

FCC Test Report

FCC ID : U4FTBII
Equipment : Wireless Equipment
Brand Name : Datalogic
Model Name : TBII
Applicant : Datalogic S.r.l.
Via S.Vitalino, 13 Calderara di Reno 40012 Italy
Manufacturer : SparkLAN Communications, Inc.
8F., No. 257, Sec. 2, Tiding Blvd., Neihu District,
Taipei 11493, Taiwan
Standard : 47 CFR FCC Part 15.247

The product was received on Dec. 13, 2018, and testing was started from Jan. 15, 2019 and completed on Jan. 15, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

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History of this test report

[illegible]

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	FCC 15.203
-	15.207	AC Power-line Conducted Emissions	Not Required	FCC 15.207
-	15.247(a)	DTS Bandwidth	Not Required	≥500kHz
-	15.247(b)	Maximum Conducted Output Power	Not Required	Power [dBm]:30
-	15.247(e)	Power Spectral Density	Not Required	PSD [dBm/3kHz]:8
-	15.247(d)	Emissions in Non-restricted Frequency Bands	Not Required	Non-Restricted Bands: >30 dBc
3.1	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and explanations:

None

Reviewed by: Jackson Tsai

Report Producer: Debby Hung

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	HUBER+SUHNER®	1399.99.0149	PCB antenna	Mini i-Pex
2	HUBER+SUHNER®	1399.99.0151	PCB antenna	Mini i-Pex

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	1	1	1
2	2	1	1	-

For 2.4GHz function:

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

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

For BT function:

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

Ant. 1 (port 1) could transmit/receive simultaneously.

For 5GHz function:

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

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

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From Host system		
EUT Function	<input checked="" type="checkbox"/> Point-to-multipoint	<input checked="" type="checkbox"/> Point-to-point	
Type of EUT			
<input checked="" type="checkbox"/>	Stand-alone		
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.:		...
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.:		...
<input type="checkbox"/>	Other:		

1.1.4 Table for Permissive Change

This product is an extension of original one reported under FCC ID : U4FTBII (Grant date: December 28, 2018). Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
Antenna 1 and Antenna 2 was added	Radiated Emissions was evaluated

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 v05

1.3 Testing Location Information

Testing Location			
<input checked="" type="checkbox"/>	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.			
<input type="checkbox"/>	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
Radiated	03CH03-HY	Justin	25.3°C / 48%	15/Jan/2019


1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

2 Test Configuration of EUT

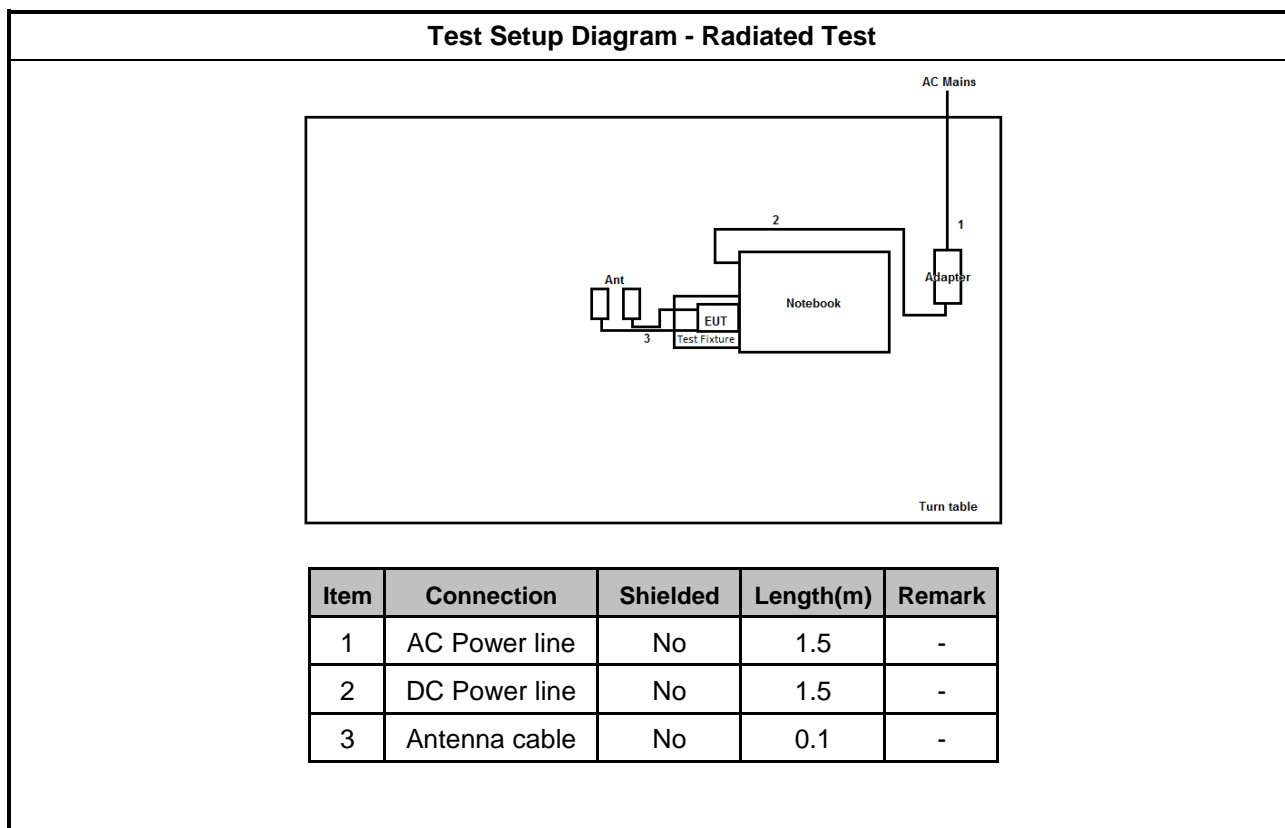
2.1 The Worst Case Measurement Configuration

