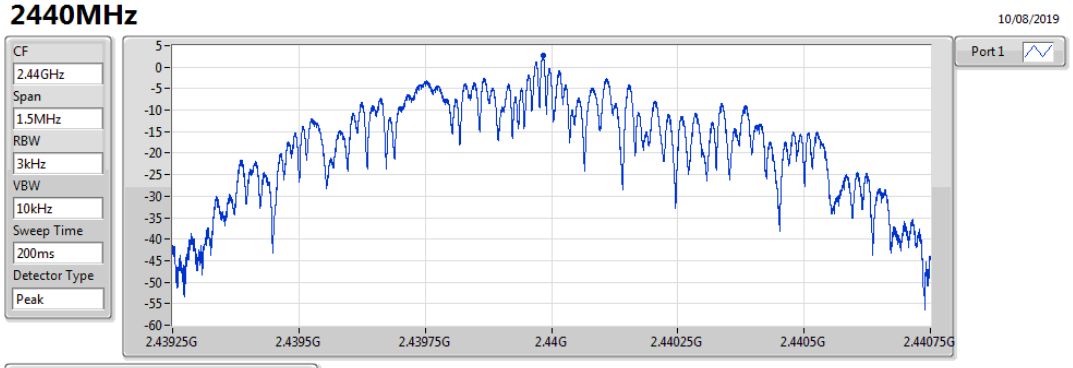
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.65	2.65	2.65

BT-LE(1Mbps) **PSD**

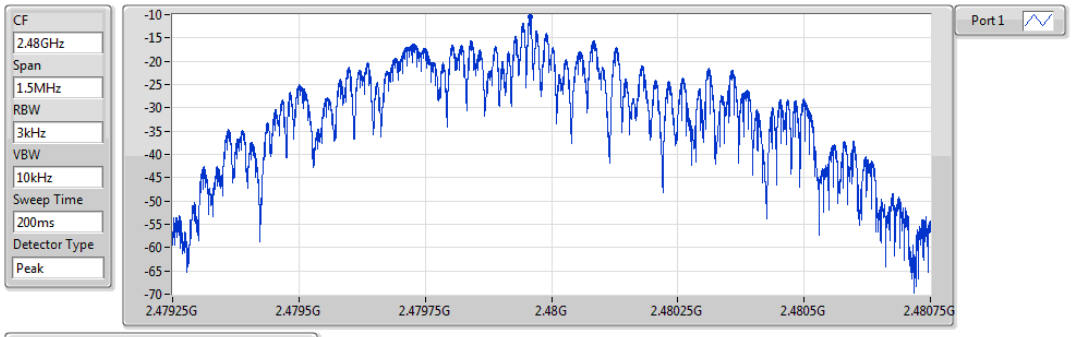
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.62	2.62	2.62

BT-LE(1Mbps) **PSD**

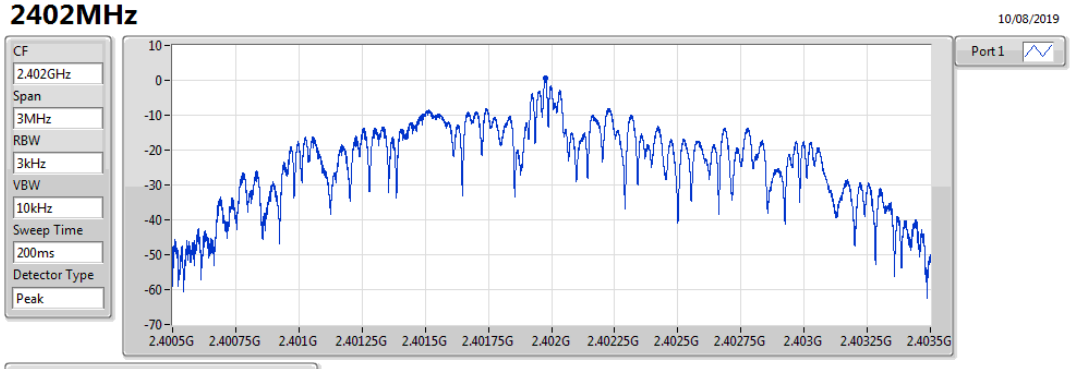
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.48	-10.48	-10.48

BT-LE(2Mbps) **PSD**

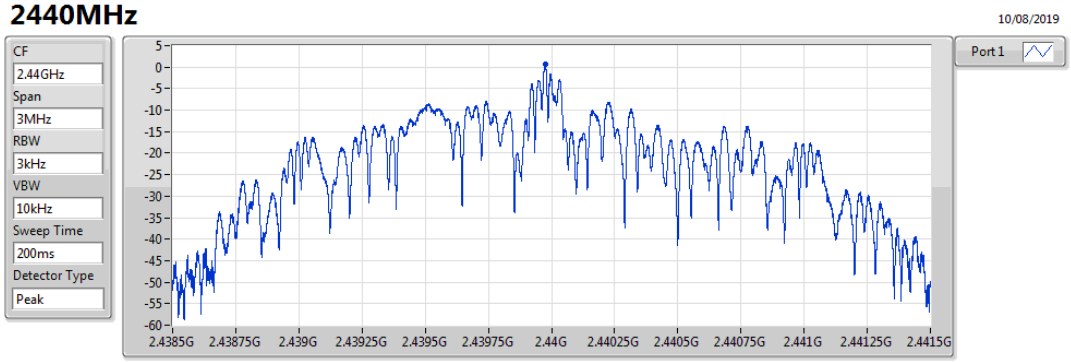
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.68	0.68	0.67

BT-LE(2Mbps) **PSD**

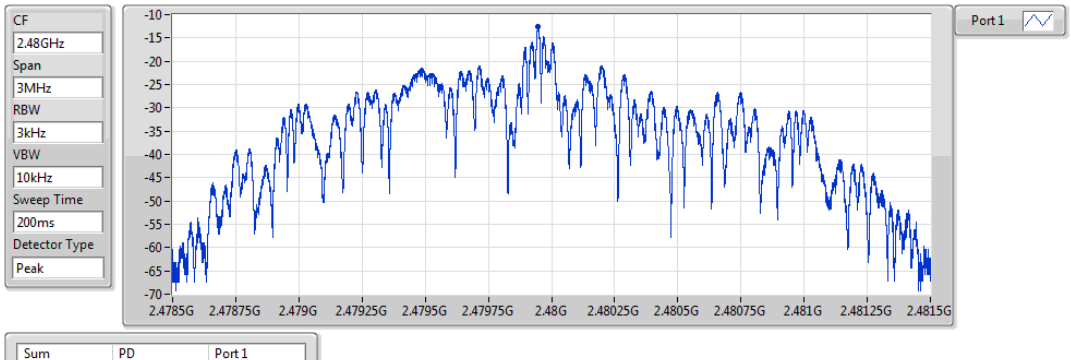
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.68	0.68	0.68

BT-LE(2Mbps) **PSD**

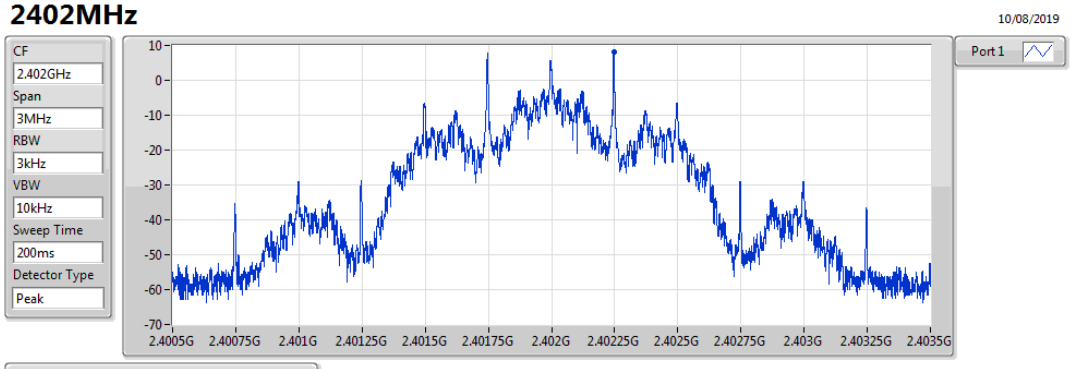
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.52	-12.52	-12.52

BT-LE(125kbps) **PSD**

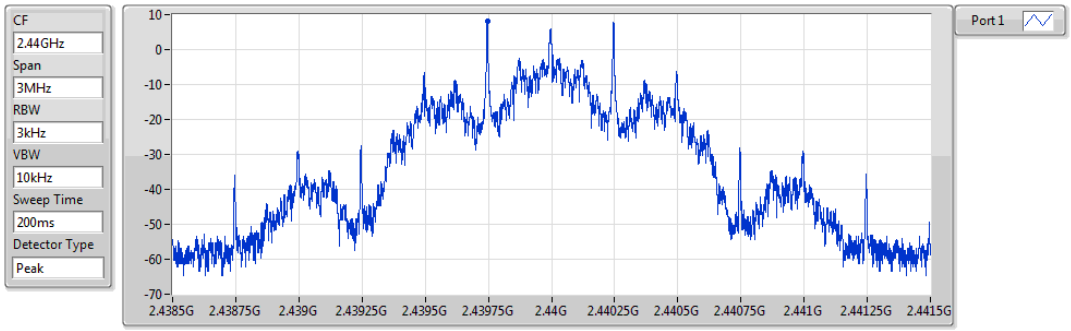
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.99	7.99	7.99

BT-LE(125kbps) **PSD**

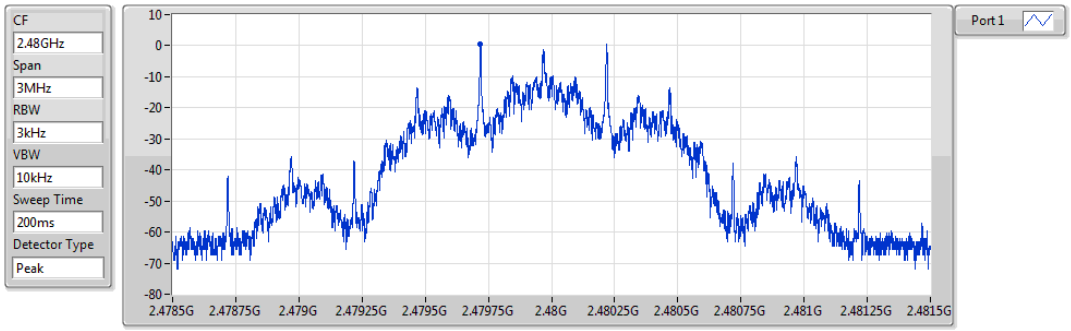
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.97	7.97	7.97

BT-LE(125kbps) **PSD**

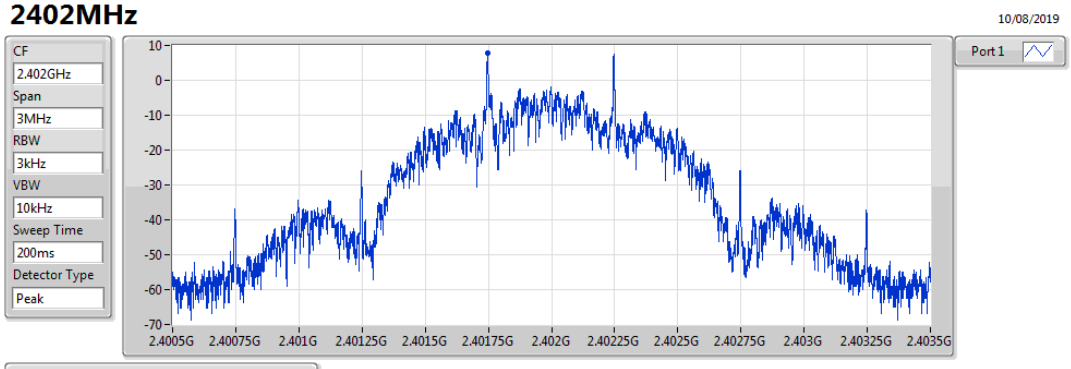
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.66	0.66	0.66

BT-LE(500kbps) **PSD**

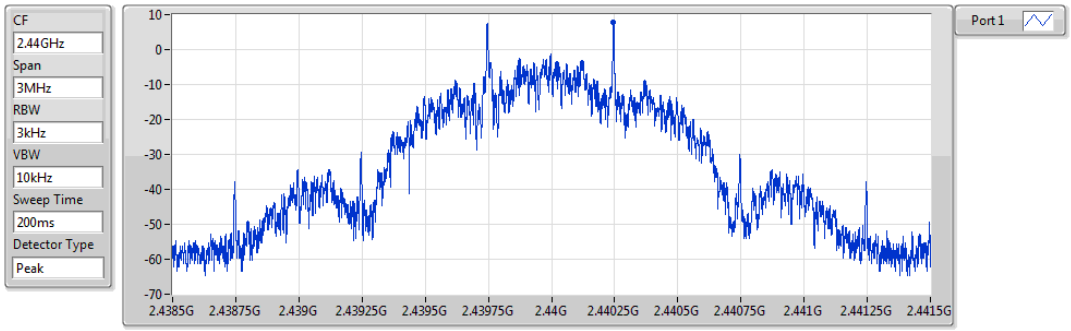
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.94	7.94	7.94

BT-LE(500kbps) **PSD**

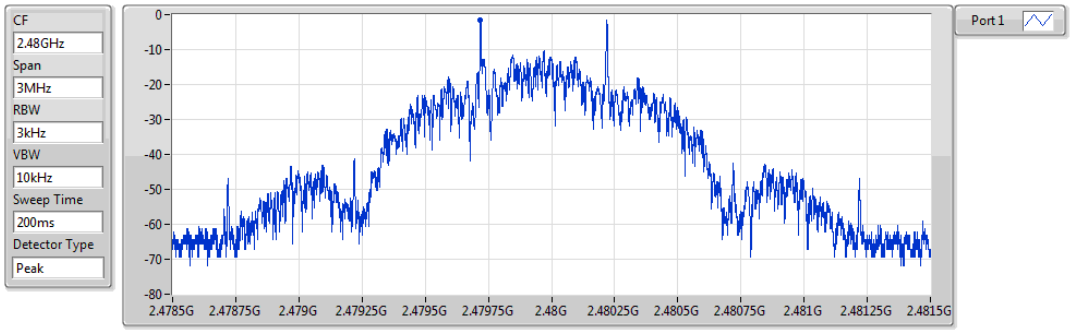
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.71	7.71	7.71

BT-LE(500kbps) **PSD**

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.45	-1.45	-1.45

Summary

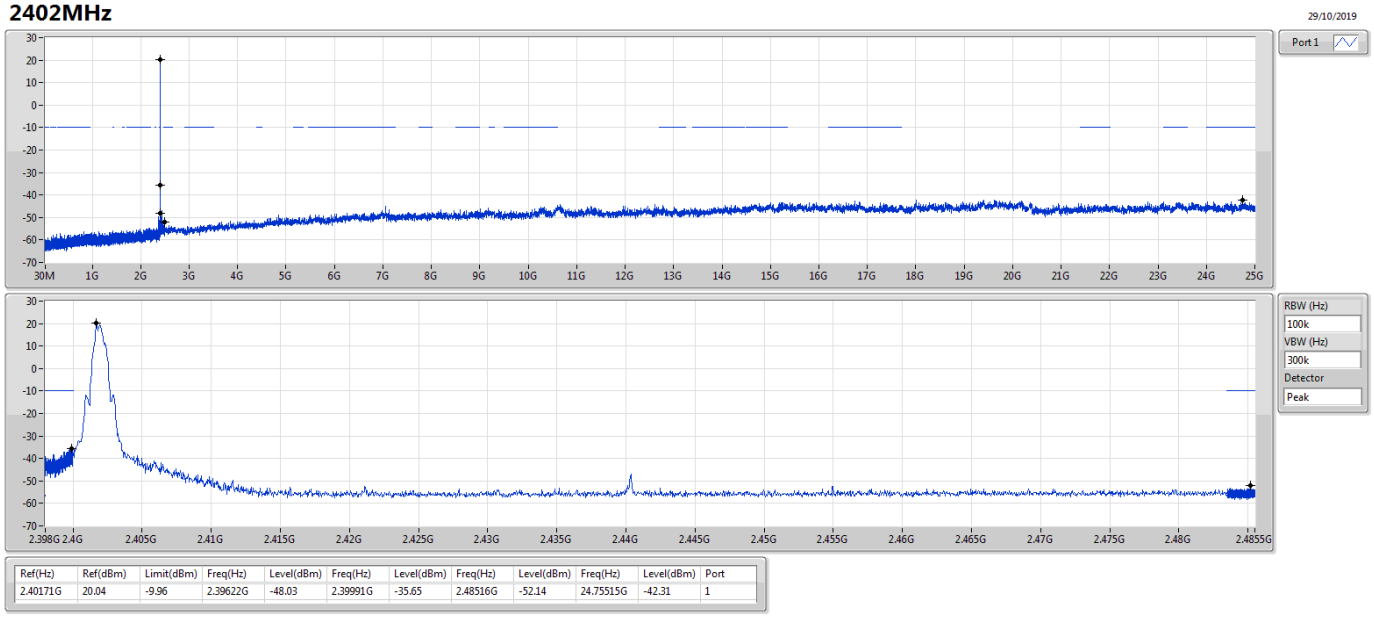
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.40171G	20.04	-9.96	2.39622G	-48.03	2.39991G	-35.65	2.48516G	-52.14	24.75515G	-42.31	1
BT-LE(2Mbps)	Pass	2.40196G	19.33	-10.67	2.39482G	-45.54	2.39997G	-12.10	2.48644G	-53.00	16.33269G	-42.84	1
BT-LE(125kbps)	Pass	2.402G	13.35	-16.65	2.3957G	-53.01	2.39956G	-40.35	2.48522G	-52.78	23.46071G	-42.83	1
BT-LE(500kbps)	Pass	2.40171G	14.41	-15.59	2.3957G	-53.42	2.39998G	-40.20	2.48636G	-52.47	15.30555G	-42.51	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)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40171G	20.04	-9.96	2.39622G	-48.03	2.39991G	-35.65	2.48516G	-52.14	24.75515G	-42.31	1
2440MHz	Pass	2.40171G	20.04	-9.96	2.12923G	-54.02	2.39975G	-53.81	2.48547G	-52.28	16.59365G	-42.07	1
2480MHz	Pass	2.40171G	20.04	-9.96	2.05967G	-53.73	2.39815G	-53.58	2.48434G	-50.26	16.89197G	-42.31	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	19.33	-10.67	2.39482G	-45.54	2.39997G	-12.10	2.48644G	-53.00	16.33269G	-42.84	1
2440MHz	Pass	2.40196G	19.29	-10.71	2.16088G	-54.94	2.39847G	-53.06	2.48471G	-52.47	23.44382G	-42.35	1
2480MHz	Pass	2.40196G	19.29	-10.71	2.09552G	-54.92	2.39605G	-53.63	2.48381G	-44.19	23.37629G	-41.42	1
BT-LE(125kbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	13.35	-16.65	2.3957G	-53.01	2.39956G	-40.35	2.48522G	-52.78	23.46071G	-42.83	1
2440MHz	Pass	2.402G	13.35	-16.65	2.1106G	-54.39	2.39605G	-53.33	2.48562G	-52.30	23.41568G	-42.26	1
2480MHz	Pass	2.402G	13.35	-16.65	2.16916G	-54.80	2.39788G	-53.52	2.48382G	-49.72	16.40867G	-42.07	1
BT-LE(500kbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40171G	14.41	-15.59	2.3957G	-53.42	2.39998G	-40.20	2.48636G	-52.47	15.30555G	-42.51	1
2440MHz	Pass	2.40171G	14.41	-15.59	2.11918G	-54.11	2.39789G	-53.62	2.48499G	-52.91	16.61972G	-41.61	1
2480MHz	Pass	2.40171G	14.41	-15.59	2.30491G	-54.67	2.39951G	-53.44	2.48386G	-51.22	17.37952G	-42.28	1

