

# FCC Test Report

**FCC ID** : 2AEUPBHASC061  
**Equipment** : Stick Up Cam Battery  
**Brand Name** : Ring  
**Model Name** : Stick Up Cam Battery  
**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 Aug. 22, 2018, and testing was started from Sep. 21, 2018 and completed on Oct. 13, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

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



Approved by: Allen Lin

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**

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



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**PHOTOGRAPHS OF EUT V01**



### History of this test report

Report No.	Version	Description	Issued Date
FR882221AL	01	Initial issue of report	Oct. 08, 2018
FR882221AL	02	9K~30M data was added (This report is the latest version replacing for the report issued on Oct. 08, 2018)	Oct. 15, 2018



### 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
3.1	15.207	AC Power-line Conducted Emissions	Not Required	FCC 15.207
3.2	15.247(a)	DTS Bandwidth	PASS	≥500kHz
3.3	15.247(b)	Maximum Conducted Output Power	PASS	Power [dBm]:30
3.4	15.247(e)	Power Spectral Density	PASS	PSD [dBm/3kHz]:8
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	Non-Restricted Bands: >30 dBc
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

Reviewed by: Sam 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	-	Lunar	PCB antenna	fixed on board
2	-	Lunar	PCB antenna	fixed on board

Ant.	Port	Gain (dBi)	
		2.4G	BT
1	1	0.57	0.57
2	2	0.57	0.57

#### For 2.4GHz function:

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

Support diversity function and pre-tested on each single chain, the worst case was Ant. 2(port 1) and it was record in this test report.

#### For BT function:

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

Support diversity function and pre-tested on each single chain, the worst case was Ant. 2(port 1) and it was record in this test report.



1.1.3 EUT Information

Operational Condition	
EUT Power Type	From Battery
EUT Function	<input checked="" type="checkbox"/> Point-to-multipoint <input 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 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.632	1.993	395u	3k

## 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
RF Conducted	TH06-HY	Streak	22.3°C / 62%	27/Sep/2018
Radiated	03CH09-HY	Andy	24.8°C / 63%	21/Sep/2018
Radiated <9k-30M>	03CH09-HY	Andy	23.6C / 59%	13/Oct/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 Version	bluetool1.8.7.2
-----------------------	-----------------

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	
<b>Tests Item</b>	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
<b>Test Condition</b>	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests			
<b>Tests Item</b>	Emissions in Restricted Frequency Bands		
<b>Test Condition</b>	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.		
<b>Operating Mode &lt; 1GHz</b>	CTX		
1	Battery mode		
<b>Operating Mode &gt; 1GHz</b>	CTX		
<b>Orthogonal Planes of EUT</b>	<b>X Plane</b>	<b>Y Plane</b>	<b>Z Plane</b>
			
<b>Worst Planes of EUT</b>	V		

## 2.4 Accessories

Accessories			
Battery	Brand Name	ring	Model Name  V4
	Power Rating	3.65V 6040 mAh 22.046 Wh 1ICR19/66-2	
	Type	Rechargeable Lithium-ion	
USB cable	Power Cord	0.45 meter, non-shielded cable, w/o ferrite core	

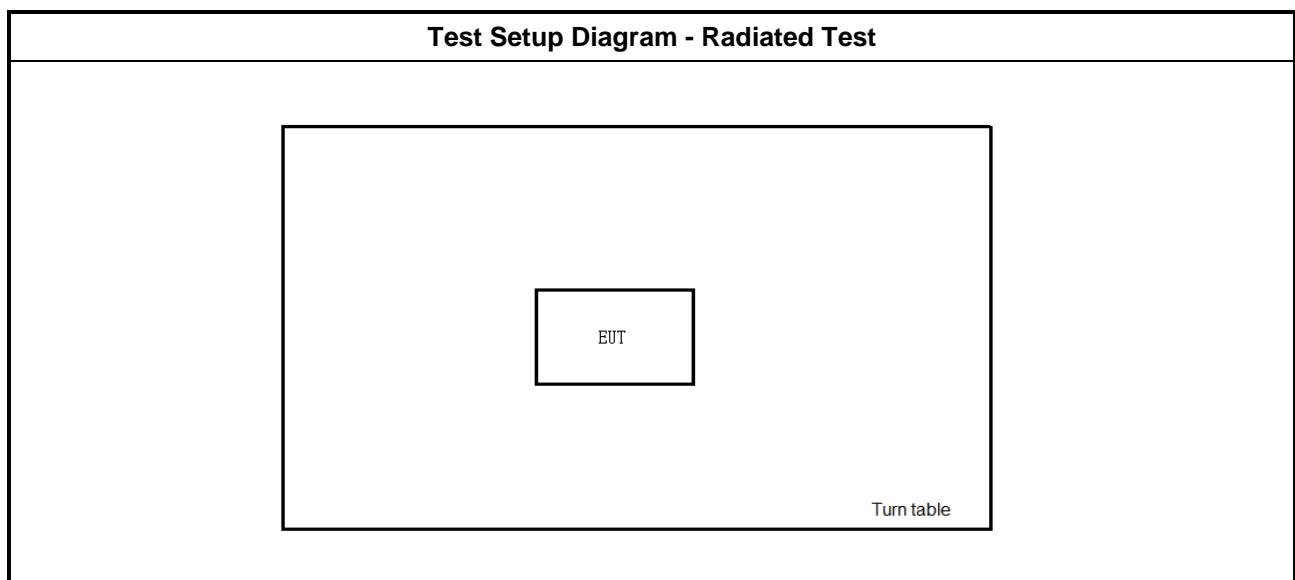
Reminder: Regarding to more detail and other information, please refer to user manual.