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	CTX
1	NB Mode
Orthogonal Planes of EUT	Z Plane
	
Worst Planes of EUT	V

2.2 Support Equipment

Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	Dell	E4300	DoC
2	AC Adapter for NB	Dell	LA90PS1-00	-
3	Test Fixture	Sporton	-	-

2.3 Test Setup Diagram



3 Transmitter Test Result

3.1 Emissions in Restricted Frequency Bands

3.1.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

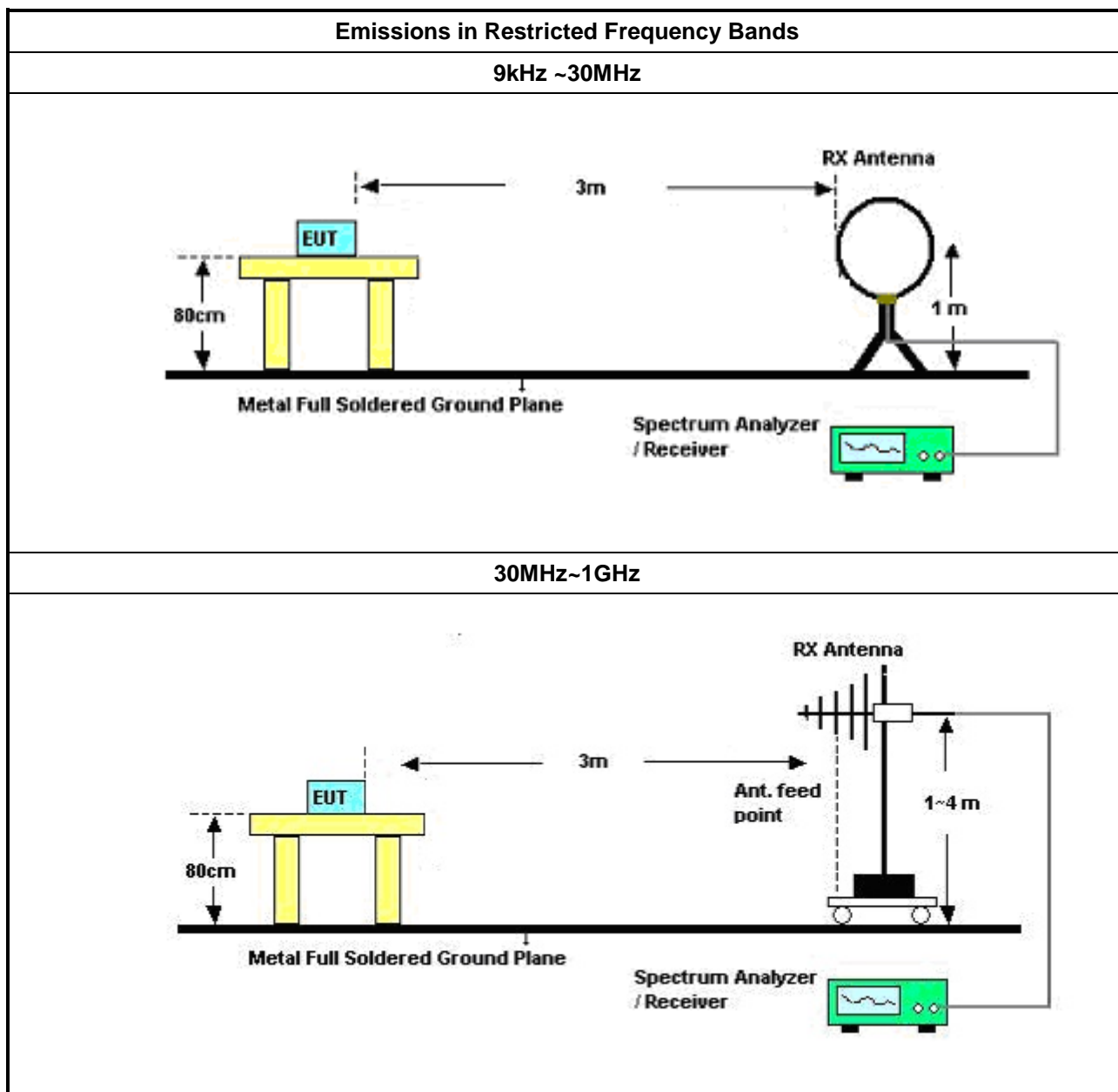
3.1.2 Measuring Instruments

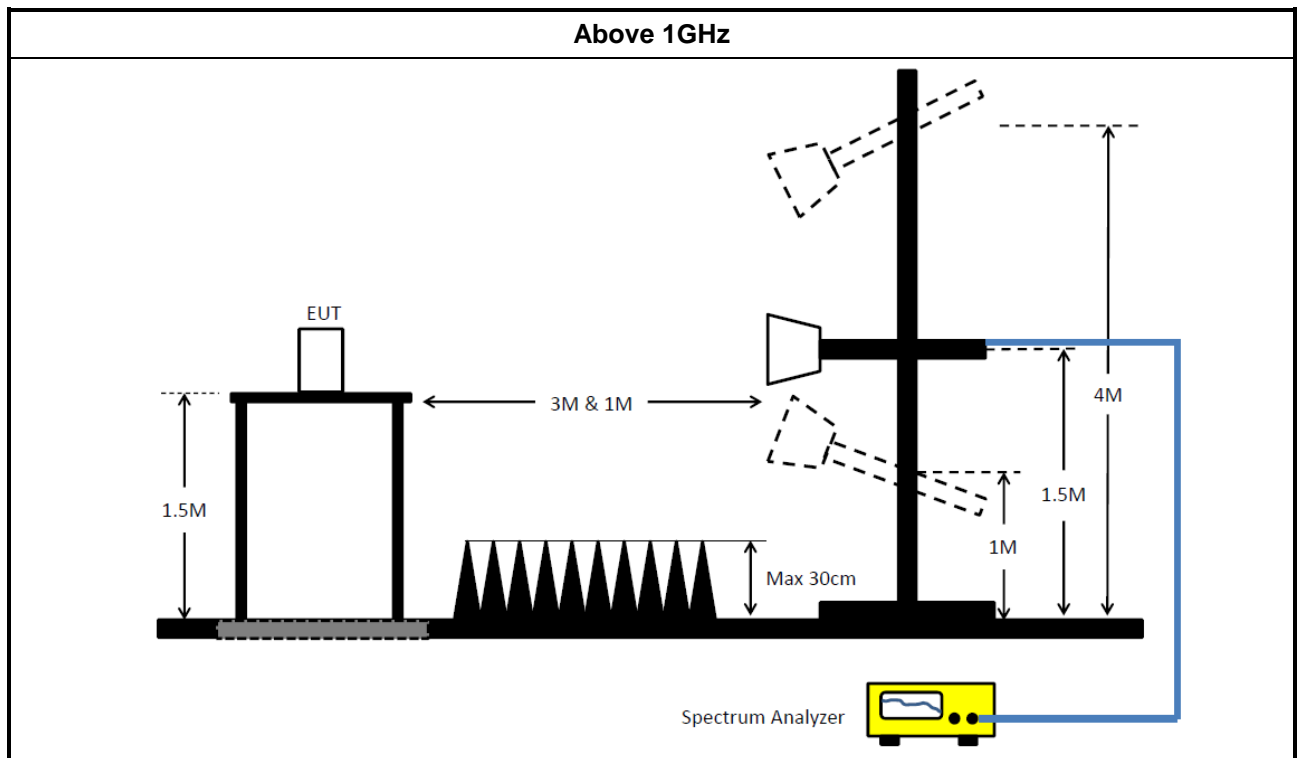
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. 	
<ul style="list-style-type: none"> 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. 	
<ul style="list-style-type: none"> For the transmitter unwanted emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
<ul style="list-style-type: none"> For the transmitter band-edge emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	<ul style="list-style-type: none"> Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	<ul style="list-style-type: none"> Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
<ul style="list-style-type: none"> Use the following spectrum analyzer settings: 	
	<ul style="list-style-type: none"> Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	<ul style="list-style-type: none"> Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.

3.1.4 Test Setup





3.1.5 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.

3.1.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix A

4 Test Equipment and Calibration Data

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	30/Oct/2018	29/Oct/2019
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	30/Oct/2018	29/Oct/2019
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	23/Apr/2018	19/Apr/2019
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	10/Apr/2018	09/Apr/2019
Bilog Antenna with 5dB Pad	ETS	3142B & MTJ6102-05	00022055	26 MHz - 3 GHz	19/Nov/2018	18/Nov/2019
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	05/Sep/2018	04/Sep/2019
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	18/Jul/2018	17/Jul/2019
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	29/Jan/2018	28/Jan/2019
RF Cable-high	SUHNER	SUCOFLEX 106	CB222	1GHz ~ 40GHz	29/Jan/2018	28/Jan/2019
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz ~ 40GHz	06/Feb/ 2018	05/Feb/2019
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz ~ 18GHz	18/Apr/ 2018	17/Apr/2019
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	24/Aug/2018	23/Aug/2019



RSE TX above 1GHz Result

Appendix A

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	2.4956G	48.35	54.00	-5.65	31.00	3	Horizontal	352	1.45	-

