Testing Laboratory 1190

FCC Test Report

FCC ID	:	2AEUPBHALP021
Equipment	:	Wi-Fi enabled Video Doorbell
Brand Name	:	RING
Model Name	:	Video Doorbell Pro
Applicant	:	Ring, Inc 1523 26th St, Santa Monica, CA 90404, USA
Manufacturer	:	Chicony Electronics (Dong Guan) Co.,Ltd. San Zhong Guan Li Qu, Qingxi Town, Dongguan City Guangdong 523651 China
Standard	:	47 CFR FCC Part 15.247

The product was received on Apr. 24, 2018, and testing was started from Apr. 27, 2018 and completed on May 02, 2018. We, SPORTON INTERTIONAL 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 INTERTIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory

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

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History of this test report

Report No.	Version	Description	Issued Date
FR842412AL	01	Initial issue of report	May 25, 2018

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	-

Reviewed by: Sam Tsai

Report Producer: Jackson Tsai

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.	Port	Brand	Model Name	Antenna Type	Connector
1	1	-	Ring Wifi Antenna	PIFA Antenna	Fixed on board

2.4G		5G		BT	
Frequency (MHz)	Gain (dBi)	Frequency (MHz)	Gain (dBi)	Frequency (MHz)	Gain (dBi)
2412	1.37	5180	1.4	2402	1.37
2417	1.37	5200	1.4	2440 / 2441	1.08
2422	1.37	5240	2.5	2480	1.09
2427	1.08	5190	1.4	-	-
2432	1.08	5230	2.5	-	-
2437	1.08	5745	3.12	-	-
2442	1.08	5785	2.65	-	-
2447	1.08	5825	1.67	-	-
2452	1.08	5755	3.12	-	-
2457	1.08	5795	2.65	-	-
2462	1.08	-	-	-	-

For 2.4 GHz function:
For IEEE 802.11b/g/n mode (1TX/1RX)
Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.
For 5 GHz function:
For IEEE 802.11a/n mode (1TX/1RX)
Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.
For Bluetooth function:
For Bluetooth mode (1TX/1RX)
Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From Battery / Transformer			
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)	0.626	2.034	391.25u	3k

1.1.5 Table for Multiple Listing

Difference	Description
SKU #1	The sample is the same one, only the color is different.
SKU #2	
SKU #3	
SKU #4	
Note. For more detailed features description, please refer to the specifications or user's manual.	

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 v04

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	Daniel	22.8°C / 53%	02/May/2018
RF Conducted	TH07-HY	Andy	23.5°C / 65%	02/May/2018
Radiated	03CH09-HY	Jerry	23.5°C / 55%	02/May/2018

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%
Temperature	0.7 °C	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	Normal
2440MHz	Normal
2480MHz	Normal

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	AC 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	AC mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT			V

2.4 Accessories

Accessories				
Battery	Brand Name	Fuji	Model Name	334060
	Power Rating	3.8 Vdc, 300 mAh	Type	Li-ion

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

2.5 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	Transformer	TRIAD	VPL24-1100	DoC

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

Support Equipment – Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Transformer	TRIAD	VPL24-1100	-

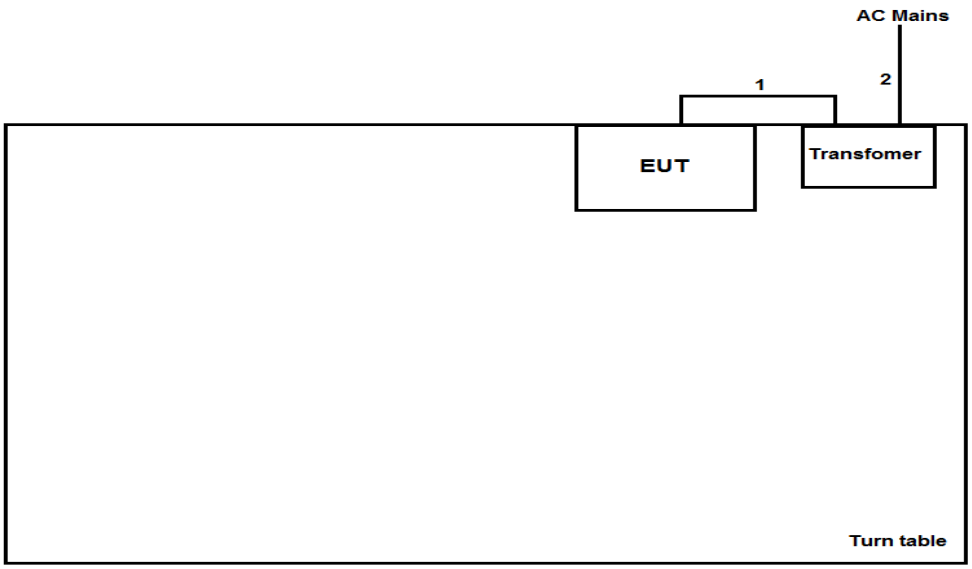
Note: Support equipment No.1 was provided by customer.

Support Equipment – AC Conduction				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Transformer	TRIAD	VPL24-1100	-

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

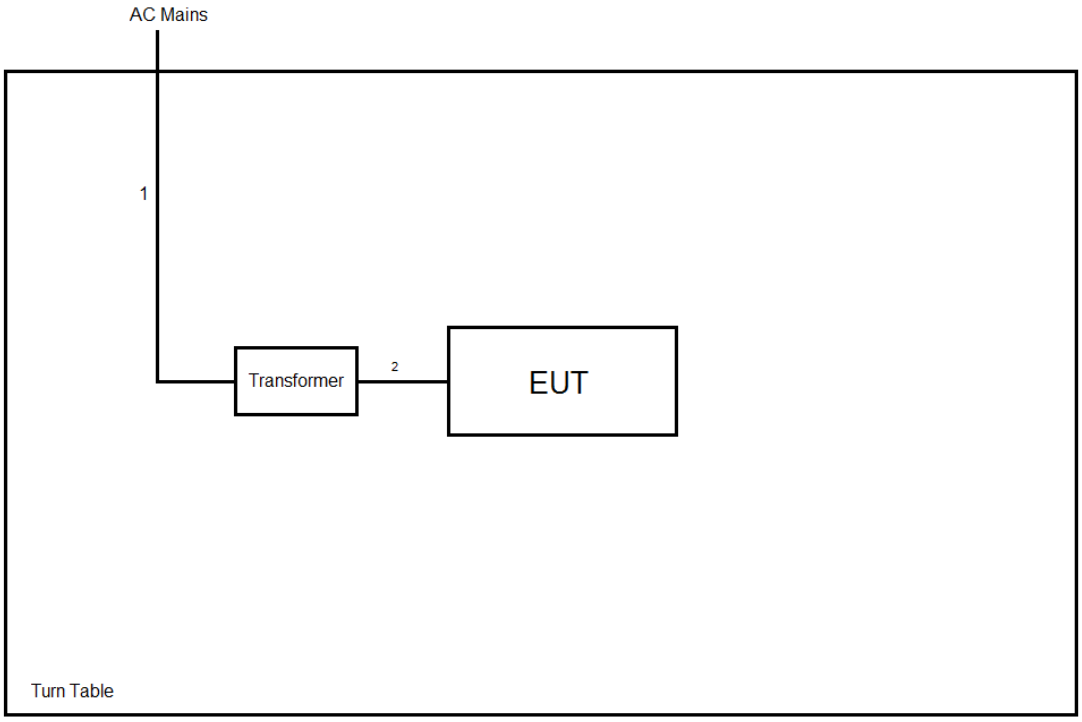
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	DC Power line	No	0.15m	-
2	AC Power line	No	1.8m	-

Test Setup Diagram – Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.8m	-
2	DC Power line	No	0.15m	-

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

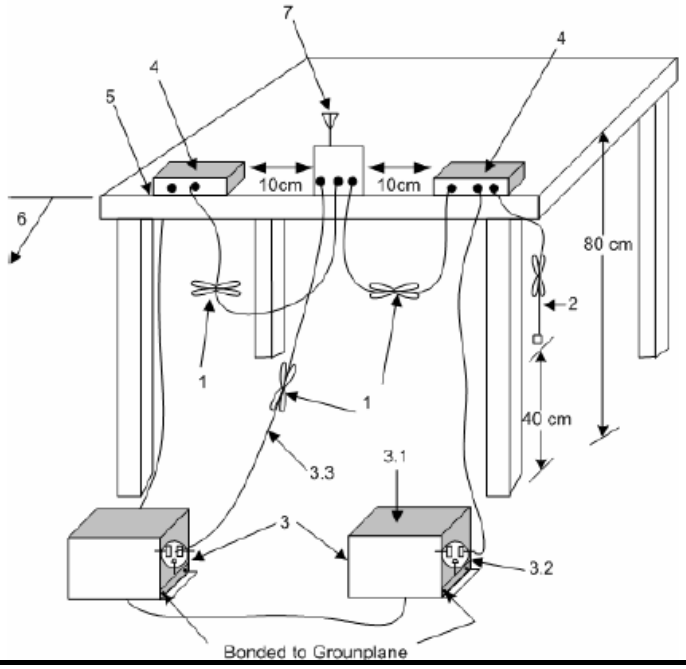
Refer a test equipment and calibration data table in this test report.

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

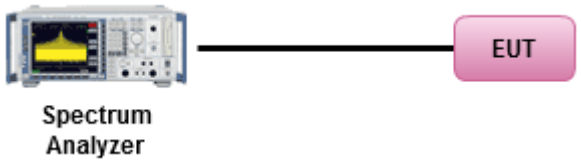
Refer a test equipment and calibration data table in this test report.

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 6.7 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

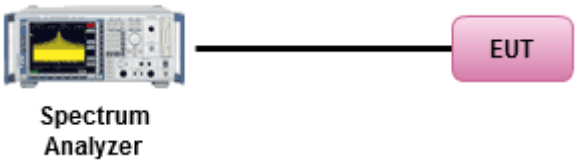
3.4.2 Measuring Instruments

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.	

