NCC Test Report

Equipment	:	網路攝影機
Brand Name	:	**Cisco Systems, Inc.**
Model No.	:	**MV12W-HW, MV12WE-HW, MV12N-HW**
Standard	:	**LP0002 Section 3.10 (2018-01-10)**
Operating Band	:	**2400 MHz – 2483.5 MHz**
Function	:	☒**Point-to-multipoint;** ☐**Point-to-point**
Applicant/ Manufacturer	:	台灣思科系統股份有限公司 台北市信義路四段 **460** 號 **12** 樓

The product sample received on Dec. 16, 2017 and completely tested on Jan. 31, 2018. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONALINC., the test report shall not be reproduced except in full.

Phoenix Chen / Assistant Manager

Testing Laboratory
1190

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TEST SETUP PHOTOS V01

PHOTOGRAPHS OF EUT V01

Summary of Test Result

Conformance Test Specifications				
Report Clause	**Ref. Std. Clause**	**Description**	**Limit**	**Result**
1.1.2	3.10.1.4	Antenna Requirement	LP0002-2.2	Complied
3.1	2.3	AC Power-line Conducted Emissions	LP0002-2.3	Complied
3.2	3.10.1.6	DTS Bandwidth	≥500kHz	Complied
3.3	3.10.1.2	Maximum Conducted Output Power	Power [dBm]:30	Complied
3.4	3.10.1.6	Power Spectral Density	PSD [dBm/3kHz]:8	Complied
3.5	3.10.1.5	Emissions in Non-restricted Frequency Bands	Non-Restricted Bands: >30 dBc	Complied
3.6	3.10.1.5	Emissions in Restricted Frequency Bands	Restricted Bands: LP0002-2.8	Complied
3.7	2.11	Receiver Radiated Unwanted Emissions	Restricted Bands: LP0002-2.8	Complied

Revision History

Report No.	Version	Description	Issued Date
TR7D2216AL	Rev. 01	Initial issue of report	Feb. 05, 2018
TR7D2216AL	Rev. 02	1. Change equipment name, applicant and Manufacturer 2. Update information of antenna	Feb. 26, 2018

1 General Description

1.1 Information

1.1.1 RF General Information

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

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

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

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	Lynwave	ALX17F-221XX2-00	Dipole	i-Pex
2	Lynwave	ALX17F-222XX0-00	PIFA	i-Pex

Ant.	Port	Gain (dBi)		
		2.4G	BT	5G
1	1	3.97	-	7.78
2	2	1.38	1.38	3.01

For 2.4 GHz function:

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

The EUT support diversity, port 2 was pretested and found to be the worst case and measured during the test.

For 5 GHz function:

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

The EUT support diversity, port 1 was pretested and found to be the worst case and measured during the test.

For Bluetooth function:

For Bluetooth mode (1TX/1RX)
Since only 1 port could be transmit/receive at port 2 which was recorded as port 1.

1.1.3 EUT Information

Identify EUT		
RF chip	QCA SWB-QC46	
Operational Condition		
EUT Power Type	From PoE	
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)	0.628	2.02	392.5u	3k

1.1.5 Table for Multiple Listing

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

Meraki Model Name	Model Differences	PCBA	IR LED PCBA	Lens
MV12W-HW	W = Wide Angle Lens (256GB)	256G emmc	140 degree LED	YTOT Lens
MV12WE-HW	WE = Wide Angle Lens (128GB, entry level storage)	128G emmc	140 degree LED	YTOT Lens
MV12N-HW	N = Narrow Angle Lens (256GB)	256G emmc	90 degree LED	Rays Lens

1.2 Testing Applied Standards

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

- NCC LP0002 (2018-01-10)
- ANSI C63.10-2013
- KDB 558074 D01 v04
- ANSI C63.4-2014

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
RF Conducted	TH06-HY	Tim	21.6°C / 62%	16/Dec/2017
Radiated	03CH02-HY	Jerry	25°C / 55%	31/Jan/2018
AC Conduction	CO04-HY	Jerry	25°C / 55%	21/Dec/2017

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)	3.6 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.0 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%

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 Version	QRCT V3.0.93.0

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

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX/CRX
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 Receiver Radiated Unwanted Emissions	
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/CRX	
1	PoE mode	
Operating Mode > 1GHz	CTX/CRX	
Orthogonal Planes of EUT	**Y Plane**	**Z Plane**
Worst Planes of EUT		V

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	Bluetooth+WLAN 2.4GHz
2	Bluetooth+WLAN 5GHz
Refer to Sporton Test Report No.: FA7D2216 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

2.4 Support Equipment

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 Source	GW	APS-9102	DoC

Support Equipment – Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	PoE (remote)	CISCO	MA-INJ-4	-

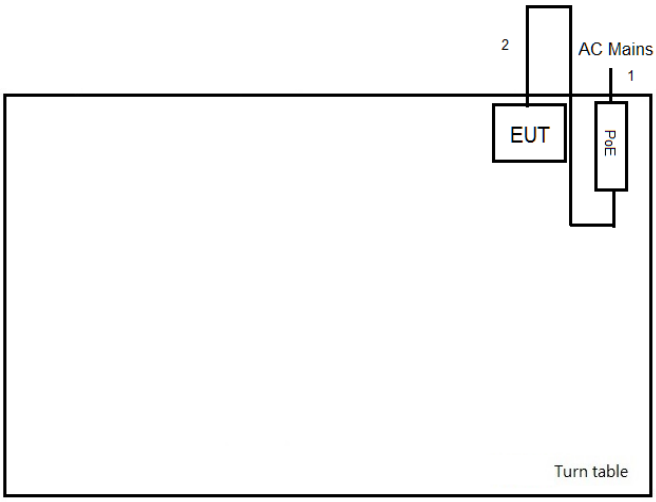
Note: Support equipment No.1 was provided by customer.

Support Equipment – AC Conduction				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	PoE	CISCO	MA-INJ-4	-

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

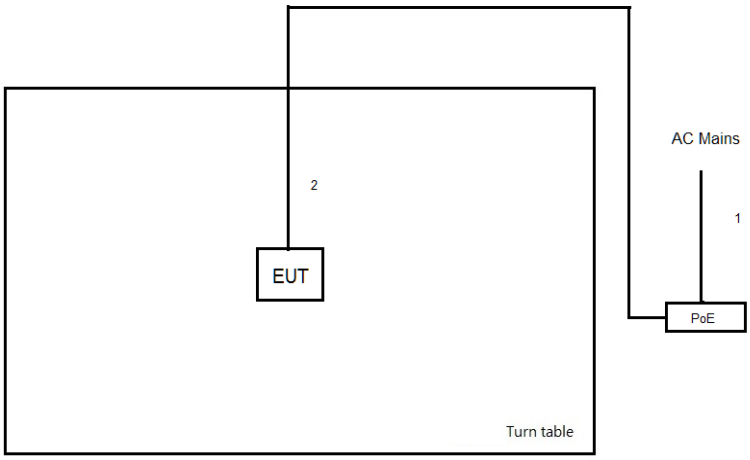
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1m	-
2	RJ45 Cable	No	10m	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1m	-
2	RJ45 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

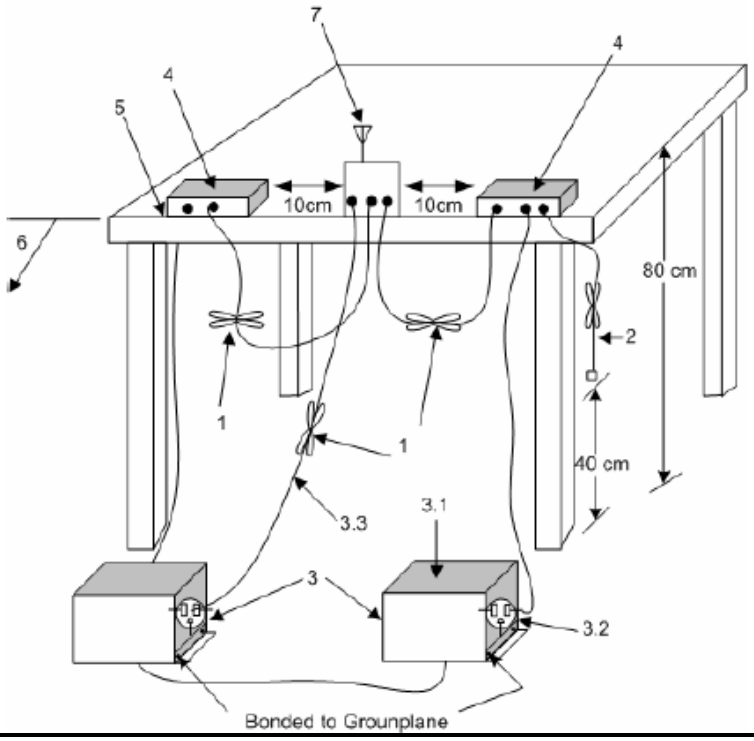
Refer a test equipment and calibration data table in this test report.

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



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.

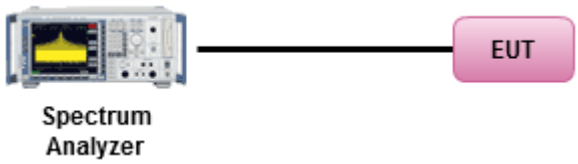
3.2.2 Measuring Instruments

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 8.1 Option 1 for 6 dB bandwidth measurement.
	☐ Refer as KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
	☐ Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
	☐ Refer as RSS-Gen, clause 6.6 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 9.1.1 Option 1 (RBW ≥ EBW method).
	☐ Refer as KDB 558074, clause 9.1.2 Option 2 (integrated band power method)
	☐ Refer as KDB 558074, clause 9.1.3 Option 3 (peak power meter for VBW ≥ DTS BW)
▪ Maximum Average Conducted Output Power	
	Duty cycle ≥ 98%
	☐ Refer as KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
	Duty cycle < 98%
	☐ Refer as KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)
	RF power meter and average over on/off periods with duty factor or gated trigger
	☒ Refer as KDB 558074, clause 9.2.3.1 Method AVGPM (using an RF average 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

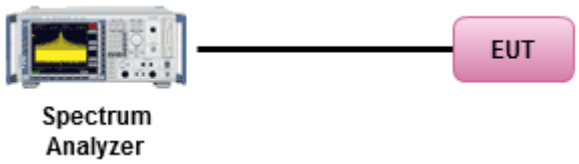
3.4.2 Measuring Instruments

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 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak).	
▪ 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


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 PSD level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

3.5.2 Measuring Instruments

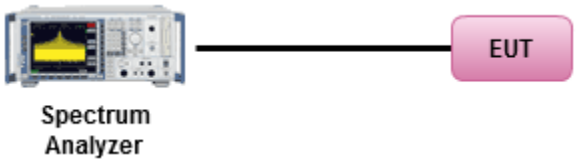
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method
▪ Refer as KDB 558074, clause 11 for unwanted emissions into non-restricted 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.

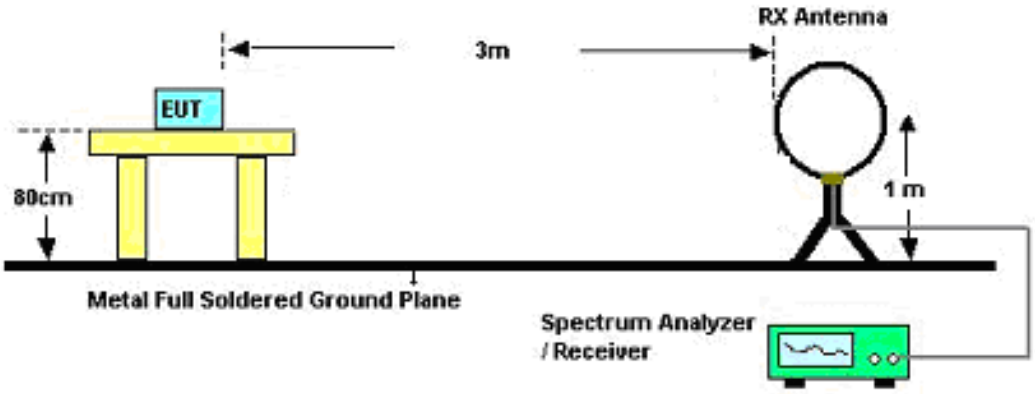
3.6.3 Test Procedures

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 12 for unwanted emissions into restricted bands.	
		☒ Refer as KDB 558074, clause 12.2.5.3 (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW≥1/T.
		☒ Refer as KDB 558074, clause 12.2.4 measurement procedure peak limit.
▪ For the transmitter band-edge emissions shall be measured using following options below:		
	▪ Refer as KDB 558074 clause 13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.	
	▪ Refer as KDB 558074, clause 13.2 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.	
	▪ Refer as KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).	
▪ For conducted and cabinet radiation measurement, refer as KDB 558074, clause 12.2.2.		
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB	
	▪ For KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.	