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	2.377G	47.19	54.00	-6.81	30.64	3	Vertical	191	1.26	-
2402MHz	Pass	AV	2.402G	83.07	Inf	-Inf	30.72	3	Vertical	191	1.26	-
2402MHz	Pass	PK	2.377G	58.31	74.00	-15.69	30.64	3	Vertical	191	1.26	-
2402MHz	Pass	PK	2.4018G	84.32	Inf	-Inf	30.72	3	Vertical	191	1.26	-
2402MHz	Pass	AV	2.3758G	47.44	54.00	-6.56	30.64	3	Horizontal	354	1.77	-
2402MHz	Pass	AV	2.402G	90.69	Inf	-Inf	30.72	3	Horizontal	354	1.77	-
2402MHz	Pass	PK	2.3606G	57.72	74.00	-16.28	30.60	3	Horizontal	354	1.77	-
2402MHz	Pass	PK	2.4022G	91.82	Inf	-Inf	30.73	3	Horizontal	354	1.77	-
2402MHz	Pass	AV	4.804G	40.57	54.00	-13.43	6.49	3	Vertical	30	1.50	-
2402MHz	Pass	PK	4.80406G	48.13	74.00	-25.87	6.49	3	Vertical	30	1.50	-
2402MHz	Pass	AV	4.804G	41.16	54.00	-12.84	6.49	3	Horizontal	4	2.53	-
2402MHz	Pass	PK	4.80424G	48.33	74.00	-25.67	6.49	3	Horizontal	4	2.53	-
2440MHz	Pass	AV	2.3888G	47.03	54.00	-6.97	30.68	3	Vertical	311	1.23	-
2440MHz	Pass	AV	2.44G	81.83	Inf	-Inf	30.84	3	Vertical	311	1.23	-
2440MHz	Pass	AV	2.498G	48.11	54.00	-5.89	31.01	3	Vertical	311	1.23	-
2440MHz	Pass	PK	2.3672G	57.60	74.00	-16.40	30.62	3	Vertical	311	1.23	-
2440MHz	Pass	PK	2.4404G	83.09	Inf	-Inf	30.84	3	Vertical	311	1.23	-
2440MHz	Pass	PK	2.4936G	59.32	74.00	-14.68	30.99	3	Vertical	311	1.23	-
2440MHz	Pass	AV	2.3864G	47.25	54.00	-6.75	30.68	3	Horizontal	352	1.45	-
2440MHz	Pass	AV	2.44G	91.17	Inf	-Inf	30.84	3	Horizontal	352	1.45	-
2440MHz	Pass	AV	2.4956G	48.35	54.00	-5.65	31.00	3	Horizontal	352	1.45	-
2440MHz	Pass	PK	2.3896G	58.01	74.00	-15.99	30.69	3	Horizontal	352	1.45	-
2440MHz	Pass	PK	2.4404G	92.28	Inf	-Inf	30.84	3	Horizontal	352	1.45	-
2440MHz	Pass	PK	2.4908G	59.45	74.00	-14.55	30.99	3	Horizontal	352	1.45	-
2440MHz	Pass	AV	4.88G	39.77	54.00	-14.23	6.67	3	Vertical	304	1.01	-
2440MHz	Pass	AV	7.31886G	40.52	54.00	-13.48	11.35	3	Vertical	11	1.46	-
2440MHz	Pass	PK	4.88024G	47.20	74.00	-26.80	6.67	3	Vertical	304	1.01	-
2440MHz	Pass	PK	7.32G	51.40	74.00	-22.60	11.35	3	Vertical	11	1.46	-
2440MHz	Pass	AV	4.88006G	39.32	54.00	-14.68	6.67	3	Horizontal	346	1.12	-
2440MHz	Pass	AV	7.32624G	40.39	54.00	-13.61	11.37	3	Horizontal	112	2.46	-
2440MHz	Pass	PK	4.87988G	46.68	74.00	-27.32	6.67	3	Horizontal	346	1.12	-
2440MHz	Pass	PK	7.3131G	52.13	74.00	-21.87	11.34	3	Horizontal	112	2.46	-
2480MHz	Pass	AV	2.48G	83.16	Inf	-Inf	30.95	3	Vertical	189	1.03	-
2480MHz	Pass	AV	2.4952G	48.10	54.00	-5.90	31.00	3	Vertical	189	1.03	-
2480MHz	Pass	PK	2.4802G	84.41	Inf	-Inf	30.95	3	Vertical	189	1.03	-
2480MHz	Pass	PK	2.4884G	58.83	74.00	-15.17	30.98	3	Vertical	189	1.03	-
2480MHz	Pass	AV	2.48G	92.66	Inf	-Inf	30.95	3	Horizontal	353	1.23	-
2480MHz	Pass	AV	2.4842G	48.32	54.00	-5.68	30.97	3	Horizontal	353	1.23	-
2480MHz	Pass	PK	2.4802G	93.76	Inf	-Inf	30.95	3	Horizontal	353	1.23	-
2480MHz	Pass	PK	2.494G	58.34	74.00	-15.66	31.00	3	Horizontal	353	1.23	-
2480MHz	Pass	AV	4.96G	40.95	54.00	-13.05	6.86	3	Vertical	307	1.02	-
2480MHz	Pass	AV	7.4487G	40.07	54.00	-13.93	11.68	3	Vertical	338	1.50	-
2480MHz	Pass	PK	4.95988G	47.77	74.00	-26.23	6.86	3	Vertical	307	1.02	-
2480MHz	Pass	PK	7.4505G	51.60	74.00	-22.40	11.68	3	Vertical	338	1.50	-
2480MHz	Pass	AV	4.95994G	39.44	54.00	-14.56	6.86	3	Horizontal	348	1.06	-
2480MHz	Pass	AV	7.44594G	39.94	54.00	-14.06	11.66	3	Horizontal	65	1.50	-
2480MHz	Pass	PK	4.95976G	46.96	74.00	-27.04	6.86	3	Horizontal	348	1.06	-