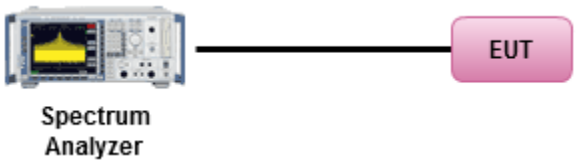
3.5.2 Measuring Instruments

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.

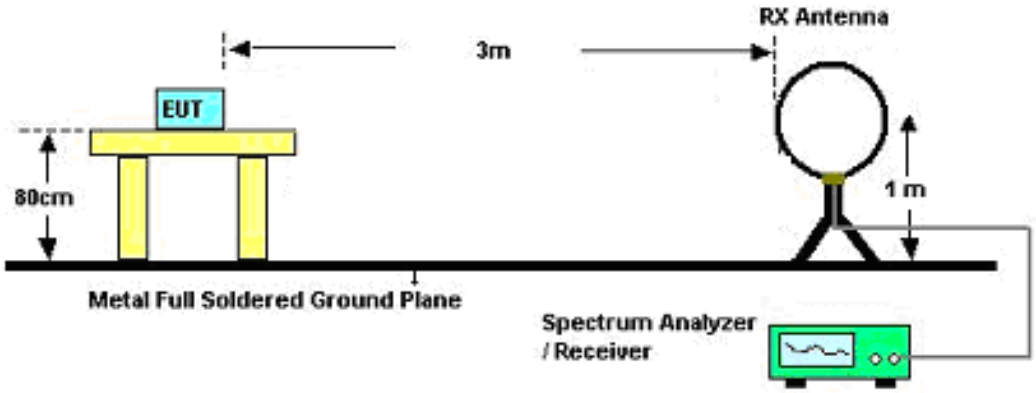
3.6.3 Test Procedures

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.	

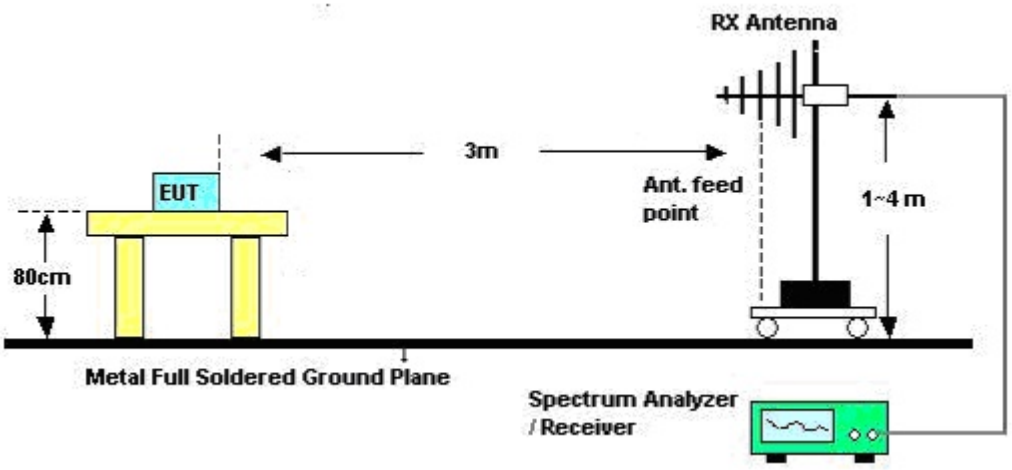
3.6.4 Test Setup

Emissions in Restricted Frequency Bands

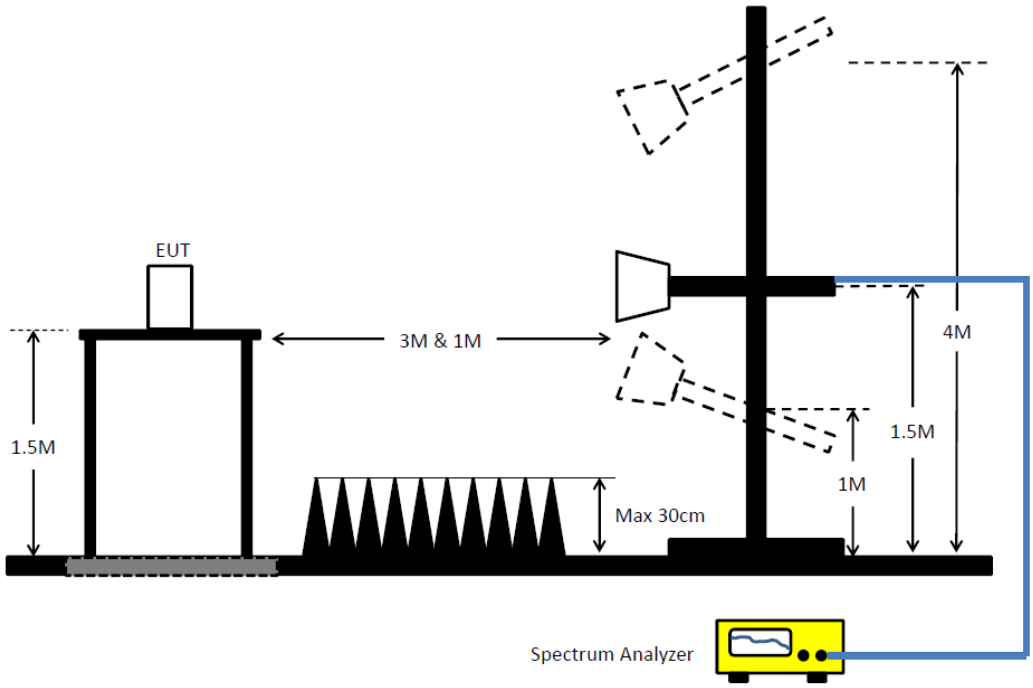
9kHz ~30MHz



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

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	Rohde & Schwarz	ESCS 30	838251/003	9 kHz ~ 2.75 GHz	13/Jun/2017	12/Jun/2018
LISN	R&S	ENV216	101295	9 kHz ~ 30 MHz	17/Nov/2017	16/Nov/2018
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9 kHz ~ 30 MHz	06/Oct/2017	05/Oct/2018
AC POWER	APC	AFC-11005G	F310050055	47 Hz ~ 63 Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2017	11/Oct/2018

NCR : Non-Calibration Require

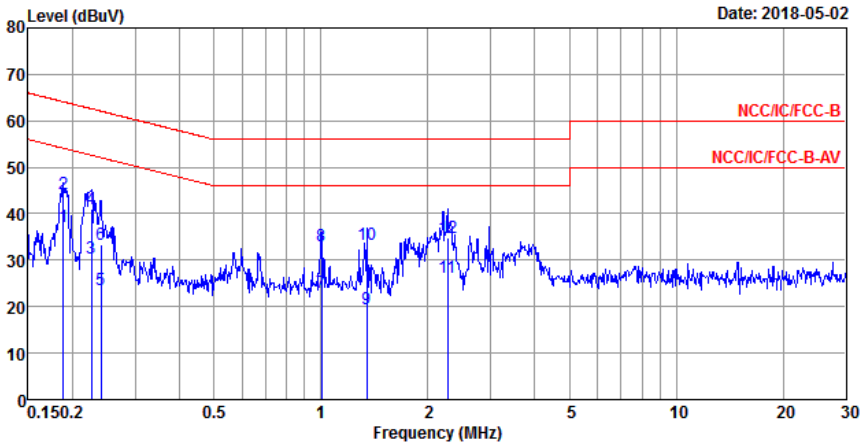
Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30 MHz ~ 1 GHz	23/Apr/2018	22/Apr/2019
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1 GHz ~ 18 GHz	20/Jun/2017	19/Jun/2018
Microwave Preamplifier	Agilent	8449B	3008A02326	1 GHz ~ 26.5 GHz	17/Jul/2017	16/Jul/2018
Amplifier	EMC	EMC9135	980232	9 kHz ~ 1 GHz	27/Apr/2018	26/Apr/2019
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10 Hz ~ 44 GHz	20/Jul/2017	19/Jul/2018
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D & MTJ6102-05	35418 / 3	30 MHz ~ 1 GHz	09/Sep/2017	08/Sep/2018
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120 D 1534	1 GHz ~ 18 GHz	30/Apr/2018	29/Apr/2019
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170614	18 GHz ~ 40 GHz	09/Feb/2018	08/Feb/2019
Preamplifier	MITEQ	TTA1840-35-H G	1864481	18 GHz ~ 40 GHz	24/Aug/2017	23/Aug/2018
Loop Antenna	TESEQ	HLA 6120	31244	9k – 30 MHz	29/Mar/2018	28/Mar/2019
RF Cable-R03m	Jye Bao	RG142	CB031	9 kHz ~ 1 GHz	02/Feb/2018	01/Feb/2019
RF Cable-high	SUHNER	SUCOFLEX104	MY34918/4	1 GHz ~ 40 GHz	02/Feb/2018	01/Feb/2019

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101515	9 kHz ~ 40 GHz	08/Dec/2017	07/Dec/2018
Power Sensor	Anritsu	MA2411B	1339407	300 MHz ~ 40 GHz	10/May/2017	09/May/2018
Power Meter	Anritsu	ML2495A	1517010	300 MHz ~ 40 GHz	06/Nov/2017	05/Nov/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10710/4	30 MHz ~ 26.5 GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30 MHz ~ 26.5 GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10713/4	30 MHz ~ 26.5 GHz	25/Aug/2017	24/Aug/2018
Signal Generator	R&S	SMR40	100116	10 MHz ~ 40 GHz	27/Jul/2017	26/Jul/2018