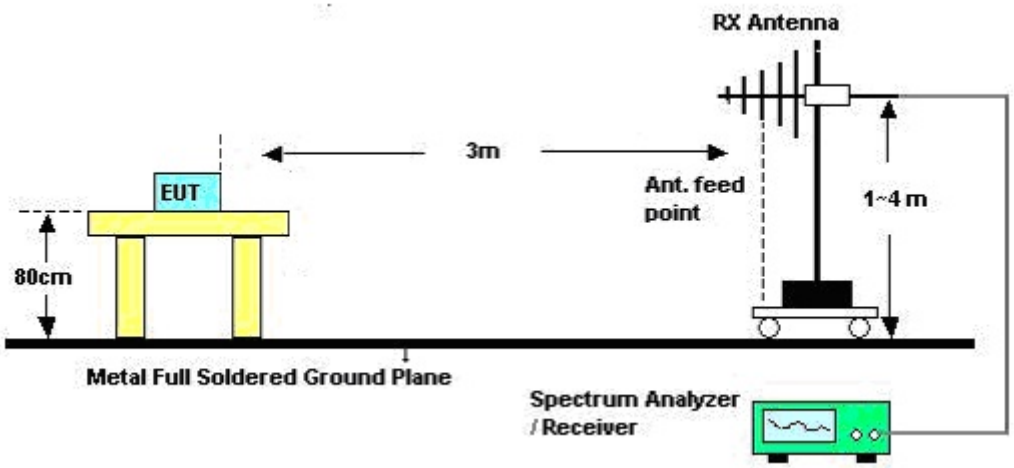
3.6.4 Test Setup

Emissions in Restricted Frequency Bands

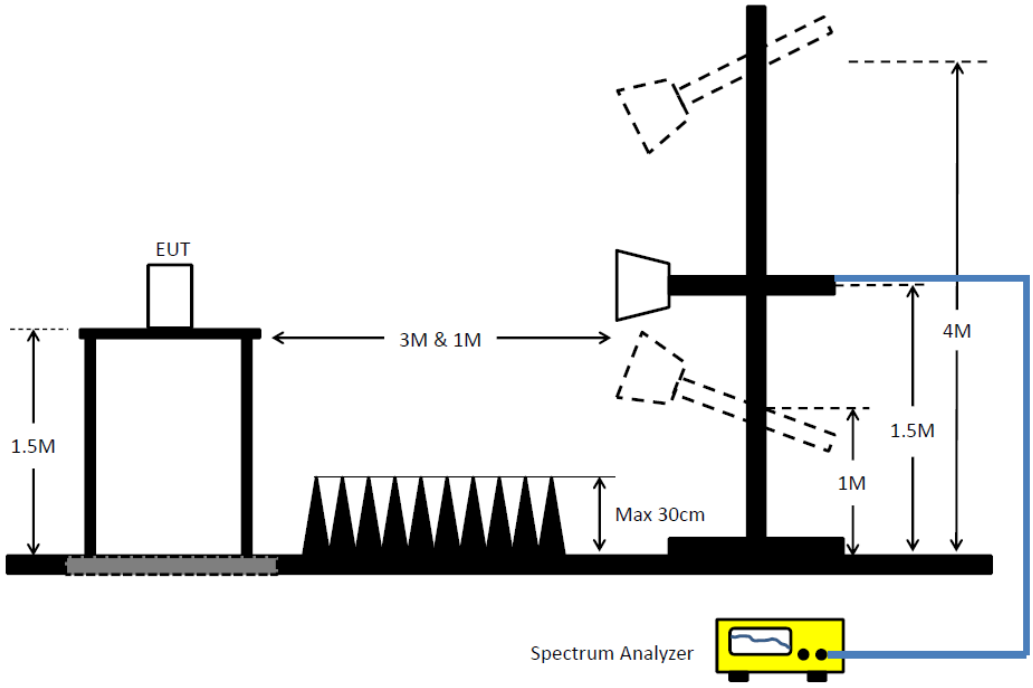
9kHz ~30MHz



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

3.7 Receiver Radiated Spurious Emissions

3.7.1 Receiver in Radiated Spurious Emissions Limit

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

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

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

3.7.2 Measuring Instruments

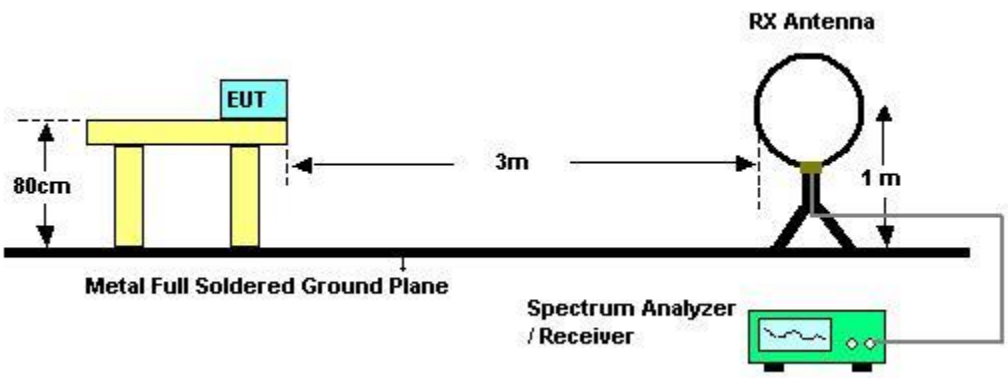
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

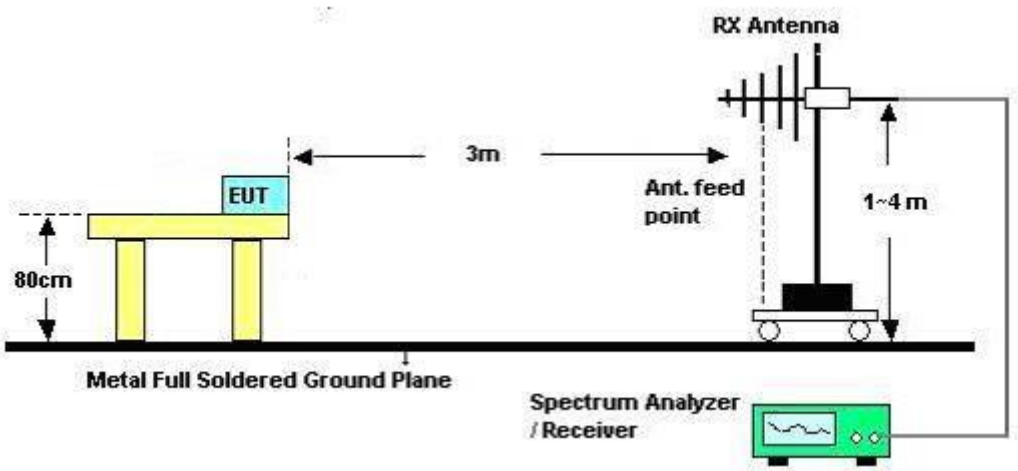
Test Method	
☒	The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is higher, without exceeding 40 GHz.
☒	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).
☒	For radiated measurement, refer as KDB558074, clause 12.2.7.
☒	Refer as ANSI C63.4, clause 8.3.1.1 and 8.3.2.1 for radiated emissions from below 30 MHz.
☒	Refer as ANSI C63.4, clause 8.3.1.1 and 8.3.2.1 for radiated emissions from 30 MHz-1 GHz. For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the QP-Limit so that the QP level does not need to be reported in addition.
☒	Refer as ANSI C63.4, clause 8.3.1.2 and 8.3.2.2 for radiated emissions from above 1 GHz. For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
☒	All amplitude of spurious emissions that are attenuated by more than 30 dB below the permissible value has no need to be reported.

3.7.4 Test Setup

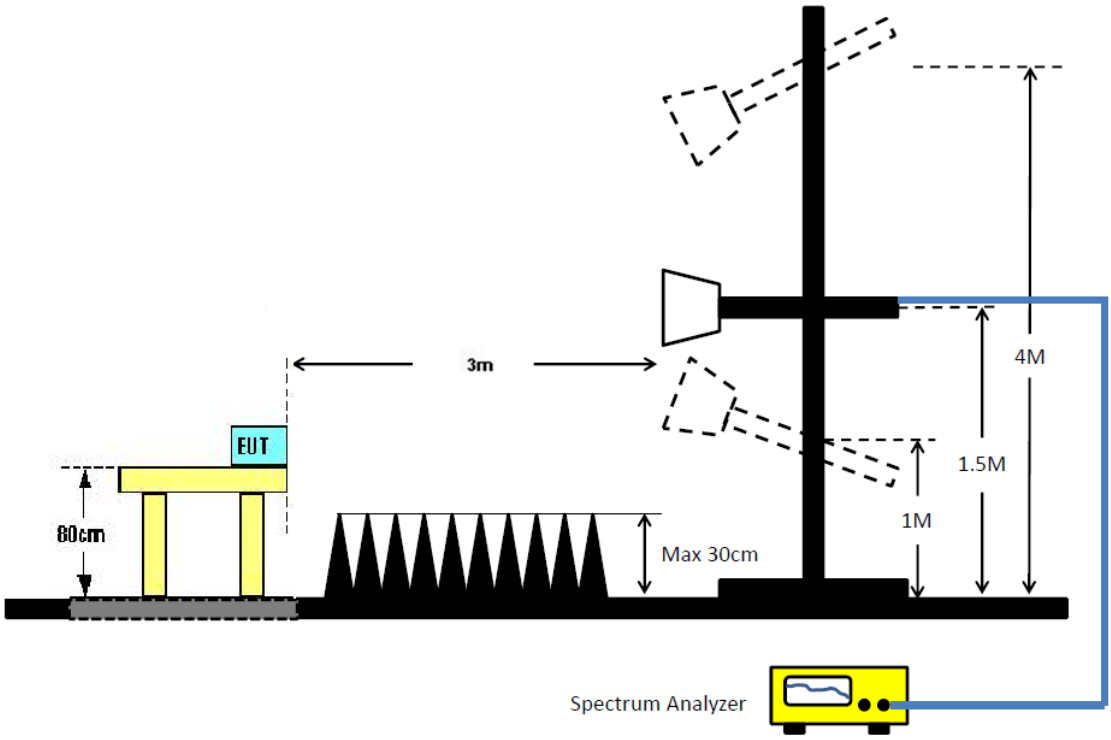
Receiver Spurious and Out of Band Emissions (9 kHz - 30 MHz)



Receiver Radiated Unwanted Emissions (below 1GHz)



Receiver Radiated Unwanted Emissions (above 1GHz)



3.7.5 Receiver Radiated Unwanted Emissions (Below 30MHz)

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

3.7.6 Test Result of Receiver Radiated Unwanted Emissions

Refer as Appendix H

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	29/Apr/2017	28/Apr/2018
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9kHz ~ 30MHz	06/Oct/2017	05/Oct/2018
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/2017	11/Oct/2018
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	17/Nov/2017	16/Nov/2018

NCR : Non-Calibration Require

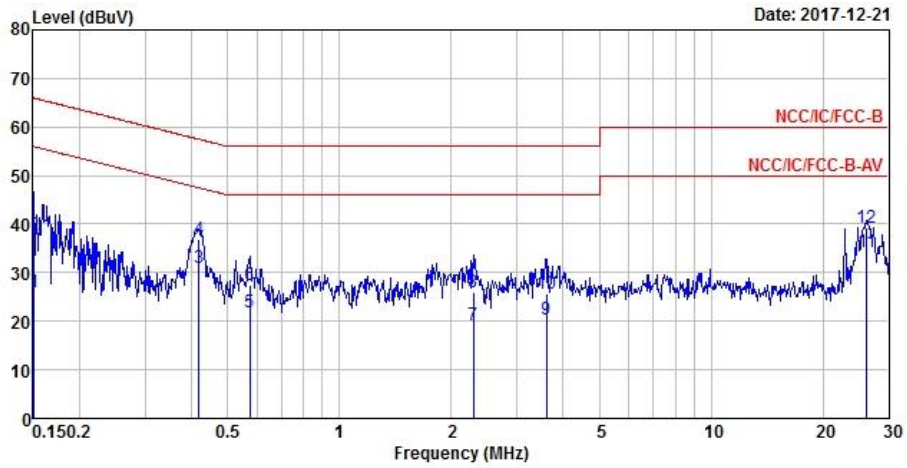
Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSP40	100305	9KHz - 40GHz	12/Dec/2017	11/Dec/2018
3m Semi Anechoic	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz-1GHz	20/Oct/2017	19/Oct/2018
3m Semi Anechoic	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz	27/Oct/2017	26/Oct/2018
Amplifier	Agilent	8447D	2944A11149	100KHz-1.3GHz	29/Jun/2017	28/Jun/2018
Amplifier	Ketsight	8449B	3008A02602	1GHz-26.5GHz	19/Sep/2017	18/Sep/2018
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA9120D 01531	1GHz-18GHz	11/May/2017	10/May/2018
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	18GHz-40GHz	06/Feb/2017	05/Feb/2018
Bilog Antenna	SCHAFFNER	CBL6112B	2723	30MHz-1GHz	09/Sep/2017	08/Sep/2018
Amplifier	MITEQ	JS44-18004000 -33-8P	1840917	18GHz-40GHz	06/Feb/2017	05/Feb/2018
Loop Antenna	TESEQ	HLA 6120	31244	9KHz-30MHz	02/Mar/2017	01/Mar/2018
RF Cable-high	SUHNER	SUCOFLEX104	MY34918/4	1GHz ~ 40GHz	02/Feb/2017	01/Feb/2018
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz ~ 1GHz	02/Feb/2017	01/Feb/2018
Receiver	R&S	ESU3	102052	9kHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101515	9kHz~40GHz	08/Dec/2017	07/Dec/2018
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	27/Jul/2017	26/Jul/2018
Temp. and Humidity Chamber	Giant Force	GTH-225-40-CP-AR	MAA1611-005	-40 ~ 100℃	21/Nov/2016	20/Nov/2018
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	10/Feb/2017	09/Feb/2018
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	10/Feb/2017	09/Feb/2018
RF Cable-1.5m	HUBER+SUHNER	SUCOFLEX_104	MY12582/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10710/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018

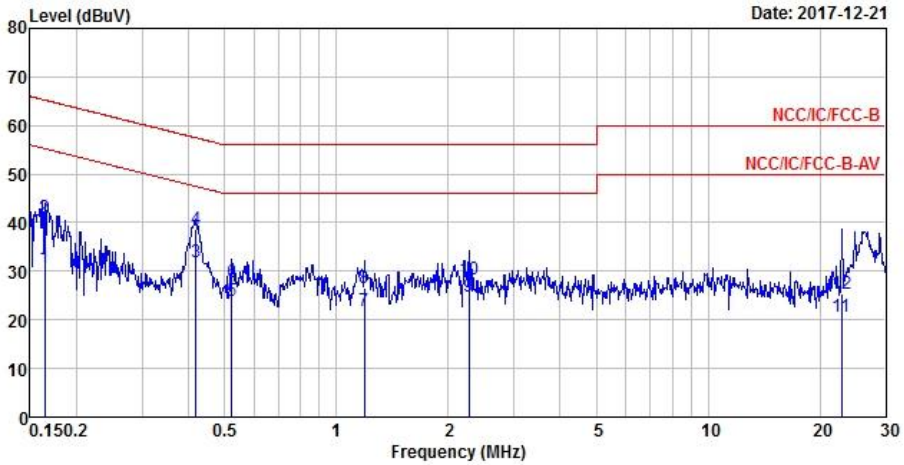
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	PoE mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1508	26.11	-29.85	55.96	16.44	9.63	0.04	Average
2	0.1508	37.85	-28.11	65.96	28.18	9.63	0.04	QP
3	0.4193	31.00	-16.46	47.46	21.29	9.61	0.10	Average
4	0.4193	36.84	-20.62	57.46	27.13	9.61	0.10	QP
5	0.5731	21.76	-24.24	46.00	12.09	9.61	0.06	Average
6	0.5731	27.56	-28.44	56.00	17.89	9.61	0.06	QP
7	2.2968	19.29	-26.71	46.00	9.64	9.63	0.02	Average
8	2.2968	25.99	-30.01	56.00	16.34	9.63	0.02	QP
9	3.6034	20.44	-25.56	46.00	10.73	9.64	0.07	Average
10	3.6034	25.72	-30.28	56.00	16.01	9.64	0.07	QP
11 MAX	26.2782	34.19	-15.81	50.00	24.41	9.70	0.08	Average
12	26.2782	39.27	-20.73	60.00	29.49	9.70	0.08	QP

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

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



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1641	30.70	-24.55	55.25	21.05	9.62	0.03	Average
2	0.1641	41.07	-24.18	65.25	31.42	9.62	0.03	QP
3 MAX	0.4193	32.03	-15.43	47.46	22.32	9.61	0.10	Average
4	0.4193	38.58	-18.88	57.46	28.87	9.61	0.10	QP
5	0.5238	23.94	-22.06	46.00	14.26	9.61	0.07	Average
6	0.5238	27.61	-28.39	56.00	17.93	9.61	0.07	QP
7	1.1907	21.92	-24.08	46.00	12.31	9.61	0.00	Average
8	1.1907	26.64	-29.36	56.00	17.03	9.61	0.00	QP
9	2.2726	24.91	-21.09	46.00	15.27	9.62	0.02	Average
10	2.2726	28.36	-27.64	56.00	18.72	9.62	0.02	QP
11	22.8965	20.81	-29.19	50.00	11.15	9.58	0.08	Average
12	22.8965	25.31	-34.69	60.00	15.65	9.58	0.08	QP

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

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)	667.5k	1.066M	1M07F1D	660k	1.059M