BT-LE(1Mbps) **CSE NdB**

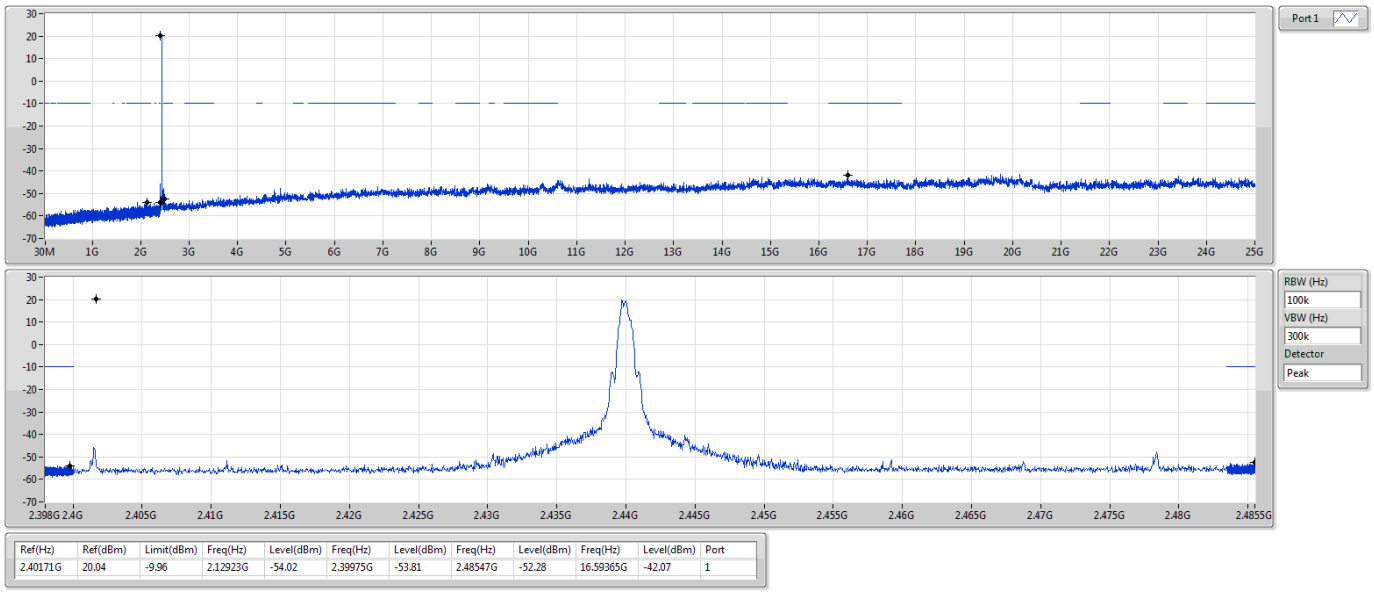
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40171G	20.04	-9.96	2.39622G	-48.03	2.39991G	-35.65	2.48516G	-52.14	24.75515G	-42.31	1

BT-LE(1Mbps) **CSE NdB**

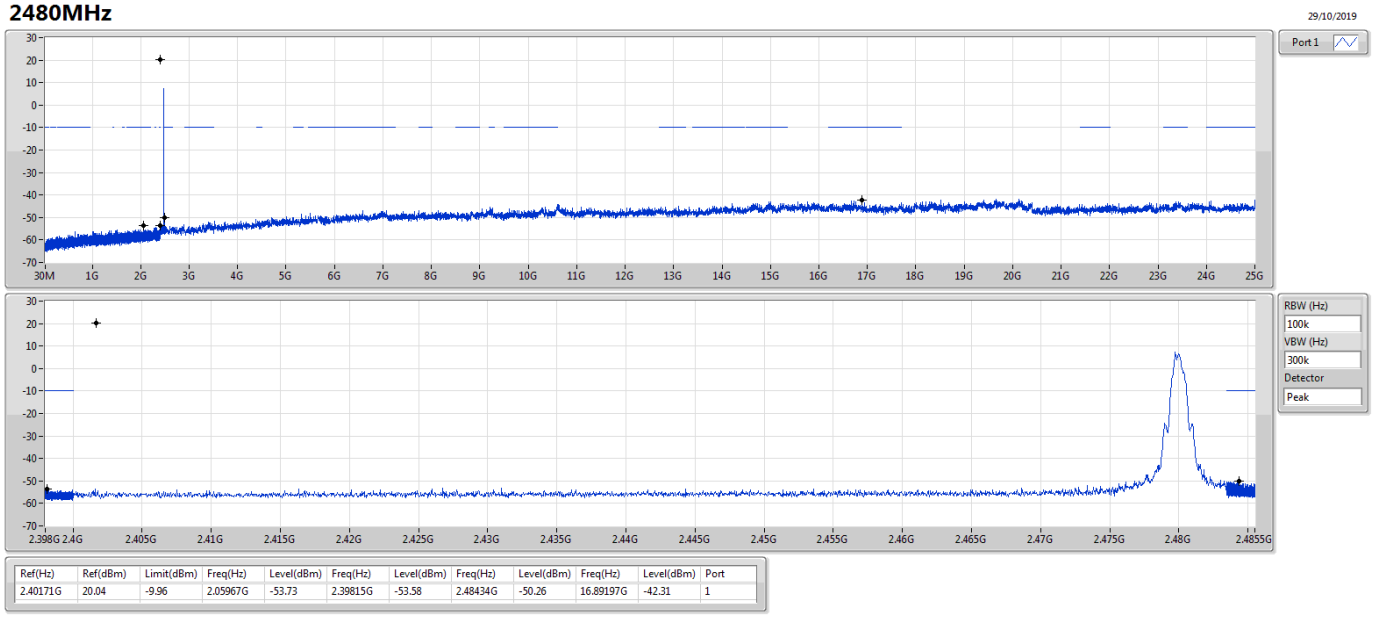
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40171G	20.04	-9.96	2.12923G	-54.02	2.39975G	-53.81	2.48547G	-52.28	16.59365G	-42.07	1

BT-LE(1Mbps) **CSE NdB**

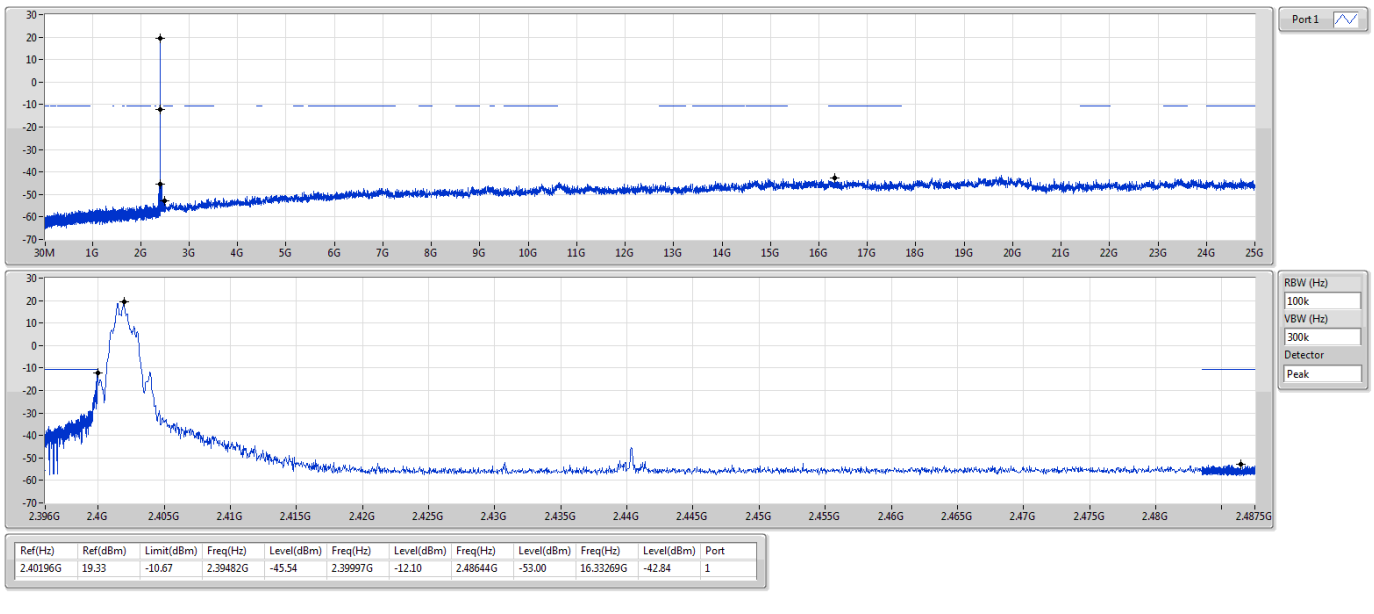
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40171G	20.04	-9.96	2.05967G	-53.73	2.39815G	-53.58	2.48434G	-50.26	16.89197G	-42.31	1

BT-LE(2Mbps) **CSE NdB**

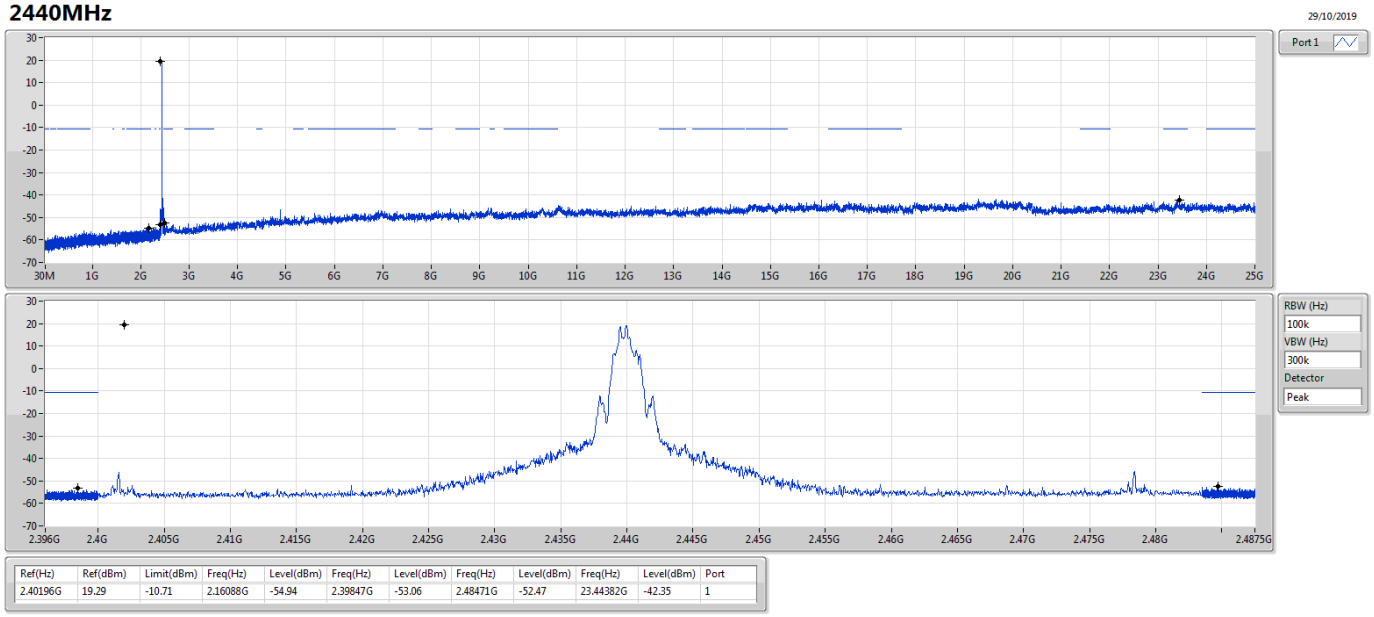
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40196G	19.33	-10.67	2.39482G	-45.54	2.39997G	-12.10	2.48644G	-53.00	16.33269G	-42.84	1

BT-LE(2Mbps) **CSE NdB**

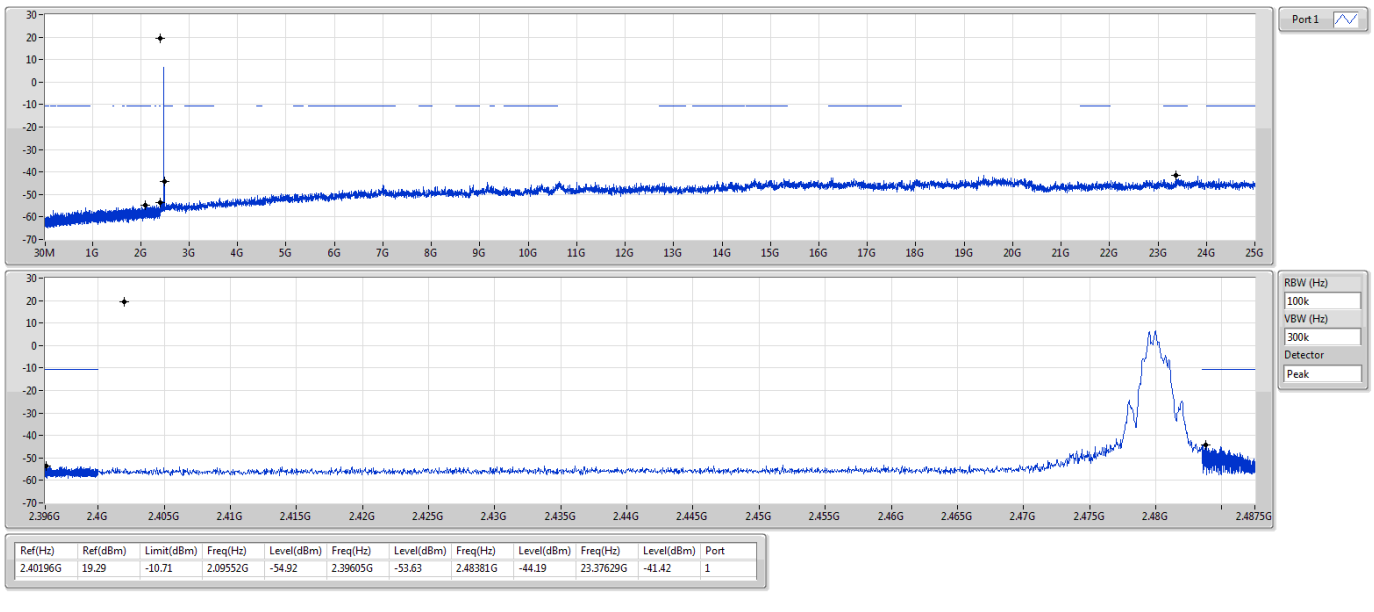
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40196G	19.29	-10.71	2.16088G	-54.94	2.39847G	-53.06	2.48471G	-52.47	23.44382G	-42.35	1

BT-LE(2Mbps) **CSE NdB**

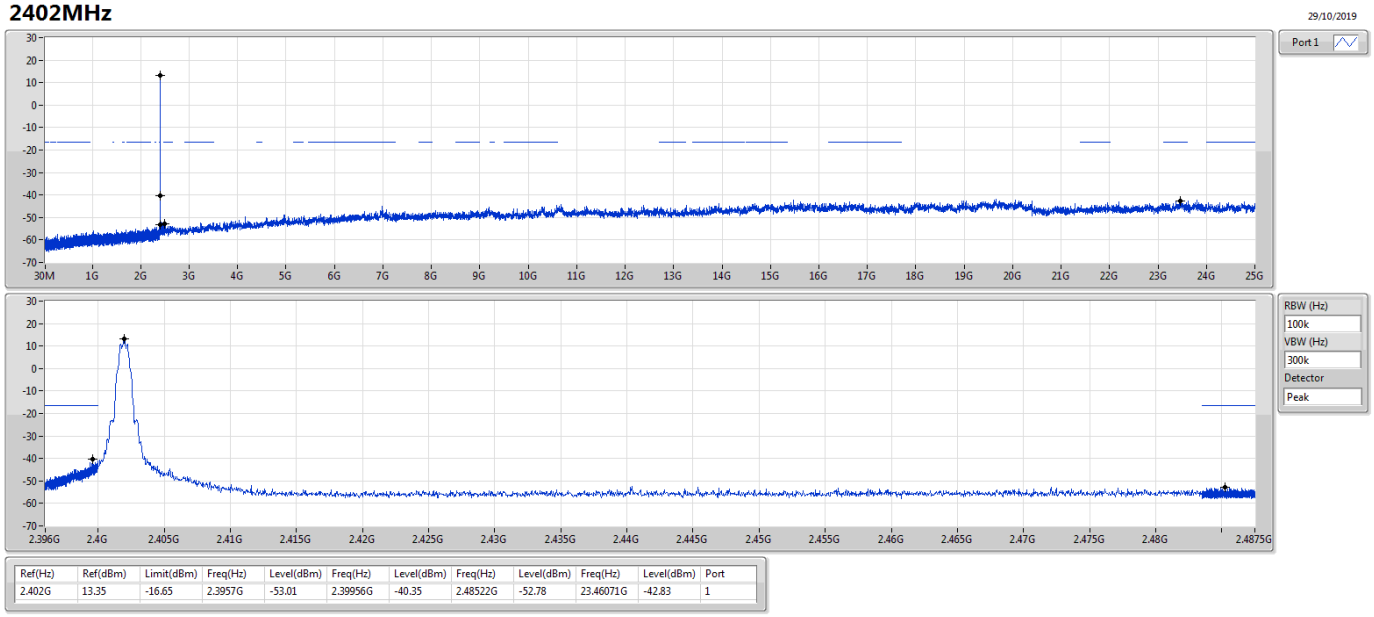
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40196G	19.29	-10.71	2.09552G	-54.92	2.39605G	-53.63	2.48381G	-44.19	23.37629G	-41.42	1

BT-LE(125kbps) **CSE NdB**

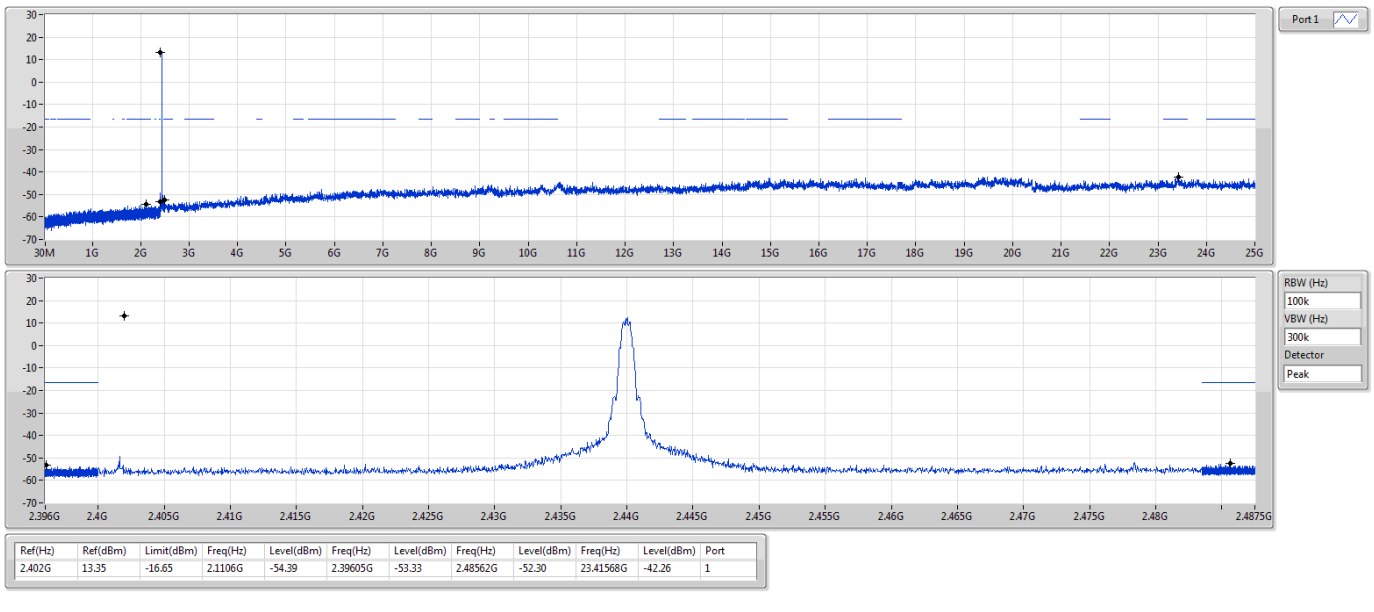
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	13.35	-16.65	2.3957G	-53.01	2.39956G	-40.35	2.48522G	-52.78	23.46071G	-42.83	1

BT-LE(125kbps) **CSE NdB**

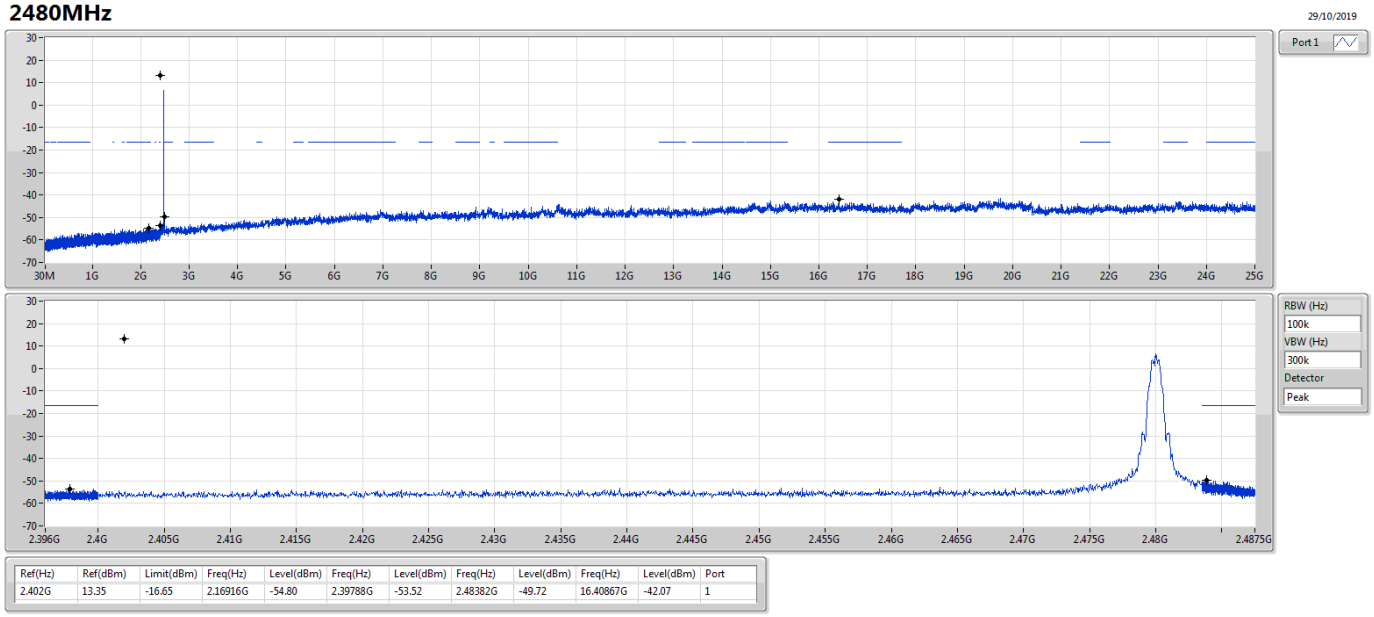
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	13.35	-16.65	2.1106G	-54.39	2.39605G	-53.33	2.48562G	-52.30	23.41568G	-42.26	1