RSE TX above 1GHz Result

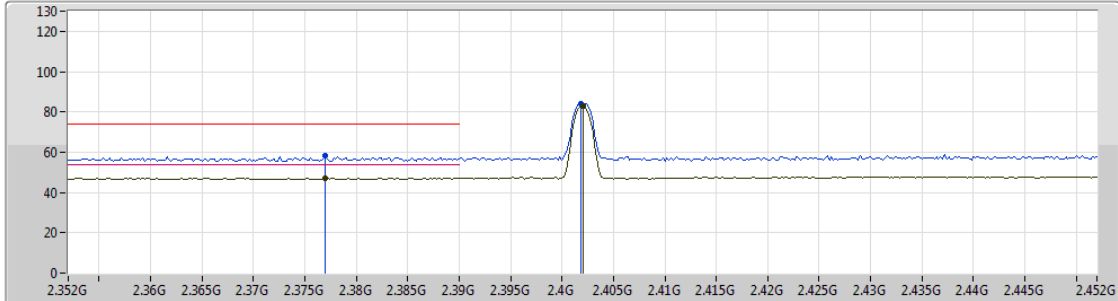
Appendix A




Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz	Pass	PK	7.455G	51.14	74.00	-22.86	11.70	3	Horizontal	65	1.50	-

BT-LE(1Mbps)

2402MHz_TX

05/01/2019



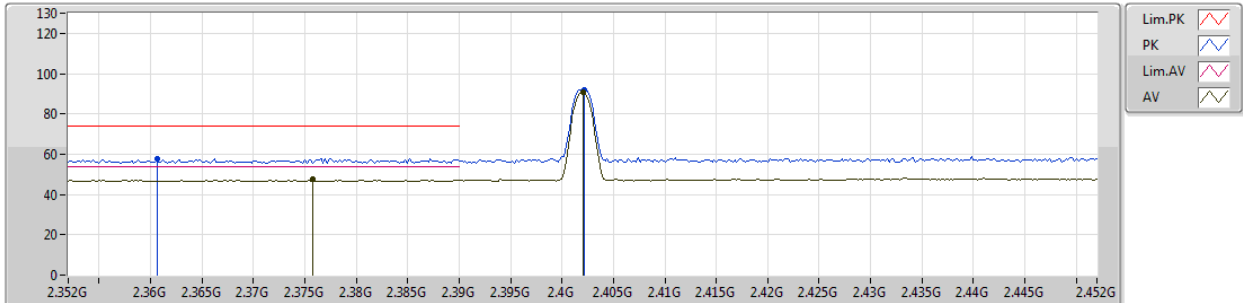
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PK	
Lim.AV	
AV	

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments								
AV	2.377G	47.19	54.00	-6.81	30.64	3	Vertical	191	1.26	-								
AV	2.402G	83.07	Inf	-Inf	30.72	3	Vertical	191	1.26	-								
PK	2.377G	58.31	74.00	-15.69	30.64	3	Vertical	191	1.26	-								
PK	2.4018G	84.32	Inf	-Inf	30.72	3	Vertical	191	1.26	-								

BT-LE(1Mbps)

2402MHz_TX

05/01/2019

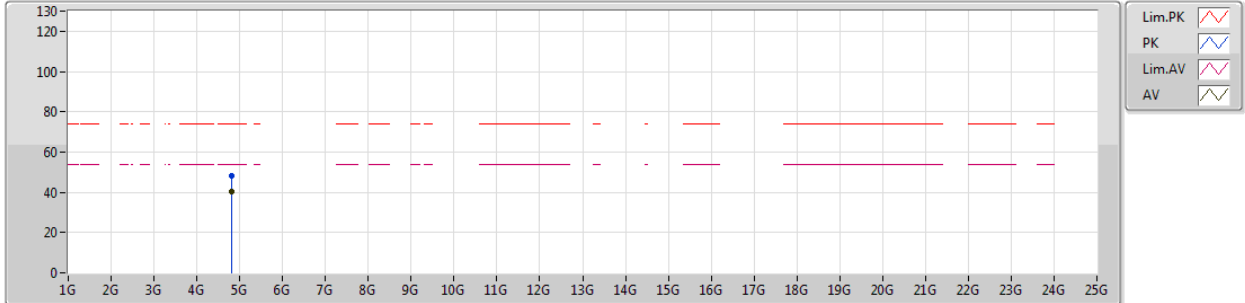


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3758G	47.44	54.00	-6.56	30.64	3	Horizontal	354	1.77	-
AV	2.402G	90.69	Inf	-Inf	30.72	3	Horizontal	354	1.77	-
PK	2.3606G	57.72	74.00	-16.28	30.60	3	Horizontal	354	1.77	-
PK	2.4022G	91.82	Inf	-Inf	30.73	3	Horizontal	354	1.77	-