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

Result

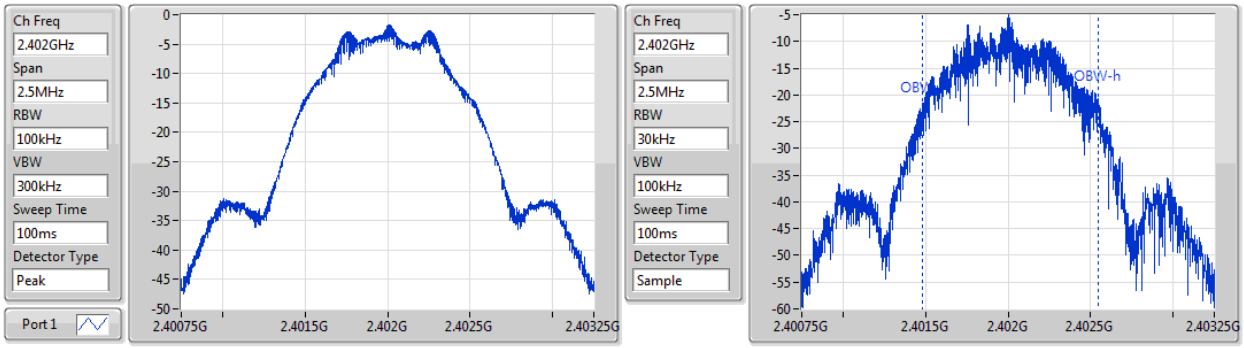
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	500k	660k	1.066M
2440MHz_TnomVnom	Pass	500k	666.25k	1.06M
2480MHz_TnomVnom	Pass	500k	667.5k	1.059M

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

BT-LE(1Mbps) EBW

2402MHz

16/12/2017

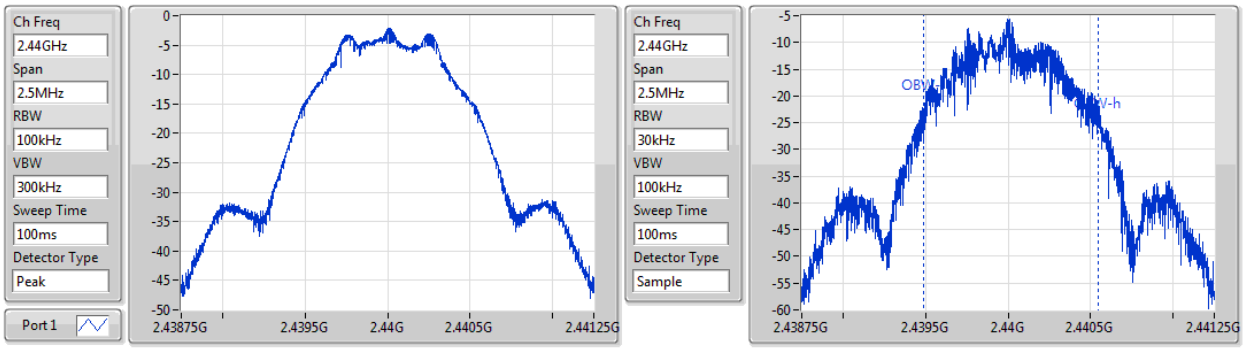


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
660k	2.401674G	2.402334G	1.066M	2.40148G	2.402546G	500k	1

BT-LE(1Mbps) EBW

2440MHz

16/12/2017

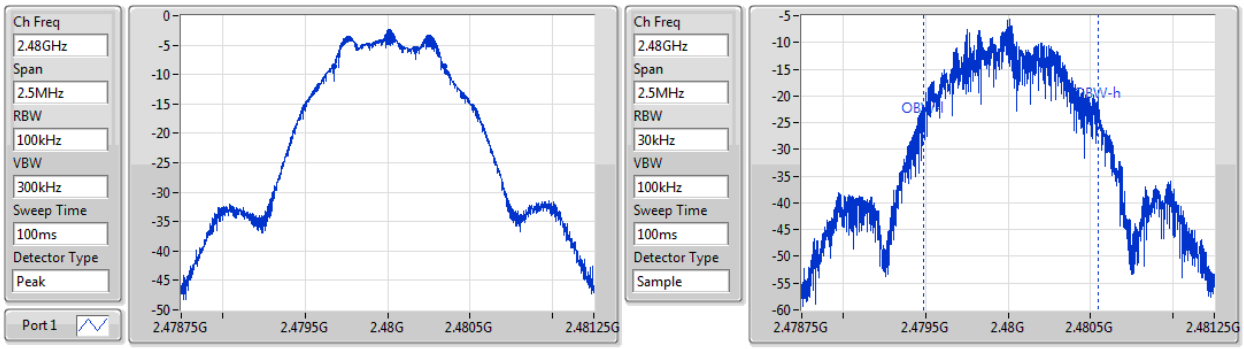


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
666.25k	2.439671G	2.440338G	1.06M	2.439485G	2.440545G	500k	1

BT-LE(1Mbps) EBW

2480MHz

16/12/2017



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
667.5k	2.479674G	2.480341G	1.059M	2.479488G	2.480546G	500k	1

Summary

Mode	Power	Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	-2.11	0.00062

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.38	-2.11	30.00
2440MHz_TnomVnom	Pass	1.38	-2.47	30.00
2480MHz_TnomVnom	Pass	1.38	-2.64	30.00

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-17.33

RBW=3kHz.

Result

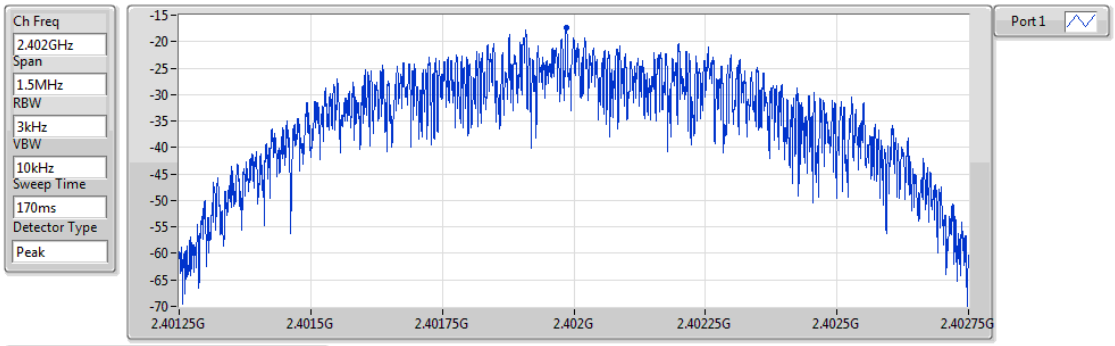
Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.38	-17.33	8.00
2440MHz_TnomVnom	Pass	1.38	-17.57	8.00
2480MHz_TnomVnom	Pass	1.38	-17.99	8.00

RBW=3kHz.

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

2402MHz

16/12/2017

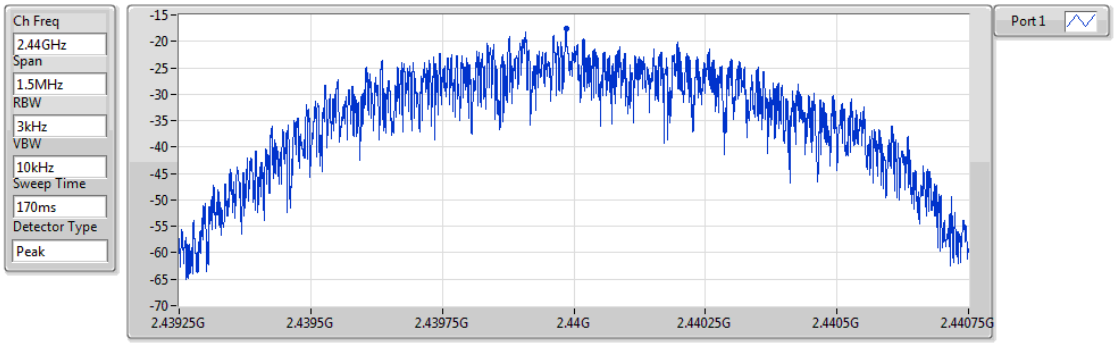


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-17.33	-17.33	-17.33

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

2440MHz

16/12/2017

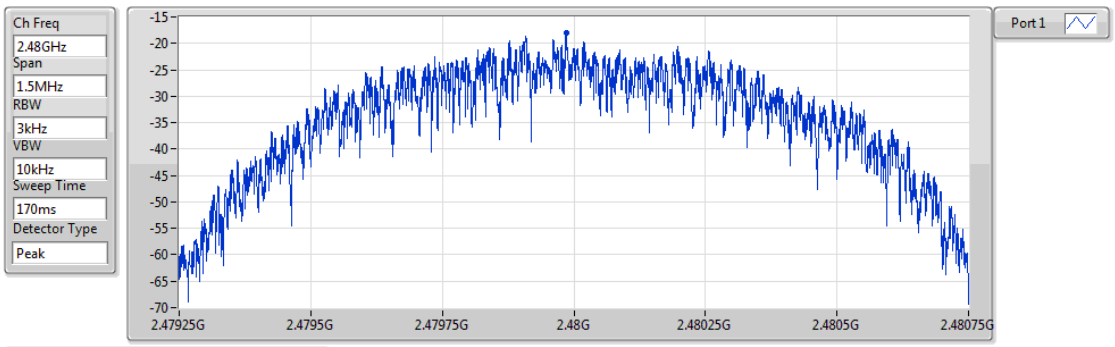


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-17.57	-17.57	-17.57

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

2480MHz

16/12/2017



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-17.99	-17.99	-17.99

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	2.402004G	-1.04	-31.04	1.991888G	-53.48	2.39996G	-53.98	2.485024G	-54.45	6.388951G	-48.29	1

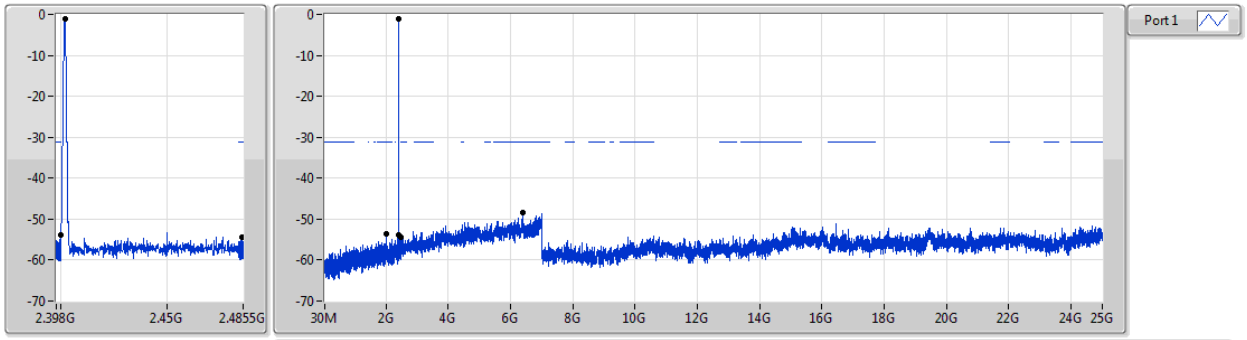
Result

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_TnomVnom	Pass	2.402004G	-1.04	-31.04	1.991888G	-53.48	2.39996G	-53.98	2.485024G	-54.45	6.388951G	-48.29	1
2440MHz_TnomVnom	Pass	2.402004G	-1.04	-31.04	1.944528G	-53.99	2.398844G	-54.00	2.483876G	-53.73	6.33548G	-48.80	1
2480MHz_TnomVnom	Pass	2.402004G	-1.04	-31.04	2.3092G	-55.05	2.398528G	-53.86	2.484872G	-54.37	6.963071G	-48.73	1

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

2402MHz

16/12/2017

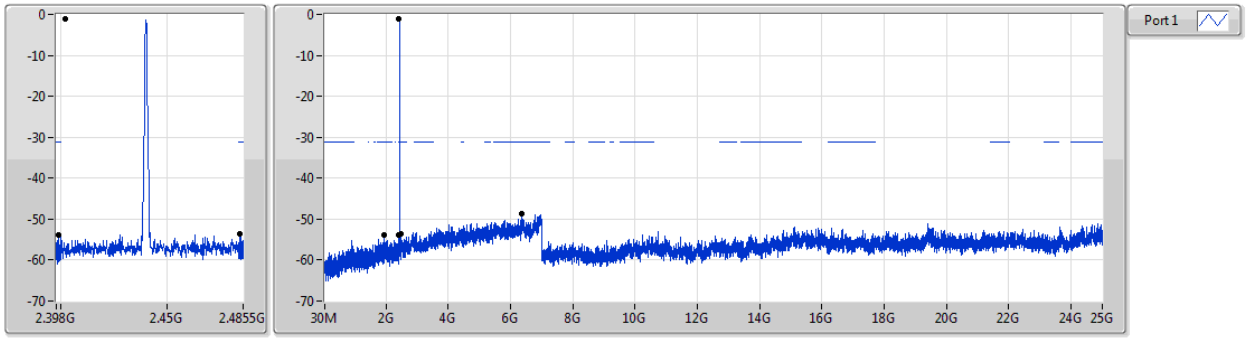


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402004G	-1.04	-31.04	1.991888G	-53.48	2.39996G	-53.98	2.485024G	-54.45	6.388951G	-48.29	1

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

2440MHz

16/12/2017

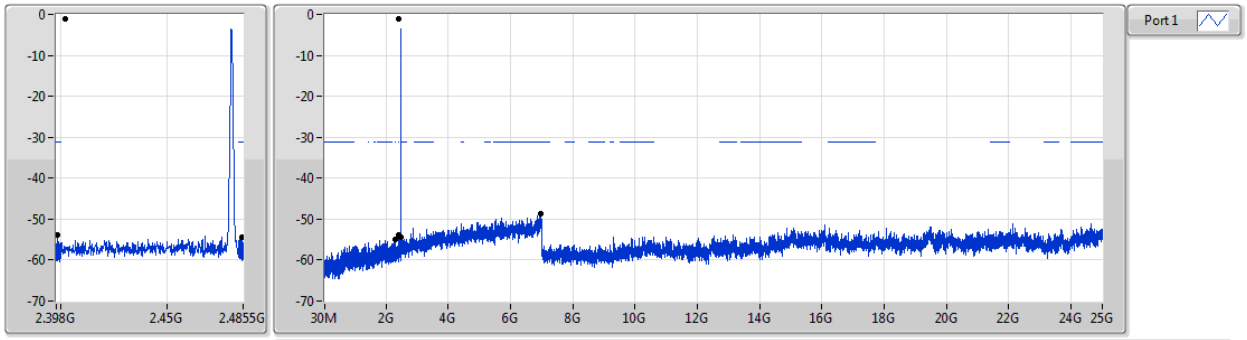


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402004G	-1.04	-31.04	1.944528G	-53.99	2.398844G	-54.00	2.483876G	-53.73	6.33548G	-48.80	1

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

2480MHz

16/12/2017



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402004G	-1.04	-31.04	2.3092G	-55.05	2.398528G	-53.86	2.484872G	-54.37	6.963071G	-48.73	1