## 2.5 Support Equipment

Support Equipment - RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	R33002 / DOC
2	Adapter for NB	DELL	HA65NM130	R35737 / DOC
3	AC Power Source	GW	APS-9102	-
4	Fixture	-	-	-

Note.Support equipment No.4 was provided by customer.

## 2.6 Test Setup Diagram



### 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.

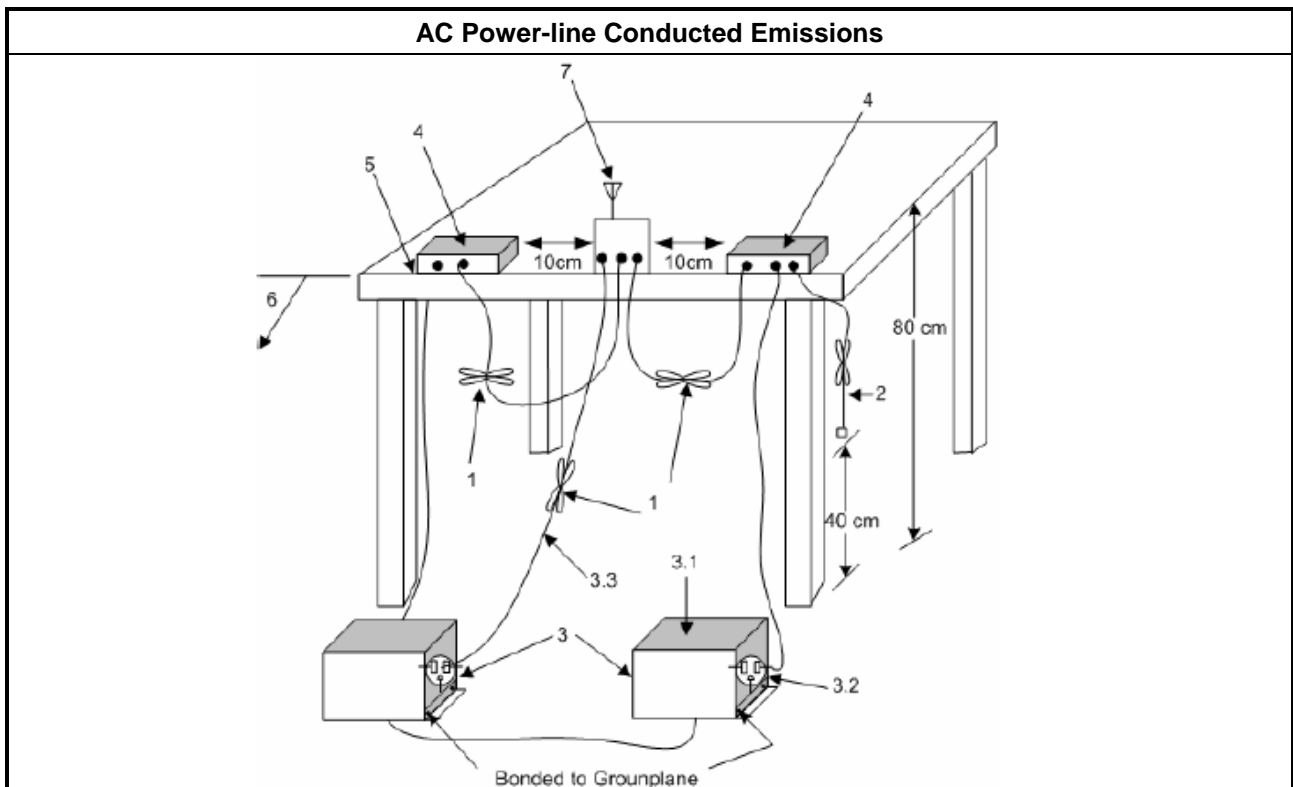
##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedures

Test Method
<ul style="list-style-type: none"> <li>Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.</li> </ul>

##### 3.1.4 Test Setup





### **3.1.5 Test Result of AC Power-line Conducted Emissions**

Please refer to FCC 15.207 which states, "Measurements to demonstrate compliance with the conducted limits are not required for devices employ Battery for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines".

Therefore, for this device, AC Power Line Conducted Emissions investigation is not required.