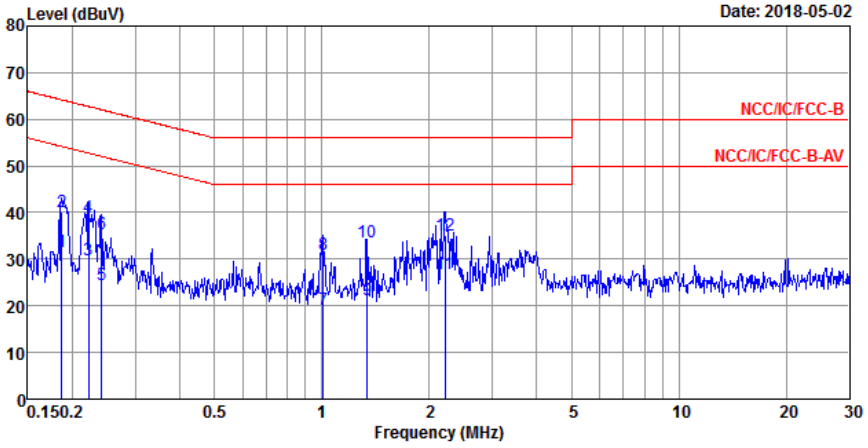
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	AC mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 MAX	0.19	37.16	-16.95	54.11	27.53	9.62	0.01	Average
2	0.19	44.16	-19.95	64.11	34.53	9.62	0.01	QP
3	0.23	30.38	-22.23	52.61	20.74	9.62	0.02	Average
4	0.23	41.11	-21.50	62.61	31.47	9.62	0.02	QP
5	0.24	23.66	-28.42	52.08	14.01	9.62	0.03	Average
6	0.24	33.30	-28.78	62.08	23.65	9.62	0.03	QP
7	1.00	23.11	-22.89	46.00	13.49	9.62	0.00	Average
8	1.00	33.10	-22.90	56.00	23.48	9.62	0.00	QP
9	1.34	19.35	-26.65	46.00	9.73	9.62	0.00	Average
10	1.34	33.39	-22.61	56.00	23.77	9.62	0.00	QP
11	2.27	26.42	-19.58	46.00	16.77	9.63	0.02	Average
12	2.27	34.85	-21.15	56.00	25.20	9.63	0.02	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	AC mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.19	31.62	-22.58	54.20	21.99	9.62	0.01	Average
2	0.19	40.07	-24.13	64.20	30.44	9.62	0.01	QP
3	0.22	29.85	-22.89	52.74	20.22	9.62	0.01	Average
4	0.22	38.98	-23.76	62.74	29.35	9.62	0.01	QP
5	0.24	24.41	-27.63	52.04	14.76	9.62	0.03	Average
6	0.24	35.55	-26.49	62.04	25.90	9.62	0.03	QP
7	1.01	19.16	-26.84	46.00	9.55	9.61	0.00	Average
8	1.01	31.05	-24.95	56.00	21.44	9.61	0.00	QP
9	1.34	21.37	-24.63	46.00	11.76	9.61	0.00	Average
10	1.34	33.58	-22.42	56.00	23.97	9.61	0.00	QP
11 MAX	2.21	26.88	-19.12	46.00	17.25	9.62	0.01	Average
12	2.21	35.23	-20.77	56.00	25.60	9.62	0.01	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)	711.25k	1.056M	1M06F1D	707.5k	1.052M

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;

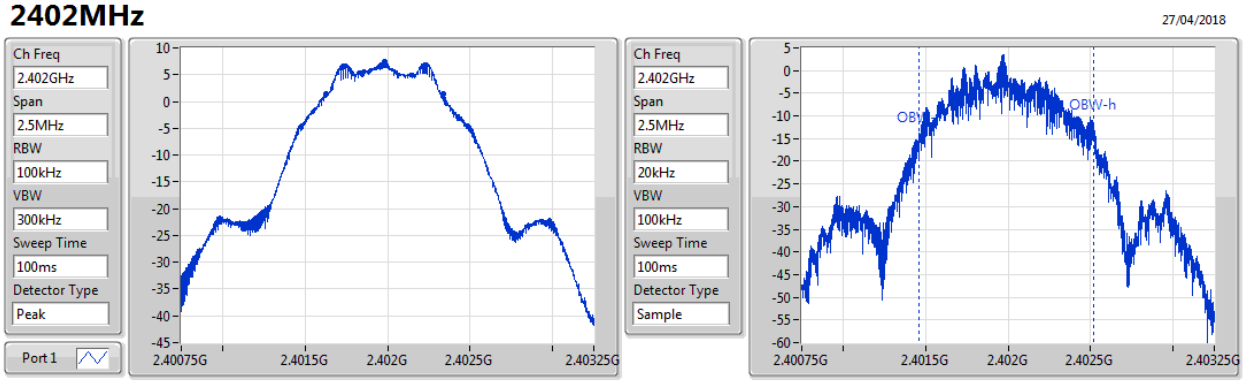
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	707.5k	1.056M
2440MHz	Pass	500k	708.75k	1.053M
2480MHz	Pass	500k	711.25k	1.052M

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

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

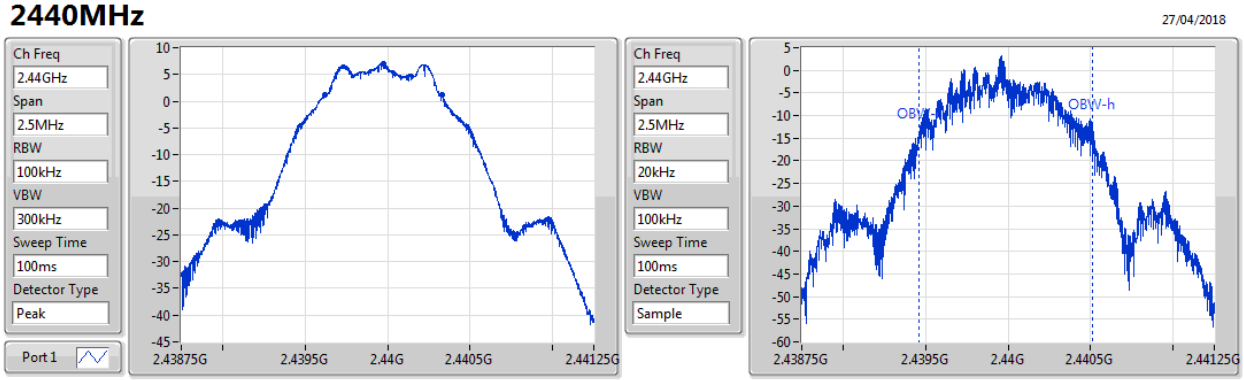
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
707.5k	2.401628G	2.402335G	1.056M	2.401463G	2.402518G	500k	1

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

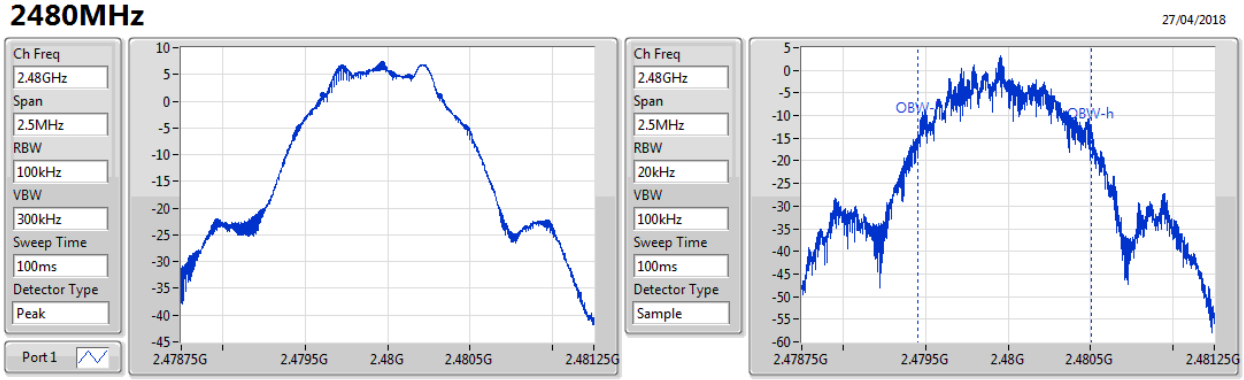
2440MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
708.75k	2.439619G	2.440328G	1.053M	2.439458G	2.440511G	500k	1

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

2480MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
711.25k	2.479609G	2.48032G	1.052M	2.479453G	2.480505G	500k	1

Summary

Mode	Power	Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	7.56	0.00570

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	1.37	7.56	30.00
2440MHz	Pass	1.08	7.36	30.00
2480MHz	Pass	1.09	7.36	30.00

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-7.11

RBW=3kHz.

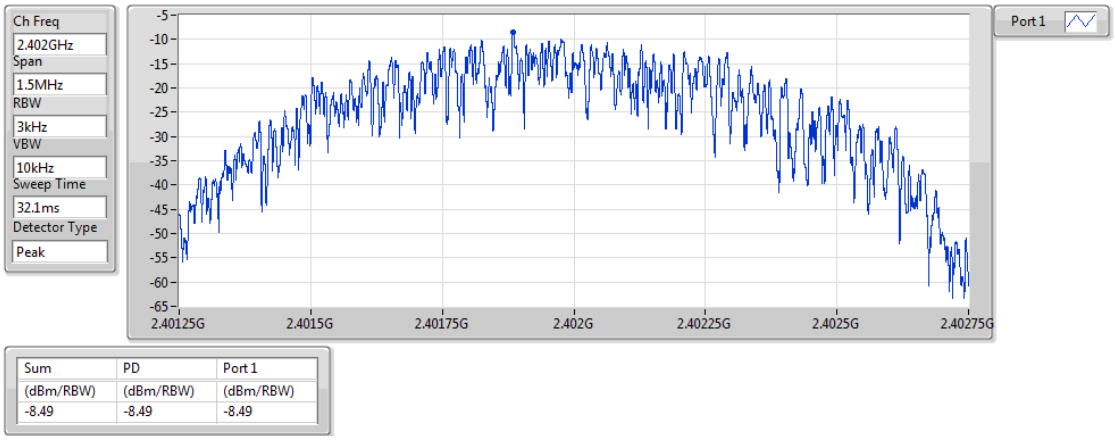
Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	1.37	-8.49	8.00
2440MHz	Pass	1.08	-8.02	8.00
2480MHz	Pass	1.09	-7.11	8.00

RBW=3kHz.