Summary

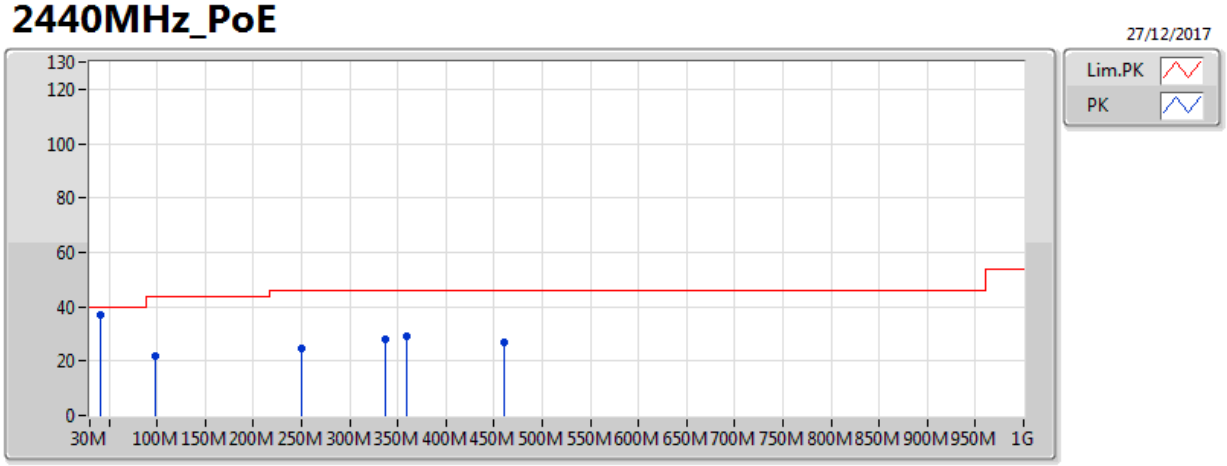
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	41.64M	36.82	40.00	-3.18	-9.98	3	Vertical	360	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	41.64M	33.90	40.00	-6.10	-9.98	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	107.6M	18.24	43.50	-25.26	-9.53	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	249.22M	27.56	46.00	-18.44	-7.65	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	336.52M	27.52	46.00	-18.48	-5.83	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	359.8M	31.26	46.00	-14.74	-5.05	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	460.68M	29.22	46.00	-16.78	-2.71	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	41.64M	36.82	40.00	-3.18	-9.98	3	Vertical	360	1.00	-
2440MHz	Pass	PK	97.9M	22.06	43.50	-21.44	-10.70	3	Vertical	360	1.00	-
2440MHz	Pass	PK	249.22M	24.71	46.00	-21.29	-7.65	3	Vertical	360	1.00	-
2440MHz	Pass	PK	336.52M	27.79	46.00	-18.21	-5.83	3	Vertical	360	1.00	-
2440MHz	Pass	PK	359.8M	28.97	46.00	-17.03	-5.05	3	Vertical	360	1.00	-
2440MHz	Pass	PK	460.68M	26.94	46.00	-19.06	-2.71	3	Vertical	360	1.00	-

BT-LE(1Mbps)

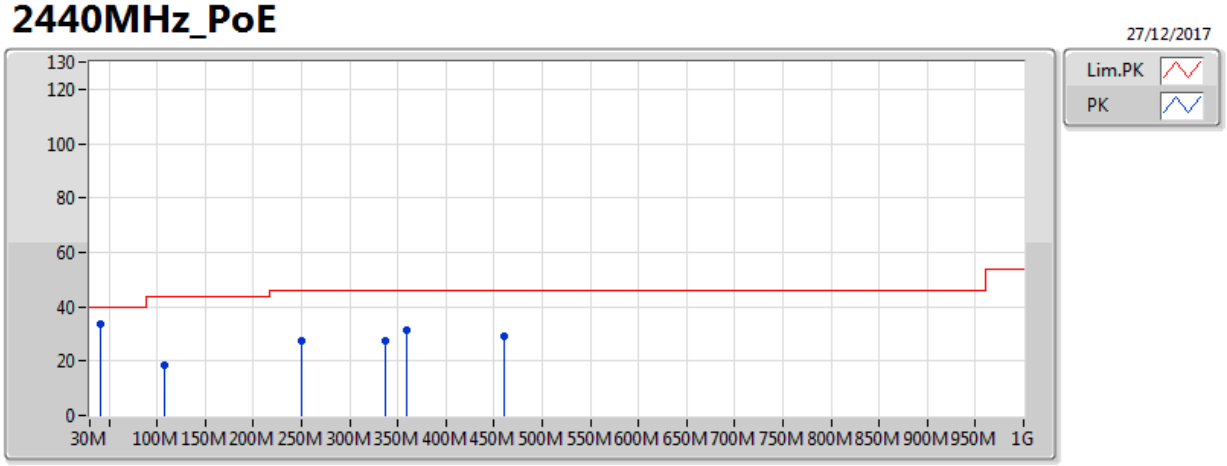
2440MHz_PoE



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	41.64M	36.82	40.00	-3.18	-9.98	3	Vertical	360	1.00	-
PK	97.9M	22.06	43.50	-21.44	-10.70	3	Vertical	360	1.00	-
PK	249.22M	24.71	46.00	-21.29	-7.65	3	Vertical	360	1.00	-
PK	336.52M	27.79	46.00	-18.21	-5.83	3	Vertical	360	1.00	-
PK	359.8M	28.97	46.00	-17.03	-5.05	3	Vertical	360	1.00	-
PK	460.68M	26.94	46.00	-19.06	-2.71	3	Vertical	360	1.00	-

BT-LE(1Mbps)

2440MHz_PoE



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	41.64M	33.90	40.00	-6.10	-9.98	3	Horizontal	0	1.00	-
PK	107.6M	18.24	43.50	-25.26	-9.53	3	Horizontal	0	1.00	-
PK	249.22M	27.56	46.00	-18.44	-7.65	3	Horizontal	0	1.00	-
PK	336.52M	27.52	46.00	-18.48	-5.83	3	Horizontal	0	1.00	-
PK	359.8M	31.26	46.00	-14.74	-5.05	3	Horizontal	0	1.00	-
PK	460.68M	29.22	46.00	-16.78	-2.71	3	Horizontal	0	1.00	-

Summary

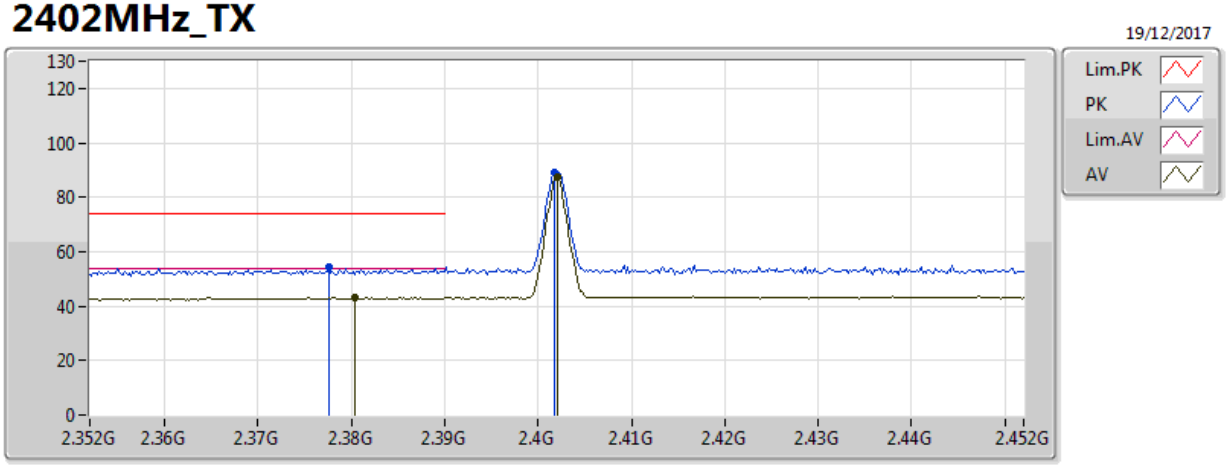
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.483502G	44.16	54.00	-9.84	31.27	3	Horizontal	282	1.27	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3896G	43.14	54.00	-10.86	30.93	3	Horizontal	236	1.01	-
2402MHz	Pass	AV	2.402G	89.63	Inf	-Inf	30.98	3	Horizontal	236	1.01	-
2402MHz	Pass	PK	2.3724G	54.47	74.00	-19.53	30.87	3	Horizontal	236	1.01	-
2402MHz	Pass	PK	2.4018G	91.17	Inf	-Inf	30.98	3	Horizontal	236	1.01	-
2402MHz	Pass	AV	2.3804G	43.06	54.00	-10.94	30.90	3	Vertical	265	1.50	-
2402MHz	Pass	AV	2.402G	87.44	Inf	-Inf	30.98	3	Vertical	265	1.50	-
2402MHz	Pass	PK	2.3776G	54.58	74.00	-19.42	30.89	3	Vertical	265	1.50	-
2402MHz	Pass	PK	2.4018G	88.97	Inf	-Inf	30.98	3	Vertical	265	1.50	-
2402MHz	Pass	AV	4.87994G	32.72	54.00	-21.28	2.28	3	Horizontal	235	1.25	-
2402MHz	Pass	PK	4.89332G	43.66	74.00	-30.34	2.32	3	Horizontal	235	1.25	-
2402MHz	Pass	AV	4.87982G	31.67	54.00	-22.33	2.28	3	Vertical	256	2.10	-
2402MHz	Pass	PK	4.86878G	44.24	74.00	-29.76	2.24	3	Vertical	256	2.10	-
2440MHz	Pass	AV	2.3824G	43.07	54.00	-10.93	30.91	3	Horizontal	286	1.52	-
2440MHz	Pass	AV	2.44G	90.27	Inf	-Inf	31.11	3	Horizontal	286	1.52	-
2440MHz	Pass	AV	2.494G	43.79	54.00	-10.21	31.31	3	Horizontal	286	1.52	-
2440MHz	Pass	PK	2.3696G	54.17	74.00	-19.83	30.86	3	Horizontal	286	1.52	-
2440MHz	Pass	PK	2.4404G	92.57	Inf	-Inf	31.12	3	Horizontal	286	1.52	-
2440MHz	Pass	PK	2.4944G	54.92	74.00	-19.08	31.31	3	Horizontal	286	1.52	-
2440MHz	Pass	AV	2.3884G	43.17	54.00	-10.83	30.93	3	Vertical	277	1.81	-
2440MHz	Pass	AV	2.44G	88.95	Inf	-Inf	31.11	3	Vertical	277	1.81	-
2440MHz	Pass	AV	2.498G	43.88	54.00	-10.12	31.32	3	Vertical	277	1.81	-
2440MHz	Pass	PK	2.3624G	53.95	74.00	-20.05	30.84	3	Vertical	277	1.81	-
2440MHz	Pass	PK	2.4404G	90.51	Inf	-Inf	31.12	3	Vertical	277	1.81	-
2440MHz	Pass	PK	2.4856G	54.71	74.00	-19.29	31.28	3	Vertical	277	1.81	-
2440MHz	Pass	AV	4.87784G	32.55	54.00	-21.45	2.27	3	Horizontal	289	2.14	-
2440MHz	Pass	PK	4.87532G	44.08	74.00	-29.92	2.26	3	Horizontal	289	2.14	-
2440MHz	Pass	AV	4.88006G	31.89	54.00	-22.11	2.28	3	Vertical	200	2.06	-
2440MHz	Pass	PK	4.88G	43.89	74.00	-30.11	2.28	3	Vertical	200	2.06	-
2480MHz	Pass	AV	2.48G	91.13	Inf	-Inf	31.26	3	Horizontal	282	1.27	-
2480MHz	Pass	AV	2.483502G	44.16	54.00	-9.84	31.27	3	Horizontal	282	1.27	-
2480MHz	Pass	PK	2.4798G	92.72	Inf	-Inf	31.26	3	Horizontal	282	1.27	-
2480MHz	Pass	PK	2.4992G	55.37	74.00	-18.63	31.33	3	Horizontal	282	1.27	-
2480MHz	Pass	AV	2.48G	88.62	Inf	-Inf	31.26	3	Vertical	270	2.45	-
2480MHz	Pass	AV	2.4972G	44.00	54.00	-10.00	31.32	3	Vertical	270	2.45	-
2480MHz	Pass	PK	2.4802G	90.07	Inf	-Inf	31.26	3	Vertical	270	2.45	-
2480MHz	Pass	PK	2.4888G	55.30	74.00	-18.70	31.29	3	Vertical	270	2.45	-
2480MHz	Pass	AV	4.95994G	33.44	54.00	-20.56	2.53	3	Horizontal	99	2.43	-
2480MHz	Pass	PK	4.96066G	44.01	74.00	-29.99	2.53	3	Horizontal	99	2.43	-
2480MHz	Pass	AV	4.96036G	31.82	54.00	-22.18	2.53	3	Vertical	1	2.18	-
2480MHz	Pass	PK	4.9588G	44.70	74.00	-29.30	2.52	3	Vertical	1	2.18	-

BT-LE(1Mbps)

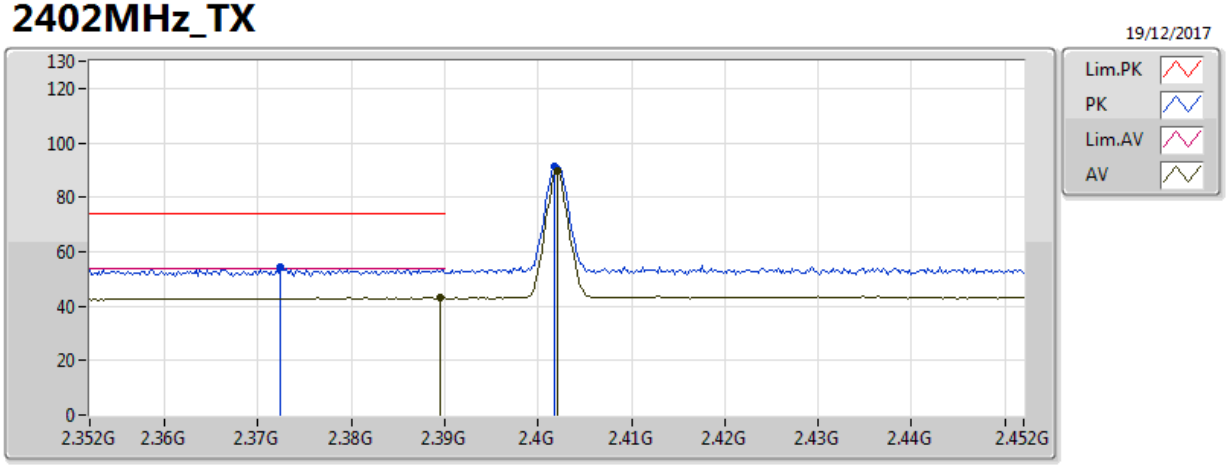
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3804G	43.06	54.00	-10.94	30.90	3	Vertical	265	1.50	-
AV	2.402G	87.44	Inf	-Inf	30.98	3	Vertical	265	1.50	-
PK	2.3776G	54.58	74.00	-19.42	30.89	3	Vertical	265	1.50	-
PK	2.4018G	88.97	Inf	-Inf	30.98	3	Vertical	265	1.50	-

BT-LE(1Mbps)