BT-LE(125kbps) **CSE NdB**

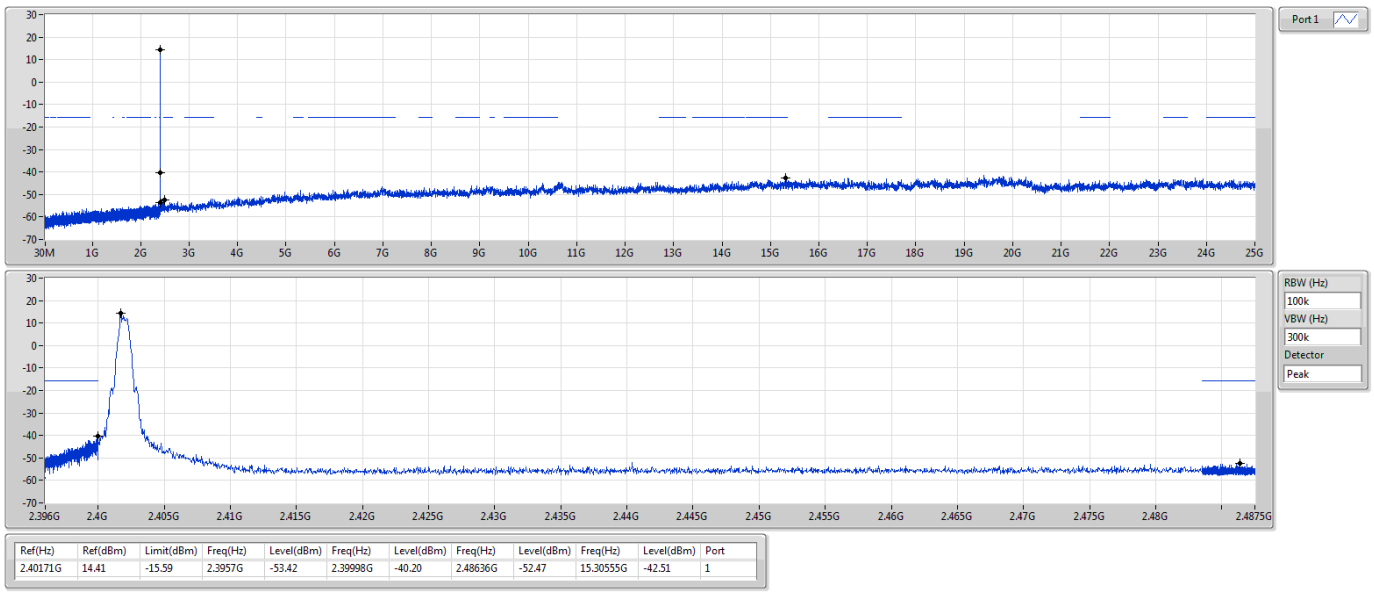
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	13.35	-16.65	2.16916G	-54.80	2.39788G	-53.52	2.48382G	-49.72	16.40867G	-42.07	1

BT-LE(500kbps) **CSE NdB**

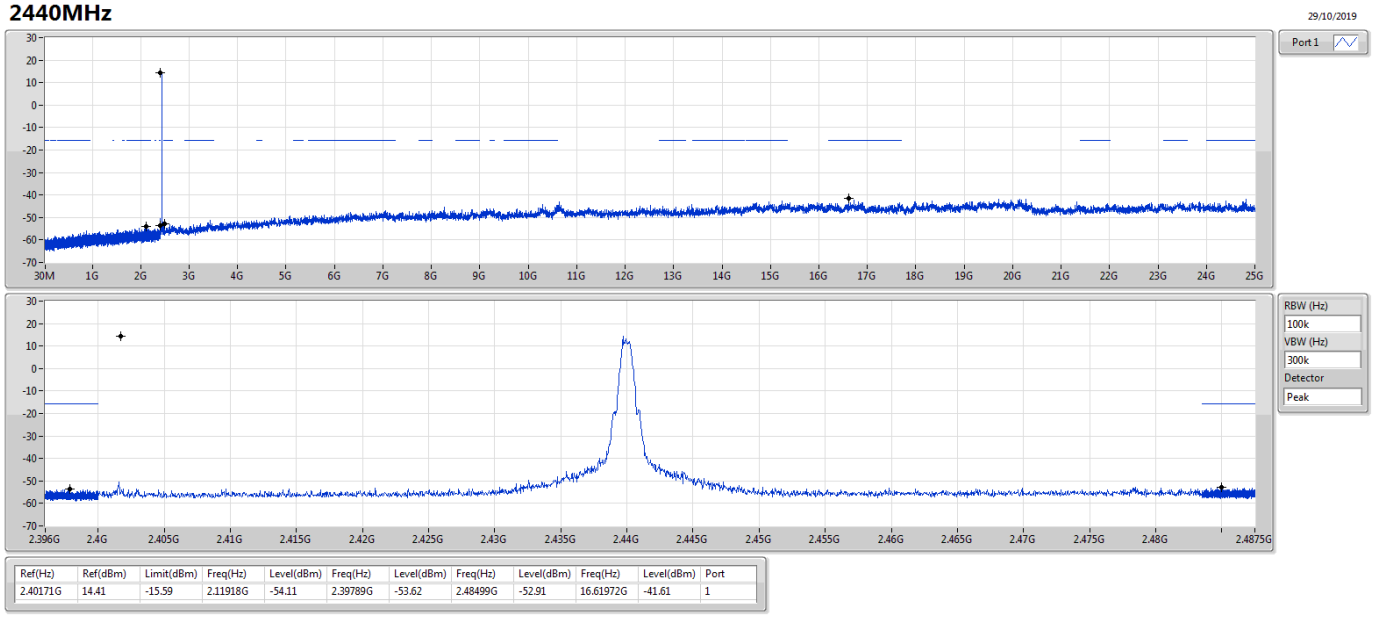
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40171G	14.41	-15.59	2.3957G	-53.42	2.39998G	-40.20	2.48636G	-52.47	15.30555G	-42.51	1

BT-LE(500kbps) **CSE NdB**

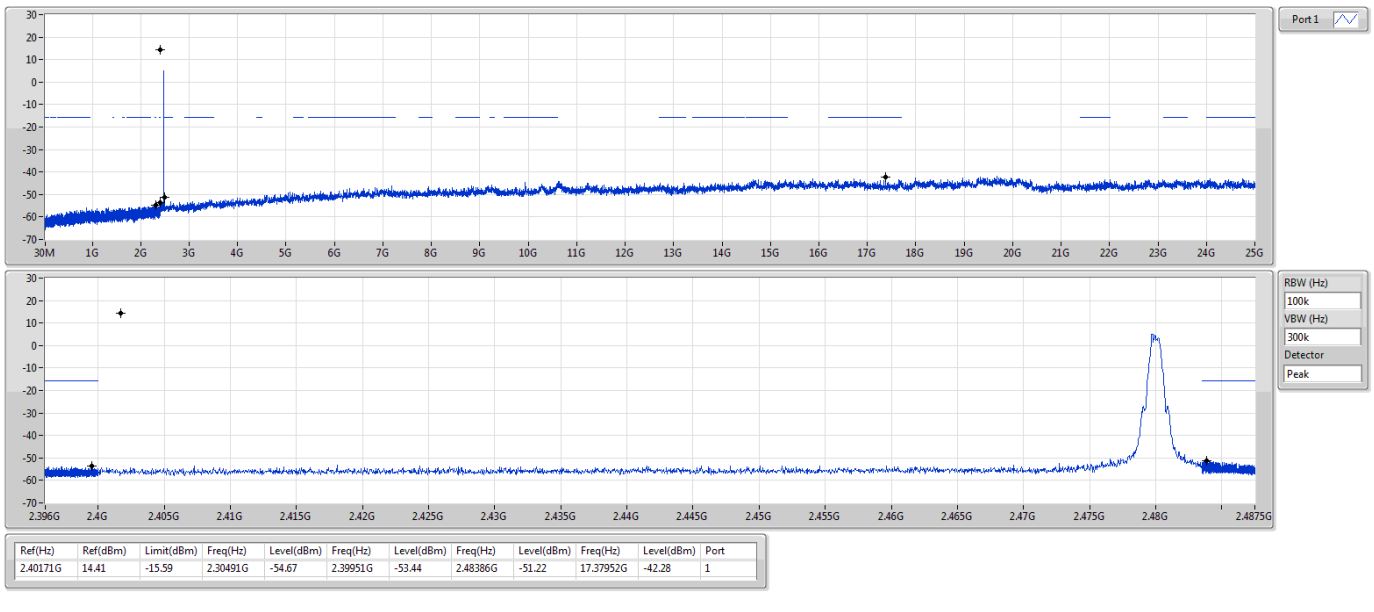
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40171G	14.41	-15.59	2.11918G	-54.11	2.39789G	-53.62	2.48499G	-52.91	16.61972G	-41.61	1

BT-LE(500kbps) **CSE NdB**

2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40171G	14.41	-15.59	2.30491G	-54.67	2.39951G	-53.44	2.48386G	-51.22	17.37952G	-42.28	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(2Mbps)_1TX	Pass	PK	30M	35.79	40.00	-4.21	3	Vertical	0	1.00	-

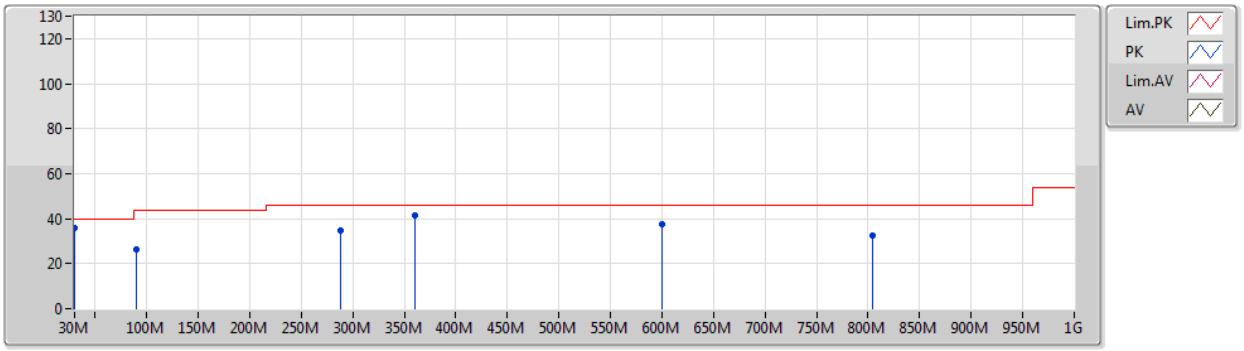
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(2Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	30M	35.79	40.00	-4.21	3	Vertical	0	1.00	-
2440MHz	Pass	PK	90.14M	26.46	43.50	-17.04	3	Vertical	0	1.00	-
2440MHz	Pass	PK	288.02M	34.86	46.00	-11.14	3	Vertical	0	1.00	-
2440MHz	Pass	PK	359.8M	41.23	46.00	-4.77	3	Vertical	0	1.00	-
2440MHz	Pass	PK	600.36M	37.33	46.00	-8.67	3	Vertical	0	1.00	-
2440MHz	Pass	PK	804.06M	32.57	46.00	-13.43	3	Vertical	0	1.00	-
2440MHz	Pass	PK	41.64M	26.32	40.00	-13.68	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	90.14M	22.73	43.50	-20.77	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	288.02M	30.37	46.00	-15.63	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	497.54M	28.37	46.00	-17.63	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	635.28M	35.45	46.00	-10.55	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	773.02M	35.48	46.00	-10.52	3	Horizontal	360	1.00	-

BT-LE(2Mbps)_1TX

2440MHz_PoE

15/08/2019

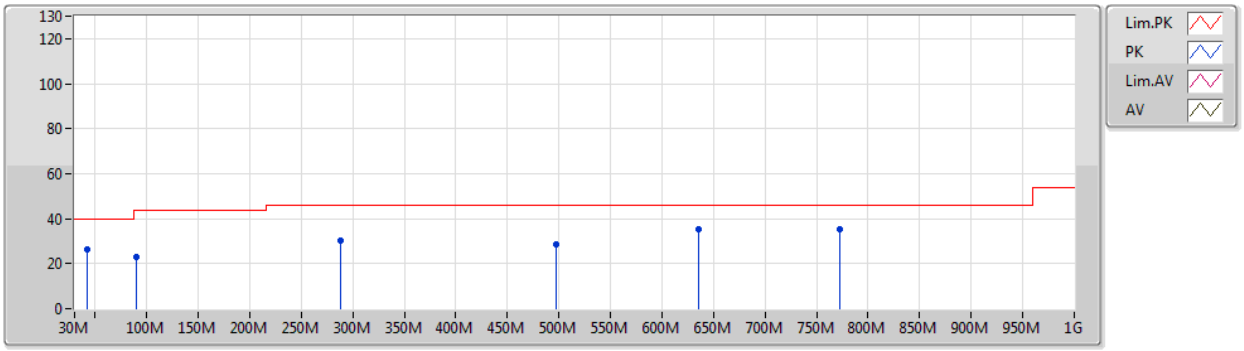


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	30M	35.79	40.00	-4.21	-4.40	3	Vertical	0	1.00	-	40.19	23.01	0.29	27.70
PK	90.14M	26.46	43.50	-17.04	-12.52	3	Vertical	0	1.00	-	38.98	13.84	1.39	27.75
PK	288.02M	34.86	46.00	-11.14	-6.14	3	Vertical	0	1.00	-	41.00	18.09	2.94	27.17
PK	359.8M	41.23	46.00	-4.77	-4.62	3	Vertical	0	1.00	-	45.85	19.83	3.12	27.57
PK	600.36M	37.33	46.00	-8.67	-1.09	3	Vertical	0	1.00	-	38.42	23.75	3.67	28.51
PK	804.06M	32.57	46.00	-13.43	1.07	3	Vertical	0	1.00	-	31.50	25.03	4.18	28.14

BT-LE(2Mbps)_1TX

2440MHz_PoE

15/08/2019



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	41.64M	26.32	40.00	-13.68	-10.28	3	Horizontal	360	1.00	-	36.60	16.72	0.68	27.68
PK	90.14M	22.73	43.50	-20.77	-12.52	3	Horizontal	360	1.00	-	35.25	13.84	1.39	27.75
PK	288.02M	30.37	46.00	-15.63	-6.14	3	Horizontal	360	1.00	-	36.51	18.09	2.94	27.17
PK	497.54M	28.37	46.00	-17.63	-2.41	3	Horizontal	360	1.00	-	30.78	22.69	3.31	28.41
PK	635.28M	35.45	46.00	-10.55	-0.52	3	Horizontal	360	1.00	-	35.97	24.25	3.76	28.53
PK	773.02M	35.48	46.00	-10.52	0.95	3	Horizontal	360	1.00	-	34.53	25.06	4.14	28.25