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

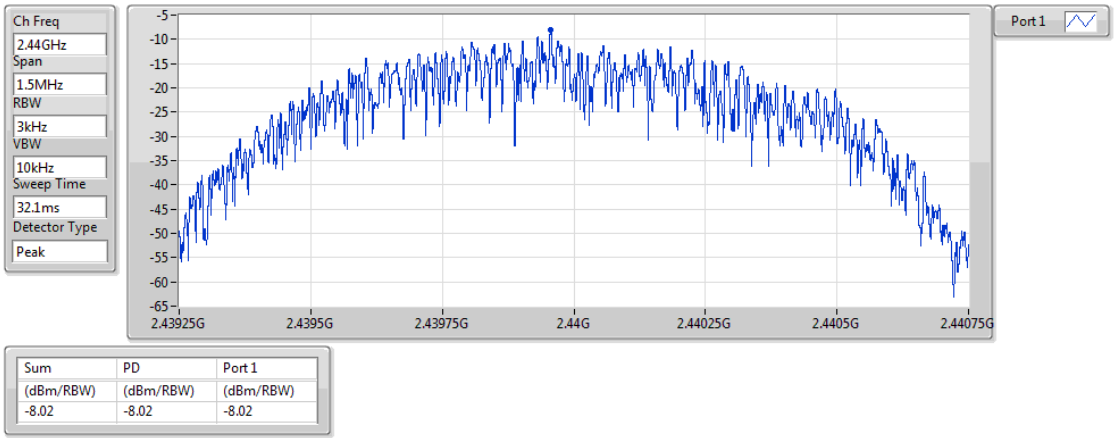
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.49	-8.49	-8.49

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

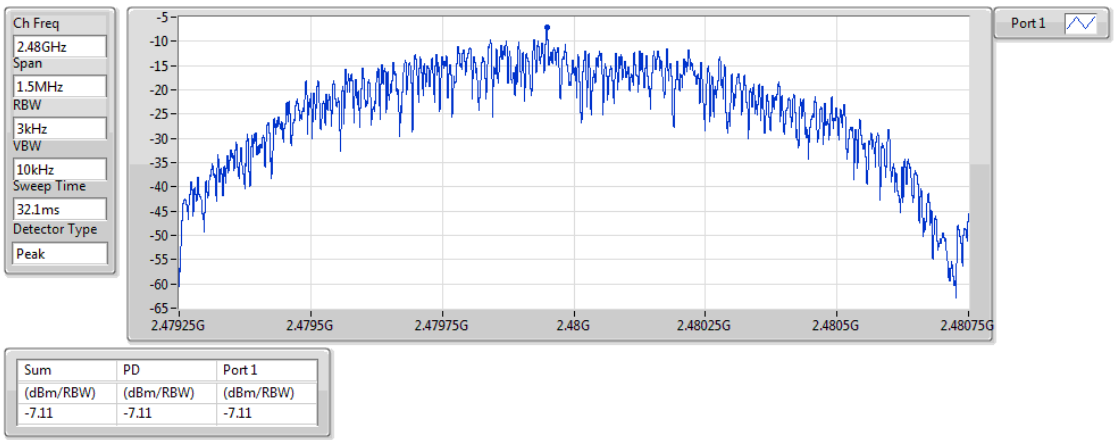
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.02	-8.02	-8.02

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

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.11	-7.11	-7.11

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	2.402171G	6.90	-23.10	147.216M	-39.99	2.39998G	-51.75	2.485184G	-59.19	24.535638G	-52.21	1

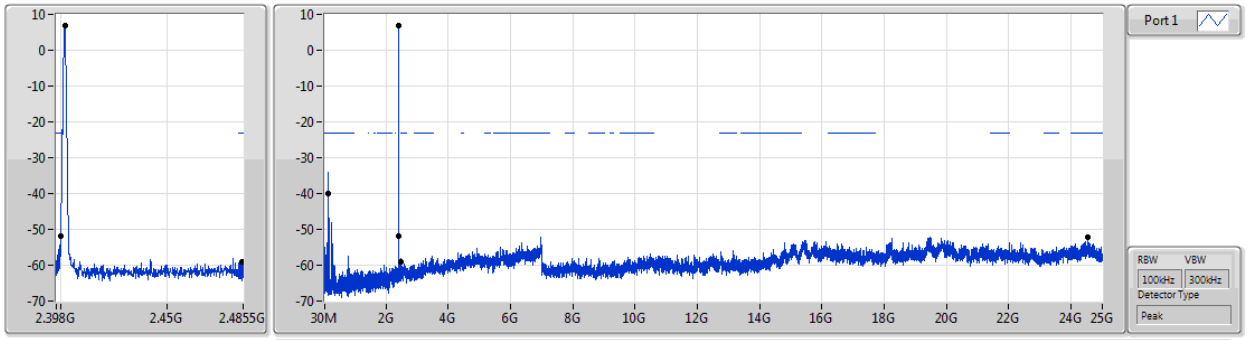
Result

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	2.402171G	6.90	-23.10	147.216M	-39.99	2.39998G	-51.75	2.485184G	-59.19	24.535638G	-52.21	1
2440MHz	Pass	2.402171G	6.90	-23.10	147.216M	-40.31	2.399952G	-58.12	2.484576G	-58.25	24.479352G	-52.34	1
2480MHz	Pass	2.402171G	6.90	-23.10	147.216M	-40.11	2.399776G	-59.11	2.484608G	-56.86	24.408994G	-53.22	1

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

2402MHz

27/04/2018

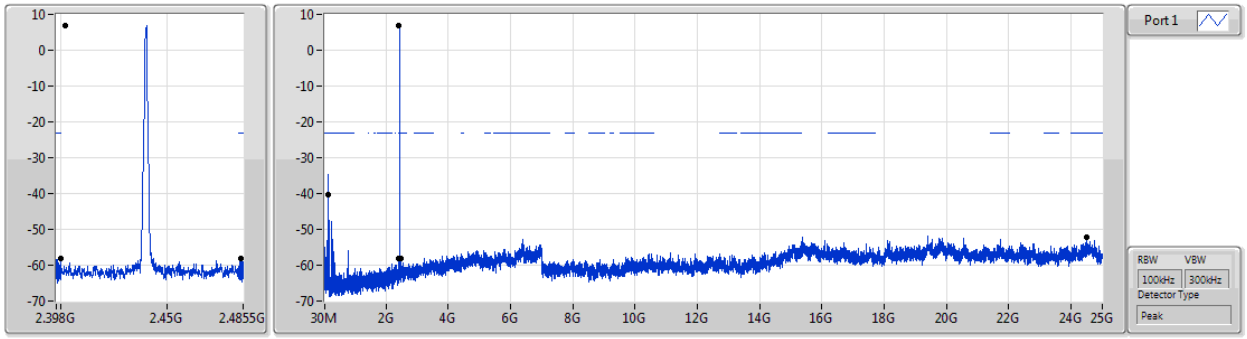


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402171G	6.90	-23.10	147.216M	-39.99	2.39998G	-51.75	2.485184G	-59.19	24.535638G	-52.21	1

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

2440MHz

27/04/2018

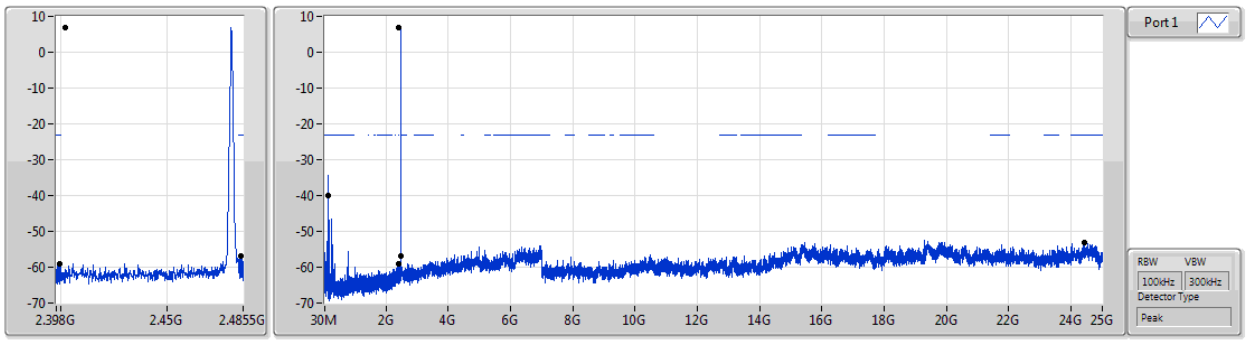


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402171G	6.90	-23.10	147.216M	-40.31	2.399952G	-58.12	2.484576G	-58.25	24.479352G	-52.34	1

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

2480MHz

27/04/2018



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402171G	6.90	-23.10	147.216M	-40.11	2.399776G	-59.11	2.484608G	-56.86	24.408994G	-53.22	1

Summary

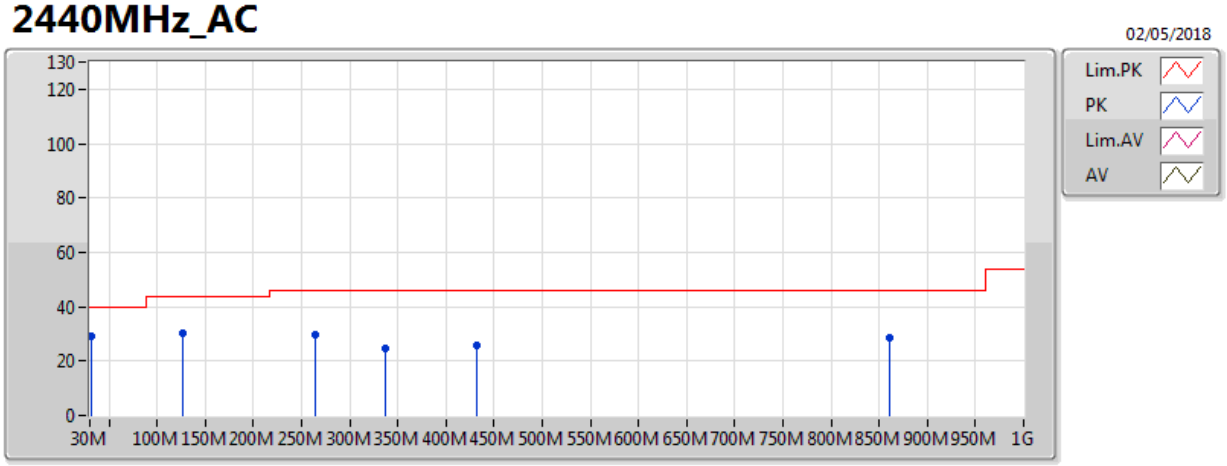
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	31.94M	28.86	40.00	-11.14	-14.32	3	Vertical	0	1.00	-