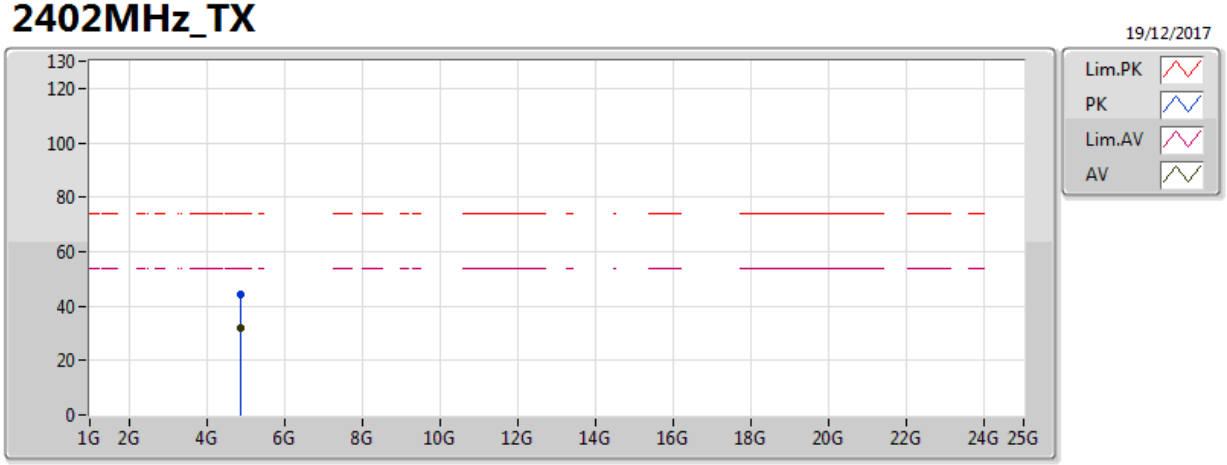
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3896G	43.14	54.00	-10.86	30.93	3	Horizontal	236	1.01	-
AV	2.402G	89.63	Inf	-Inf	30.98	3	Horizontal	236	1.01	-
PK	2.3724G	54.47	74.00	-19.53	30.87	3	Horizontal	236	1.01	-
PK	2.4018G	91.17	Inf	-Inf	30.98	3	Horizontal	236	1.01	-

BT-LE(1Mbps)

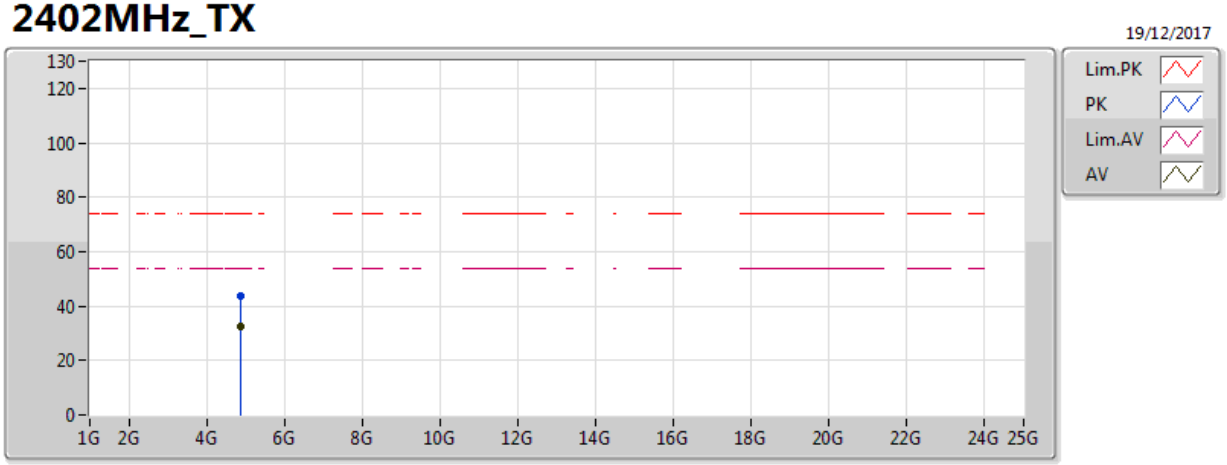
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.87982G	31.67	54.00	-22.33	2.28	3	Vertical	256	2.10	-
PK	4.86878G	44.24	74.00	-29.76	2.24	3	Vertical	256	2.10	-

BT-LE(1Mbps)

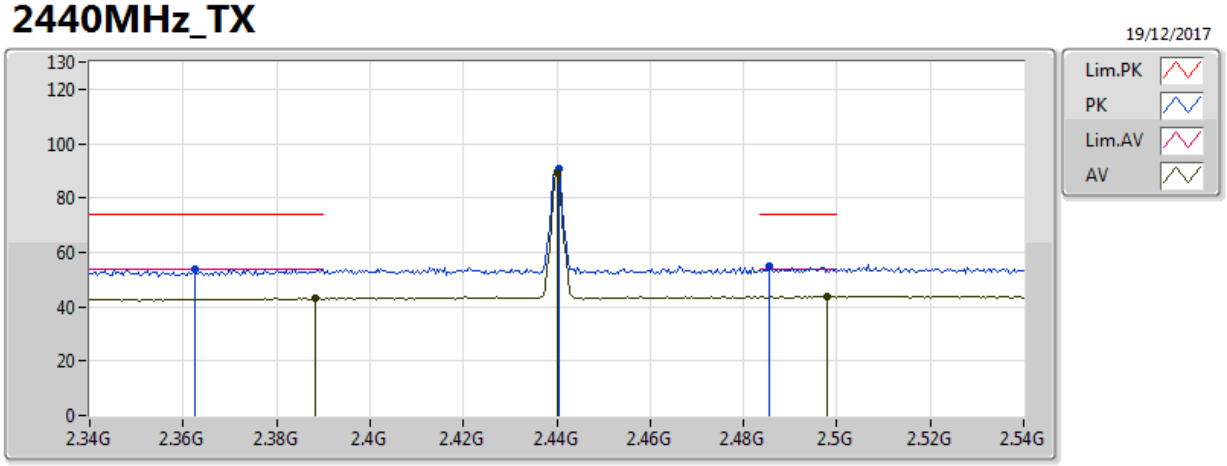
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.87994G	32.72	54.00	-21.28	2.28	3	Horizontal	235	1.25	-
PK	4.89332G	43.66	74.00	-30.34	2.32	3	Horizontal	235	1.25	-

BT-LE(1Mbps)

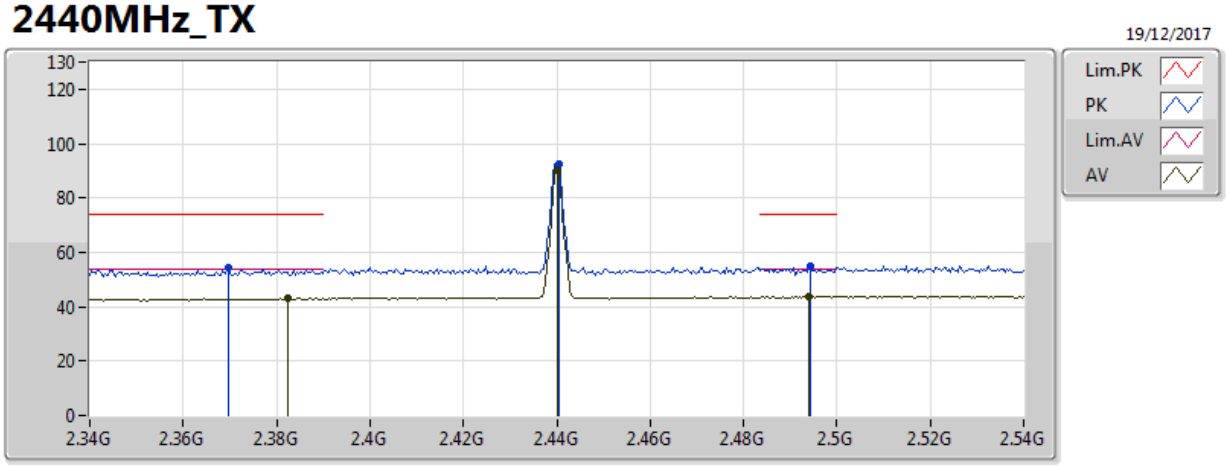
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3884G	43.17	54.00	-10.83	30.93	3	Vertical	277	1.81	-
AV	2.44G	88.95	Inf	-Inf	31.11	3	Vertical	277	1.81	-
AV	2.498G	43.88	54.00	-10.12	31.32	3	Vertical	277	1.81	-
PK	2.3624G	53.95	74.00	-20.05	30.84	3	Vertical	277	1.81	-
PK	2.4404G	90.51	Inf	-Inf	31.12	3	Vertical	277	1.81	-
PK	2.4856G	54.71	74.00	-19.29	31.28	3	Vertical	277	1.81	-

BT-LE(1Mbps)

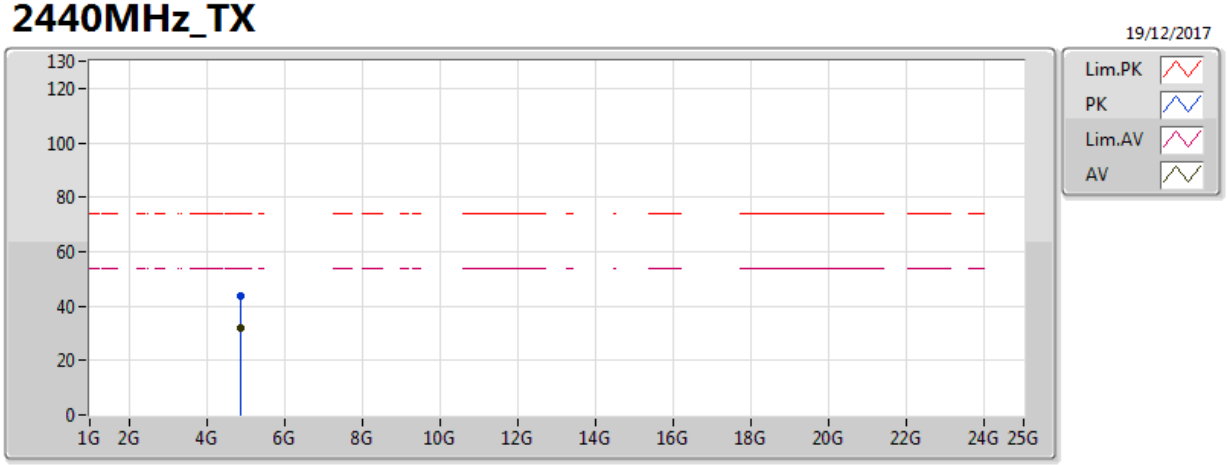
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3824G	43.07	54.00	-10.93	30.91	3	Horizontal	286	1.52	-
AV	2.44G	90.27	Inf	-Inf	31.11	3	Horizontal	286	1.52	-
AV	2.494G	43.79	54.00	-10.21	31.31	3	Horizontal	286	1.52	-
PK	2.3696G	54.17	74.00	-19.83	30.86	3	Horizontal	286	1.52	-
PK	2.4404G	92.57	Inf	-Inf	31.12	3	Horizontal	286	1.52	-
PK	2.4944G	54.92	74.00	-19.08	31.31	3	Horizontal	286	1.52	-

BT-LE(1Mbps)

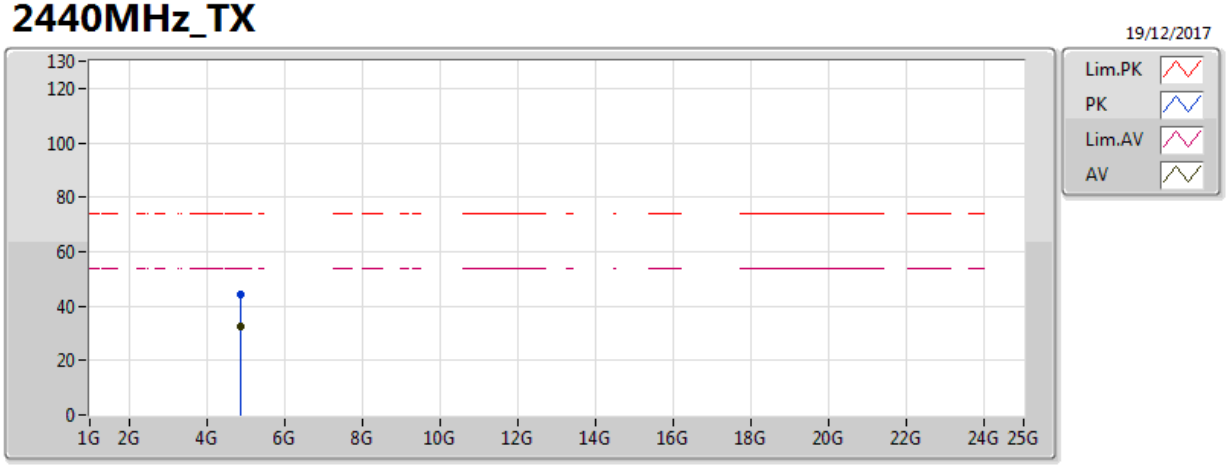
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.88006G	31.89	54.00	-22.11	2.28	3	Vertical	200	2.06	-
PK	4.88G	43.89	74.00	-30.11	2.28	3	Vertical	200	2.06	-

BT-LE(1Mbps)

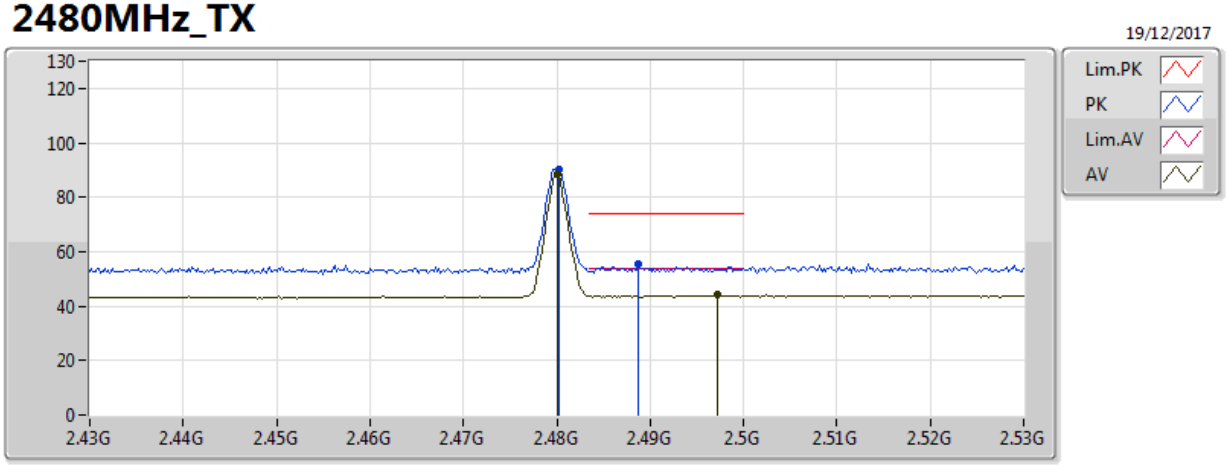
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.87784G	32.55	54.00	-21.45	2.27	3	Horizontal	289	2.14	-
PK	4.87532G	44.08	74.00	-29.92	2.26	3	Horizontal	289	2.14	-

BT-LE(1Mbps)