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(125kbps)_1TX	Pass	AV	2.4835G	52.96	54.00	-1.04	3	Horizontal	316	2.81	-
BT-LE(500kbps)_1TX	Pass	AV	2.4835G	53.00	54.00	-1.00	3	Horizontal	315	2.80	-
BT-LE(1Mbps)_1TX	Pass	AV	2.4835G	52.88	54.00	-1.12	3	Horizontal	316	2.80	-
BT-LE(2Mbps)_1TX	Pass	AV	2.4835G	52.55	54.00	-1.45	3	Horizontal	311	1.24	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(125kbps)_1TX	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.39G	45.89	54.00	-8.11	3	Vertical	312	2.55	-
2402MHz_TX	Pass	AV	2.402G	109.29	Inf	-Inf	3	Vertical	312	2.55	-
2402MHz_TX	Pass	PK	2.376G	57.17	74.00	-16.83	3	Vertical	312	2.55	-
2402MHz_TX	Pass	PK	2.402G	110.81	Inf	-Inf	3	Vertical	312	2.55	-
2402MHz_TX	Pass	AV	2.3898G	46.08	54.00	-7.92	3	Horizontal	311	2.96	-
2402MHz_TX	Pass	AV	2.402G	112.66	Inf	-Inf	3	Horizontal	311	2.96	-
2402MHz_TX	Pass	PK	2.3696G	57.55	74.00	-16.45	3	Horizontal	311	2.96	-
2402MHz_TX	Pass	PK	2.4018G	114.22	Inf	-Inf	3	Horizontal	311	2.96	-
2402MHz_TX	Pass	AV	4.8042G	36.31	54.00	-17.69	3	Vertical	9	1.32	-
2402MHz_TX	Pass	PK	4.80434G	46.35	74.00	-27.65	3	Vertical	9	1.32	-
2402MHz_TX	Pass	AV	4.80402G	41.83	54.00	-12.17	3	Horizontal	32	1.76	-
2402MHz_TX	Pass	PK	4.8035G	49.16	74.00	-24.84	3	Horizontal	32	1.76	-
2440MHz_TX	Pass	AV	2.3848G	46.00	54.00	-8.00	3	Vertical	28	2.25	-
2440MHz_TX	Pass	AV	2.44G	107.31	Inf	-Inf	3	Vertical	28	2.25	-
2440MHz_TX	Pass	AV	2.486G	46.17	54.00	-7.83	3	Vertical	28	2.25	-
2440MHz_TX	Pass	PK	2.3692G	57.04	74.00	-16.96	3	Vertical	28	2.25	-
2440MHz_TX	Pass	PK	2.4396G	108.82	Inf	-Inf	3	Vertical	28	2.25	-
2440MHz_TX	Pass	PK	2.4884G	57.24	74.00	-16.76	3	Vertical	28	2.25	-
2440MHz_TX	Pass	AV	2.3856G	45.66	54.00	-8.34	3	Horizontal	317	2.87	-
2440MHz_TX	Pass	AV	2.44G	111.00	Inf	-Inf	3	Horizontal	317	2.87	-
2440MHz_TX	Pass	AV	2.5G	46.44	54.00	-7.56	3	Horizontal	317	2.87	-
2440MHz_TX	Pass	PK	2.3616G	56.84	74.00	-17.16	3	Horizontal	317	2.87	-
2440MHz_TX	Pass	PK	2.4404G	112.49	Inf	-Inf	3	Horizontal	317	2.87	-
2440MHz_TX	Pass	PK	2.4904G	56.94	74.00	-17.06	3	Horizontal	317	2.87	-
2440MHz_TX	Pass	AV	4.8801G	35.69	54.00	-18.31	3	Vertical	11	1.37	-
2440MHz_TX	Pass	PK	4.8803G	45.52	74.00	-28.48	3	Vertical	11	1.37	-
2440MHz_TX	Pass	AV	4.87998G	41.65	54.00	-12.35	3	Horizontal	35	1.98	-
2440MHz_TX	Pass	PK	4.88047G	49.49	74.00	-24.51	3	Horizontal	35	1.98	-
2480MHz_TX	Pass	AV	2.48G	98.86	Inf	-Inf	3	Vertical	306	2.45	-
2480MHz_TX	Pass	AV	2.4835G	50.68	54.00	-3.32	3	Vertical	306	2.45	-
2480MHz_TX	Pass	PK	2.4802G	100.37	Inf	-Inf	3	Vertical	306	2.45	-
2480MHz_TX	Pass	PK	2.4836G	58.18	74.00	-15.82	3	Vertical	306	2.45	-
2480MHz_TX	Pass	AV	2.48G	101.88	Inf	-Inf	3	Horizontal	316	2.81	-
2480MHz_TX	Pass	AV	2.4835G	52.96	54.00	-1.04	3	Horizontal	316	2.81	-
2480MHz_TX	Pass	PK	2.4802G	103.45	Inf	-Inf	3	Horizontal	316	2.81	-
2480MHz_TX	Pass	PK	2.4835G	60.59	74.00	-13.41	3	Horizontal	316	2.81	-
2480MHz_TX	Pass	AV	4.95994G	35.05	54.00	-18.95	3	Vertical	13	1.72	-
2480MHz_TX	Pass	PK	4.95963G	45.92	74.00	-28.08	3	Vertical	13	1.72	-
2480MHz_TX	Pass	AV	4.95988G	41.52	54.00	-12.48	3	Horizontal	51	1.84	-
2480MHz_TX	Pass	PK	4.95936G	49.24	74.00	-24.76	3	Horizontal	51	1.84	-
BT-LE(500kbps)_1TX	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.3824G	45.64	54.00	-8.36	3	Vertical	309	2.45	-
2402MHz_TX	Pass	AV	2.402G	107.02	Inf	-Inf	3	Vertical	309	2.45	-
2402MHz_TX	Pass	PK	2.3664G	57.30	74.00	-16.70	3	Vertical	309	2.45	-
2402MHz_TX	Pass	PK	2.4018G	108.68	Inf	-Inf	3	Vertical	309	2.45	-
2402MHz_TX	Pass	AV	2.3898G	45.83	54.00	-8.17	3	Horizontal	315	2.79	-
2402MHz_TX	Pass	AV	2.402G	108.45	Inf	-Inf	3	Horizontal	315	2.79	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2402MHz_TX	Pass	PK	2.3644G	57.02	74.00	-16.98	3	Horizontal	315	2.79	-
2402MHz_TX	Pass	PK	2.4018G	109.91	Inf	-Inf	3	Horizontal	315	2.79	-
2402MHz_TX	Pass	AV	4.80353G	37.14	54.00	-16.86	3	Vertical	10	1.32	-
2402MHz_TX	Pass	PK	4.80364G	45.83	74.00	-28.17	3	Vertical	10	1.32	-
2402MHz_TX	Pass	AV	4.80366G	42.12	54.00	-11.88	3	Horizontal	34	1.80	-
2402MHz_TX	Pass	PK	4.80457G	49.17	74.00	-24.83	3	Horizontal	34	1.80	-
2440MHz_TX	Pass	AV	2.3464G	45.55	54.00	-8.45	3	Vertical	29	2.23	-
2440MHz_TX	Pass	AV	2.44G	107.33	Inf	-Inf	3	Vertical	29	2.23	-
2440MHz_TX	Pass	AV	2.5G	46.23	54.00	-7.77	3	Vertical	29	2.23	-
2440MHz_TX	Pass	PK	2.3688G	56.11	74.00	-17.89	3	Vertical	29	2.23	-
2440MHz_TX	Pass	PK	2.44G	108.86	Inf	-Inf	3	Vertical	29	2.23	-
2440MHz_TX	Pass	PK	2.484G	55.87	74.00	-18.13	3	Vertical	29	2.23	-
2440MHz_TX	Pass	AV	2.3792G	45.51	54.00	-8.49	3	Horizontal	318	2.89	-
2440MHz_TX	Pass	AV	2.44G	110.75	Inf	-Inf	3	Horizontal	318	2.89	-
2440MHz_TX	Pass	AV	2.5G	46.48	54.00	-7.52	3	Horizontal	318	2.89	-
2440MHz_TX	Pass	PK	2.3816G	56.58	74.00	-17.42	3	Horizontal	318	2.89	-
2440MHz_TX	Pass	PK	2.44G	112.55	Inf	-Inf	3	Horizontal	318	2.89	-
2440MHz_TX	Pass	PK	2.4868G	56.48	74.00	-17.52	3	Horizontal	318	2.89	-
2440MHz_TX	Pass	AV	4.87948G	36.29	54.00	-17.71	3	Vertical	13	1.48	-
2440MHz_TX	Pass	PK	4.88043G	45.46	74.00	-28.54	3	Vertical	13	1.48	-
2440MHz_TX	Pass	AV	4.87958G	41.91	54.00	-12.09	3	Horizontal	35	1.99	-
2440MHz_TX	Pass	PK	4.87944G	49.29	74.00	-24.71	3	Horizontal	35	1.99	-
2480MHz_TX	Pass	AV	2.48G	98.65	Inf	-Inf	3	Vertical	309	2.45	-
2480MHz_TX	Pass	AV	2.4835G	50.79	54.00	-3.21	3	Vertical	309	2.45	-
2480MHz_TX	Pass	PK	2.4802G	100.44	Inf	-Inf	3	Vertical	309	2.45	-
2480MHz_TX	Pass	PK	2.4852G	58.77	74.00	-15.23	3	Vertical	309	2.45	-
2480MHz_TX	Pass	AV	2.48G	101.70	Inf	-Inf	3	Horizontal	315	2.80	-
2480MHz_TX	Pass	AV	2.4835G	53.00	54.00	-1.00	3	Horizontal	315	2.80	-
2480MHz_TX	Pass	PK	2.4802G	103.41	Inf	-Inf	3	Horizontal	315	2.80	-
2480MHz_TX	Pass	PK	2.4835G	59.52	74.00	-14.48	3	Horizontal	315	2.80	-
2480MHz_TX	Pass	AV	4.9595G	35.59	54.00	-18.41	3	Vertical	15	1.69	-
2480MHz_TX	Pass	PK	4.9601G	45.04	74.00	-28.96	3	Vertical	15	1.69	-
2480MHz_TX	Pass	AV	4.95954G	41.53	54.00	-12.47	3	Horizontal	50	1.82	-
2480MHz_TX	Pass	PK	4.95947G	49.00	74.00	-25.00	3	Horizontal	50	1.82	-
BT-LE(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.3634G	47.95	54.00	-6.05	3	Vertical	312	2.54	-
2402MHz_TX	Pass	AV	2.402G	115.11	Inf	-Inf	3	Vertical	312	2.54	-
2402MHz_TX	Pass	PK	2.37G	56.85	74.00	-17.15	3	Vertical	312	2.54	-
2402MHz_TX	Pass	PK	2.4018G	116.29	Inf	-Inf	3	Vertical	312	2.54	-
2402MHz_TX	Pass	AV	2.3634G	48.56	54.00	-5.44	3	Horizontal	314	2.98	-
2402MHz_TX	Pass	AV	2.402G	118.79	Inf	-Inf	3	Horizontal	314	2.98	-
2402MHz_TX	Pass	PK	2.3634G	58.02	74.00	-15.98	3	Horizontal	314	2.98	-
2402MHz_TX	Pass	PK	2.402G	119.83	Inf	-Inf	3	Horizontal	314	2.98	-
2402MHz_TX	Pass	AV	4.80364G	39.92	54.00	-14.08	3	Vertical	12	1.54	-
2402MHz_TX	Pass	PK	4.80347G	46.81	74.00	-27.19	3	Vertical	12	1.54	-
2402MHz_TX	Pass	AV	4.80384G	37.44	54.00	-16.56	3	Horizontal	330	1.68	-
2402MHz_TX	Pass	PK	4.80392G	45.95	74.00	-28.05	3	Horizontal	330	1.68	-
2440MHz_TX	Pass	AV	2.3512G	46.73	54.00	-7.27	3	Vertical	25	2.22	-
2440MHz_TX	Pass	AV	2.44G	113.66	Inf	-Inf	3	Vertical	25	2.22	-

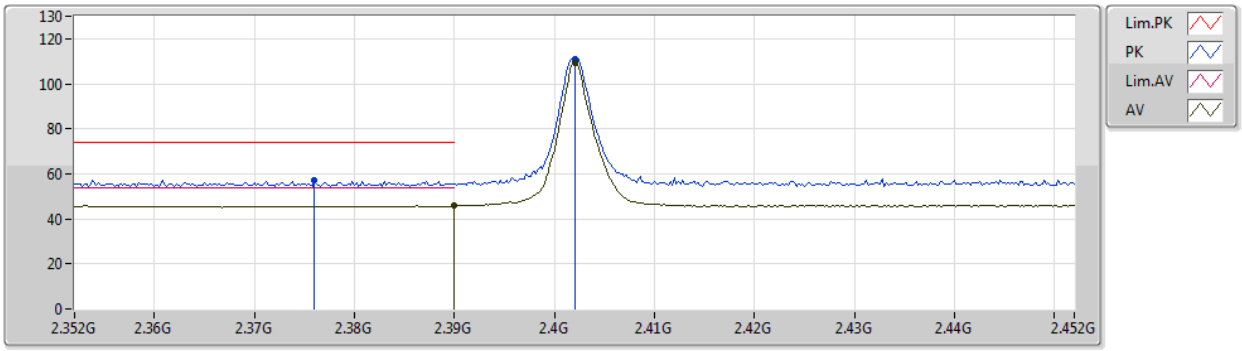
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2440MHz_TX	Pass	AV	2.4916G	47.06	54.00	-6.94	3	Vertical	25	2.22	-
2440MHz_TX	Pass	PK	2.3832G	57.03	74.00	-16.97	3	Vertical	25	2.22	-
2440MHz_TX	Pass	PK	2.4396G	114.85	Inf	-Inf	3	Vertical	25	2.22	-
2440MHz_TX	Pass	PK	2.494G	57.31	74.00	-16.69	3	Vertical	25	2.22	-
2440MHz_TX	Pass	AV	2.36G	46.82	54.00	-7.18	3	Horizontal	321	2.90	-
2440MHz_TX	Pass	AV	2.44G	117.27	Inf	-Inf	3	Horizontal	321	2.90	-
2440MHz_TX	Pass	AV	2.5G	47.20	54.00	-6.80	3	Horizontal	321	2.90	-
2440MHz_TX	Pass	PK	2.3764G	56.94	74.00	-17.06	3	Horizontal	321	2.90	-
2440MHz_TX	Pass	PK	2.4404G	118.39	Inf	-Inf	3	Horizontal	321	2.90	-
2440MHz_TX	Pass	PK	2.494G	57.02	74.00	-16.98	3	Horizontal	321	2.90	-
2440MHz_TX	Pass	AV	4.87989G	38.93	54.00	-15.07	3	Vertical	12	1.50	-
2440MHz_TX	Pass	PK	4.88005G	46.45	74.00	-27.55	3	Vertical	12	1.50	-
2440MHz_TX	Pass	AV	4.87988G	45.58	54.00	-8.42	3	Horizontal	36	2.07	-
2440MHz_TX	Pass	PK	4.88004G	51.47	74.00	-22.53	3	Horizontal	36	2.07	-
2480MHz_TX	Pass	AV	2.48G	99.80	Inf	-Inf	3	Vertical	310	2.14	-
2480MHz_TX	Pass	AV	2.4835G	50.42	54.00	-3.58	3	Vertical	310	2.14	-
2480MHz_TX	Pass	PK	2.4798G	100.91	Inf	-Inf	3	Vertical	310	2.14	-
2480MHz_TX	Pass	PK	2.4835G	58.03	74.00	-15.97	3	Vertical	310	2.14	-
2480MHz_TX	Pass	AV	2.48G	102.68	Inf	-Inf	3	Horizontal	316	2.80	-
2480MHz_TX	Pass	AV	2.4835G	52.88	54.00	-1.12	3	Horizontal	316	2.80	-
2480MHz_TX	Pass	PK	2.48G	103.72	Inf	-Inf	3	Horizontal	316	2.80	-
2480MHz_TX	Pass	PK	2.4835G	60.01	74.00	-13.99	3	Horizontal	316	2.80	-
2480MHz_TX	Pass	AV	4.95993G	38.49	54.00	-15.51	3	Vertical	11	1.50	-
2480MHz_TX	Pass	PK	4.95991G	45.93	74.00	-28.07	3	Vertical	11	1.50	-
2480MHz_TX	Pass	AV	4.95989G	47.32	54.00	-6.68	3	Horizontal	55	1.93	-
2480MHz_TX	Pass	PK	4.95992G	52.25	74.00	-21.75	3	Horizontal	55	1.93	-
BT-LE(2Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.39G	47.91	54.00	-6.09	3	Vertical	318	1.84	-
2402MHz_TX	Pass	AV	2.4018G	111.61	Inf	-Inf	3	Vertical	318	1.84	-
2402MHz_TX	Pass	PK	2.39G	58.08	74.00	-15.92	3	Vertical	318	1.84	-
2402MHz_TX	Pass	PK	2.4016G	115.00	Inf	-Inf	3	Vertical	318	1.84	-
2402MHz_TX	Pass	AV	2.39G	51.16	54.00	-2.84	3	Horizontal	314	2.99	-
2402MHz_TX	Pass	AV	2.402G	116.52	Inf	-Inf	3	Horizontal	314	2.99	-
2402MHz_TX	Pass	PK	2.3896G	60.55	74.00	-13.45	3	Horizontal	314	2.99	-
2402MHz_TX	Pass	PK	2.402G	119.73	Inf	-Inf	3	Horizontal	314	2.99	-
2402MHz_TX	Pass	AV	4.80396G	38.20	54.00	-15.80	3	Vertical	12	1.29	-
2402MHz_TX	Pass	PK	4.80304G	46.27	74.00	-27.73	3	Vertical	12	1.29	-
2402MHz_TX	Pass	AV	4.80384G	41.43	54.00	-12.57	3	Horizontal	17	1.28	-
2402MHz_TX	Pass	PK	4.80382G	49.06	74.00	-24.94	3	Horizontal	17	1.28	-
2440MHz_TX	Pass	AV	2.3852G	46.63	54.00	-7.37	3	Vertical	28	2.18	-
2440MHz_TX	Pass	AV	2.44G	110.30	Inf	-Inf	3	Vertical	28	2.18	-
2440MHz_TX	Pass	AV	2.4835G	47.17	54.00	-6.83	3	Vertical	28	2.18	-
2440MHz_TX	Pass	PK	2.3684G	57.03	74.00	-16.97	3	Vertical	28	2.18	-
2440MHz_TX	Pass	PK	2.4396G	114.63	Inf	-Inf	3	Vertical	28	2.18	-
2440MHz_TX	Pass	PK	2.4984G	57.07	74.00	-16.93	3	Vertical	28	2.18	-
2440MHz_TX	Pass	AV	2.3876G	46.84	54.00	-7.16	3	Horizontal	318	2.88	-
2440MHz_TX	Pass	AV	2.44G	114.57	Inf	-Inf	3	Horizontal	318	2.88	-
2440MHz_TX	Pass	AV	2.5G	47.23	54.00	-6.77	3	Horizontal	318	2.88	-
2440MHz_TX	Pass	PK	2.3496G	57.33	74.00	-16.67	3	Horizontal	318	2.88	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2440MHz_TX	Pass	PK	2.4396G	118.51	Inf	-Inf	3	Horizontal	318	2.88	-
2440MHz_TX	Pass	PK	2.5G	56.95	74.00	-17.05	3	Horizontal	318	2.88	-
2440MHz_TX	Pass	AV	4.87992G	37.51	54.00	-16.49	3	Vertical	14	1.50	-
2440MHz_TX	Pass	PK	4.87996G	46.06	74.00	-27.94	3	Vertical	14	1.50	-
2440MHz_TX	Pass	AV	4.8798G	43.65	54.00	-10.35	3	Horizontal	35	2.01	-
2440MHz_TX	Pass	PK	4.87994G	51.66	74.00	-22.34	3	Horizontal	35	2.01	-
2480MHz_TX	Pass	AV	2.4802G	94.61	Inf	-Inf	3	Vertical	311	1.96	-
2480MHz_TX	Pass	AV	2.4835G	50.86	54.00	-3.14	3	Vertical	311	1.96	-
2480MHz_TX	Pass	PK	2.4794G	98.64	Inf	-Inf	3	Vertical	311	1.96	-
2480MHz_TX	Pass	PK	2.4848G	59.31	74.00	-14.69	3	Vertical	311	1.96	-
2480MHz_TX	Pass	AV	2.4798G	98.00	Inf	-Inf	3	Horizontal	311	1.24	-
2480MHz_TX	Pass	AV	2.4835G	52.55	54.00	-1.45	3	Horizontal	311	1.24	-
2480MHz_TX	Pass	PK	2.4796G	101.16	Inf	-Inf	3	Horizontal	311	1.24	-
2480MHz_TX	Pass	PK	2.4836G	62.72	74.00	-11.28	3	Horizontal	311	1.24	-
2480MHz_TX	Pass	AV	4.96002G	37.64	54.00	-16.36	3	Vertical	3	1.10	-
2480MHz_TX	Pass	PK	4.96015G	46.25	74.00	-27.75	3	Vertical	3	1.10	-
2480MHz_TX	Pass	AV	4.95984G	44.54	54.00	-9.46	3	Horizontal	50	1.79	-
2480MHz_TX	Pass	PK	4.95994G	52.38	74.00	-21.62	3	Horizontal	50	1.79	-

BT-LE(125kbps)_1TX

2402MHz_TX

13/08/2019

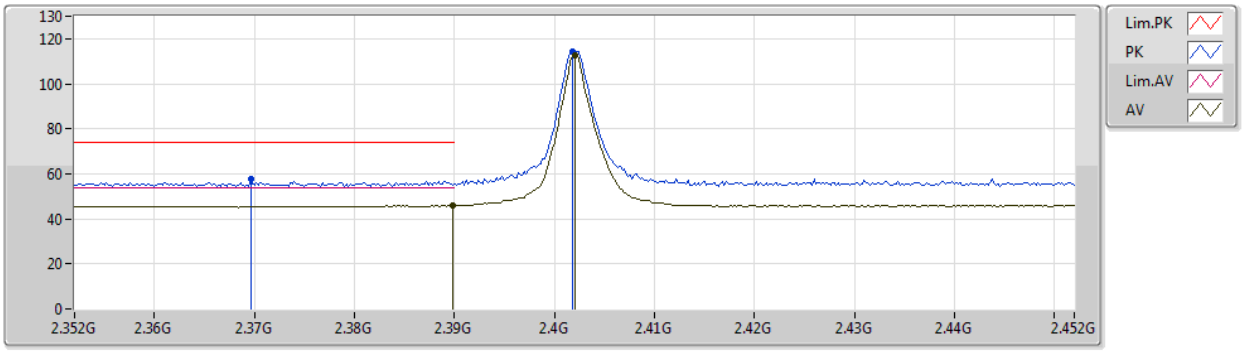


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.39G	45.89	54.00	-8.11	32.09	13.80	3	Vertical	312	2.55	-	27.37	4.72	-
AV	2.402G	109.29	Inf	-Inf	32.14	77.15	3	Vertical	312	2.55	-	27.41	4.73	-
PK	2.376G	57.17	74.00	-16.83	32.03	25.14	3	Vertical	312	2.55	-	27.33	4.70	-
PK	2.402G	110.81	Inf	-Inf	32.14	78.67	3	Vertical	312	2.55	-	27.41	4.73	-

BT-LE(125kbps)_1TX

2402MHz_TX

13/08/2019

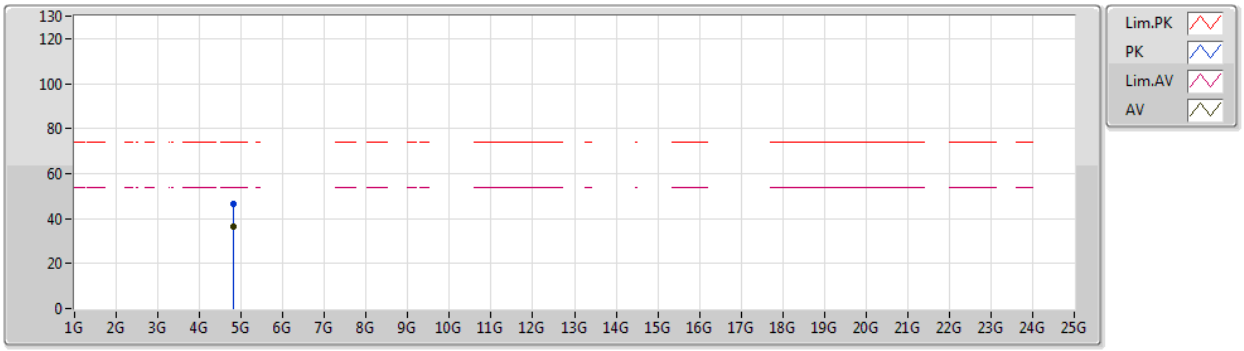


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3898G	46.08	54.00	-7.92	32.09	13.99	3	Horizonta	311	2.96	-	27.37	4.72	-
AV	2.402G	112.66	Inf	-Inf	32.14	80.52	3	Horizonta	311	2.96	-	27.41	4.73	-
PK	2.3696G	57.55	74.00	-16.45	32.00	25.55	3	Horizonta	311	2.96	-	27.31	4.69	-
PK	2.4018G	114.22	Inf	-Inf	32.14	82.08	3	Horizonta	311	2.96	-	27.41	4.73	-

BT-LE(125kbps)_1TX

2402MHz_TX

13/08/2019

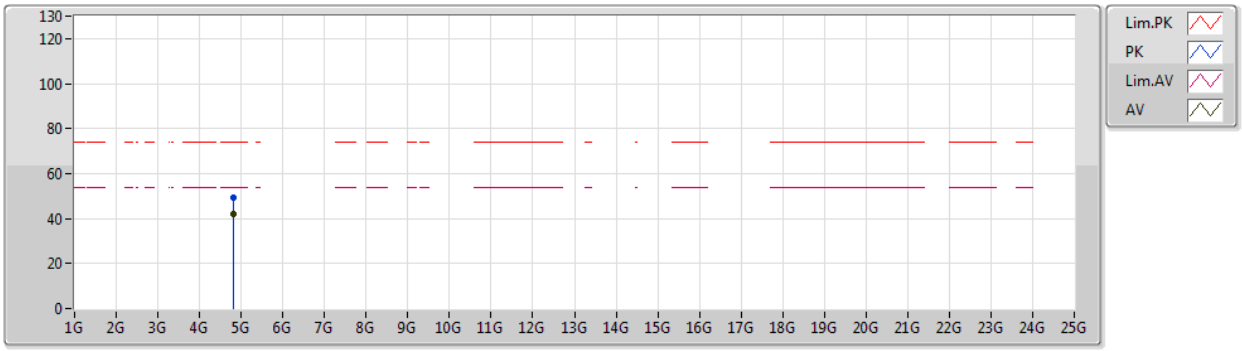


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.8042G	36.31	54.00	-17.69	3.64	32.67	3	Vertical	9	1.32	-	31.35	6.78	34.49
PK	4.80434G	46.35	74.00	-27.65	3.64	42.71	3	Vertical	9	1.32	-	31.35	6.78	34.49