### 3.2 DTS Bandwidth

#### 3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
<b>Systems using digital modulation techniques:</b>
<ul style="list-style-type: none"> <li>▪ 6 dB bandwidth <math>\geq</math> 500 kHz.</li> </ul>

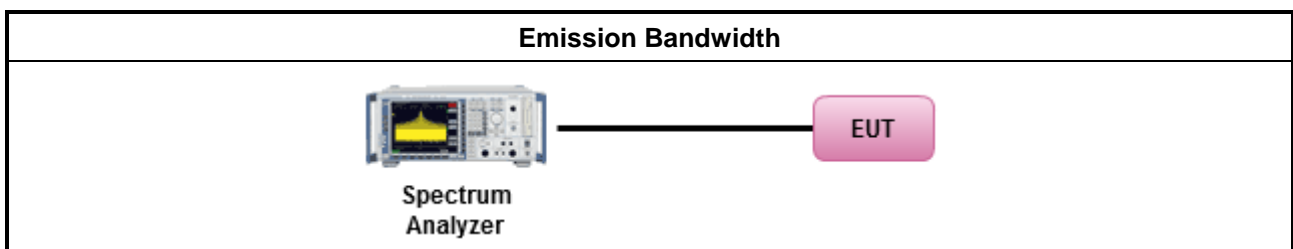
#### 3.2.2 Measuring Instruments

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

#### 3.2.3 Test Procedures

Test Method
<ul style="list-style-type: none"> <li>▪ For the emission bandwidth shall be measured using one of the options below:</li> </ul>
<input checked="" type="checkbox"/> Refer as KDB 558074, clause 8.2 (11.9.2.2 of ANSI C63.10) DTS bandwidth measurement.
<input type="checkbox"/> Refer as RSS-Gen, clause 6.7 for for occupied bandwidth testing.
<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

#### 3.2.4 Test Setup



#### 3.2.5 Test Result of Emission Bandwidth

Refer as Appendix A

### 3.3 Maximum Conducted Output Power

#### 3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	<ul style="list-style-type: none"> <li>▪ If <math>G_{TX} \leq 6</math> dBi, then <math>P_{Out} \leq 30</math> dBm (1 W)</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Point-to-point systems (P2P): If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)/3</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Smart antenna system (SAS):</li> </ul>
	<ul style="list-style-type: none"> <li>- Single beam: If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)/3</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>- Overlap beam: If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)/3</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>- Aggregate power on all beams: If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)/3 + 8</math> dB dBm</li> </ul>
<b>e.i.r.p. Power Limit:</b>	
	<ul style="list-style-type: none"> <li>▪ 2400-2483.5 MHz Band</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): <math>P_{eirp} \leq 36</math> dBm (4 W)</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Point-to-point systems (P2P): <math>P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Smart antenna system (SAS)</li> </ul>
	<ul style="list-style-type: none"> <li>- Single beam: <math>P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>- Overlap beam: <math>P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>- Aggregate power on all beams: <math>P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])</math> dBm</li> </ul>
$P_{Out}$ = maximum peak conducted output power or maximum conducted output power in dBm, $G_{TX}$ = the maximum transmitting antenna directional gain in dBi.	

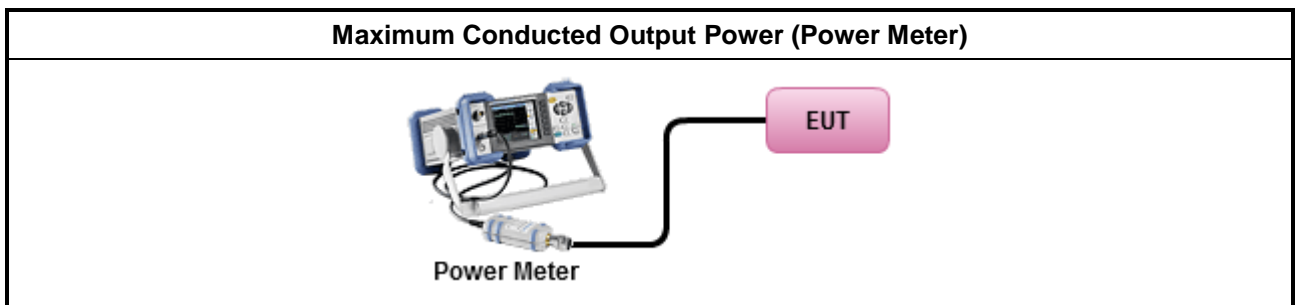
#### 3.3.2 Measuring Instruments

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

### 3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> <li>▪ Maximum Peak Conducted Output Power</li> </ul>	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
<ul style="list-style-type: none"> <li>▪ Maximum Average Conducted Output Power</li> </ul>	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
<ul style="list-style-type: none"> <li>▪ For conducted measurement.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ 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.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ If multiple transmit chains, EIRP calculation could be following as methods:  <math>P_{total} = P_1 + P_2 + \dots + P_n</math>                      (calculated in linear unit [mW] and transfer to log unit [dBm])  <math>EIRP_{total} = P_{total} + DG</math> </li> </ul>	

### 3.3.4 Test Setup



### 3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B

### 3.4 Power Spectral Density

#### 3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
<ul style="list-style-type: none"> <li>▪ Power Spectral Density (PSD) ≤ 8 dBm/3kHz</li> </ul>