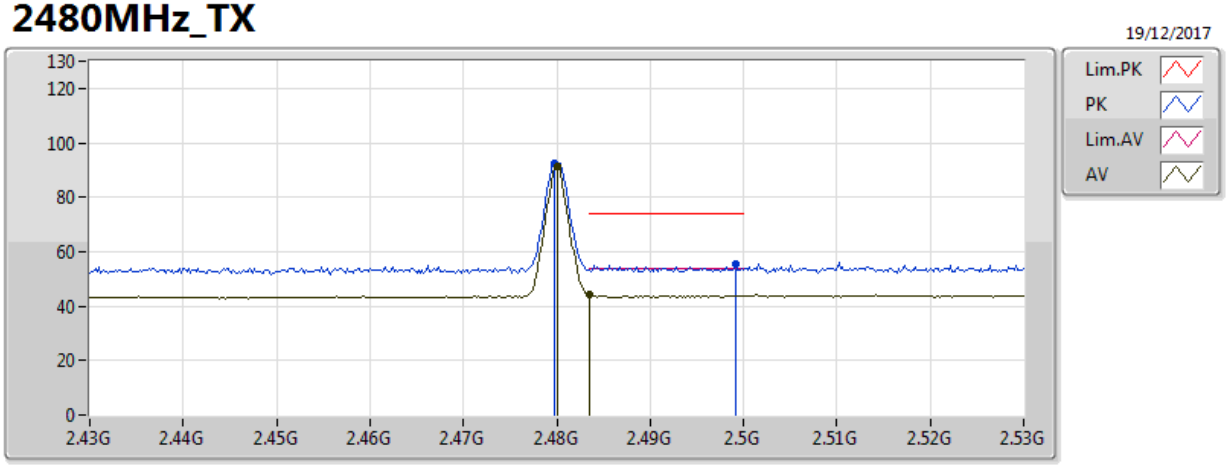
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.48G	88.62	Inf	-Inf	31.26	3	Vertical	270	2.45	-
AV	2.4972G	44.00	54.00	-10.00	31.32	3	Vertical	270	2.45	-
PK	2.4802G	90.07	Inf	-Inf	31.26	3	Vertical	270	2.45	-
PK	2.4888G	55.30	74.00	-18.70	31.29	3	Vertical	270	2.45	-

BT-LE(1Mbps)

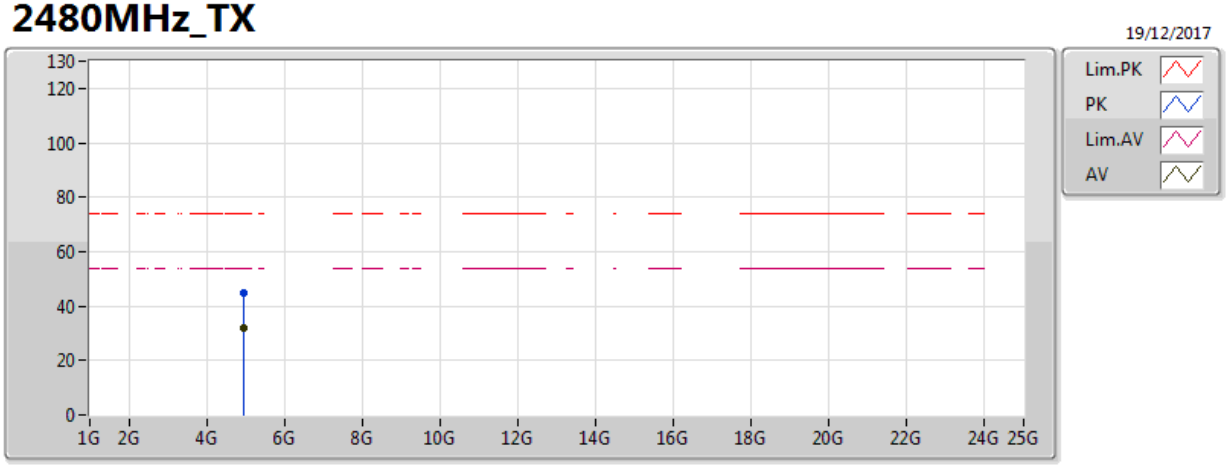
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.48G	91.13	Inf	-Inf	31.26	3	Horizontal	282	1.27	-
AV	2.483502G	44.16	54.00	-9.84	31.27	3	Horizontal	282	1.27	-
PK	2.4798G	92.72	Inf	-Inf	31.26	3	Horizontal	282	1.27	-
PK	2.4992G	55.37	74.00	-18.63	31.33	3	Horizontal	282	1.27	-

BT-LE(1Mbps)

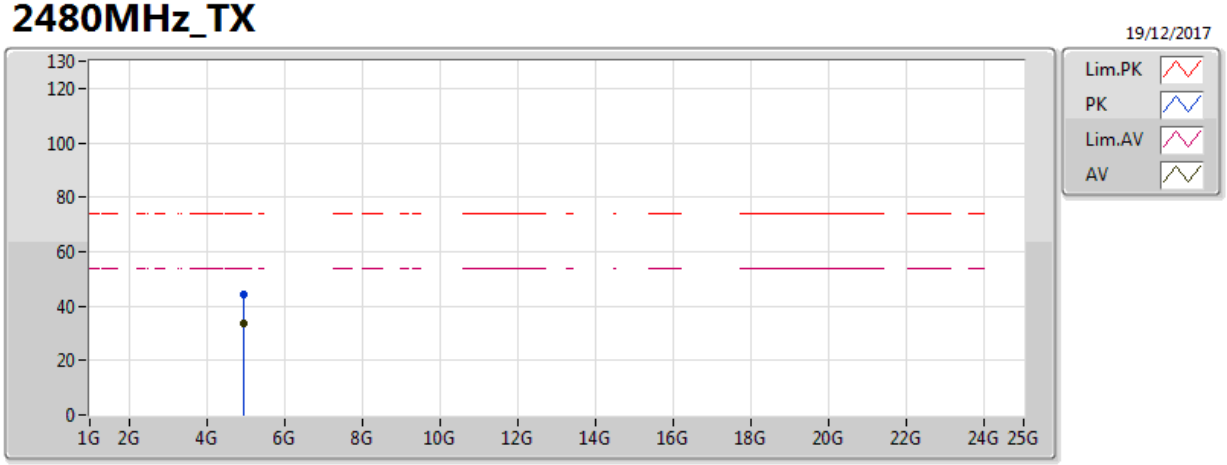
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.96036G	31.82	54.00	-22.18	2.53	3	Vertical	1	2.18	-
PK	4.9588G	44.70	74.00	-29.30	2.52	3	Vertical	1	2.18	-

BT-LE(1Mbps)

2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.95994G	33.44	54.00	-20.56	2.53	3	Horizontal	99	2.43	-
PK	4.96066G	44.01	74.00	-29.99	2.53	3	Horizontal	99	2.43	-

Summary

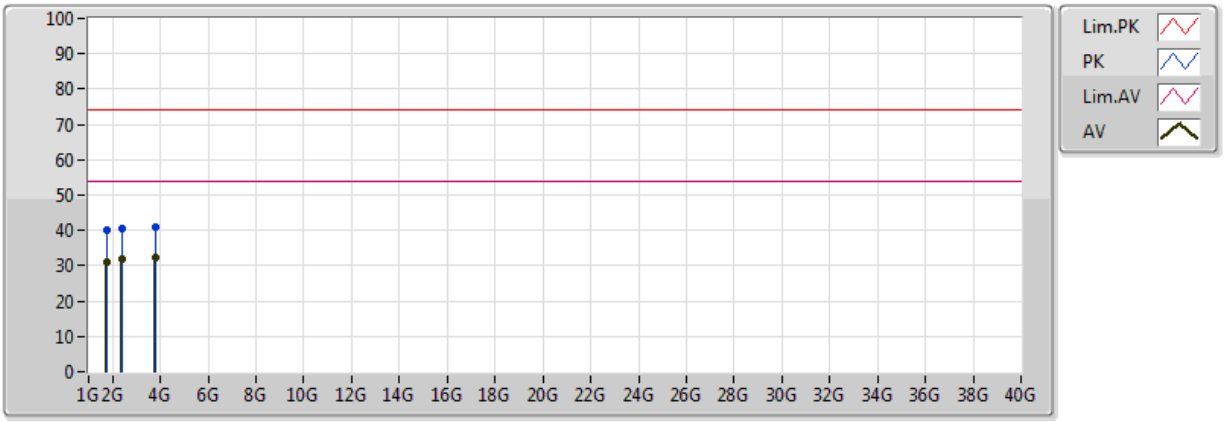
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	3.774G	32.47	54.00	-21.53	0.33	3	Vertical	360	1.00	-
Mode 2	Pass	AV	3.861G	36.85	54.00	-17.15	0.66	3	Horizontal	0	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	1.667G	31.10	54.00	-22.90	-4.84	3	Horizontal	0	1.00	-
Mode 1	Pass	AV	2.387G	31.27	54.00	-22.73	-2.48	3	Horizontal	0	1.00	-
Mode 1	Pass	AV	3.337G	31.36	54.00	-22.64	-0.63	3	Horizontal	0	1.00	-
Mode 1	Pass	PK	1.667G	40.12	74.00	-33.88	-4.84	3	Horizontal	0	1.00	-
Mode 1	Pass	PK	2.387G	39.64	74.00	-34.36	-2.48	3	Horizontal	0	1.00	-
Mode 1	Pass	PK	3.337G	40.34	74.00	-33.66	-0.63	3	Horizontal	0	1.00	-
Mode 1	Pass	AV	1.745G	30.88	54.00	-23.12	-4.61	3	Vertical	360	1.00	-
Mode 1	Pass	AV	2.38G	32.05	54.00	-21.95	-2.50	3	Vertical	360	1.00	-
Mode 1	Pass	AV	3.774G	32.47	54.00	-21.53	0.33	3	Vertical	360	1.00	-
Mode 1	Pass	PK	1.745G	39.88	74.00	-34.12	-4.61	3	Vertical	360	1.00	-
Mode 1	Pass	PK	2.38G	40.67	74.00	-33.33	-2.50	3	Vertical	360	1.00	-
Mode 1	Pass	PK	3.774G	40.80	74.00	-33.12	0.33	3	Vertical	360	1.00	-
Mode 2	Pass	AV	1.227G	29.38	54.00	-24.62	-6.79	3	Horizontal	0	1.00	
Mode 2	Pass	AV	2.552G	32.56	54.00	-21.44	-1.91	3	Horizontal	0	1.00	
Mode 2	Pass	AV	3.861G	36.85	54.00	-17.15	0.66	3	Horizontal	0	1.00	
Mode 2	Pass	PK	1.227G	38.48	74.00	-35.52	-6.79	3	Horizontal	0	1.00	
Mode 2	Pass	PK	2.552G	41.15	74.00	-32.85	-1.91	3	Horizontal	0	1.00	
Mode 2	Pass	PK	3.861G	41.21	74.00	-32.79	0.66	3	Horizontal	0	1.00	
Mode 2	Pass	AV	1.174G	28.15	54.00	-25.85	-7.07	3	Vertical	360	1.00	
Mode 2	Pass	AV	2.447G	30.20	54.00	-23.80	-2.26	3	Vertical	360	1.00	
Mode 2	Pass	AV	3.881G	32.84	54.00	-21.16	0.73	3	Vertical	360	1.00	
Mode 2	Pass	PK	1.174G	37.55	74.00	-36.45	-7.07	3	Vertical	360	1.00	
Mode 2	Pass	PK	2.447G	38.31	74.00	-35.69	-2.26	3	Vertical	360	1.00	
Mode 2	Pass	PK	3.881G	41.74	74.00	-32.26	0.73	3	Vertical	360	1.00	

Radiation-above 1GHz_Mode 1

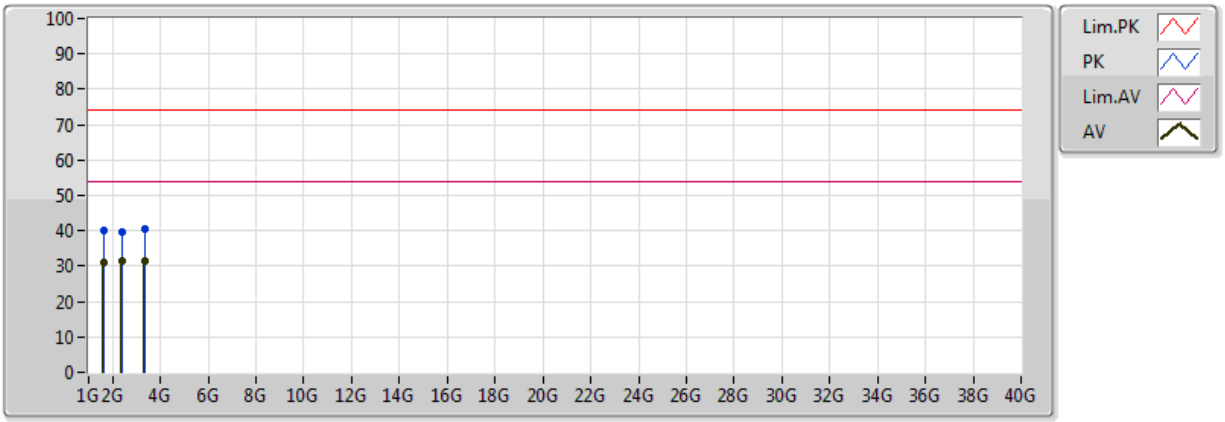
31/01/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	1.745G	30.88	54.00	-23.12	-4.61	3	Vertical	360	1.00	-	35.49	25.64	4.91	35.16
AV	2.38G	32.05	54.00	-21.95	-2.50	3	Vertical	360	1.00	-	34.55	26.96	5.72	35.18
AV	3.774G	32.47	54.00	-21.53	0.33	3	Vertical	360	1.00	-	32.14	29.15	6.44	35.26
PK	1.745G	39.88	74.00	-34.12	-4.61	3	Vertical	360	1.00	-	44.49	25.64	4.91	35.16
PK	2.38G	40.67	74.00	-33.33	-2.50	3	Vertical	360	1.00	-	43.17	26.96	5.72	35.18
PK	3.774G	40.88	74.00	-33.12	0.33	3	Vertical	360	1.00	-	40.55	29.15	6.44	35.26

Radiation-above 1GHz_Mode 1

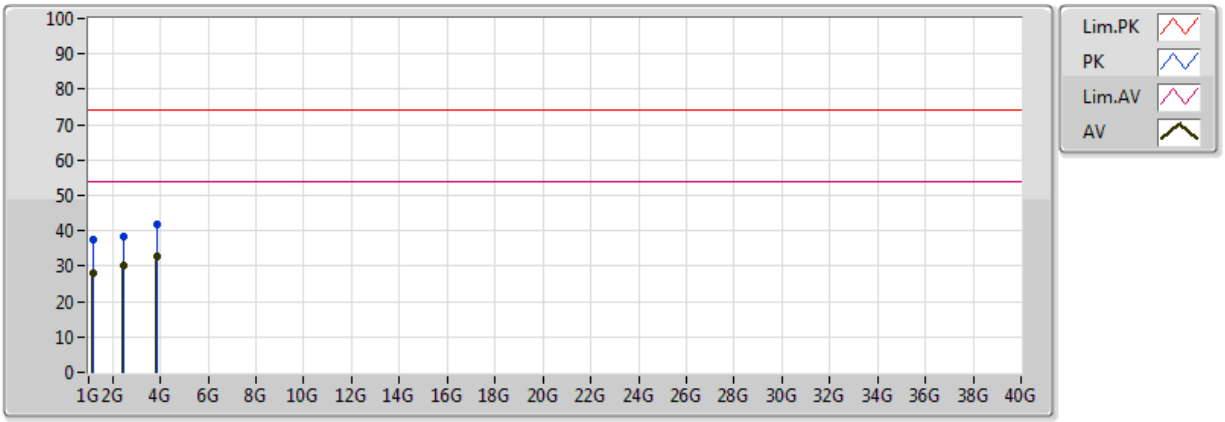
31/01/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	1.667G	31.10	54.00	-22.90	-4.84	3	Horizontal	0	1.00	-	35.94	25.57	4.79	35.20
AV	2.387G	31.27	54.00	-22.73	-2.48	3	Horizontal	0	1.00	-	33.75	26.98	5.73	35.19
AV	3.337G	31.36	54.00	-22.64	-0.63	3	Horizontal	0	1.00	-	31.99	28.60	6.09	35.33
PK	1.667G	40.12	74.00	-33.88	-4.84	3	Horizontal	0	1.00	-	44.96	25.57	4.79	35.20
PK	2.387G	39.64	74.00	-34.36	-2.48	3	Horizontal	0	1.00	-	42.12	26.98	5.73	35.19
PK	3.337G	40.34	74.00	-33.66	-0.63	3	Horizontal	0	1.00	-	40.97	28.60	6.09	35.33