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	31.94M	28.86	40.00	-11.14	-14.32	3	Vertical	0	1.00	-
2440MHz	Pass	PK	127M	30.47	43.50	-13.03	-19.11	3	Vertical	0	1.00	-
2440MHz	Pass	PK	264.74M	29.68	46.00	-16.32	-15.73	3	Vertical	0	1.00	-
2440MHz	Pass	PK	336.52M	24.62	46.00	-21.38	-15.62	3	Vertical	0	1.00	-
2440MHz	Pass	PK	431.58M	25.50	46.00	-20.50	-12.93	3	Vertical	0	1.00	-
2440MHz	Pass	PK	860.32M	28.76	46.00	-17.24	-6.78	3	Vertical	0	1.00	-
2440MHz	Pass	PK	57.16M	28.51	40.00	-11.49	-25.32	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	103.72M	24.39	43.50	-19.11	-20.61	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	255.04M	32.12	46.00	-13.88	-16.14	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	357.86M	25.16	46.00	-20.84	-15.07	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	575.14M	23.25	46.00	-22.75	-10.60	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	858.38M	30.82	46.00	-15.18	-6.79	3	Horizontal	360	1.00	-

BT-LE(1Mbps)

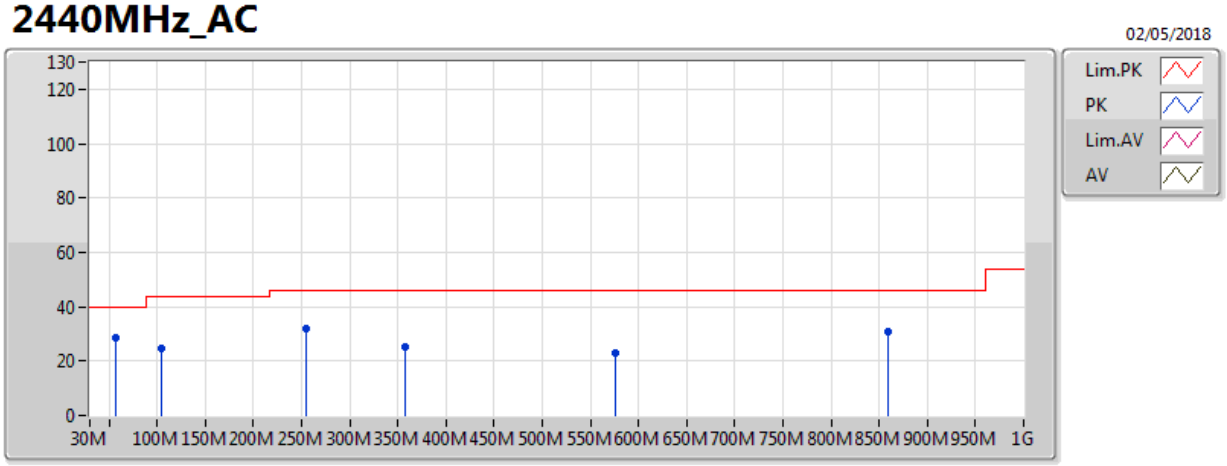
2440MHz_AC



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	31.94M	28.86	40.00	-11.14	-14.32	3	Vertical	0	1.00	-
PK	127M	30.47	43.50	-13.03	-19.11	3	Vertical	0	1.00	-
PK	264.74M	29.68	46.00	-16.32	-15.73	3	Vertical	0	1.00	-
PK	336.52M	24.62	46.00	-21.38	-15.62	3	Vertical	0	1.00	-
PK	431.58M	25.50	46.00	-20.50	-12.93	3	Vertical	0	1.00	-
PK	860.32M	28.76	46.00	-17.24	-6.78	3	Vertical	0	1.00	-

BT-LE(1Mbps)

2440MHz_AC



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	57.16M	28.51	40.00	-11.49	-25.32	3	Horizontal	360	1.00	-
PK	103.72M	24.39	43.50	-19.11	-20.61	3	Horizontal	360	1.00	-
PK	255.04M	32.12	46.00	-13.88	-16.14	3	Horizontal	360	1.00	-
PK	357.86M	25.16	46.00	-20.84	-15.07	3	Horizontal	360	1.00	-
PK	575.14M	23.25	46.00	-22.75	-10.60	3	Horizontal	360	1.00	-
PK	858.38M	30.82	46.00	-15.18	-6.79	3	Horizontal	360	1.00	-

Summary

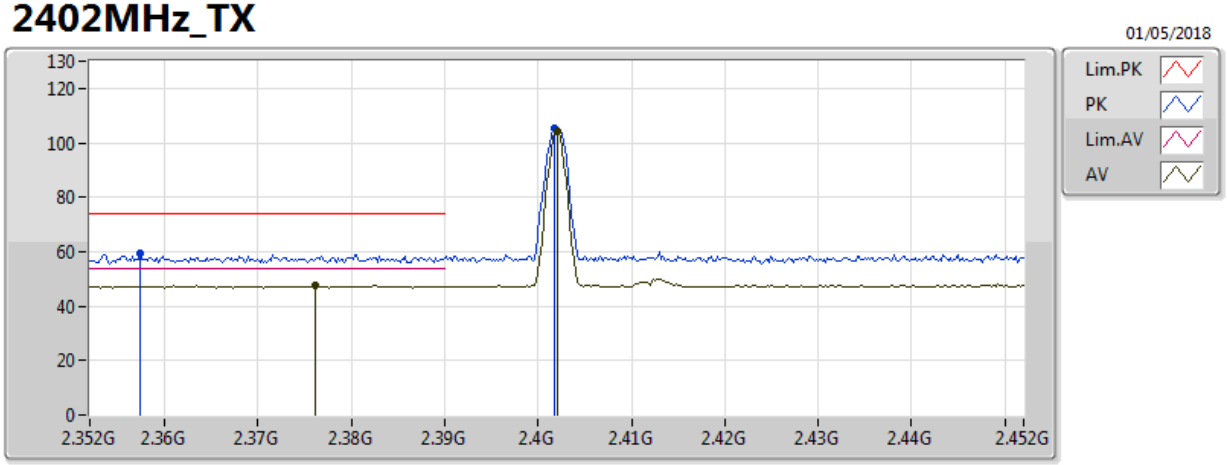
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4968G	48.22	54.00	-5.78	34.07	3	Horizontal	39	1.55	-

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	2.3762G	47.69	54.00	-6.31	34.04	3	Vertical	325	2.59	-
2402MHz	Pass	AV	2.402G	104.13	Inf	-Inf	34.05	3	Vertical	325	2.59	-
2402MHz	Pass	PK	2.3574G	59.25	74.00	-14.75	34.05	3	Vertical	325	2.59	-
2402MHz	Pass	PK	2.4018G	105.12	Inf	-Inf	34.05	3	Vertical	325	2.59	-
2402MHz	Pass	AV	2.3758G	47.45	54.00	-6.55	34.04	3	Horizontal	33	1.22	-
2402MHz	Pass	AV	2.402G	104.56	Inf	-Inf	34.05	3	Horizontal	33	1.22	-
2402MHz	Pass	PK	2.3892G	58.58	74.00	-15.42	34.05	3	Horizontal	33	1.22	-
2402MHz	Pass	PK	2.4018G	105.57	Inf	-Inf	34.05	3	Horizontal	33	1.22	-
2402MHz	Pass	AV	4.80394G	39.18	54.00	-14.82	4.23	3	Vertical	321	1.02	-
2402MHz	Pass	PK	4.80394G	51.15	74.00	-22.85	4.23	3	Vertical	321	1.02	-
2402MHz	Pass	AV	4.80394G	35.94	54.00	-18.06	4.23	3	Horizontal	175	1.27	-
2402MHz	Pass	PK	4.80394G	48.18	74.00	-25.82	4.23	3	Horizontal	175	1.27	-
2440MHz	Pass	AV	2.3804G	47.53	54.00	-6.47	34.05	3	Vertical	328	2.59	-
2440MHz	Pass	AV	2.44G	104.13	Inf	-Inf	34.06	3	Vertical	328	2.59	-
2440MHz	Pass	AV	2.4888G	47.94	54.00	-6.06	34.07	3	Vertical	328	2.59	-
2440MHz	Pass	PK	2.3736G	59.25	74.00	-14.75	34.05	3	Vertical	328	2.59	-
2440MHz	Pass	PK	2.44G	105.19	Inf	-Inf	34.06	3	Vertical	328	2.59	-
2440MHz	Pass	PK	2.484G	58.54	74.00	-15.46	34.07	3	Vertical	328	2.59	-
2440MHz	Pass	AV	2.3412G	47.42	54.00	-6.58	34.05	3	Horizontal	39	1.55	-
2440MHz	Pass	AV	2.44G	104.44	Inf	-Inf	34.06	3	Horizontal	39	1.55	-
2440MHz	Pass	AV	2.4968G	48.22	54.00	-5.78	34.07	3	Horizontal	39	1.55	-
2440MHz	Pass	PK	2.352G	58.39	74.00	-15.61	34.05	3	Horizontal	39	1.55	-
2440MHz	Pass	PK	2.4396G	105.49	Inf	-Inf	34.06	3	Horizontal	39	1.55	-
2440MHz	Pass	PK	2.4952G	58.81	74.00	-15.19	34.07	3	Horizontal	39	1.55	-
2440MHz	Pass	AV	4.87994G	39.48	54.00	-14.52	4.51	3	Vertical	318	1.05	-
2440MHz	Pass	PK	4.87994G	50.88	74.00	-23.12	4.51	3	Vertical	318	1.05	-
2440MHz	Pass	AV	4.87994G	36.26	54.00	-17.74	4.51	3	Horizontal	175	1.25	-
2440MHz	Pass	PK	4.87994G	47.66	74.00	-26.34	4.51	3	Horizontal	175	1.25	-
2480MHz	Pass	AV	2.48G	103.47	Inf	-Inf	34.07	3	Vertical	345	2.19	-
2480MHz	Pass	AV	2.4924G	47.85	54.00	-6.15	34.06	3	Vertical	345	2.19	-
2480MHz	Pass	PK	2.4798G	104.49	Inf	-Inf	34.07	3	Vertical	345	2.19	-
2480MHz	Pass	PK	2.4986G	58.89	74.00	-15.11	34.07	3	Vertical	345	2.19	-
2480MHz	Pass	AV	2.48G	104.30	Inf	-Inf	34.07	3	Horizontal	39	1.01	-
2480MHz	Pass	AV	2.4866G	47.64	54.00	-6.36	34.07	3	Horizontal	39	1.01	-
2480MHz	Pass	PK	2.4798G	105.34	Inf	-Inf	34.07	3	Horizontal	39	1.01	-
2480MHz	Pass	PK	2.4888G	59.18	74.00	-14.82	34.07	3	Horizontal	39	1.01	-
2480MHz	Pass	AV	4.95994G	41.02	54.00	-12.98	4.82	3	Vertical	323	1.08	-
2480MHz	Pass	PK	4.95994G	52.54	74.00	-21.46	4.82	3	Vertical	323	1.08	-
2480MHz	Pass	AV	4.95982G	36.83	54.00	-17.17	4.82	3	Horizontal	175	1.44	-
2480MHz	Pass	PK	4.95982G	47.88	74.00	-26.12	4.82	3	Horizontal	175	1.44	-