BT-LE(125kbps)_1TX

2402MHz_TX

13/08/2019

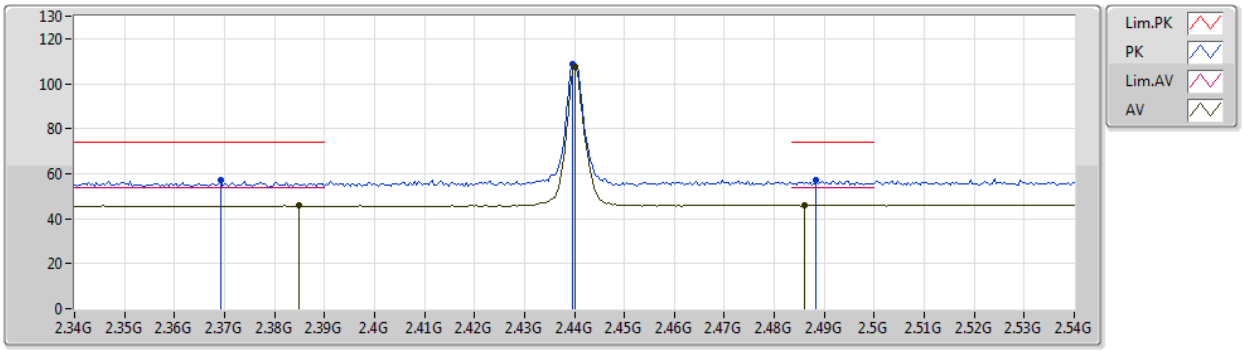


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.80402G	41.83	54.00	-12.17	3.64	38.19	3	Horizonta	32	1.76	-	31.35	6.78	34.49
PK	4.8035G	49.16	74.00	-24.84	3.64	45.52	3	Horizonta	32	1.76	-	31.35	6.78	34.49

BT-LE(125kbps)_1TX

2440MHz_TX

13/08/2019

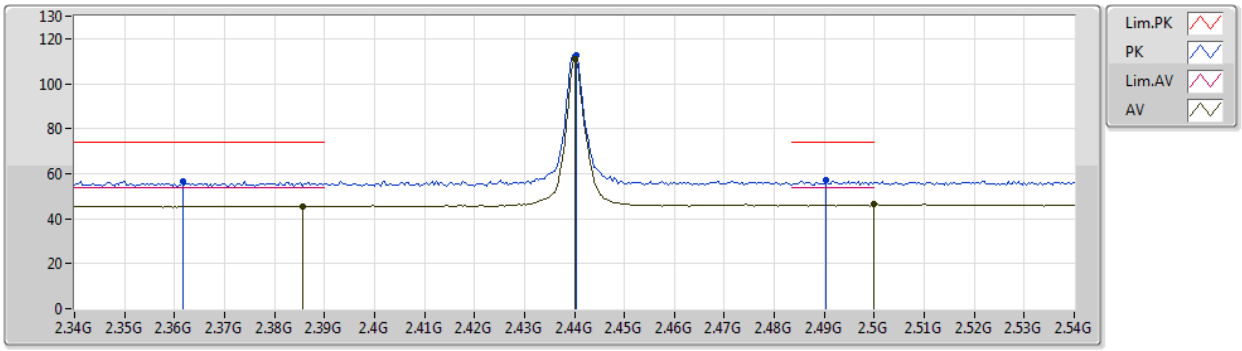


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3848G	46.00	54.00	-8.00	32.06	13.94	3	Vertical	28	2.25	-	27.35	4.71	-
AV	2.44G	107.31	Inf	-Inf	32.30	75.01	3	Vertical	28	2.25	-	27.52	4.78	-
AV	2.486G	46.17	54.00	-7.83	32.49	13.68	3	Vertical	28	2.25	-	27.66	4.83	-
PK	2.3692G	57.04	74.00	-16.96	32.00	25.04	3	Vertical	28	2.25	-	27.31	4.69	-
PK	2.4396G	108.82	Inf	-Inf	32.30	76.52	3	Vertical	28	2.25	-	27.52	4.78	-
PK	2.4884G	57.24	74.00	-16.76	32.50	24.74	3	Vertical	28	2.25	-	27.67	4.83	-

BT-LE(125kbps)_1TX

2440MHz_TX

13/08/2019

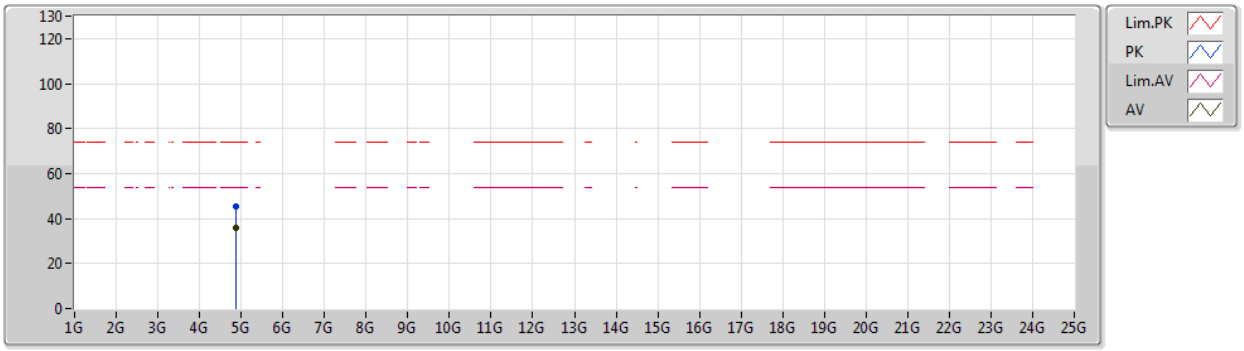


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3856G	45.66	54.00	-8.34	32.07	13.59	3	Horizonta	317	2.87	-	27.36	4.71	-
AV	2.44G	111.00	Inf	-Inf	32.30	78.70	3	Horizonta	317	2.87	-	27.52	4.78	-
AV	2.5G	46.44	54.00	-7.56	32.55	13.89	3	Horizonta	317	2.87	-	27.70	4.85	-
PK	2.3616G	56.84	74.00	-17.16	31.97	24.87	3	Horizonta	317	2.87	-	27.28	4.69	-
PK	2.4404G	112.49	Inf	-Inf	32.30	80.19	3	Horizonta	317	2.87	-	27.52	4.78	-
PK	2.4904G	56.94	74.00	-17.06	32.51	24.43	3	Horizonta	317	2.87	-	27.67	4.84	-

BT-LE(125kbps)_1TX

2440MHz_TX

13/08/2019

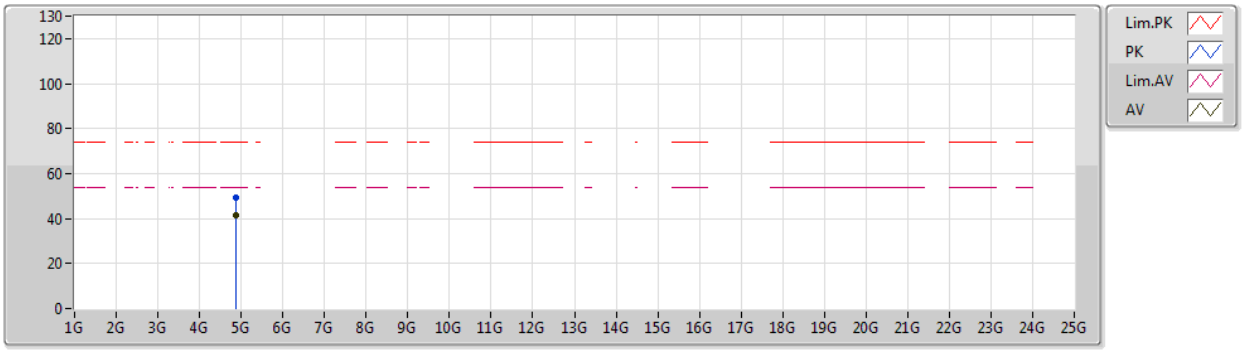


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.8801G	35.69	54.00	-18.31	3.82	31.87	3	Vertical	11	1.37	-	31.48	6.81	34.47
PK	4.8803G	45.52	74.00	-28.48	3.82	41.70	3	Vertical	11	1.37	-	31.48	6.81	34.47

BT-LE(125kbps)_1TX

2440MHz_TX

13/08/2019

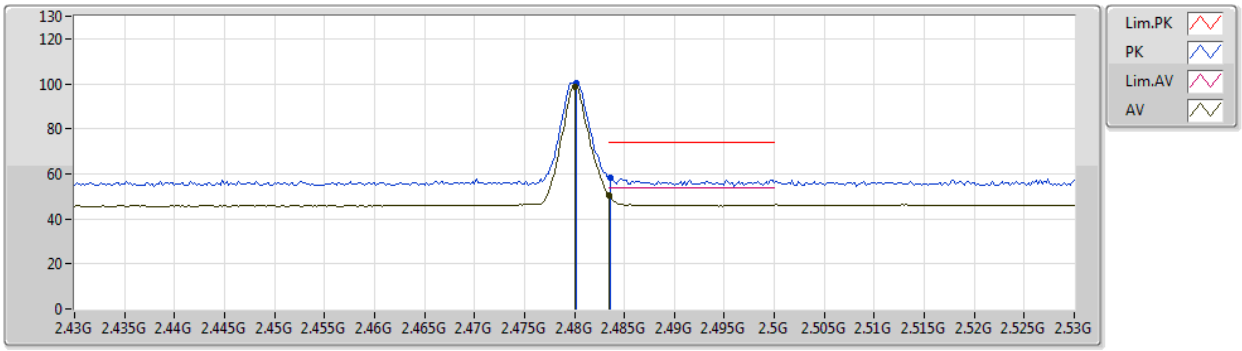


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.87998G	41.65	54.00	-12.35	3.82	37.83	3	Horizonta	35	1.98	-	31.48	6.81	34.47
PK	4.88047G	49.49	74.00	-24.51	3.82	45.67	3	Horizonta	35	1.98	-	31.48	6.81	34.47

BT-LE(125kbps)_1TX

2480MHz_TX

13/08/2019

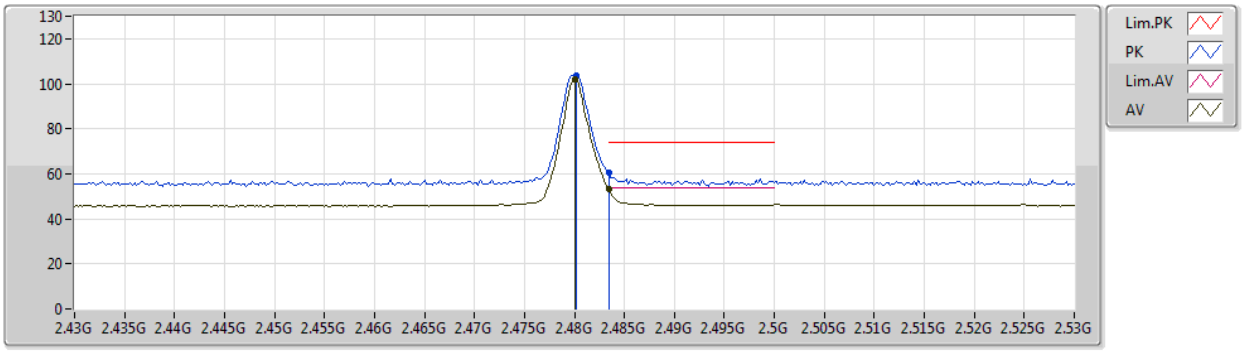


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.48G	98.86	Inf	-Inf	32.46	66.40	3	Vertical	306	2.45	-	27.64	4.82	-
AV	2.4835G	50.68	54.00	-3.32	32.48	18.20	3	Vertical	306	2.45	-	27.65	4.83	-
PK	2.4802G	100.37	Inf	-Inf	32.46	67.91	3	Vertical	306	2.45	-	27.64	4.82	-
PK	2.4836G	58.18	74.00	-15.82	32.48	25.70	3	Vertical	306	2.45	-	27.65	4.83	-

BT-LE(125kbps)_1TX

2480MHz_TX

13/08/2019

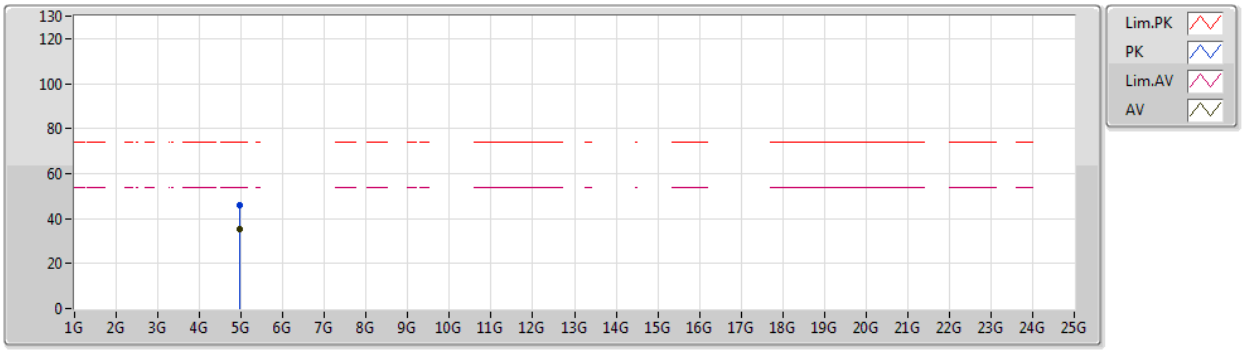


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.48G	101.88	Inf	-Inf	32.46	69.42	3	Horizonta	316	2.81	-	27.64	4.82	-
AV	2.4835G	52.96	54.00	-1.04	32.48	20.48	3	Horizonta	316	2.81	-	27.65	4.83	-
PK	2.4802G	103.45	Inf	-Inf	32.46	70.99	3	Horizonta	316	2.81	-	27.64	4.82	-
PK	2.4835G	60.59	74.00	-13.41	32.48	28.11	3	Horizonta	316	2.81	-	27.65	4.83	-

BT-LE(125kbps)_1TX

2480MHz_TX

13/08/2019

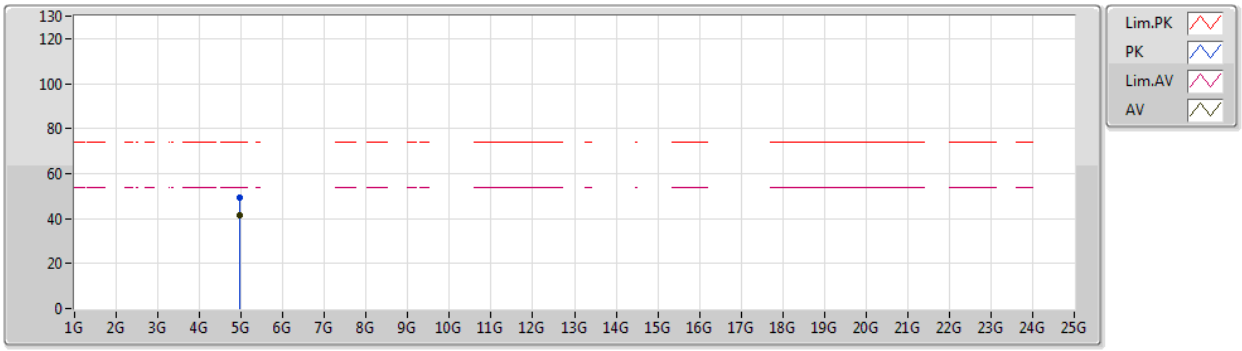


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.95994G	35.05	54.00	-18.95	4.02	31.03	3	Vertical	13	1.72	-	31.63	6.83	34.44
PK	4.95963G	45.92	74.00	-28.08	4.02	41.90	3	Vertical	13	1.72	-	31.63	6.83	34.44

BT-LE(125kbps)_1TX

2480MHz_TX

13/08/2019

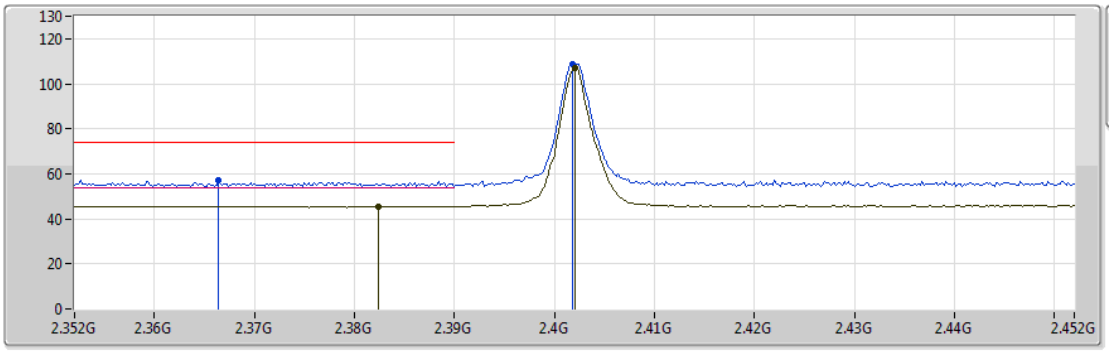


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.95988G	41.52	54.00	-12.48	4.02	37.50	3	Horizonta	51	1.84	-	31.63	6.83	34.44
PK	4.95936G	49.24	74.00	-24.76	4.02	45.22	3	Horizonta	51	1.84	-	31.63	6.83	34.44

BT-LE(500kbps)_1TX

2402MHz_TX

13/08/2019

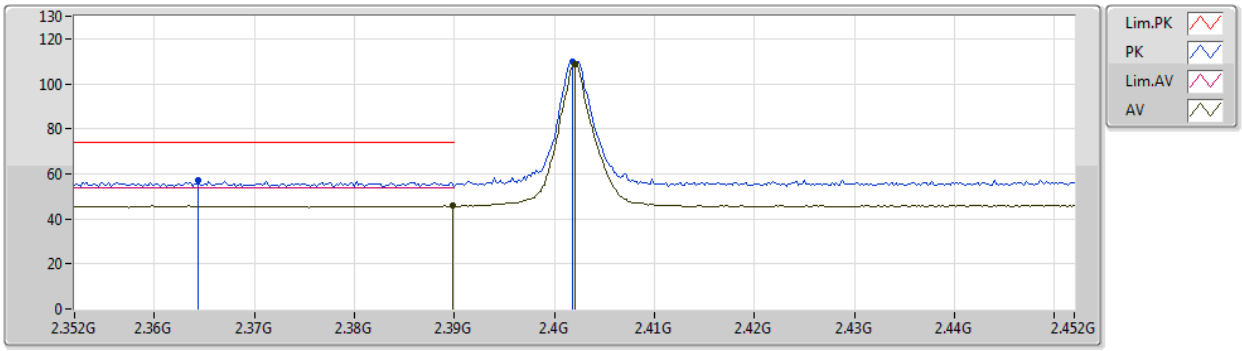


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3824G	45.64	54.00	-8.36	32.06	13.58	3	Vertical	309	2.45	-	27.35	4.71	-
AV	2.402G	107.02	Inf	-Inf	32.14	74.88	3	Vertical	309	2.45	-	27.41	4.73	-
PK	2.3664G	57.30	74.00	-16.70	31.99	25.31	3	Vertical	309	2.45	-	27.30	4.69	-
PK	2.4018G	108.68	Inf	-Inf	32.14	76.54	3	Vertical	309	2.45	-	27.41	4.73	-

BT-LE(500kbps)_1TX

2402MHz_TX

13/08/2019

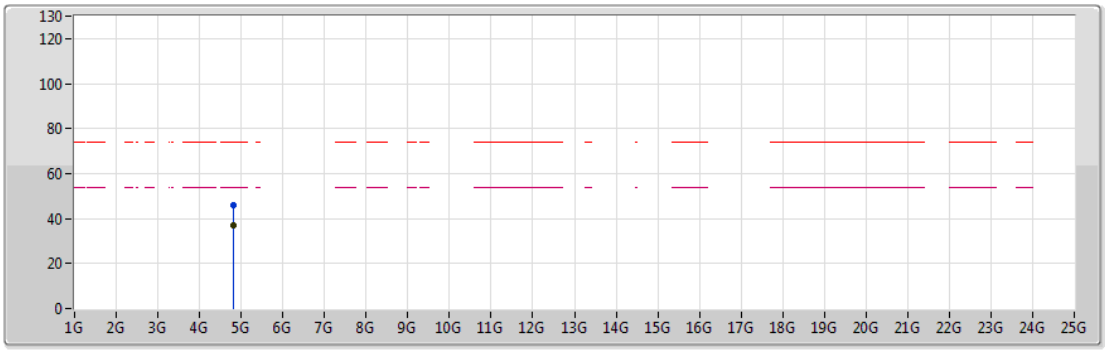


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3898G	45.83	54.00	-8.17	32.09	13.74	3	Horizonta	315	2.79	-	27.37	4.72	-
AV	2.402G	108.45	Inf	-Inf	32.14	76.31	3	Horizonta	315	2.79	-	27.41	4.73	-
PK	2.3644G	57.02	74.00	-16.98	31.98	25.04	3	Horizonta	315	2.79	-	27.29	4.69	-
PK	2.4018G	109.91	Inf	-Inf	32.14	77.77	3	Horizonta	315	2.79	-	27.41	4.73	-