Radiation-above 1GHz_Mode 2

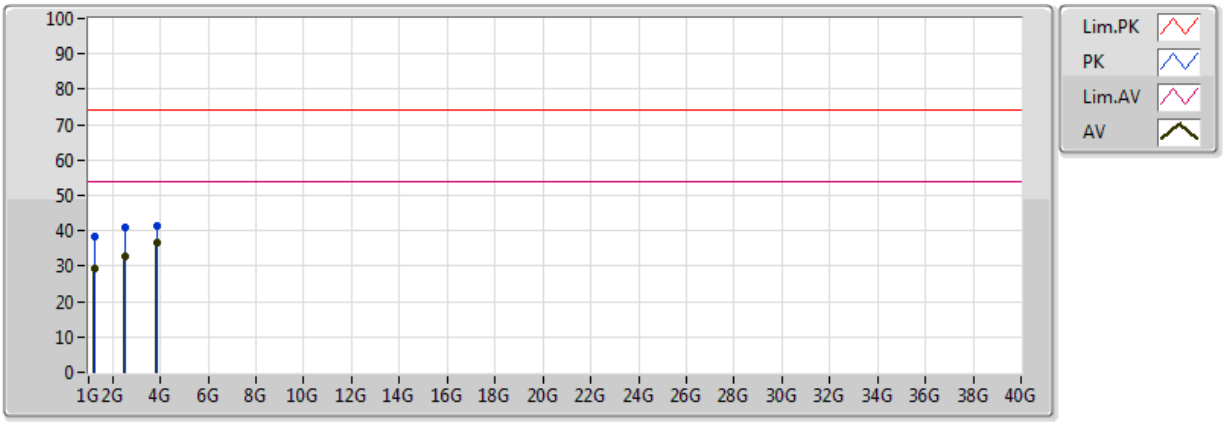
31/01/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	1.174G	28.15	54.00	-25.85	-7.07	3	Vertical	360	1.00	-	35.22	24.75	4.06	35.88
AV	2.447G	30.20	54.00	-23.80	-2.26	3	Vertical	360	1.00	-	32.46	27.15	5.80	35.21
AV	3.881G	32.84	54.00	-21.16	0.73	3	Vertical	360	1.00	-	32.11	29.36	6.60	35.23
PK	1.174G	37.55	74.00	-36.45	-7.07	3	Vertical	360	1.00	-	44.62	24.75	4.06	35.88
PK	2.447G	38.31	74.00	-35.69	-2.26	3	Vertical	360	1.00	-	40.57	27.15	5.80	35.21
PK	3.881G	41.74	74.00	-32.26	0.73	3	Vertical	360	1.00	-	41.01	29.36	6.60	35.23

Radiation-above 1GHz_Mode 2

31/01/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	1.227G	29.38	54.00	-24.62	-6.79	3	Horizontal	0	1.00	-	36.17	24.85	4.14	35.78
AV	2.552G	32.56	54.00	-21.44	-1.91	3	Horizontal	0	1.00	-	34.47	27.44	5.90	35.25
AV	3.861G	36.85	54.00	-17.15	0.66	3	Horizontal	0	1.00	-	36.19	29.32	6.57	35.24
PK	1.227G	38.48	74.00	-35.52	-6.79	3	Horizontal	0	1.00	-	45.27	24.85	4.14	35.78
PK	2.552G	41.15	74.00	-32.85	-1.91	3	Horizontal	0	1.00	-	43.06	27.44	5.90	35.25
PK	3.861G	41.21	74.00	-32.79	0.66	3	Horizontal	0	1.00	-	40.55	29.32	6.57	35.24

Summary

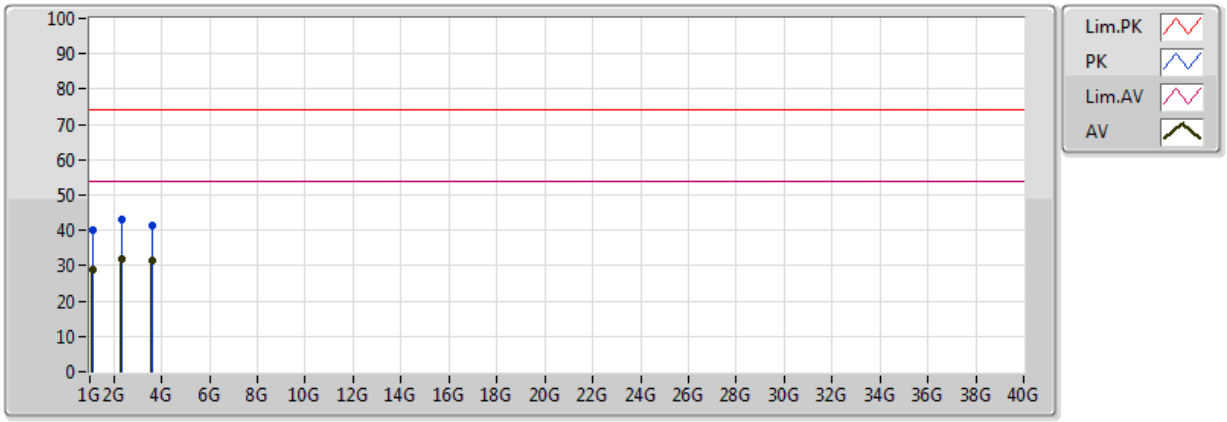
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1.	Pass	AV	4.031G	33.02	54.00	-20.98	1.31	3	Horizontal	0	1.00	-
Mode 2.	Pass	AV	3.951G	33.18	54.00	-20.82	0.99	3	Vertical	360	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	1.21G	28.59	54.00	-25.41	-6.88	3	Horizontal	0	1.00	-
Mode 1	Pass	AV	2.23G	31.04	54.00	-22.96	-3.04	3	Horizontal	0	1.00	-
Mode 1	Pass	AV	4.031G	33.02	54.00	-20.98	1.31	3	Horizontal	0	1.00	-
Mode 1	Pass	PK	1.21G	38.55	74.00	-35.45	-6.88	3	Horizontal	0	1.00	-
Mode 1	Pass	PK	2.23G	40.43	74.00	-33.57	-3.04	3	Horizontal	0	1.00	-
Mode 1	Pass	PK	4.031G	42.09	74.00	-31.91	1.31	3	Horizontal	0	1.00	-
Mode 1	Pass	AV	1.135G	28.80	54.00	-25.20	-7.28	3	Vertical	360	1.00	-
Mode 1	Pass	AV	2.307G	31.70	54.00	-22.30	-2.76	3	Vertical	360	1.00	-
Mode 1	Pass	AV	3.595G	31.39	54.00	-22.61	-0.34	3	Vertical	360	1.00	-
Mode 1	Pass	PK	1.135G	40.10	74.00	-33.90	-7.28	3	Vertical	360	1.00	-
Mode 1	Pass	PK	2.307G	43.17	74.00	-30.83	-2.76	3	Vertical	360	1.00	-
Mode 1	Pass	PK	3.595G	41.55	74.00	-32.45	-0.34	3	Vertical	360	1.00	-
Mode 2	Pass	AV	1.165G	29.57	54.00	-24.43	-7.12	3	Horizontal	0	1.00	
Mode 2	Pass	AV	2.28G	31.97	54.00	-22.03	-2.86	3	Horizontal	0	1.00	
Mode 2	Pass	AV	3.695G	32.27	54.00	-21.73	0.03	3	Horizontal	0	1.00	
Mode 2	Pass	PK	1.165G	38.58	74.00	-35.42	-7.12	3	Horizontal	0	1.00	
Mode 2	Pass	PK	2.28G	40.74	74.00	-33.26	-2.86	3	Horizontal	0	1.00	
Mode 2	Pass	PK	3.695G	40.79	74.00	-33.21	0.03	3	Horizontal	0	1.00	
Mode 2	Pass	AV	1.189G	29.13	54.00	-24.87	-6.99	3	Vertical	360	1.00	
Mode 2	Pass	AV	2.427G	30.53	54.00	-23.47	-2.33	3	Vertical	360	1.00	
Mode 2	Pass	AV	3.951G	33.18	54.00	-20.82	0.99	3	Vertical	360	1.00	
Mode 2	Pass	PK	1.189G	38.74	74.00	-35.26	-6.99	3	Vertical	360	1.00	
Mode 2	Pass	PK	2.427G	38.54	74.00	-35.46	-2.33	3	Vertical	360	1.00	
Mode 2	Pass	PK	3.951G	42.60	74.00	-31.40	0.99	3	Vertical	360	1.00	

Radiation-above 1GHz_Mode 1

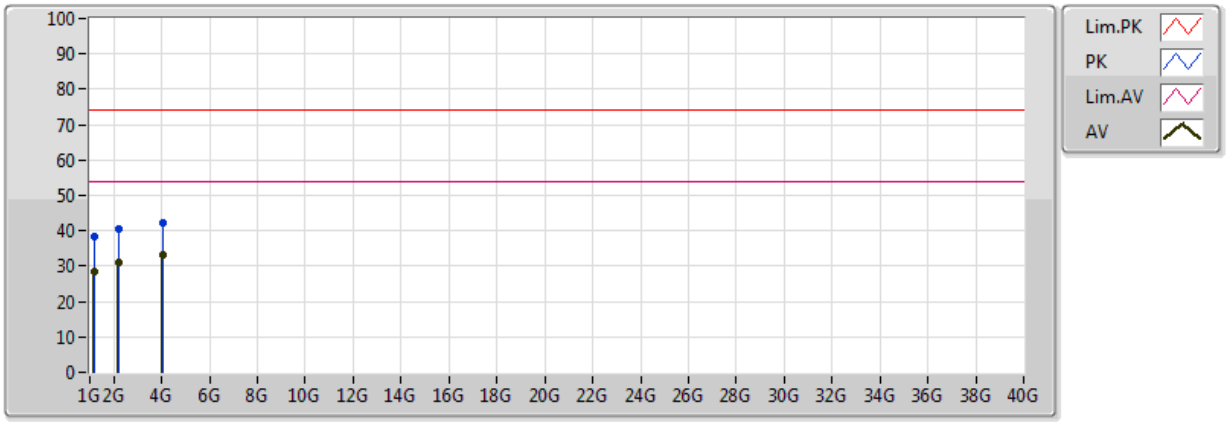
24/01/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	1.135G	28.80	54.00	-25.20	-7.28	3	Vertical	360	1.00	-	36.08	24.67	4.00	35.95
AV	2.307G	31.70	54.00	-22.30	-2.76	3	Vertical	360	1.00	-	34.46	26.76	5.64	35.16
AV	3.595G	31.39	54.00	-22.61	-0.34	3	Vertical	360	1.00	-	31.73	28.79	6.16	35.29
PK	1.135G	40.10	74.00	-33.90	-7.28	3	Vertical	360	1.00	-	47.38	24.67	4.00	35.95
PK	2.307G	43.17	74.00	-30.83	-2.76	3	Vertical	360	1.00	-	45.94	26.76	5.64	35.16
PK	3.595G	41.55	74.00	-32.45	-0.34	3	Vertical	360	1.00	-	41.89	28.79	6.16	35.29

Radiation-above 1GHz_Mode 1

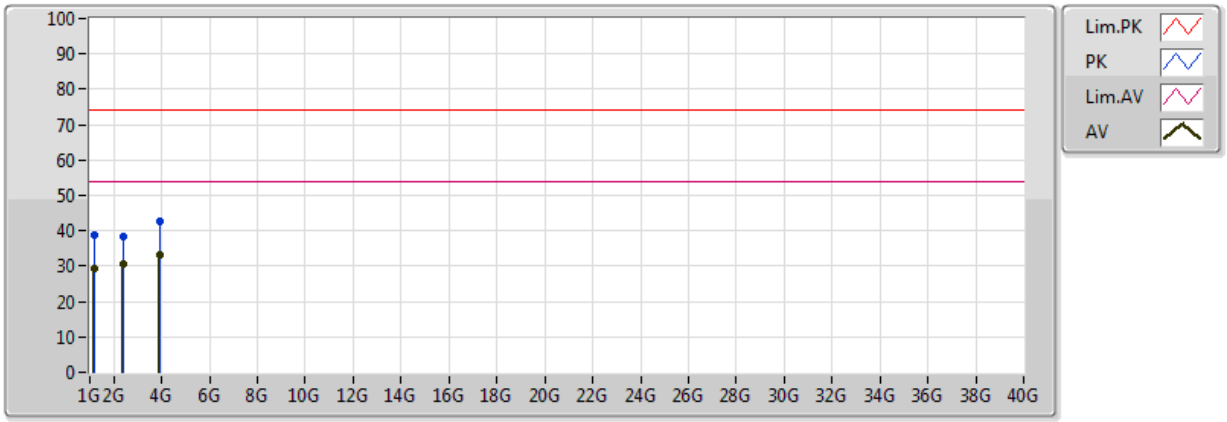
24/01/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	1.21G	28.59	54.00	-25.41	-6.88	3	Horizontal	0	1.00	-	35.47	24.82	4.11	35.81
AV	2.23G	31.04	54.00	-22.96	-3.04	3	Horizontal	0	1.00	-	34.08	26.54	5.55	35.13
AV	4.031G	33.02	54.00	-20.98	1.31	3	Horizontal	0	1.00	-	31.71	29.67	6.85	35.20
PK	1.21G	38.55	74.00	-35.45	-6.88	3	Horizontal	0	1.00	-	45.43	24.82	4.11	35.81
PK	2.23G	40.43	74.00	-33.57	-3.04	3	Horizontal	0	1.00	-	43.47	26.54	5.55	35.13
PK	4.031G	42.09	74.00	-31.91	1.31	3	Horizontal	0	1.00	-	40.77	29.67	6.85	35.20