BT-LE(1Mbps)

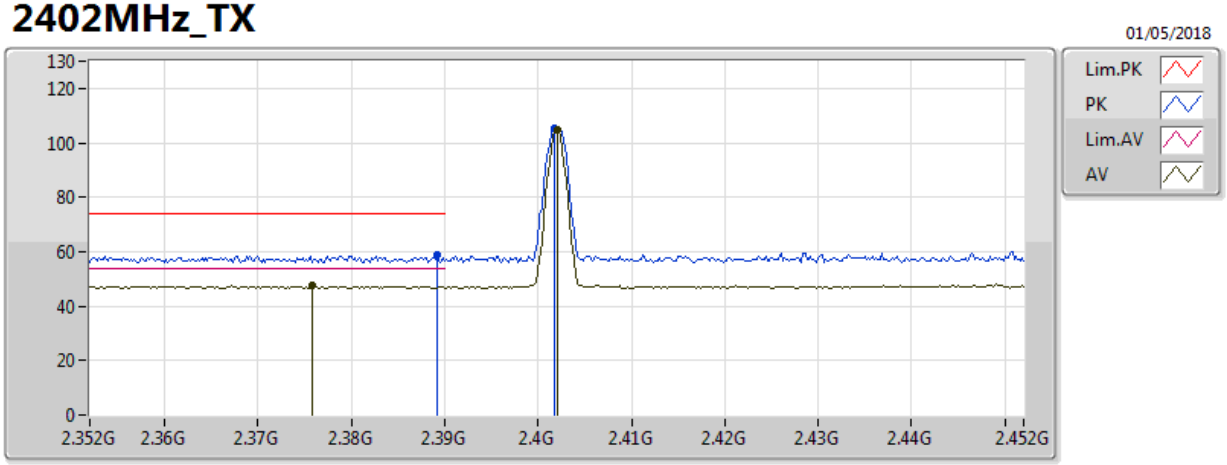
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3762G	47.69	54.00	-6.31	34.04	3	Vertical	325	2.59	-
AV	2.402G	104.13	Inf	-Inf	34.05	3	Vertical	325	2.59	-
PK	2.3574G	59.25	74.00	-14.75	34.05	3	Vertical	325	2.59	-
PK	2.4018G	105.12	Inf	-Inf	34.05	3	Vertical	325	2.59	-

BT-LE(1Mbps)

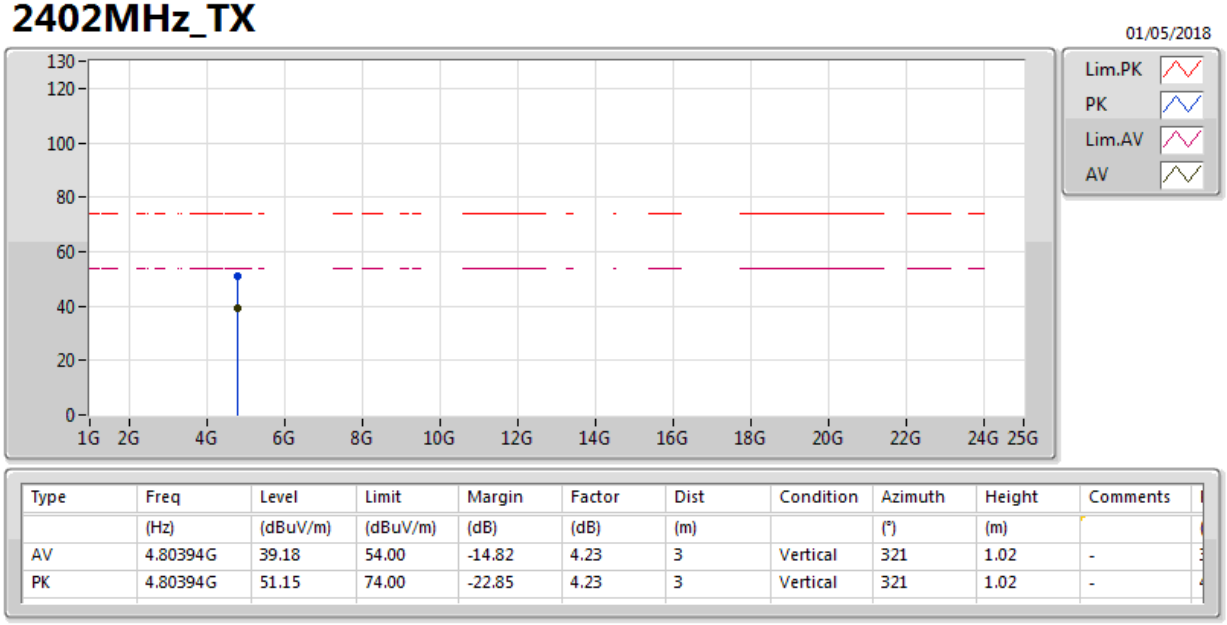
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3758G	47.45	54.00	-6.55	34.04	3	Horizontal	33	1.22	-
AV	2.402G	104.56	Inf	-Inf	34.05	3	Horizontal	33	1.22	-
PK	2.3892G	58.58	74.00	-15.42	34.05	3	Horizontal	33	1.22	-
PK	2.4018G	105.57	Inf	-Inf	34.05	3	Horizontal	33	1.22	-

BT-LE(1Mbps)

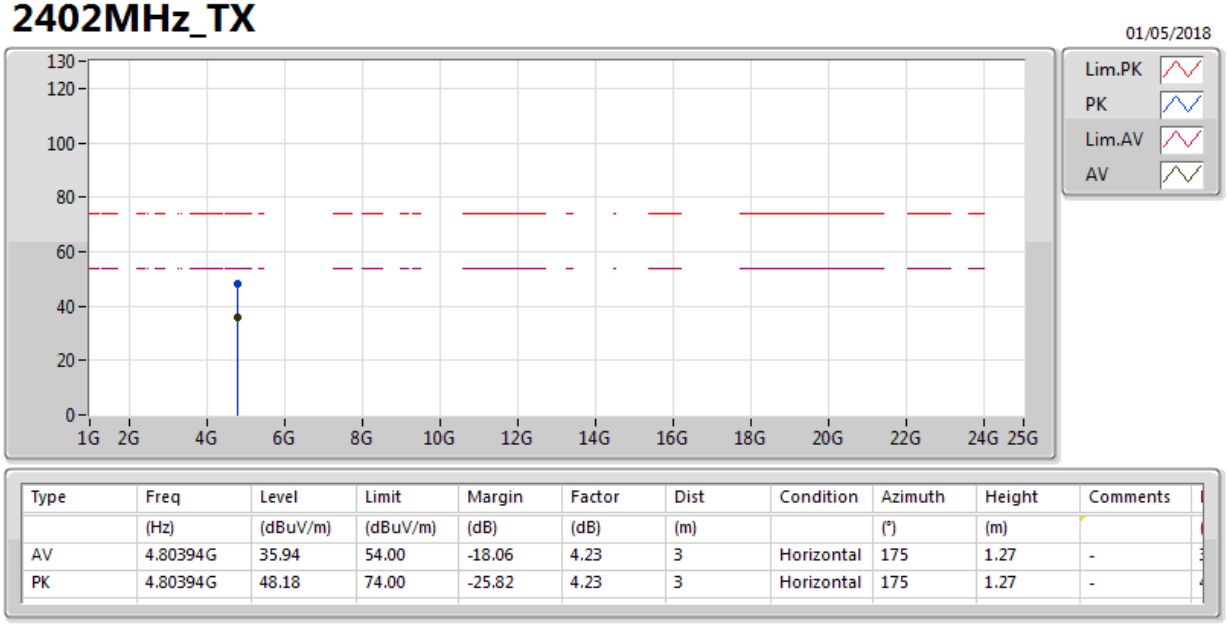
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.80394G	39.18	54.00	-14.82	4.23	3	Vertical	321	1.02	-
PK	4.80394G	51.15	74.00	-22.85	4.23	3	Vertical	321	1.02	-

BT-LE(1Mbps)