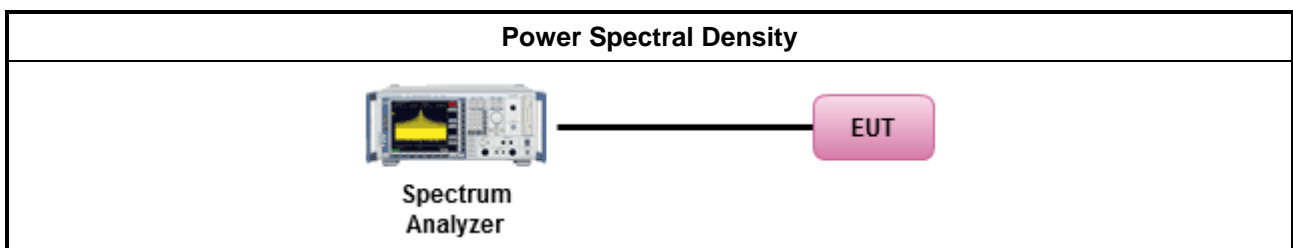
#### 3.4.2 Measuring Instruments

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

#### 3.4.3 Test Procedures

Test Method	
	<ul style="list-style-type: none"> <li>▪ 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).</li> </ul>
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Method PKPSD.
	<ul style="list-style-type: none"> <li>▪ For conducted measurement.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ If The EUT supports multiple transmit chains using options given below:</li> </ul>
	<ul style="list-style-type: none"> <li>▪ 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.</li> </ul>

#### 3.4.4 Test Setup



#### 3.4.5 Test Result of Power Spectral Density

Refer as Appendix C



### 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.

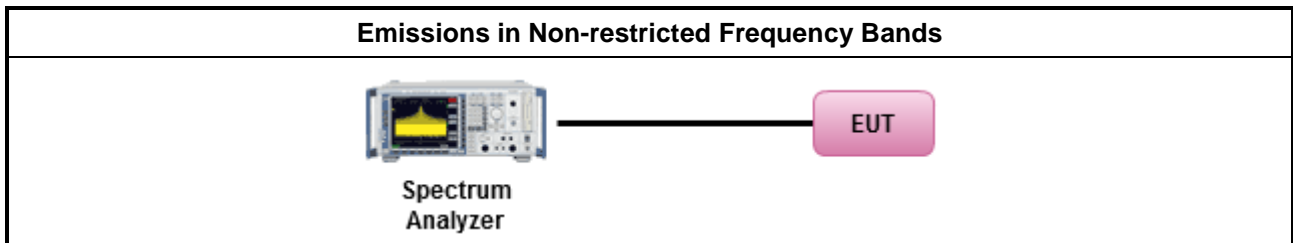
#### 3.5.2 Measuring Instruments

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

#### 3.5.3 Test Procedures

Test Method
<ul style="list-style-type: none"> <li>Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.</li> </ul>