BT-LE(500kbps)_1TX

2402MHz_TX

13/08/2019

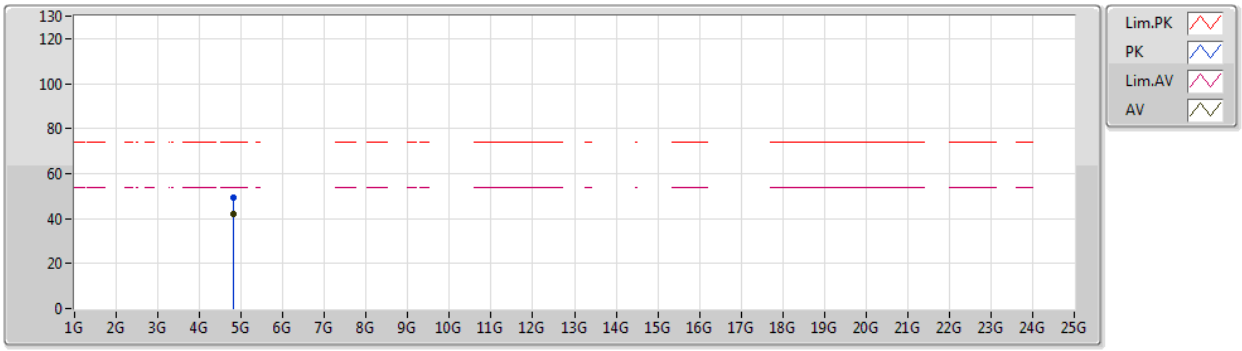


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.80353G	37.14	54.00	-16.86	3.64	33.50	3	Vertical	10	1.32	-	31.35	6.78	34.49
PK	4.80364G	45.83	74.00	-28.17	3.64	42.19	3	Vertical	10	1.32	-	31.35	6.78	34.49

BT-LE(500kbps)_1TX

2402MHz_TX

13/08/2019

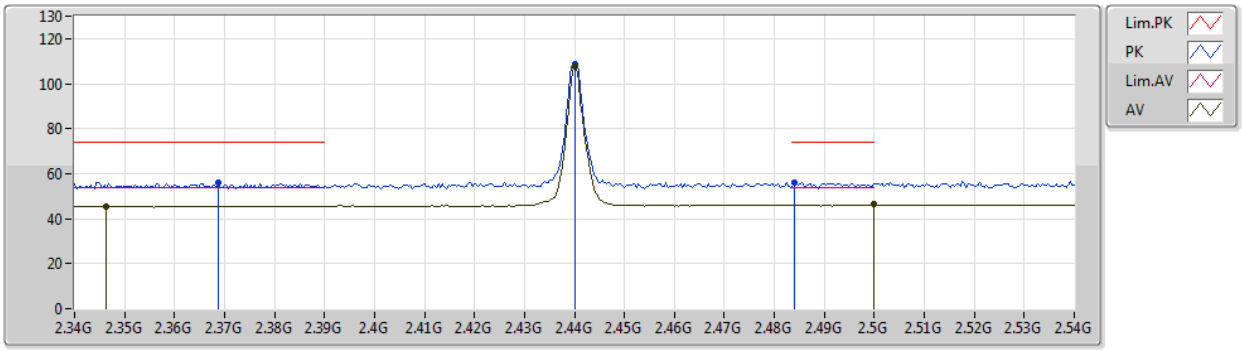


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.80366G	42.12	54.00	-11.88	3.64	38.48	3	Horizonta	34	1.80	-	31.35	6.78	34.49
PK	4.80457G	49.17	74.00	-24.83	3.64	45.53	3	Horizonta	34	1.80	-	31.35	6.78	34.49

BT-LE(500kbps)_1TX

2440MHz_TX

13/08/2019

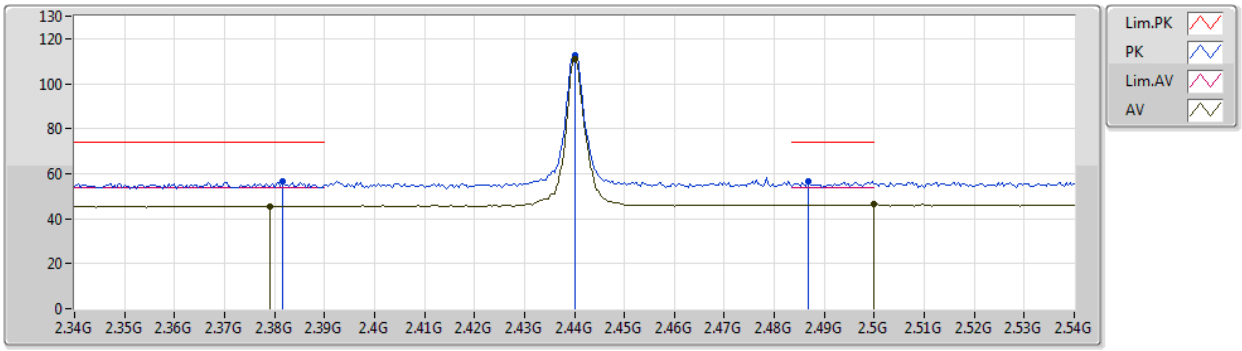


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3464G	45.55	54.00	-8.45	31.91	3	Vertical	29	2.23	-	13.64	27.24	4.67	-
AV	2.44G	107.33	Inf	-Inf	32.30	3	Vertical	29	2.23	-	75.03	27.52	4.78	-
AV	2.5G	46.23	54.00	-7.77	32.55	3	Vertical	29	2.23	-	13.68	27.70	4.85	-
PK	2.3688G	56.11	74.00	-17.89	32.00	3	Vertical	29	2.23	-	24.11	27.31	4.69	-
PK	2.44G	108.86	Inf	-Inf	32.30	3	Vertical	29	2.23	-	76.56	27.52	4.78	-
PK	2.484G	55.87	74.00	-18.13	32.48	3	Vertical	29	2.23	-	23.39	27.65	4.83	-

BT-LE(500kbps)_1TX

2440MHz_TX

13/08/2019

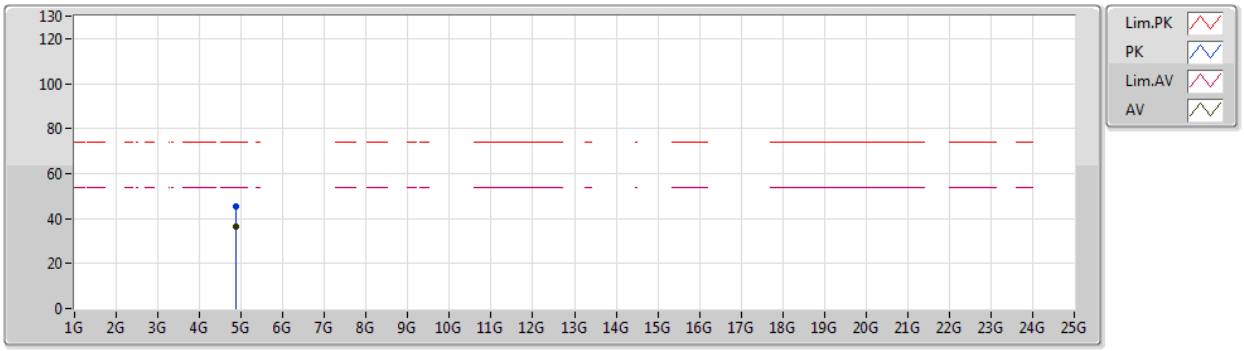


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3792G	45.51	54.00	-8.49	32.05	3	Horizontal	318	2.89	-	13.46	27.34	4.71	-
AV	2.44G	110.75	Inf	-Inf	32.30	3	Horizontal	318	2.89	-	78.45	27.52	4.78	-
AV	2.5G	46.48	54.00	-7.52	32.55	3	Horizontal	318	2.89	-	13.93	27.70	4.85	-
PK	2.3816G	56.58	74.00	-17.42	32.05	3	Horizontal	318	2.89	-	24.53	27.34	4.71	-
PK	2.44G	112.55	Inf	-Inf	32.30	3	Horizontal	318	2.89	-	80.25	27.52	4.78	-
PK	2.4868G	56.48	74.00	-17.52	32.49	3	Horizontal	318	2.89	-	23.99	27.66	4.83	-

BT-LE(500kbps)_1TX

2440MHz_TX

13/08/2019

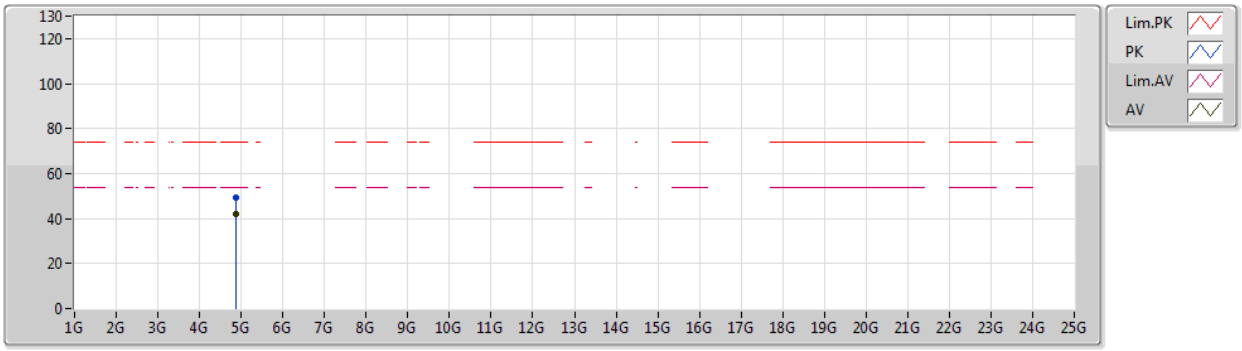


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87948G	36.29	54.00	-17.71	3.82	3	Vertical	13	1.48	-	32.47	31.48	6.81	34.47
PK	4.88043G	45.46	74.00	-28.54	3.82	3	Vertical	13	1.48	-	41.64	31.48	6.81	34.47

BT-LE(500kbps)_1TX

2440MHz_TX

13/08/2019

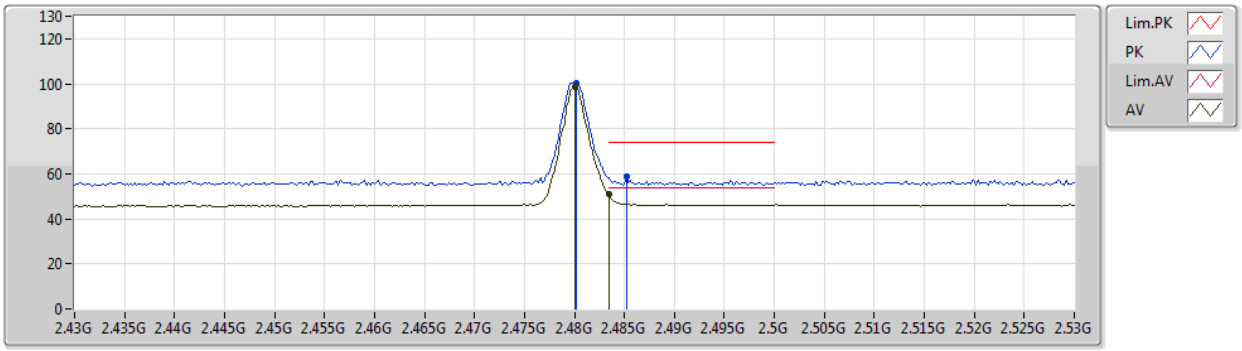


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87958G	41.91	54.00	-12.09	3.82	3	Horizontal	35	1.99	-	38.09	31.48	6.81	34.47
PK	4.87944G	49.29	74.00	-24.71	3.82	3	Horizontal	35	1.99	-	45.47	31.48	6.81	34.47

BT-LE(500kbps)_1TX

2480MHz_TX

13/08/2019

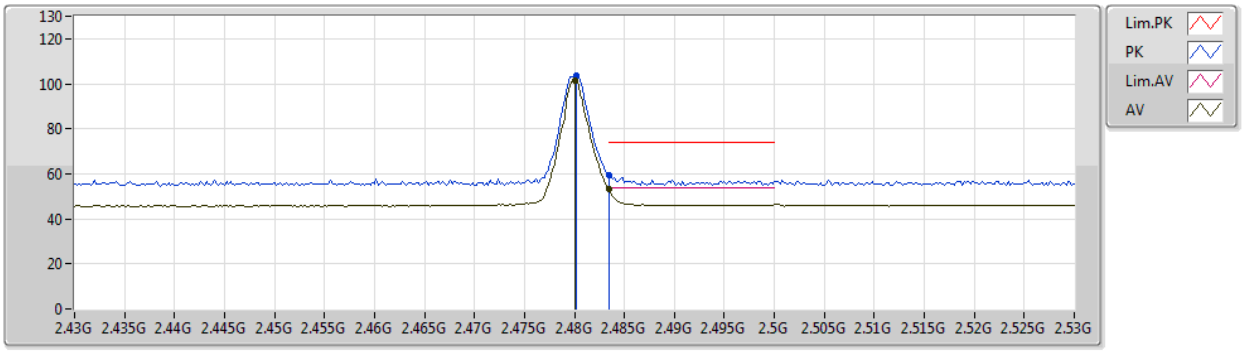


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.48G	98.65	Inf	-Inf	32.46	66.19	3	Vertical	309	2.45	-	27.64	4.82	-
AV	2.4835G	50.79	54.00	-3.21	32.48	18.31	3	Vertical	309	2.45	-	27.65	4.83	-
PK	2.4802G	100.44	Inf	-Inf	32.46	67.98	3	Vertical	309	2.45	-	27.64	4.82	-
PK	2.4852G	58.77	74.00	-15.23	32.49	26.28	3	Vertical	309	2.45	-	27.66	4.83	-

BT-LE(500kbps)_1TX

2480MHz_TX

13/08/2019

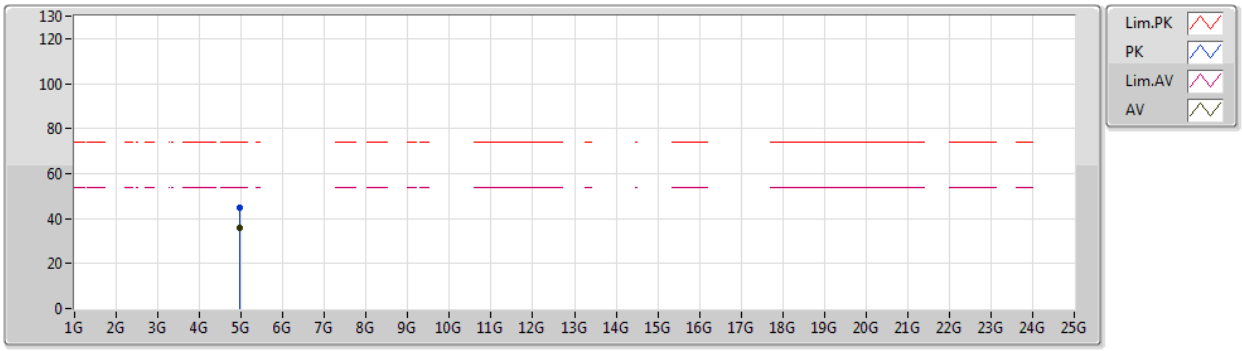


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.48G	101.70	Inf	-Inf	32.46	69.24	3	Horizonta	315	2.80	-	27.64	4.82	-
AV	2.4835G	53.00	54.00	-1.00	32.48	20.52	3	Horizonta	315	2.80	-	27.65	4.83	-
PK	2.4802G	103.41	Inf	-Inf	32.46	70.95	3	Horizonta	315	2.80	-	27.64	4.82	-
PK	2.4835G	59.52	74.00	-14.48	32.48	27.04	3	Horizonta	315	2.80	-	27.65	4.83	-

BT-LE(500kbps)_1TX

2480MHz_TX

13/08/2019

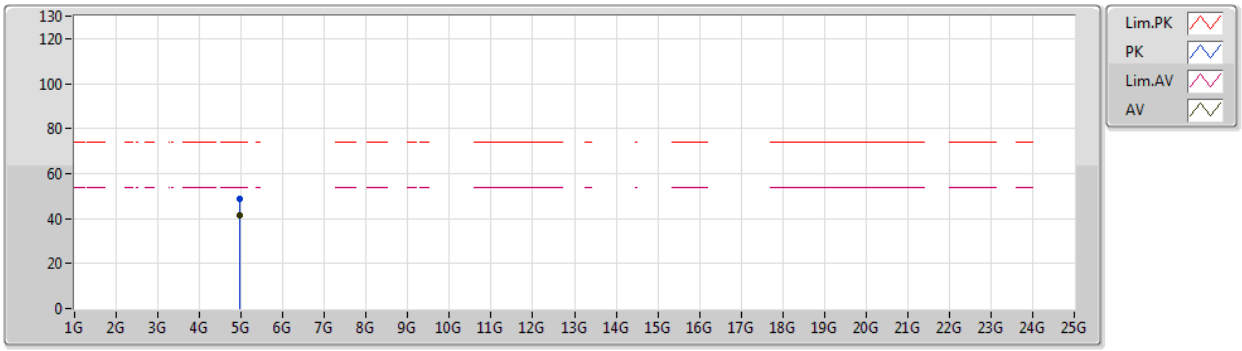


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.9595G	35.59	54.00	-18.41	4.02	31.57	3	Vertical	15	1.69	-	31.63	6.83	34.44
PK	4.9601G	45.04	74.00	-28.96	4.02	41.02	3	Vertical	15	1.69	-	31.63	6.83	34.44

BT-LE(500kbps)_1TX

2480MHz_TX

13/08/2019

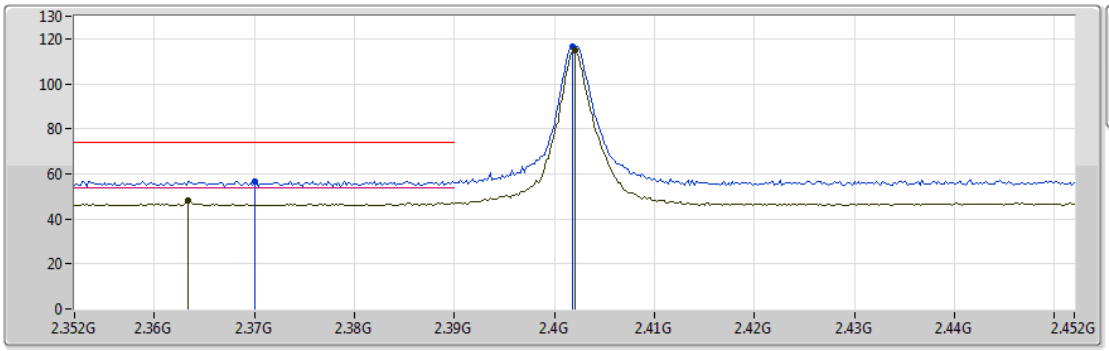


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.95954G	41.53	54.00	-12.47	4.02	37.51	3	Horizonta	50	1.82	-	31.63	6.83	34.44
PK	4.95947G	49.00	74.00	-25.00	4.02	44.98	3	Horizonta	50	1.82	-	31.63	6.83	34.44

BT-LE(1Mbps)_1TX

2402MHz_TX

13/08/2019

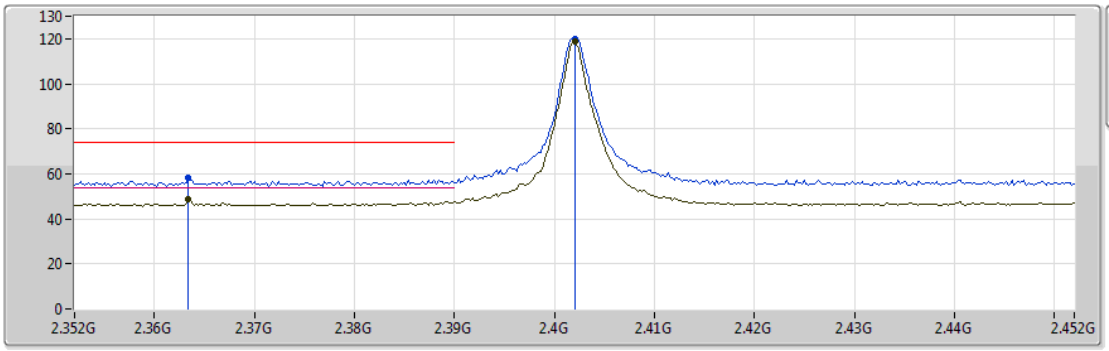


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3634G	47.95	54.00	-6.05	31.98	15.97	3	Vertical	312	2.54	-	27.29	4.69	-
AV	2.402G	115.11	Inf	-Inf	32.14	82.97	3	Vertical	312	2.54	-	27.41	4.73	-
PK	2.37G	56.85	74.00	-17.15	32.00	24.85	3	Vertical	312	2.54	-	27.31	4.69	-
PK	2.4018G	116.29	Inf	-Inf	32.14	84.15	3	Vertical	312	2.54	-	27.41	4.73	-