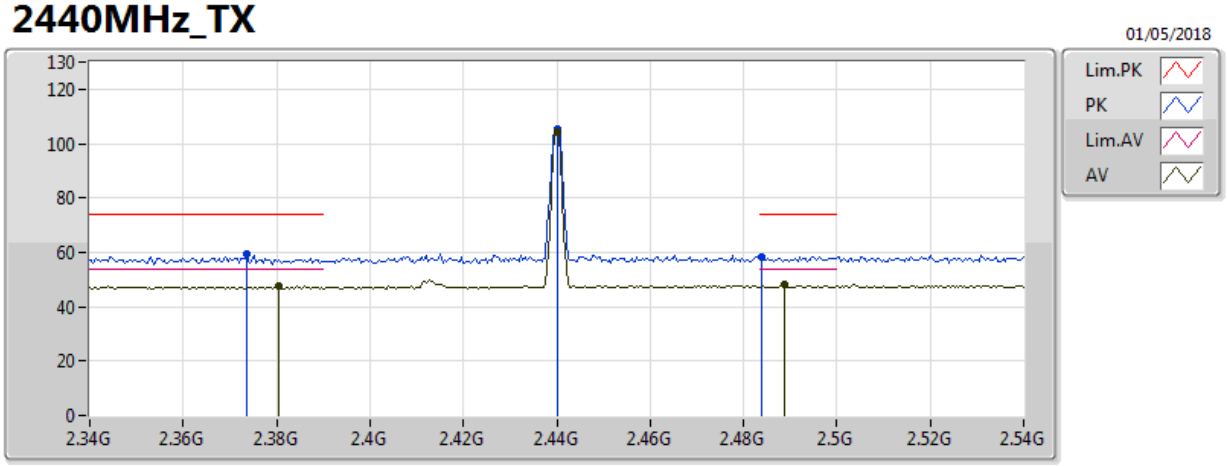
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.80394G	35.94	54.00	-18.06	4.23	3	Horizontal	175	1.27	-
PK	4.80394G	48.18	74.00	-25.82	4.23	3	Horizontal	175	1.27	-

BT-LE(1Mbps)

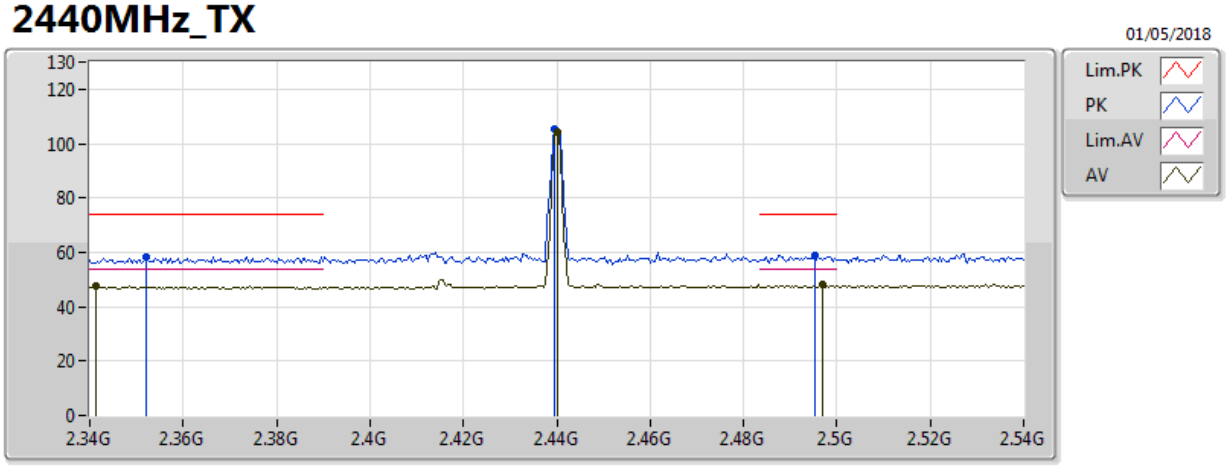
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3804G	47.53	54.00	-6.47	34.05	3	Vertical	328	2.59	-
AV	2.44G	104.13	Inf	-Inf	34.06	3	Vertical	328	2.59	-
AV	2.4888G	47.94	54.00	-6.06	34.07	3	Vertical	328	2.59	-
PK	2.3736G	59.25	74.00	-14.75	34.05	3	Vertical	328	2.59	-
PK	2.44G	105.19	Inf	-Inf	34.06	3	Vertical	328	2.59	-
PK	2.484G	58.54	74.00	-15.46	34.07	3	Vertical	328	2.59	-

BT-LE(1Mbps)

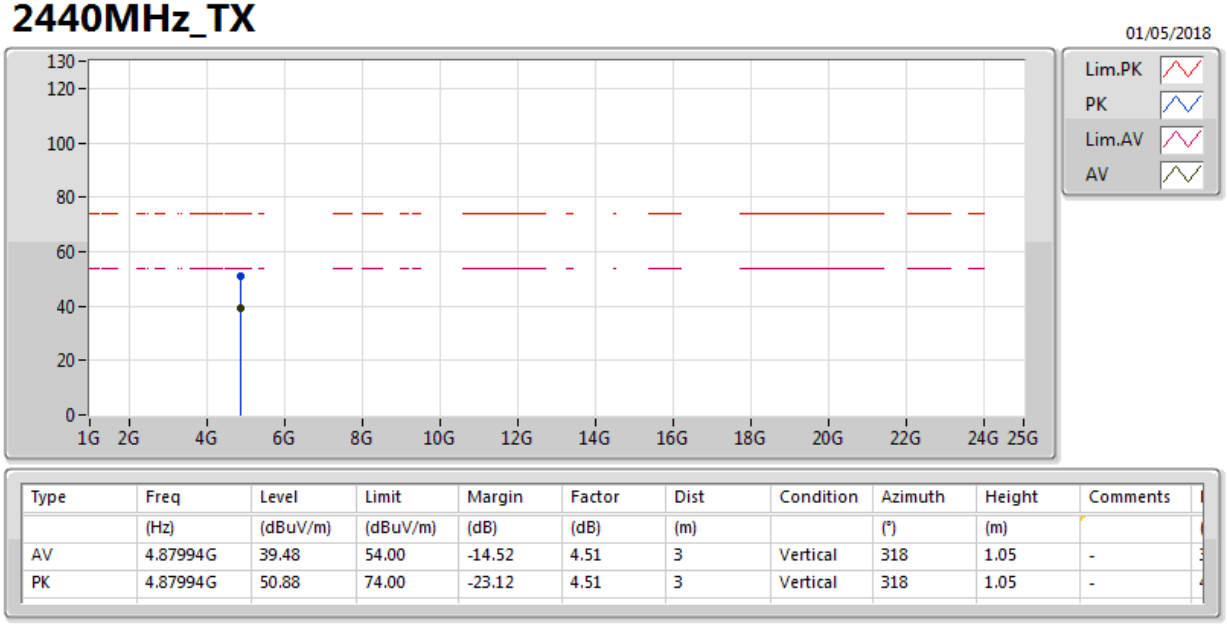
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3412G	47.42	54.00	-6.58	34.05	3	Horizontal	39	1.55	-
AV	2.44G	104.44	Inf	-Inf	34.06	3	Horizontal	39	1.55	-
AV	2.4968G	48.22	54.00	-5.78	34.07	3	Horizontal	39	1.55	-
PK	2.352G	58.39	74.00	-15.61	34.05	3	Horizontal	39	1.55	-
PK	2.4396G	105.49	Inf	-Inf	34.06	3	Horizontal	39	1.55	-
PK	2.4952G	58.81	74.00	-15.19	34.07	3	Horizontal	39	1.55	-

BT-LE(1Mbps)

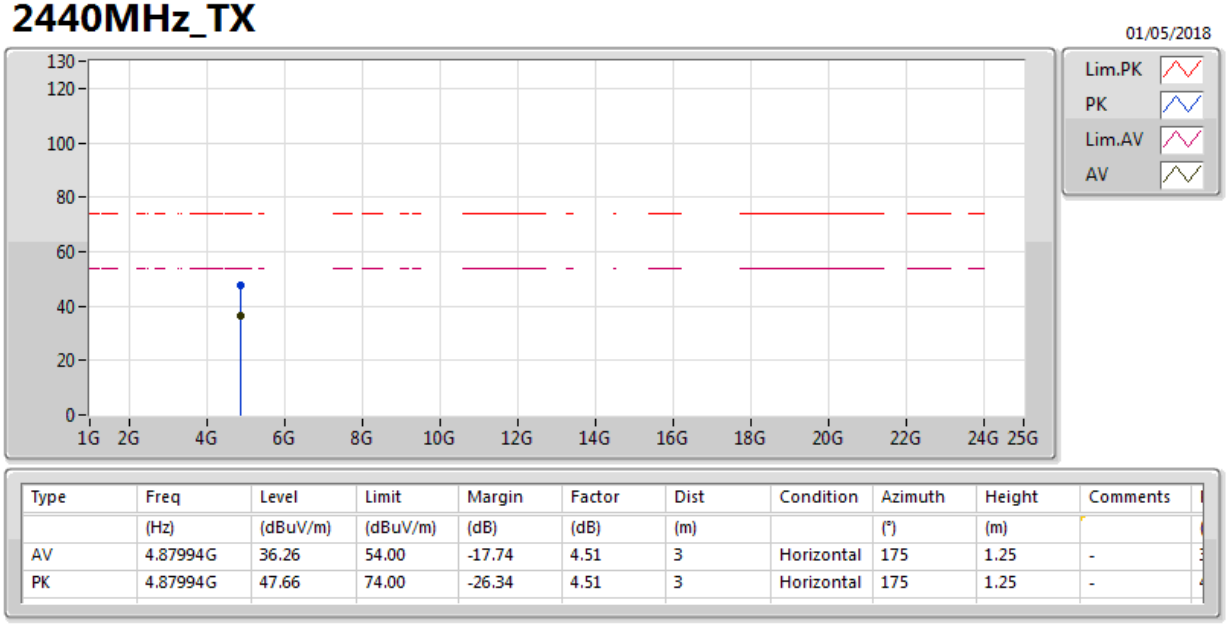
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.87994G	39.48	54.00	-14.52	4.51	3	Vertical	318	1.05	-
PK	4.87994G	50.88	74.00	-23.12	4.51	3	Vertical	318	1.05	-

BT-LE(1Mbps)