#### 3.5.4 Test Setup



#### 3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix D

### 3.6 Emissions in Restricted Frequency Bands

#### 3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

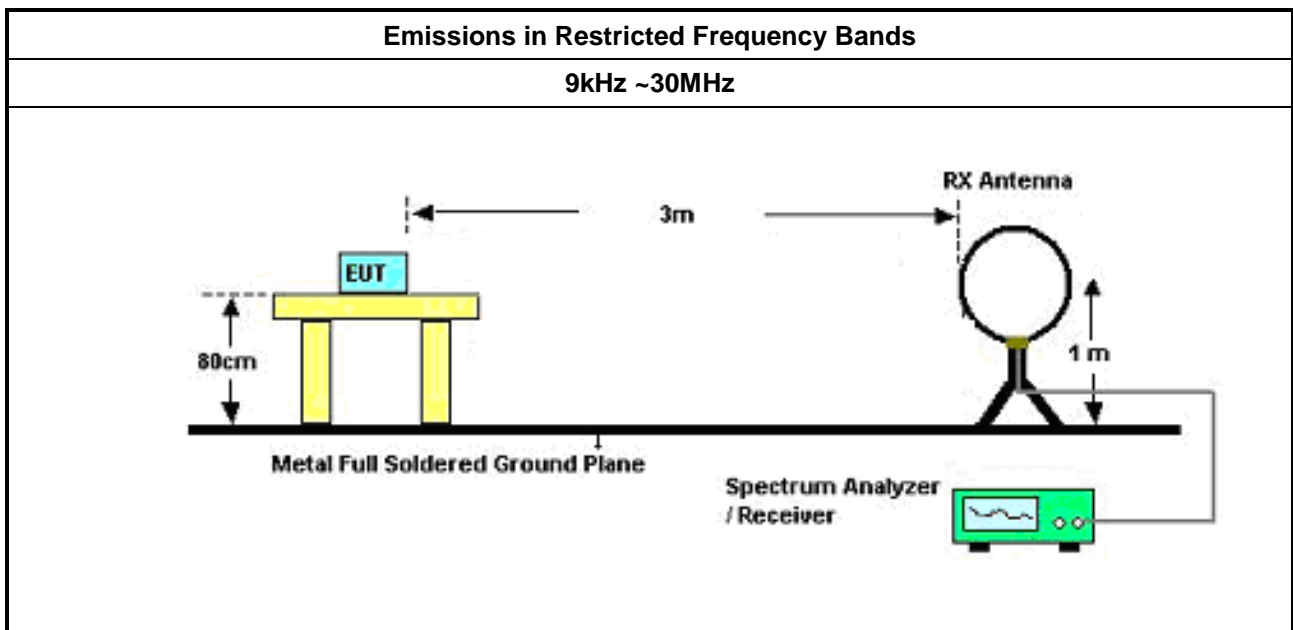
#### 3.6.2 Measuring Instruments

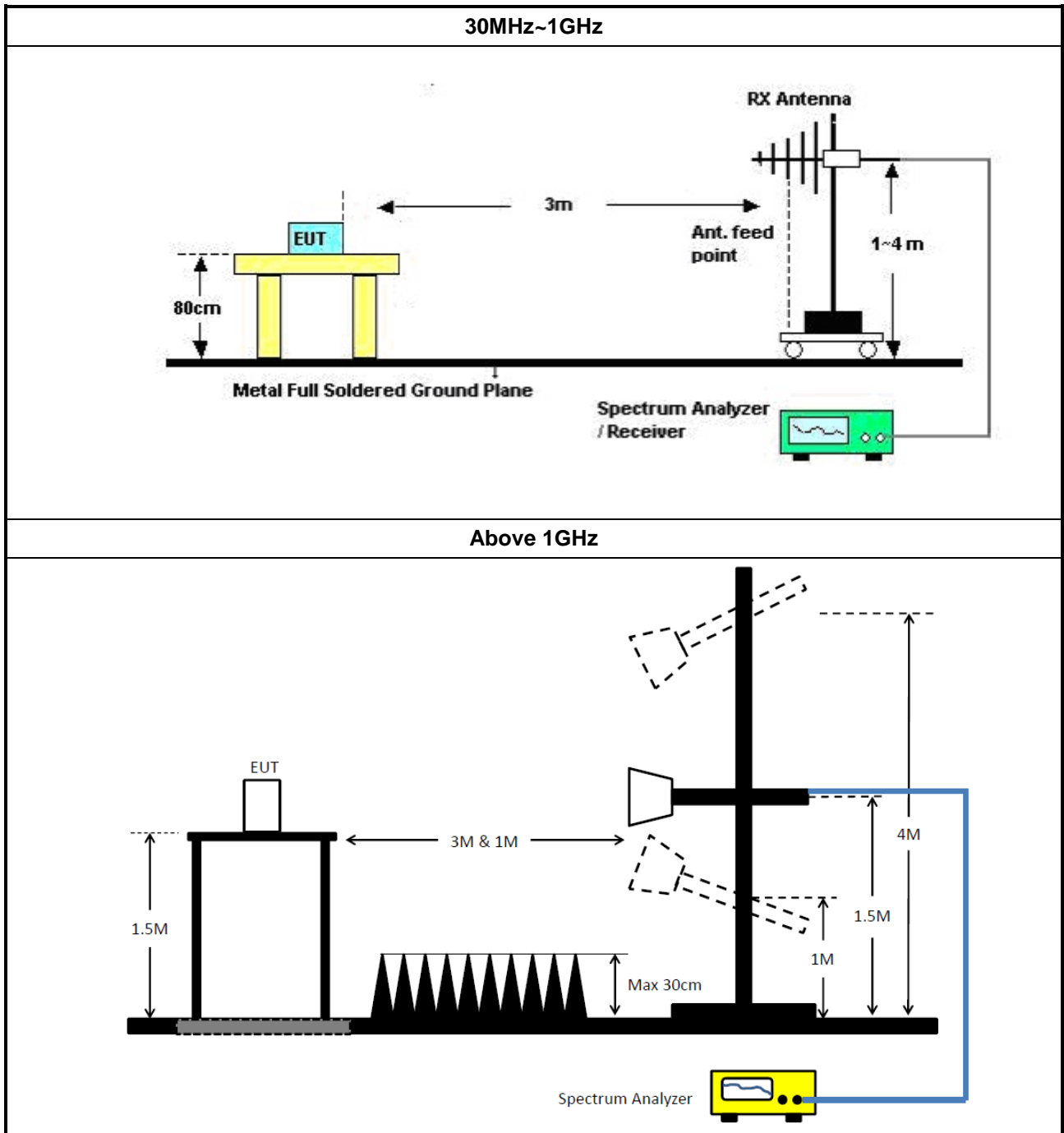
Refer a test equipment and calibration data table in this test report.

### 3.6.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> <li>The average emission levels shall be measured in [duty cycle <math>\geq</math> 98 or duty factor].</li> </ul>	
<ul style="list-style-type: none"> <li>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.</li> </ul>	
<ul style="list-style-type: none"> <li>For the transmitter unwanted emissions shall be measured using following options below:</li> </ul>	
	<ul style="list-style-type: none"> <li>Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.</li> </ul>
<ul style="list-style-type: none"> <li>For the transmitter band-edge emissions shall be measured using following options below:</li> </ul>	
	<ul style="list-style-type: none"> <li>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.</li> </ul>
	<ul style="list-style-type: none"> <li>Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.</li> </ul>
	<ul style="list-style-type: none"> <li>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).</li> </ul>