BT-LE(1Mbps)

2402MHz_TX

05/01/2019

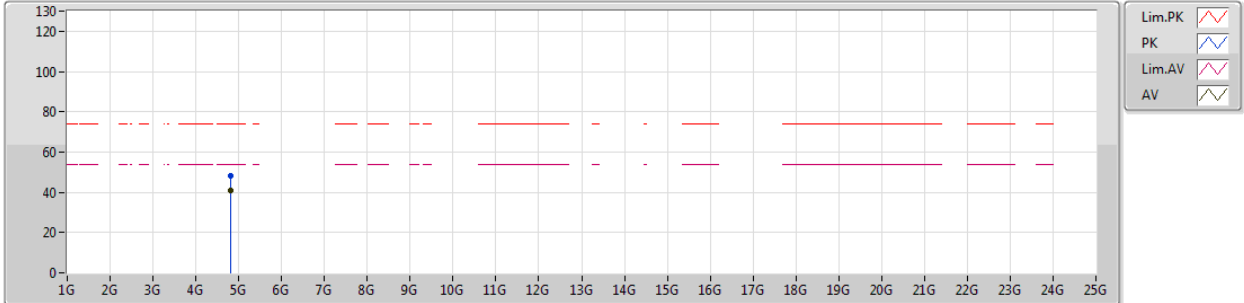


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments								
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)		(m)		(°)	(m)									
AV	4.804G	40.57	54.00	-13.43	6.49	3	Vertical	30	1.50	-								
PK	4.80406G	48.13	74.00	-25.87	6.49	3	Vertical	30	1.50	-								

BT-LE(1Mbps)

2402MHz_TX

05/01/2019

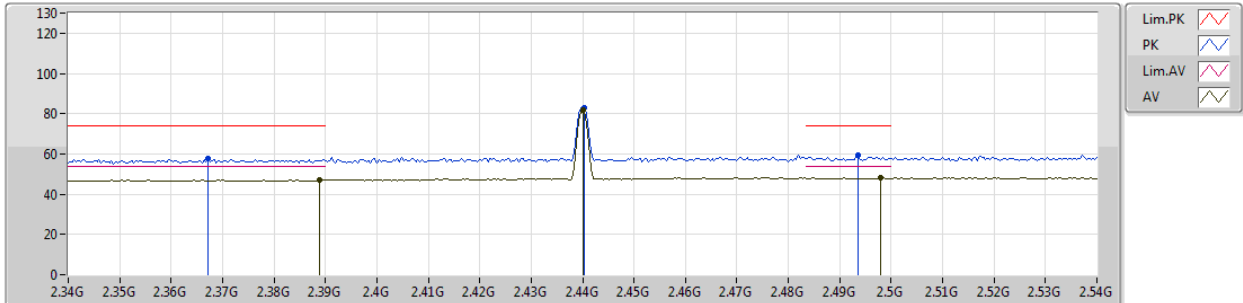


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments								
AV	4.804G	41.16	54.00	-12.84	6.49	3	Horizontal	4	2.53	-								
PK	4.80424G	48.33	74.00	-25.67	6.49	3	Horizontal	4	2.53	-								

BT-LE(1Mbps)

2440MHz_TX

05/01/2019

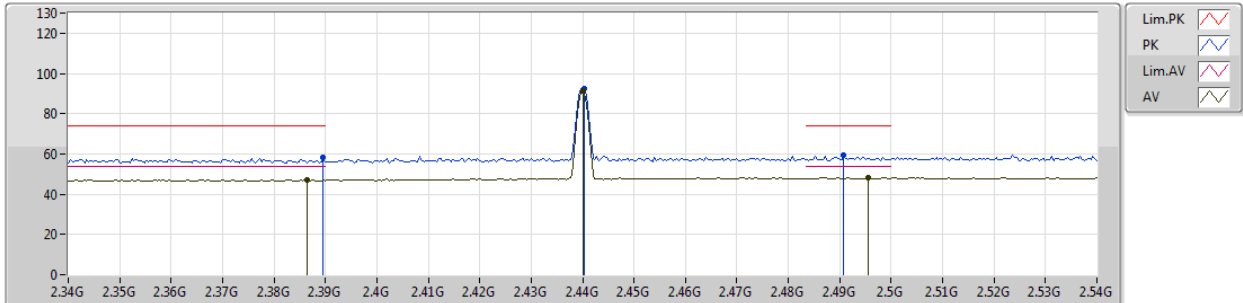


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3888G	47.03	54.00	-6.97	30.68	3	Vertical	311	1.23	-
AV	2.44G	81.83	Inf	-Inf	30.84	3	Vertical	311	1.23	-
AV	2.498G	48.11	54.00	-5.89	31.01	3	Vertical	311	1.23	-
PK	2.3672G	57.60	74.00	-16.40	30.62	3	Vertical	311	1.23	-
PK	2.4404G	83.09	Inf	-Inf	30.84	3	Vertical	311	1.23	-
PK	2.4936G	59.32	74.00	-14.68	30.99	3	Vertical	311	1.23	-