BT-LE(1Mbps)_1TX

2402MHz_TX

13/08/2019

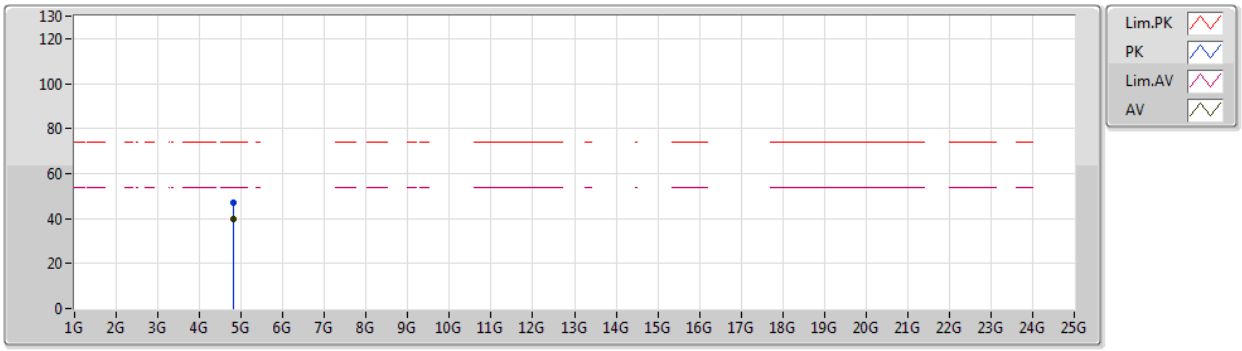


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3634G	48.56	54.00	-5.44	31.98	16.58	3	Horizonta	314	2.98	-	27.29	4.69	-
AV	2.402G	118.79	Inf	-Inf	32.14	86.65	3	Horizonta	314	2.98	-	27.41	4.73	-
PK	2.3634G	58.02	74.00	-15.98	31.98	26.04	3	Horizonta	314	2.98	-	27.29	4.69	-
PK	2.402G	119.83	Inf	-Inf	32.14	87.69	3	Horizonta	314	2.98	-	27.41	4.73	-

BT-LE(1Mbps)_1TX

2402MHz_TX

13/08/2019

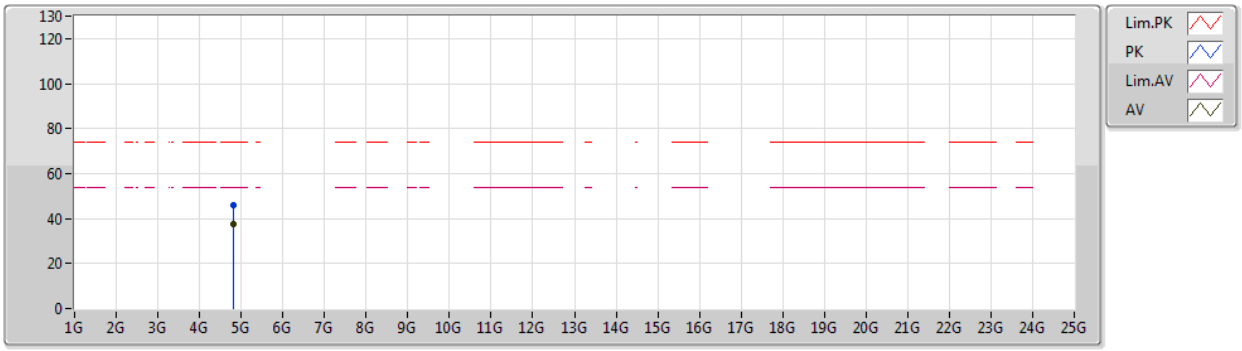


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.80364G	39.92	54.00	-14.08	3.64	36.28	3	Vertical	12	1.54	-	31.35	6.78	34.49
PK	4.80347G	46.81	74.00	-27.19	3.64	43.17	3	Vertical	12	1.54	-	31.35	6.78	34.49

BT-LE(1Mbps)_1TX

2402MHz_TX

13/08/2019

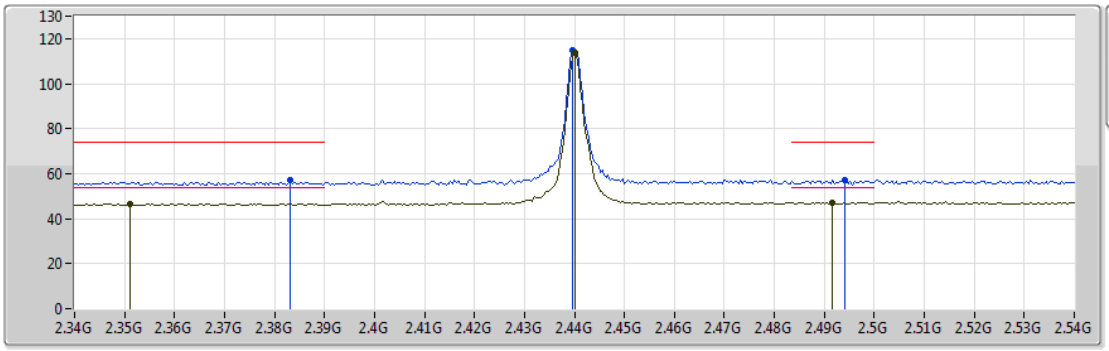


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.80384G	37.44	54.00	-16.56	3.64	33.80	3	Horizonta	330	1.68	-	31.35	6.78	34.49
PK	4.80392G	45.95	74.00	-28.05	3.64	42.31	3	Horizonta	330	1.68	-	31.35	6.78	34.49

BT-LE(1Mbps)_1TX

2440MHz_TX

13/08/2019

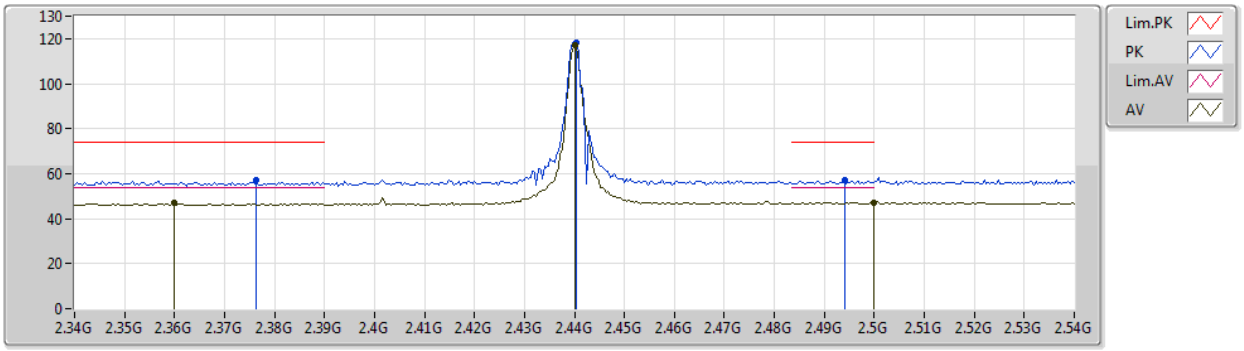


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3512G	46.73	54.00	-7.27	31.92	14.81	3	Vertical	25	2.22	-	27.25	4.67	-
AV	2.44G	113.66	Inf	-Inf	32.30	81.36	3	Vertical	25	2.22	-	27.52	4.78	-
AV	2.4916G	47.06	54.00	-6.94	32.51	14.55	3	Vertical	25	2.22	-	27.67	4.84	-
PK	2.3832G	57.03	74.00	-16.97	32.06	24.97	3	Vertical	25	2.22	-	27.35	4.71	-
PK	2.4396G	114.85	Inf	-Inf	32.30	82.55	3	Vertical	25	2.22	-	27.52	4.78	-
PK	2.494G	57.31	74.00	-16.69	32.52	24.79	3	Vertical	25	2.22	-	27.68	4.84	-

BT-LE(1Mbps)_1TX

2440MHz_TX

13/08/2019

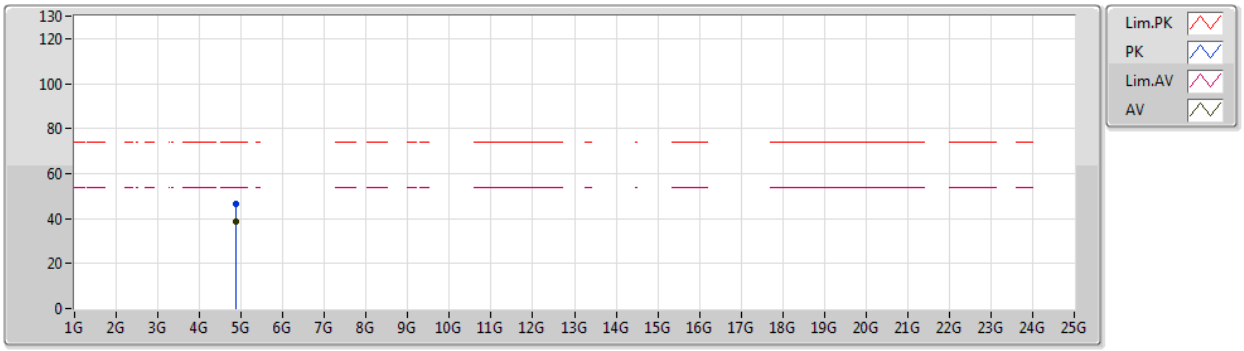


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.36G	46.82	54.00	-7.18	31.96	14.86	3	Horizonta	321	2.90	-	27.28	4.68	-
AV	2.44G	117.27	Inf	-Inf	32.30	84.97	3	Horizonta	321	2.90	-	27.52	4.78	-
AV	2.5G	47.20	54.00	-6.80	32.55	14.65	3	Horizonta	321	2.90	-	27.70	4.85	-
PK	2.3764G	56.94	74.00	-17.06	32.03	24.91	3	Horizonta	321	2.90	-	27.33	4.70	-
PK	2.4404G	118.39	Inf	-Inf	32.30	86.09	3	Horizonta	321	2.90	-	27.52	4.78	-
PK	2.494G	57.02	74.00	-16.98	32.52	24.50	3	Horizonta	321	2.90	-	27.68	4.84	-

BT-LE(1Mbps)_1TX

2440MHz_TX

13/08/2019

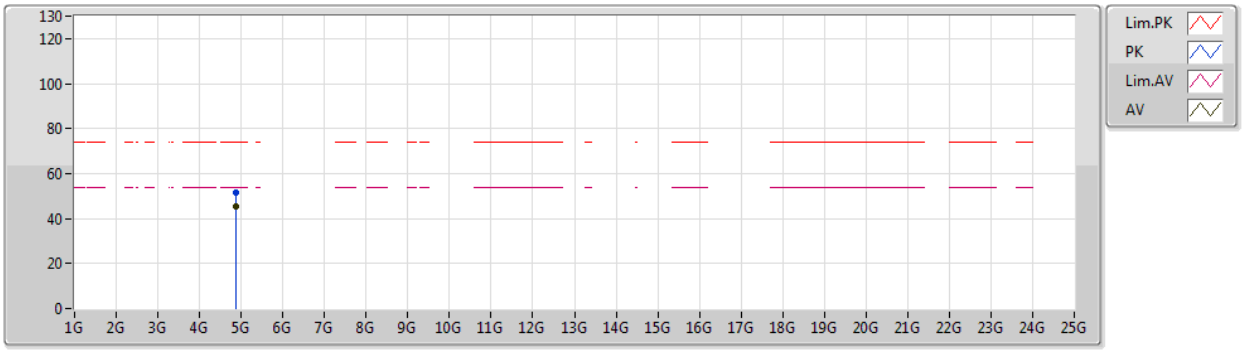


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.87989G	38.93	54.00	-15.07	3.82	35.11	3	Vertical	12	1.50	-	31.48	6.81	34.47
PK	4.88005G	46.45	74.00	-27.55	3.82	42.63	3	Vertical	12	1.50	-	31.48	6.81	34.47

BT-LE(1Mbps)_1TX

2440MHz_TX

13/08/2019

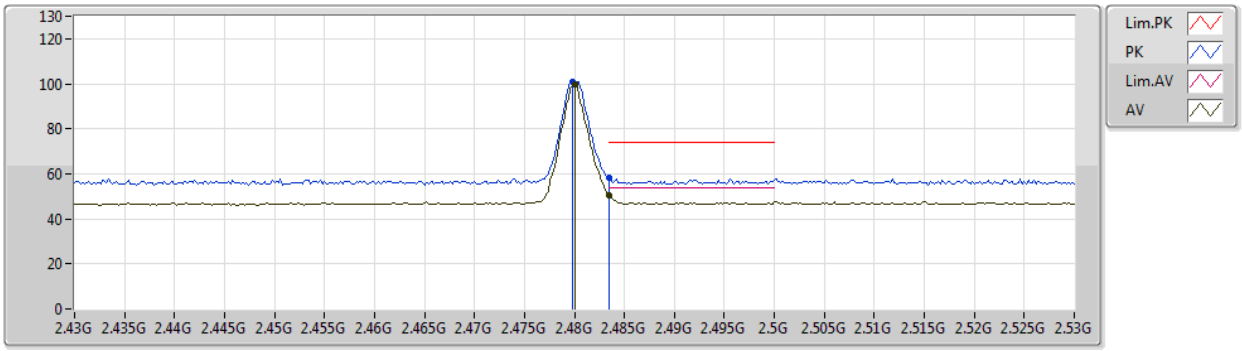


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.87988G	45.58	54.00	-8.42	3.82	41.76	3	Horizonta	36	2.07	-	31.48	6.81	34.47
PK	4.88004G	51.47	74.00	-22.53	3.82	47.65	3	Horizonta	36	2.07	-	31.48	6.81	34.47

BT-LE(1Mbps)_1TX

2480MHz_TX

13/08/2019

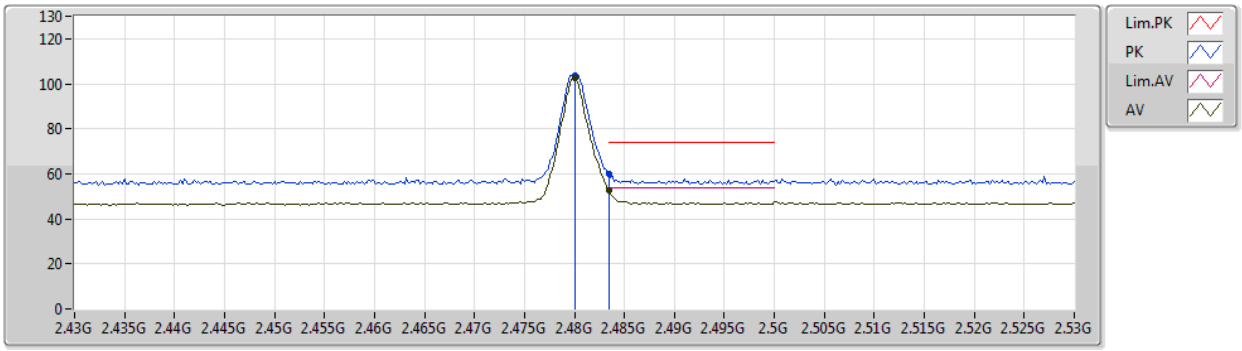


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.48G	99.80	Inf	-Inf	32.46	67.34	3	Vertical	310	2.14	-	27.64	4.82	-
AV	2.4835G	50.42	54.00	-3.58	32.48	17.94	3	Vertical	310	2.14	-	27.65	4.83	-
PK	2.4798G	100.91	Inf	-Inf	32.46	68.45	3	Vertical	310	2.14	-	27.64	4.82	-
PK	2.4835G	58.03	74.00	-15.97	32.48	25.55	3	Vertical	310	2.14	-	27.65	4.83	-

BT-LE(1Mbps)_1TX

2480MHz_TX

13/08/2019

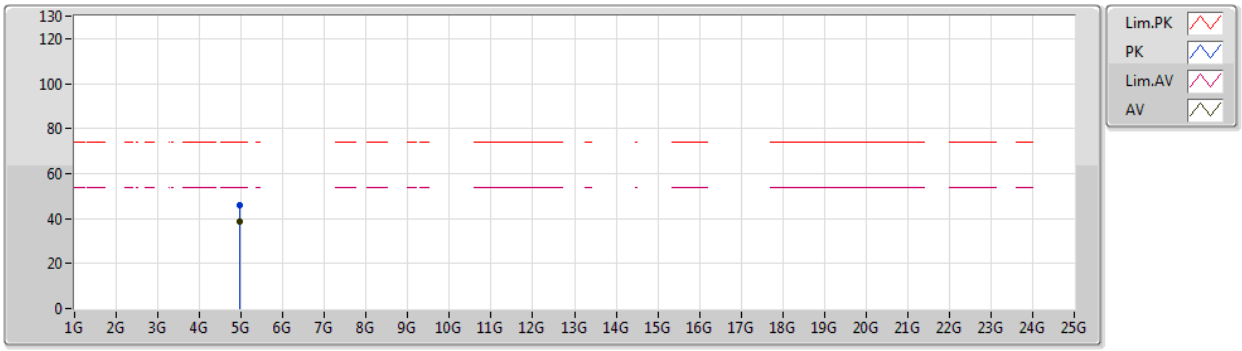


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.48G	102.68	Inf	-Inf	32.46	70.22	3	Horizonta	316	2.80	-	27.64	4.82	-
AV	2.4835G	52.88	54.00	-1.12	32.48	20.40	3	Horizonta	316	2.80	-	27.65	4.83	-
PK	2.48G	103.72	Inf	-Inf	32.46	71.26	3	Horizonta	316	2.80	-	27.64	4.82	-
PK	2.4835G	60.01	74.00	-13.99	32.48	27.53	3	Horizonta	316	2.80	-	27.65	4.83	-

BT-LE(1Mbps)_1TX

2480MHz_TX

13/08/2019

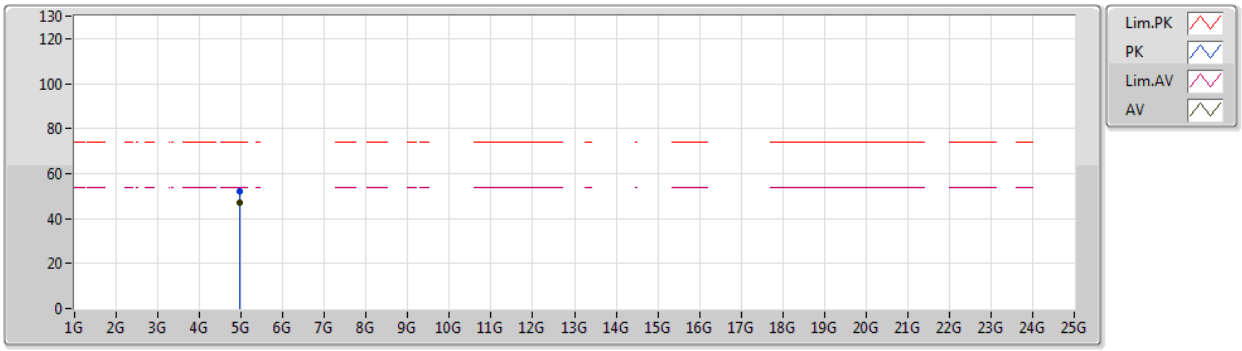


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.95993G	38.49	54.00	-15.51	4.02	34.47	3	Vertical	11	1.50	-	31.63	6.83	34.44
PK	4.95991G	45.93	74.00	-28.07	4.02	41.91	3	Vertical	11	1.50	-	31.63	6.83	34.44

BT-LE(1Mbps)_1TX

2480MHz_TX

13/08/2019

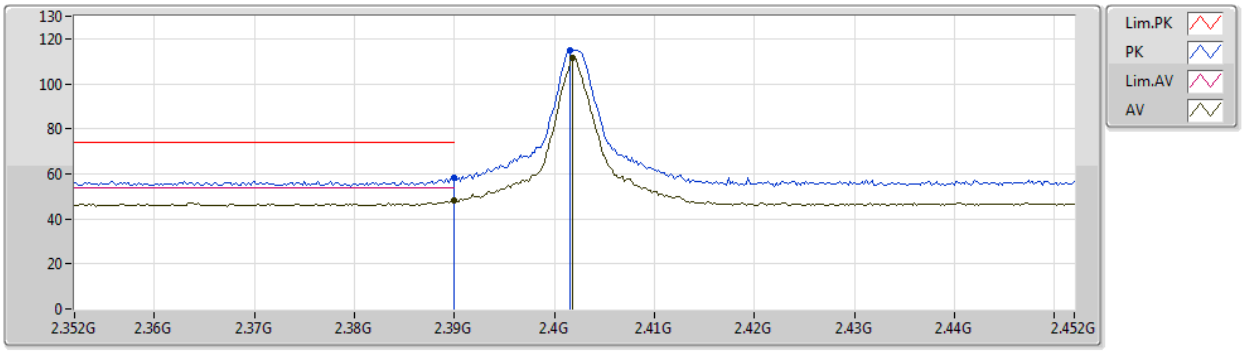


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.95989G	47.32	54.00	-6.68	4.02	43.30	3	Horizonta	55	1.93	-	31.63	6.83	34.44
PK	4.95992G	52.25	74.00	-21.75	4.02	48.23	3	Horizonta	55	1.93	-	31.63	6.83	34.44