### 3.6.4 Test Setup





### 3.6.5 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix E

## 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	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz	23/Apr/2018	22/Apr/2019
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz	14/Jun/2018	13/Jun/2019
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz ~ 26.5GHz	10/May/2018	09/May/2019
Amplifier	EMC	EMC9135	980232	9KHz~1GHz	27/Apr/2018	26/Apr/2019
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz ~ 44GHz	31/Jul/2018	30/Jul/2019
Bilog Antenna & 6dB Attenuator	SCHAFFNER/Yi Chang	CBL6111C / MTJ61202	2724 / MTJ61202-06	30MHz~1GHz	07/Jul/2018	06/Jul/2019
Double Ridged Guide Horn Antenna	SCHWARZBEC K	BBHA 9120 D	BBHA9120 D 1534	1GHz~18GHz	30/Apr/2018	29/Apr/2019
Broadband Horn Antenna	SCHWARZBEC K	BBHA 9170	BBHA9170614	18GHz~40GHz	09/Feb/2018	08/Feb/2019
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	29/Mar/2018	28/Mar/2019
RF Cable-R03m	Jye Bao	RG142	CB031	9kHz ~ 1GHz	1/Feb/2018	31/Jan/2019
RF Cable-high	HUBER+SUHNER	SUCOFLEX104	SN 556626/4 + 556627	1GHz ~ 40GHz	14/Mar/2018	13/Mar/2019

### Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	18/Jul/2018	17/Jul/2019
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	06/Nov/2017	05/Nov/2018
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	06/Nov/2017	05/Nov/2018
RF Cable-1.5m	HUBER+SUHNER	SUCOFLEX_104	MY12585/4	30MHz ~ 26.5GHz	26/Jan/2018	25/Jan/2019
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10710/4	30MHz ~ 26.5GHz	26/Jan/2018	25/Jan/2019
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30MHz ~ 26.5GHz	26/Jan/2018	25/Jan/2019
Signal Generator	R&S	SMB100A	175727	100kHz~40GHz	26/Oct/2017	25/Oct/2018



Summary

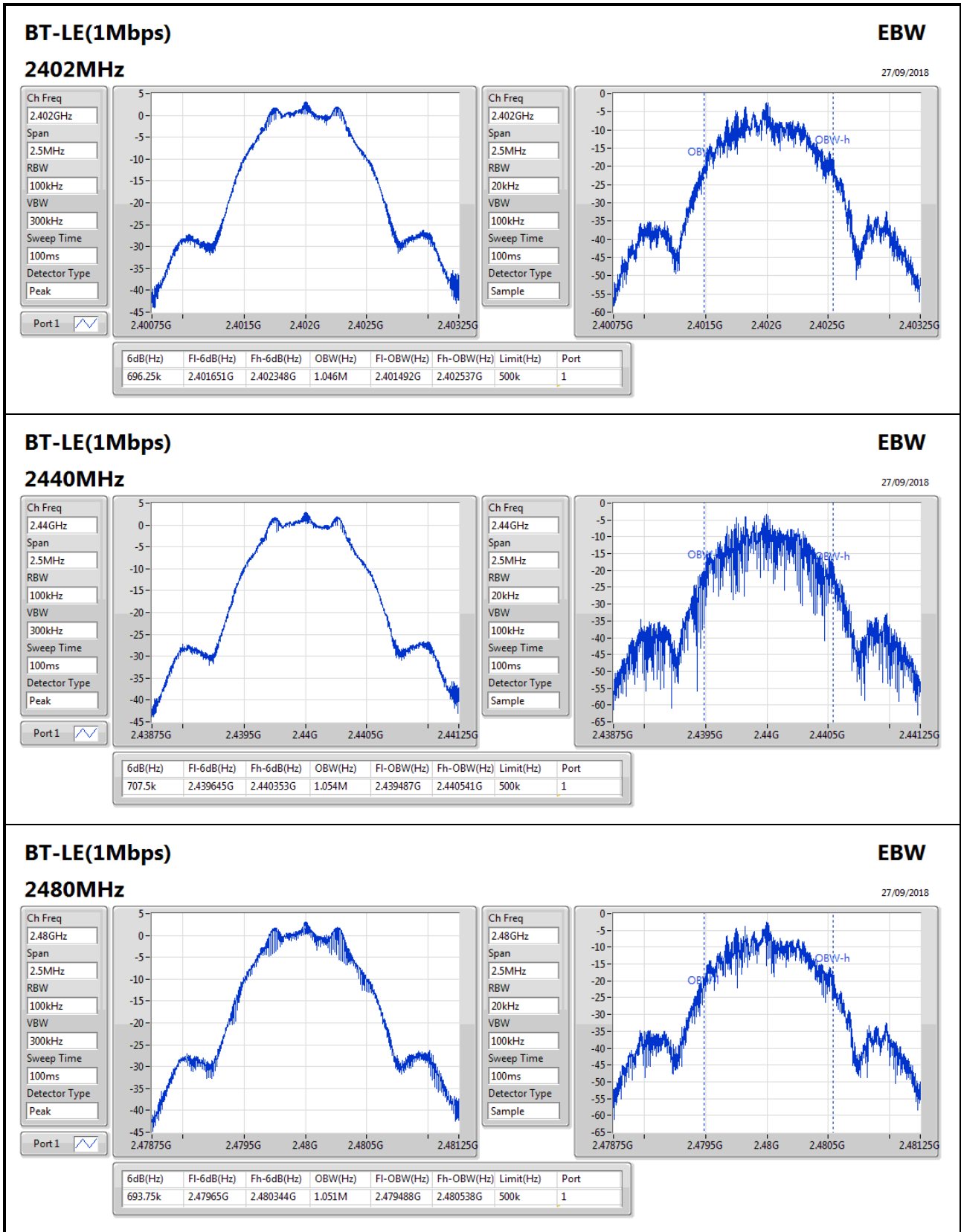
Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	707.5k	1.054M	1M05F1D	693.75k	1.046M