BT-LE(1Mbps)

2440MHz_TX

05/01/2019

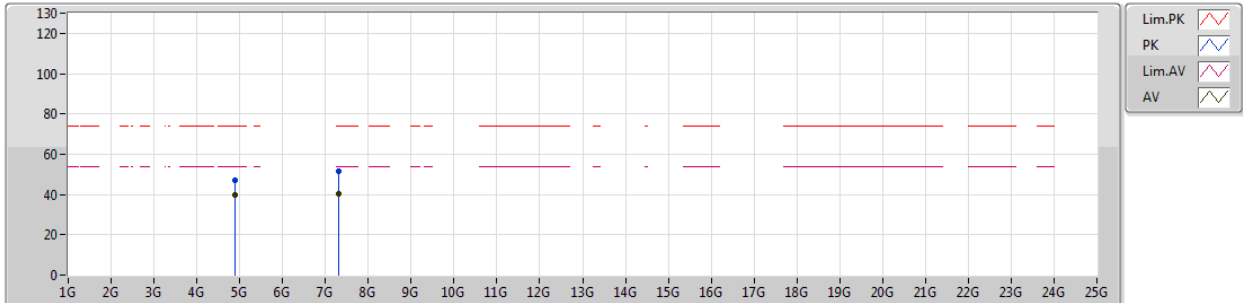


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3864G	47.25	54.00	-6.75	30.68	3	Horizontal	352	1.45	-
AV	2.44G	91.17	Inf	-Inf	30.84	3	Horizontal	352	1.45	-
AV	2.4956G	48.35	54.00	-5.65	31.00	3	Horizontal	352	1.45	-
PK	2.3896G	58.01	74.00	-15.99	30.69	3	Horizontal	352	1.45	-
PK	2.4404G	92.28	Inf	-Inf	30.84	3	Horizontal	352	1.45	-
PK	2.4908G	59.45	74.00	-14.55	30.99	3	Horizontal	352	1.45	-

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2440MHz_TX

05/01/2019

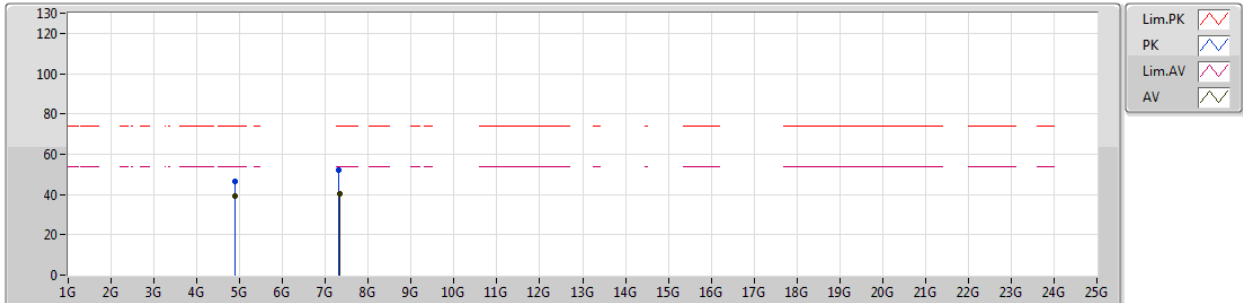


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments							
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)								
AV	4.88G	39.77	54.00	-14.23	6.67	3	Vertical	304	1.01	-							
AV	7.31886G	40.52	54.00	-13.48	11.35	3	Vertical	11	1.46	-							
PK	4.88024G	47.20	74.00	-26.80	6.67	3	Vertical	304	1.01	-							
PK	7.32G	51.40	74.00	-22.60	11.35	3	Vertical	11	1.46	-							

BT-LE(1Mbps)

2440MHz_TX

05/01/2019

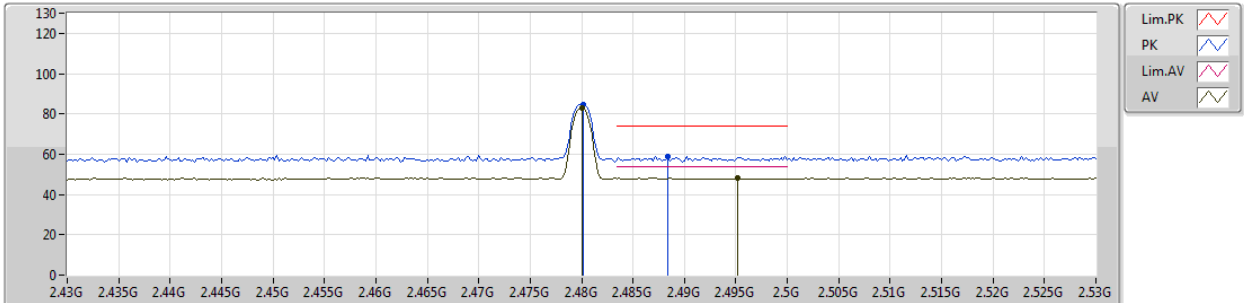


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.88006G	39.32	54.00	-14.68	6.67	3	Horizontal	346	1.12	-
AV	7.32624G	40.39	54.00	-13.61	11.37	3	Horizontal	112	2.46	-
PK	4.87988G	46.68	74.00	-27.32	6.67	3	Horizontal	346	1.12	-
PK	7.3131G	52.13	74.00	-21.87	11.34	3	Horizontal	112	2.46	-