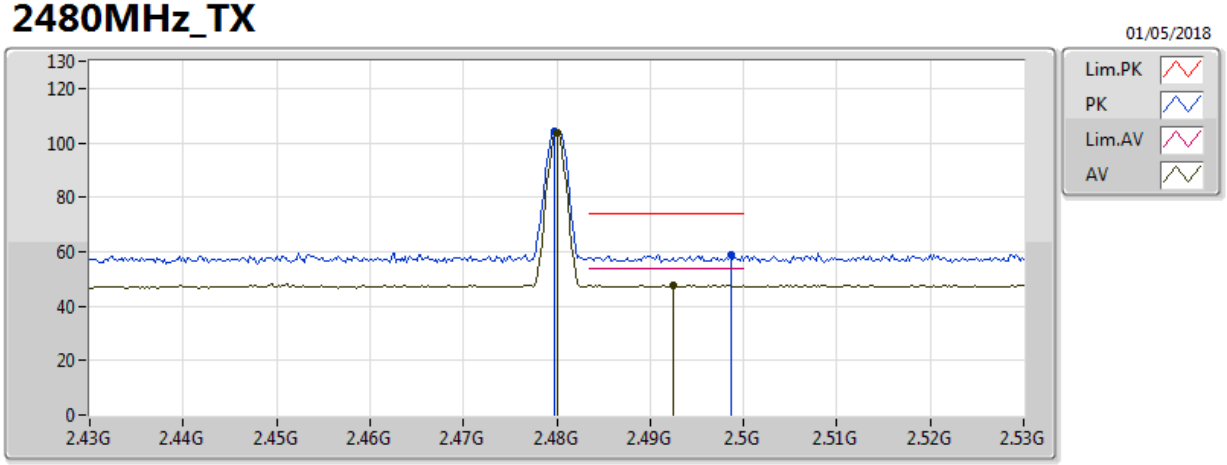
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.87994G	36.26	54.00	-17.74	4.51	3	Horizontal	175	1.25	-
PK	4.87994G	47.66	74.00	-26.34	4.51	3	Horizontal	175	1.25	-

BT-LE(1Mbps)

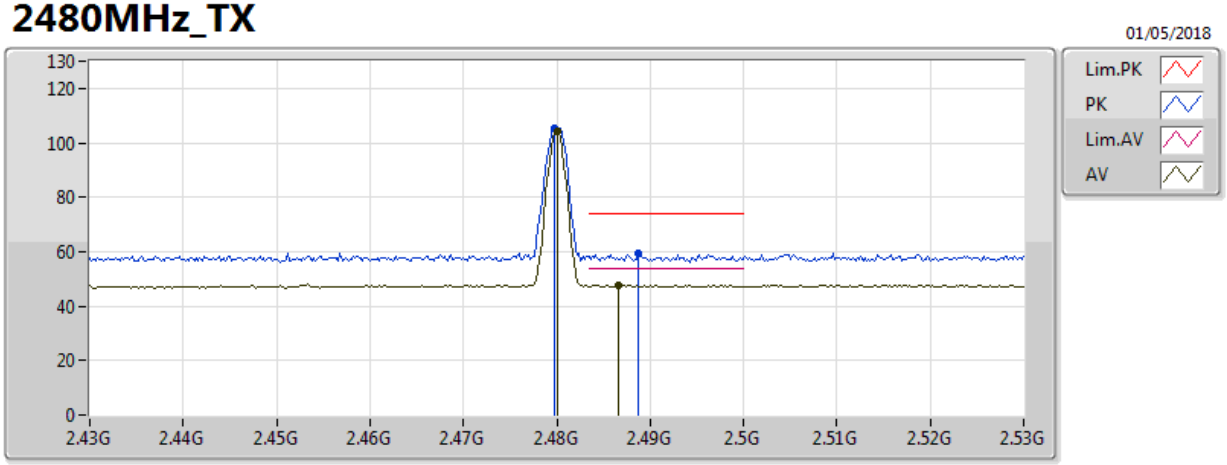
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.48G	103.47	Inf	-Inf	34.07	3	Vertical	345	2.19	-
AV	2.4924G	47.85	54.00	-6.15	34.06	3	Vertical	345	2.19	-
PK	2.4798G	104.49	Inf	-Inf	34.07	3	Vertical	345	2.19	-
PK	2.4986G	58.89	74.00	-15.11	34.07	3	Vertical	345	2.19	-

BT-LE(1Mbps)

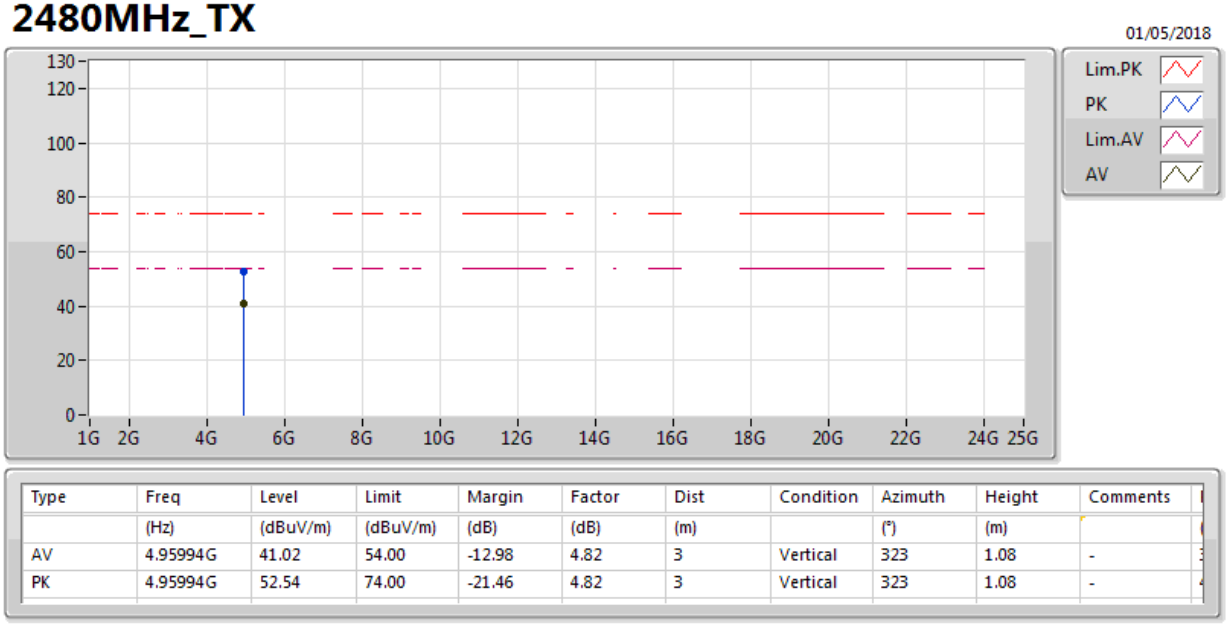
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.48G	104.30	Inf	-Inf	34.07	3	Horizontal	39	1.01	-
AV	2.4866G	47.64	54.00	-6.36	34.07	3	Horizontal	39	1.01	-
PK	2.4798G	105.34	Inf	-Inf	34.07	3	Horizontal	39	1.01	-
PK	2.4888G	59.18	74.00	-14.82	34.07	3	Horizontal	39	1.01	-

BT-LE(1Mbps)

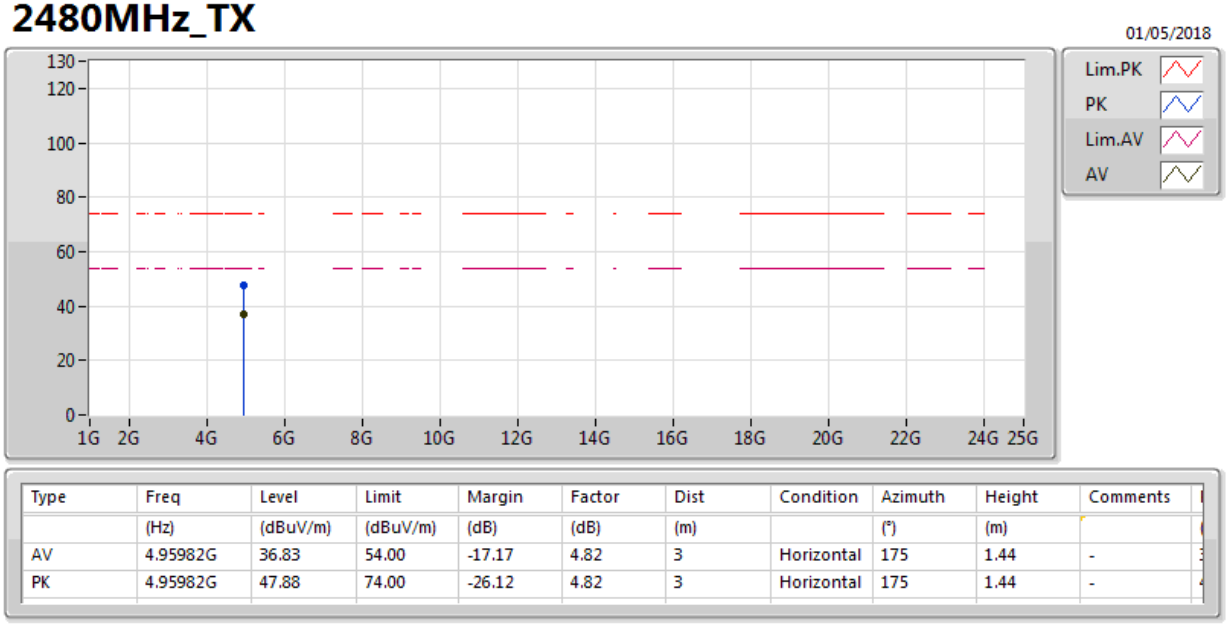
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.95994G	41.02	54.00	-12.98	4.82	3	Vertical	323	1.08	-
PK	4.95994G	52.54	74.00	-21.46	4.82	3	Vertical	323	1.08	-

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	4.95982G	36.83	54.00	-17.17	4.82	3	Horizontal	175	1.44	-
PK	4.95982G	47.88	74.00	-26.12	4.82	3	Horizontal	175	1.44	-