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	696.25k	1.046M
2440MHz_TnomVnom	Pass	500k	707.5k	1.054M
2480MHz_TnomVnom	Pass	500k	693.75k	1.051M

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


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

27/09/2018

**2480MHz**

Ch Freq: 2.48GHz  
Span: 2.5MHz  
RBW: 100kHz  
VBW: 300kHz  
Sweep Time: 100ms  
Detector Type: Peak

Ch Freq: 2.48GHz  
Span: 2.5MHz  
RBW: 20kHz  
VBW: 100kHz  
Sweep Time: 100ms  
Detector Type: Sample

6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
693.75k	2.47965G	2.480344G	1.051M	2.479488G	2.480538G	500k	1



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	2.50	0.00178

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.57	2.50	30.00
2440MHz_TnomVnom	Pass	0.57	2.42	30.00
2480MHz_TnomVnom	Pass	0.57	2.34	30.00





Summary

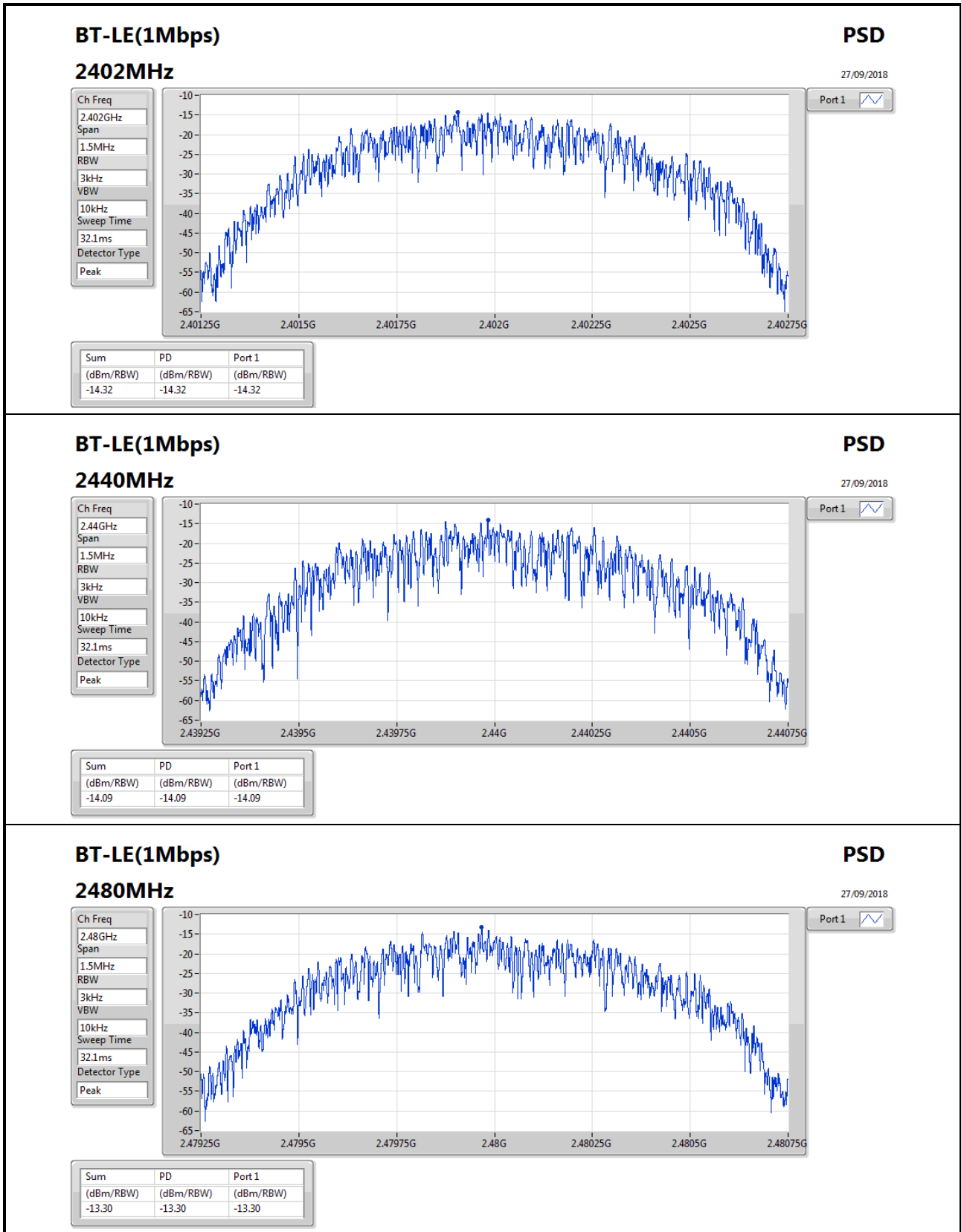
Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-13.30

RBW=3kHz.

Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.57	-14.32	8.00
2440MHz_TnomVnom	Pass	0.57	-14.09	8.00
2480MHz_TnomVnom	Pass	0.57	-13.30	8.00

RBW=3kHz.