Radiation-above 1GHz_Mode 2

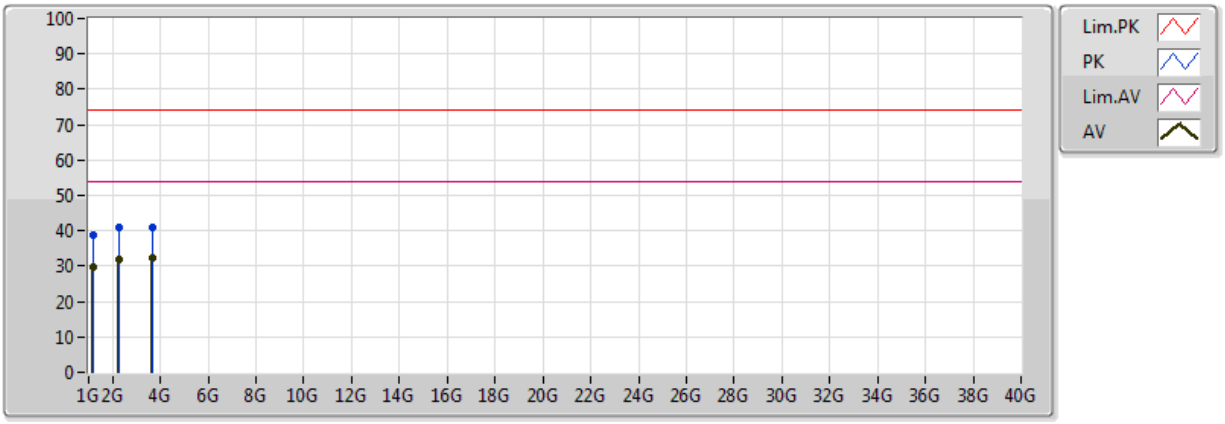
24/01/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	1.189G	29.13	54.00	-24.87	-6.99	3	Vertical	360	1.00	-	36.12	24.78	4.08	35.85
AV	2.427G	30.53	54.00	-23.47	-2.33	3	Vertical	360	1.00	-	32.86	27.10	5.77	35.20
AV	3.951G	33.18	54.00	-20.82	0.99	3	Vertical	360	1.00	-	32.19	29.50	6.71	35.22
PK	1.189G	38.74	74.00	-35.26	-6.99	3	Vertical	360	1.00	-	45.73	24.78	4.08	35.85
PK	2.427G	38.54	74.00	-35.46	-2.33	3	Vertical	360	1.00	-	40.87	27.10	5.77	35.20
PK	3.951G	42.60	74.00	-31.40	0.99	3	Vertical	360	1.00	-	41.61	29.50	6.71	35.22

Radiation-above 1GHz_Mode 2

24/01/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	1.165G	29.57	54.00	-24.43	-7.12	3	Horizontal	0	1.00	-	36.69	24.73	4.05	35.90
AV	2.28G	31.97	54.00	-22.03	-2.86	3	Horizontal	0	1.00	-	34.84	26.68	5.61	35.15
AV	3.695G	32.27	54.00	-21.73	0.03	3	Horizontal	0	1.00	-	32.24	28.99	6.31	35.27
PK	1.165G	38.58	74.00	-35.42	-7.12	3	Horizontal	0	1.00	-	45.70	24.73	4.05	35.90
PK	2.28G	40.74	74.00	-33.26	-2.86	3	Horizontal	0	1.00	-	43.60	26.68	5.61	35.15
PK	3.695G	40.79	74.00	-33.21	0.03	3	Horizontal	0	1.00	-	40.75	28.99	6.31	35.27

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	41.64M	36.80	40.00	-3.20	-9.98	3	Vertical	0	1.00	-

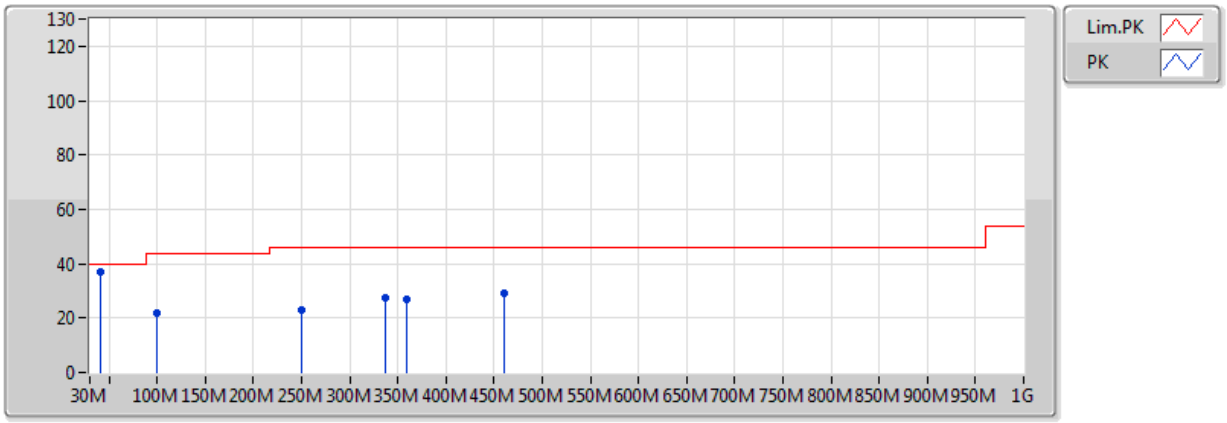
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	41.64M	33.65	40.00	-6.35	-9.98	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	249.22M	28.29	46.00	-17.71	-7.65	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	336.52M	29.59	46.00	-16.41	-5.83	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	359.8M	32.97	46.00	-13.03	-5.05	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	400.54M	29.96	46.00	-16.04	-3.85	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	460.68M	29.48	46.00	-16.52	-2.71	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	41.64M	36.80	40.00	-3.20	-9.98	3	Vertical	0	1.00	-
2440MHz	Pass	PK	99.84M	21.61	43.50	-21.89	-10.40	3	Vertical	0	1.00	-
2440MHz	Pass	PK	249.22M	22.87	46.00	-23.13	-7.65	3	Vertical	0	1.00	-
2440MHz	Pass	PK	336.52M	27.25	46.00	-18.75	-5.83	3	Vertical	0	1.00	-
2440MHz	Pass	PK	359.8M	27.12	46.00	-18.88	-5.05	3	Vertical	0	1.00	-
2440MHz	Pass	PK	460.68M	29.31	46.00	-16.69	-2.71	3	Vertical	0	1.00	-

BT-LE(1Mbps)RX

2440MHz_PoE

28/12/2017

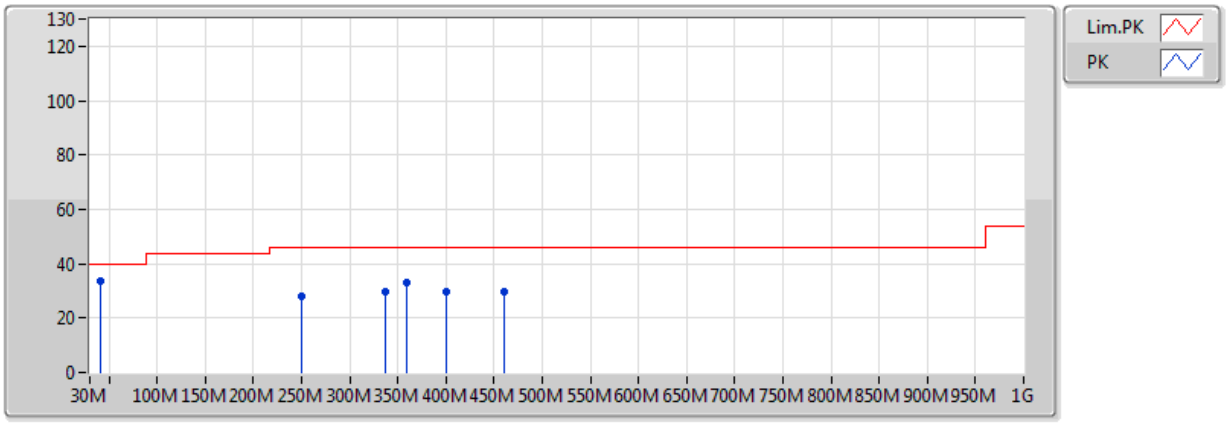


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	41.64M	36.80	40.00	-3.20	-9.98	3	Vertical	0	1.00	-
PK	99.84M	21.61	43.50	-21.89	-10.40	3	Vertical	0	1.00	-
PK	249.22M	22.87	46.00	-23.13	-7.65	3	Vertical	0	1.00	-
PK	336.52M	27.25	46.00	-18.75	-5.83	3	Vertical	0	1.00	-
PK	359.8M	27.12	46.00	-18.88	-5.05	3	Vertical	0	1.00	-
PK	460.68M	29.31	46.00	-16.69	-2.71	3	Vertical	0	1.00	-

BT-LE(1Mbps)RX

2440MHz_PoE

27/12/2017



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	41.64M	33.65	40.00	-6.35	-9.98	3	Horizontal	360	1.00	-
PK	249.22M	28.29	46.00	-17.71	-7.65	3	Horizontal	360	1.00	-
PK	336.52M	29.59	46.00	-16.41	-5.83	3	Horizontal	360	1.00	-
PK	359.8M	32.97	46.00	-13.03	-5.05	3	Horizontal	360	1.00	-
PK	400.54M	29.96	46.00	-16.04	-3.85	3	Horizontal	360	1.00	-
PK	460.68M	29.48	46.00	-16.52	-2.71	3	Horizontal	360	1.00	-

Summary

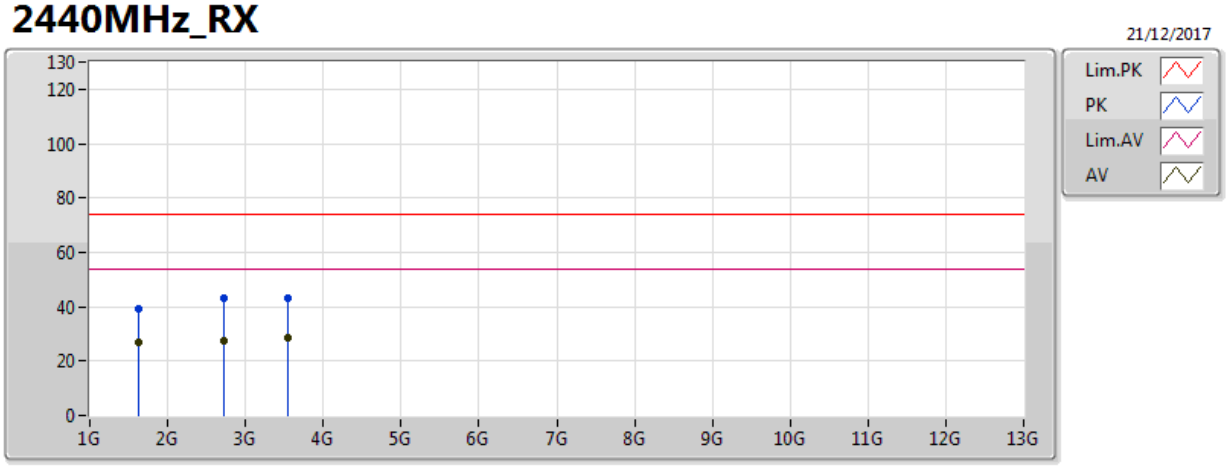
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	3.546G	28.53	54.00	-25.47	-1.34	3	Vertical	122	1.72	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	AV	2.543G	25.40	54.00	-28.60	-3.19	3	Vertical	185	1.27	-
2440MHz	Pass	AV	2.723G	27.53	54.00	-26.47	-2.71	3	Vertical	173	1.48	-
2440MHz	Pass	PK	2.543G	40.05	74.00	-33.95	-3.19	3	Vertical	185	1.27	-
2440MHz	Pass	PK	2.723G	43.07	74.00	-30.93	-2.71	3	Vertical	173	1.48	-
2440MHz	Pass	AV	1.562G	24.49	54.00	-29.51	-6.07	3	Vertical	268	1.74	-
2440MHz	Pass	AV	1.623G	26.85	54.00	-27.15	-5.89	3	Vertical	152	1.26	-
2440MHz	Pass	AV	3.272G	26.93	54.00	-27.07	-1.70	3	Vertical	182	1.58	-
2440MHz	Pass	AV	3.546G	28.53	54.00	-25.47	-1.34	3	Vertical	122	1.72	-
2440MHz	Pass	PK	1.562G	37.80	74.00	-36.20	-6.07	3	Vertical	268	1.74	-
2440MHz	Pass	PK	1.623G	39.43	74.00	-34.57	-5.89	3	Vertical	152	1.26	-
2440MHz	Pass	PK	3.272G	42.82	74.00	-31.18	-1.70	3	Vertical	182	1.58	-
2440MHz	Pass	PK	3.546G	43.24	74.00	-30.76	-1.34	3	Vertical	122	1.72	-

BT-LE(1Mbps)RX

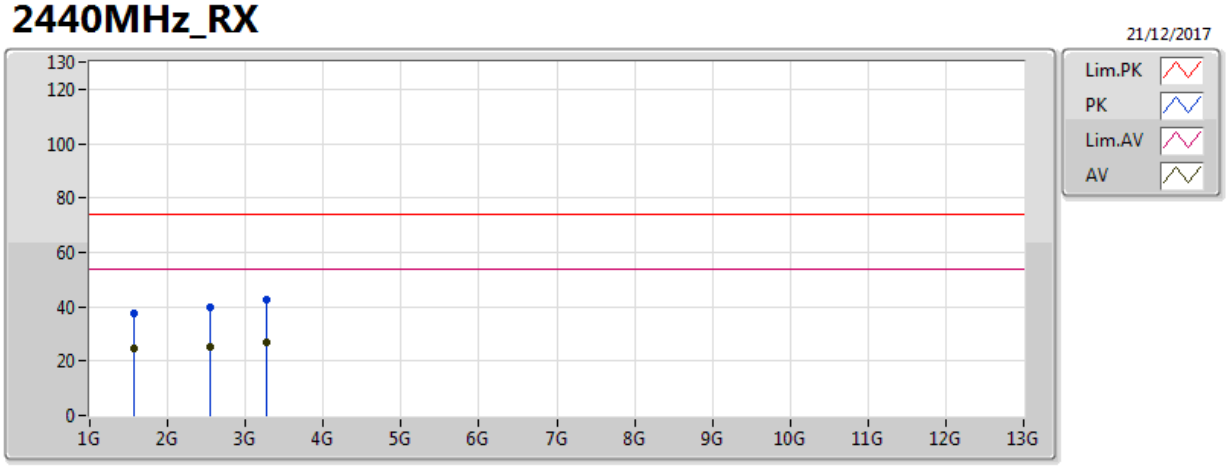
2440MHz_RX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	1.623G	26.85	54.00	-27.15	-5.89	3	Vertical	152	1.26	-
AV	2.723G	27.53	54.00	-26.47	-2.71	3	Vertical	173	1.48	-
AV	3.546G	28.53	54.00	-25.47	-1.34	3	Vertical	122	1.72	-
PK	1.623G	39.43	74.00	-34.57	-5.89	3	Vertical	152	1.26	-
PK	2.723G	43.07	74.00	-30.93	-2.71	3	Vertical	173	1.48	-
PK	3.546G	43.24	74.00	-30.76	-1.34	3	Vertical	122	1.72	-

BT-LE(1Mbps)RX

2440MHz_RX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	1.562G	24.49	54.00	-29.51	-6.07	3	Horizontal	268	1.74	-
AV	2.543G	25.40	54.00	-28.60	-3.19	3	Horizontal	185	1.27	-
AV	3.272G	26.93	54.00	-27.07	-1.70	3	Horizontal	182	1.58	-
PK	1.562G	37.80	74.00	-36.20	-6.07	3	Horizontal	268	1.74	-
PK	2.543G	40.05	74.00	-33.95	-3.19	3	Horizontal	185	1.27	-
PK	3.272G	42.82	74.00	-31.18	-1.70	3	Horizontal	182	1.58	-