BT-LE(2Mbps)_1TX

2402MHz_TX

13/08/2019

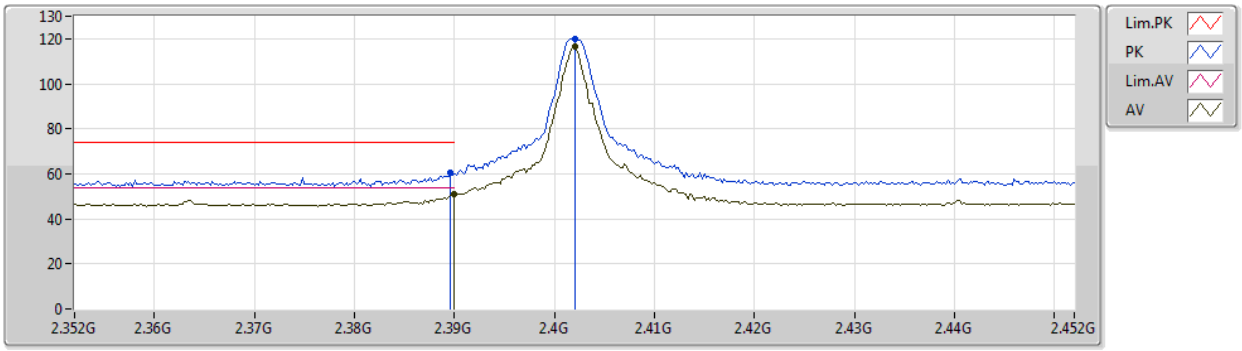


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.39G	47.91	54.00	-6.09	32.09	15.82	3	Vertical	318	1.84	-	27.37	4.72	-
AV	2.4018G	111.61	Inf	-Inf	32.14	79.47	3	Vertical	318	1.84	-	27.41	4.73	-
PK	2.39G	58.08	74.00	-15.92	32.09	25.99	3	Vertical	318	1.84	-	27.37	4.72	-
PK	2.4016G	115.00	Inf	-Inf	32.13	82.87	3	Vertical	318	1.84	-	27.40	4.73	-

BT-LE(2Mbps)_1TX

2402MHz_TX

13/08/2019

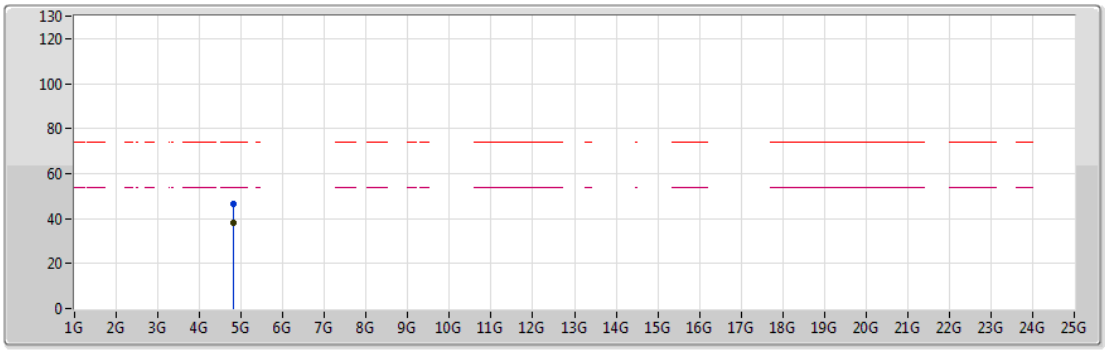


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.39G	51.16	54.00	-2.84	32.09	19.07	3	Horizonta	314	2.99	-	27.37	4.72	-
AV	2.402G	116.52	Inf	-Inf	32.14	84.38	3	Horizonta	314	2.99	-	27.41	4.73	-
PK	2.3896G	60.55	74.00	-13.45	32.09	28.46	3	Horizonta	314	2.99	-	27.37	4.72	-
PK	2.402G	119.73	Inf	-Inf	32.14	87.59	3	Horizonta	314	2.99	-	27.41	4.73	-

BT-LE(2Mbps)_1TX

2402MHz_TX

13/08/2019

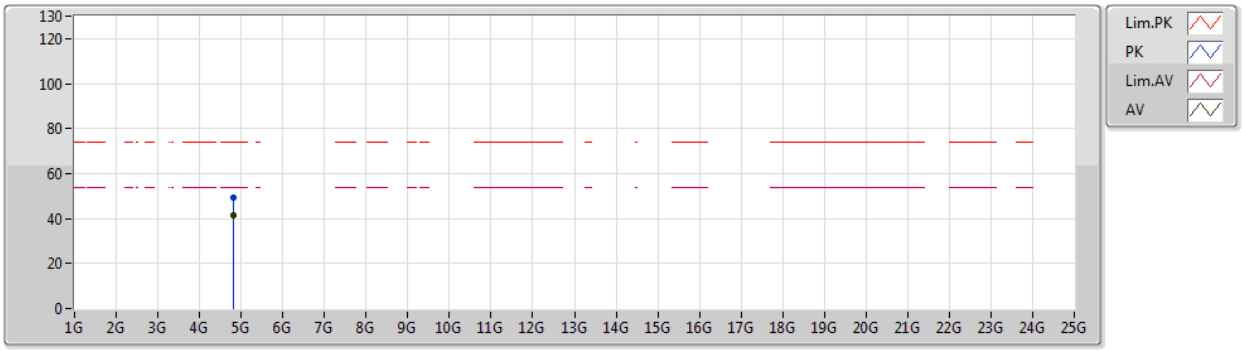


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.80396G	38.20	54.00	-15.80	3.64	34.56	3	Vertical	12	1.29	-	31.35	6.78	34.49
PK	4.80304G	46.27	74.00	-27.73	3.64	42.63	3	Vertical	12	1.29	-	31.35	6.78	34.49

BT-LE(2Mbps)_1TX

2402MHz_TX

13/08/2019

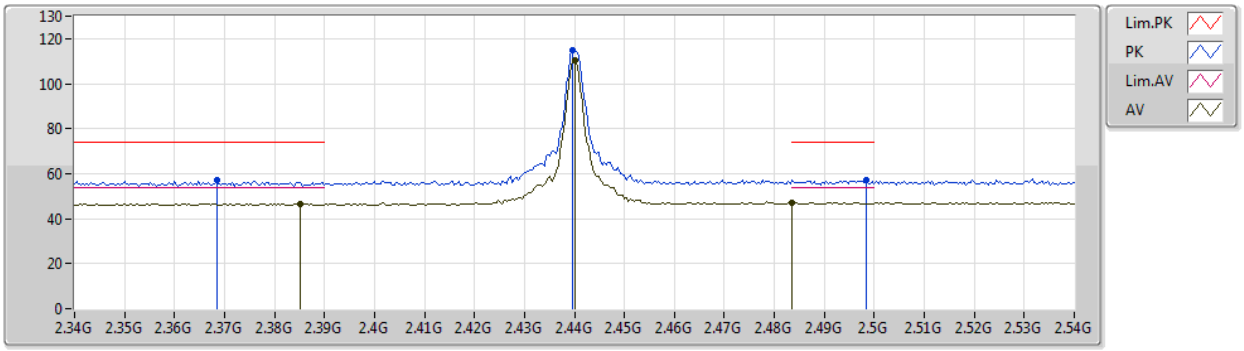


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.80384G	41.43	54.00	-12.57	3.64	37.79	3	Horizonta	17	1.28	-	31.35	6.78	34.49
PK	4.80382G	49.06	74.00	-24.94	3.64	45.42	3	Horizonta	17	1.28	-	31.35	6.78	34.49

BT-LE(2Mbps)_1TX

2440MHz_TX

13/08/2019

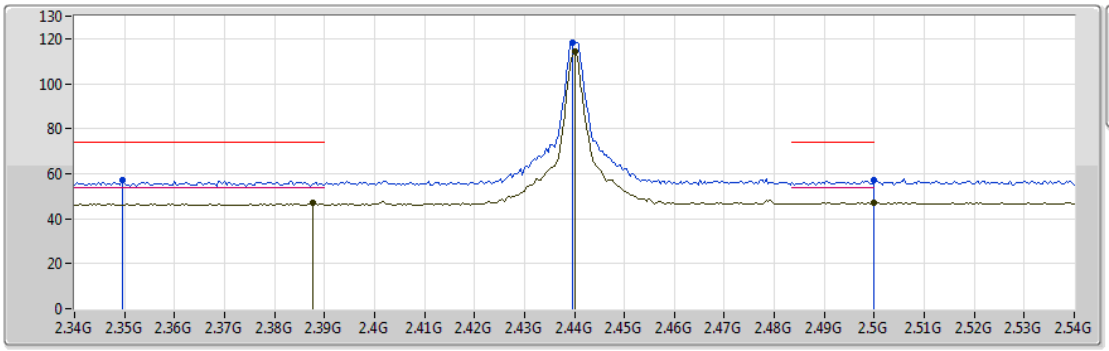


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3852G	46.63	54.00	-7.37	32.07	14.56	3	Vertical	28	2.18	-	27.36	4.71	-
AV	2.44G	110.30	Inf	-Inf	32.30	78.00	3	Vertical	28	2.18	-	27.52	4.78	-
AV	2.4835G	47.17	54.00	-6.83	32.48	14.69	3	Vertical	28	2.18	-	27.65	4.83	-
PK	2.3684G	57.03	74.00	-16.97	32.00	25.03	3	Vertical	28	2.18	-	27.31	4.69	-
PK	2.4396G	114.63	Inf	-Inf	32.30	82.33	3	Vertical	28	2.18	-	27.52	4.78	-
PK	2.4984G	57.07	74.00	-16.93	32.55	24.52	3	Vertical	28	2.18	-	27.70	4.85	-

BT-LE(2Mbps)_1TX

2440MHz_TX

13/08/2019

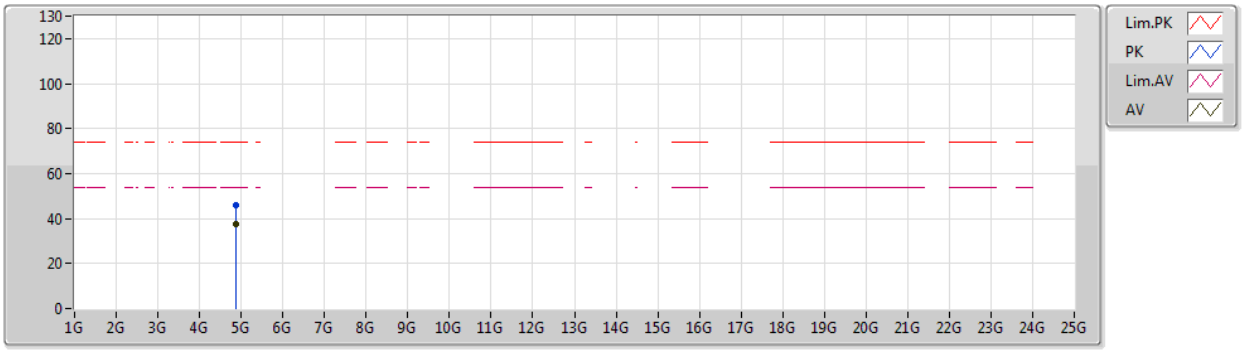


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	2.3876G	46.84	54.00	-7.16	32.08	14.76	3	Horizonta	318	2.88	-	27.36	4.72	-
AV	2.44G	114.57	Inf	-Inf	32.30	82.27	3	Horizonta	318	2.88	-	27.52	4.78	-
AV	2.5G	47.23	54.00	-6.77	32.55	14.68	3	Horizonta	318	2.88	-	27.70	4.85	-
PK	2.3496G	57.33	74.00	-16.67	31.92	25.41	3	Horizonta	318	2.88	-	27.25	4.67	-
PK	2.4396G	118.51	Inf	-Inf	32.30	86.21	3	Horizonta	318	2.88	-	27.52	4.78	-
PK	2.5G	56.95	74.00	-17.05	32.55	24.40	3	Horizonta	318	2.88	-	27.70	4.85	-

BT-LE(2Mbps)_1TX

2440MHz_TX

13/08/2019

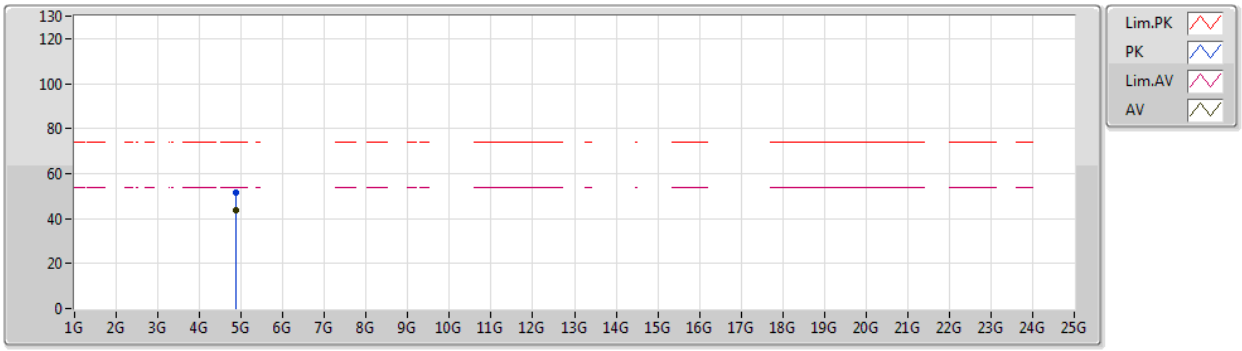


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.87992G	37.51	54.00	-16.49	3.82	33.69	3	Vertical	14	1.50	-	31.48	6.81	34.47
PK	4.87996G	46.06	74.00	-27.94	3.82	42.24	3	Vertical	14	1.50	-	31.48	6.81	34.47

BT-LE(2Mbps)_1TX

2440MHz_TX

13/08/2019

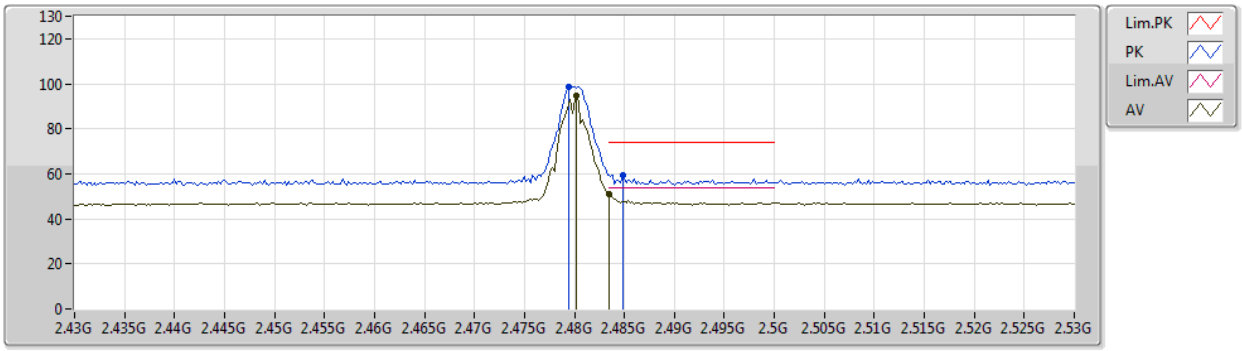


Type	Freq	Level	Limit	Margin	Factor	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
AV	4.8798G	43.65	54.00	-10.35	3.82	39.83	3	Horizonta	35	2.01	-	31.48	6.81	34.47
PK	4.87994G	51.66	74.00	-22.34	3.82	47.84	3	Horizonta	35	2.01	-	31.48	6.81	34.47

BT-LE(2Mbps)_1TX

2480MHz_TX

13/08/2019

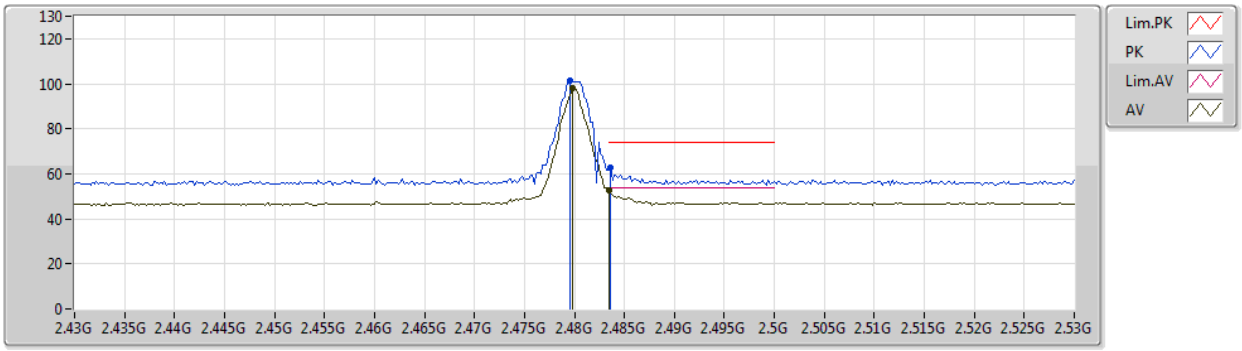


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4802G	94.61	Inf	-Inf	32.46	3	Vertical	311	1.96	-	62.15	27.64	4.82	-
AV	2.4835G	50.86	54.00	-3.14	32.48	3	Vertical	311	1.96	-	18.38	27.65	4.83	-
PK	2.4794G	98.64	Inf	-Inf	32.46	3	Vertical	311	1.96	-	66.18	27.64	4.82	-
PK	2.4848G	59.31	74.00	-14.69	32.48	3	Vertical	311	1.96	-	26.83	27.65	4.83	-

BT-LE(2Mbps)_1TX

2480MHz_TX

13/08/2019

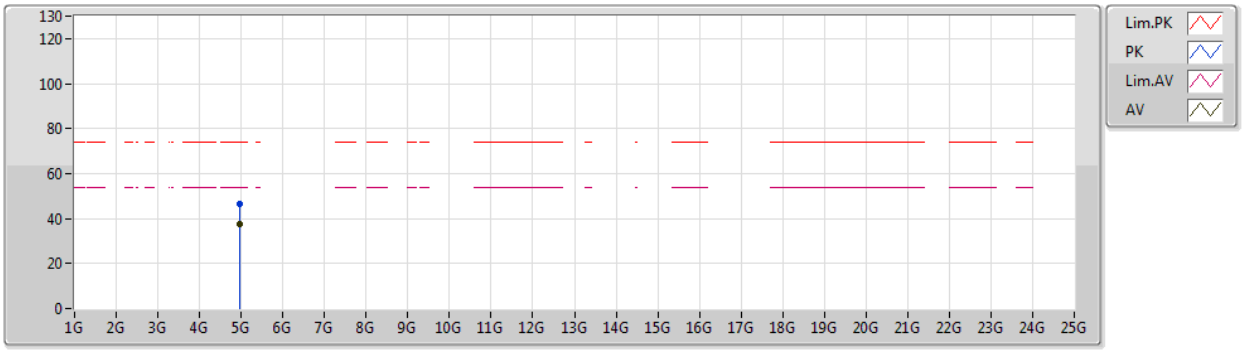


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	98.00	Inf	-Inf	32.46	3	Horizontal	311	1.24	-	65.54	27.64	4.82	-
AV	2.4835G	52.55	54.00	-1.45	32.48	3	Horizontal	311	1.24	-	20.07	27.65	4.83	-
PK	2.4796G	101.16	Inf	-Inf	32.46	3	Horizontal	311	1.24	-	68.70	27.64	4.82	-
PK	2.4836G	62.72	74.00	-11.28	32.48	3	Horizontal	311	1.24	-	30.24	27.65	4.83	-

BT-LE(2Mbps)_1TX

2480MHz_TX

13/08/2019

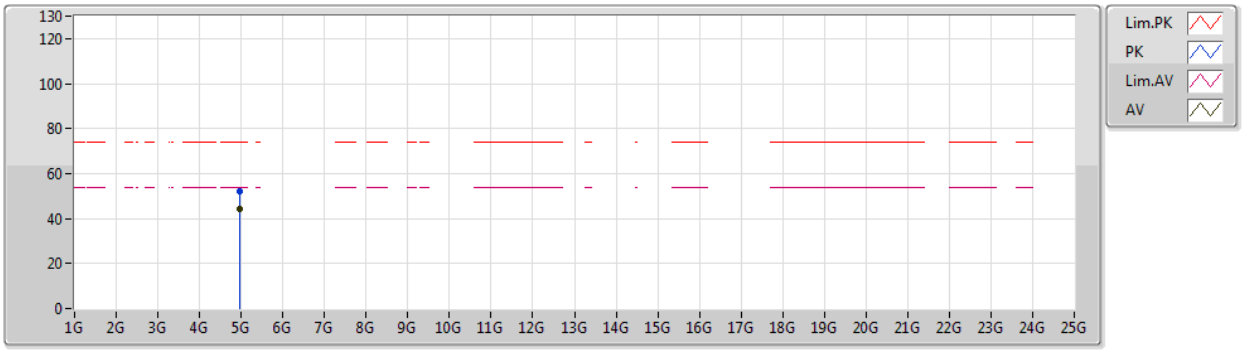


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96002G	37.64	54.00	-16.36	4.02	3	Vertical	3	1.10	-	33.62	31.63	6.83	34.44
PK	4.96015G	46.25	74.00	-27.75	4.02	3	Vertical	3	1.10	-	42.23	31.63	6.83	34.44

BT-LE(2Mbps)_1TX

2480MHz_TX

13/08/2019



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95984G	44.54	54.00	-9.46	4.02	3	Horizontal	50	1.79	-	40.52	31.63	6.83	34.44
PK	4.95994G	52.38	74.00	-21.62	4.02	3	Horizontal	50	1.79	-	48.36	31.63	6.83	34.44