BT-LE(1Mbps)

2480MHz_TX

05/01/2019

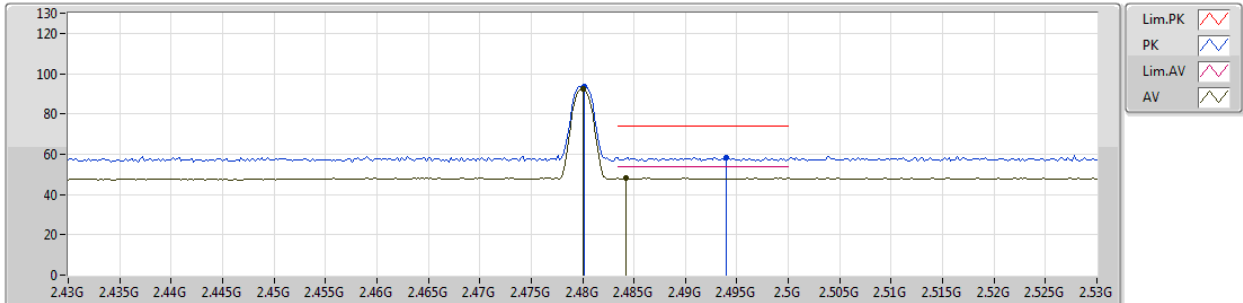


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	83.16	Inf	-Inf	30.95	3	Vertical	189	1.03	-
AV	2.4952G	48.10	54.00	-5.90	31.00	3	Vertical	189	1.03	-
PK	2.4802G	84.41	Inf	-Inf	30.95	3	Vertical	189	1.03	-
PK	2.4884G	58.83	74.00	-15.17	30.98	3	Vertical	189	1.03	-

BT-LE(1Mbps)

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Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	92.66	Inf	-Inf	30.95	3	Horizontal	353	1.23	-
AV	2.4842G	48.32	54.00	-5.68	30.97	3	Horizontal	353	1.23	-
PK	2.4802G	93.76	Inf	-Inf	30.95	3	Horizontal	353	1.23	-
PK	2.494G	58.34	74.00	-15.66	31.00	3	Horizontal	353	1.23	-

BT-LE(1Mbps)

2480MHz_TX

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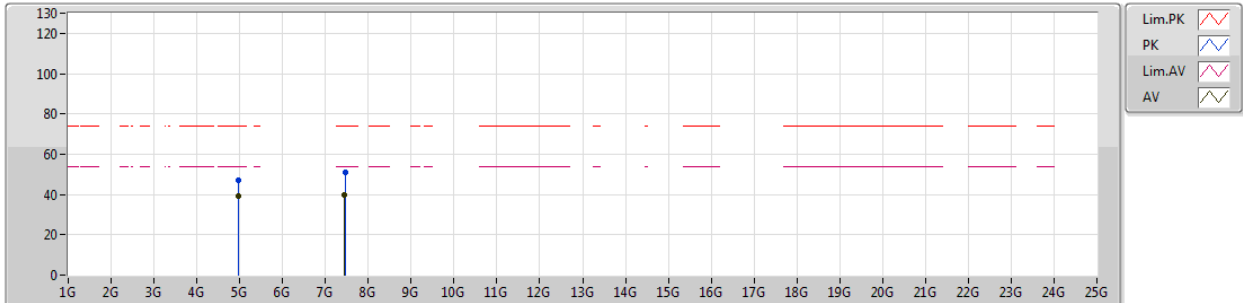


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments							
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)								
AV	4.96G	40.95	54.00	-13.05	6.86	3	Vertical	307	1.02	-							
AV	7.4487G	40.07	54.00	-13.93	11.68	3	Vertical	338	1.50	-							
PK	4.95988G	47.77	74.00	-26.23	6.86	3	Vertical	307	1.02	-							
PK	7.4505G	51.60	74.00	-22.40	11.68	3	Vertical	338	1.50	-							

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Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments							
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)								
AV	4.95994G	39.44	54.00	-14.56	6.86	3	Horizontal	348	1.06	-							
AV	7.44594G	39.94	54.00	-14.06	11.66	3	Horizontal	65	1.50	-							
PK	4.95976G	46.96	74.00	-27.04	6.86	3	Horizontal	348	1.06	-							
PK	7.455G	51.14	74.00	-22.86	11.70	3	Horizontal	65	1.50	-							