### BT-LE(1Mbps)

#### 2480MHz

### PSD

27/09/2018

Ch Freq  
2.48GHz

Span  
1.5MHz

RBW  
3kHz

VBW  
10kHz

Sweep Time  
32.1ms

Detector Type  
Peak

Port 1

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.30	-13.30	-13.30

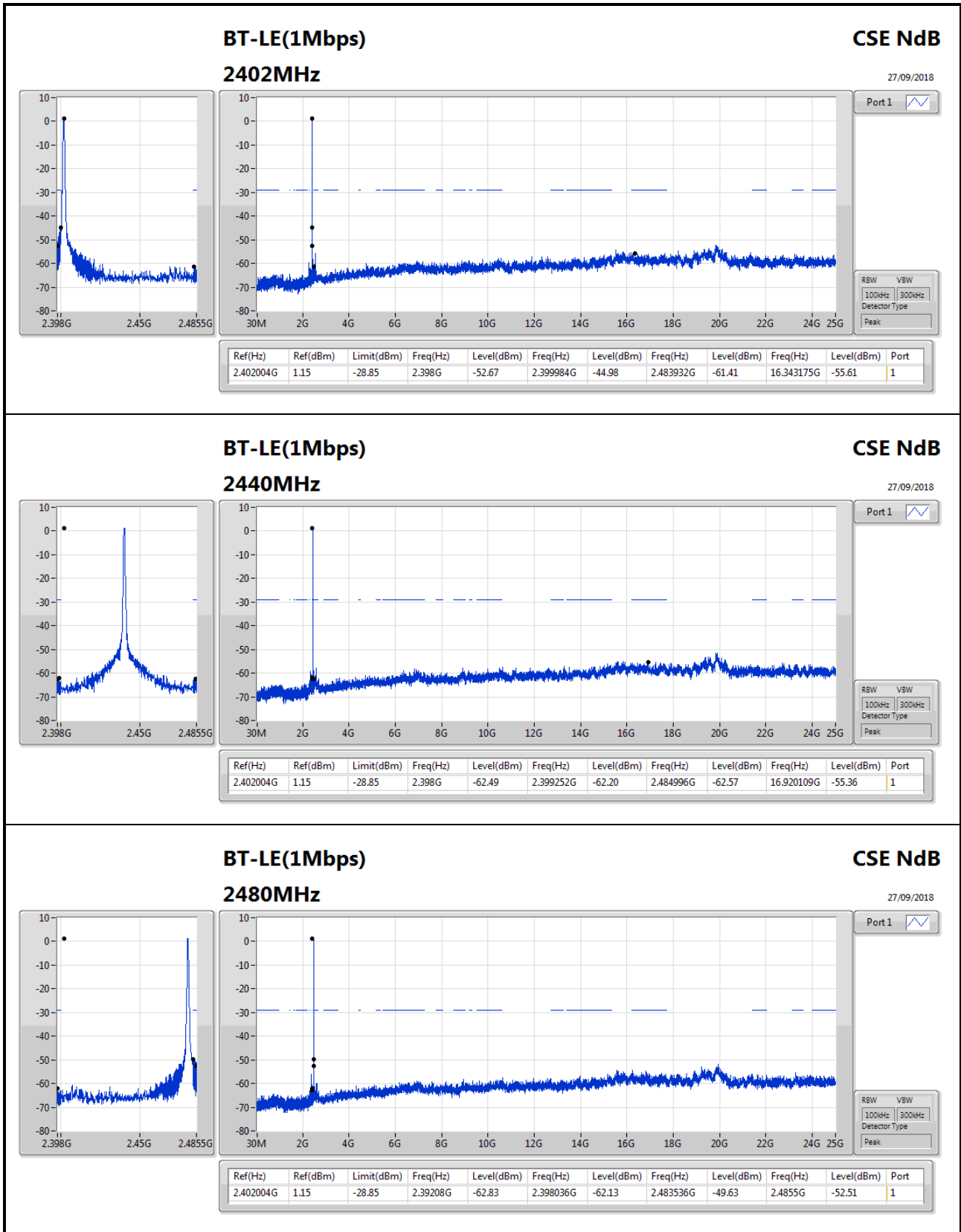


Summary

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	1.15	-28.85	2.398G	-52.67	2.399984G	-44.98	2.483932G	-61.41	16.343175G	-55.61	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	1.15	-28.85	2.398G	-52.67	2.399984G	-44.98	2.483932G	-61.41	16.343175G	-55.61	1
2440MHz_TnomVnom	Pass	2.402004G	1.15	-28.85	2.398G	-62.49	2.399252G	-62.20	2.484996G	-62.57	16.920109G	-55.36	1
2480MHz_TnomVnom	Pass	2.402004G	1.15	-28.85	2.39208G	-62.83	2.398036G	-62.13	2.483536G	-49.63	2.4855G	-52.51	1



### BT-LE(1Mbps)

#### 2480MHz

**CSE NdB**  
27/09/2018

Port1

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	1.15	-28.85	2.39208G	-62.83	2.398036G	-62.13	2.483536G	-49.63	2.4855G	-52.51	1

RBW 100kHz | 300kHz | Detector Type Peak



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)_Nss1_1TX(Port2)	Pass	PK	771.08M	38.12	46.00	-7.88	-8.18	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
BT-LE(1Mbps)_Nss1_1TX(Port2)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	47.07k	55.68	114.13	-58.45	21.29	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	62.862k	46.81	111.63	-64.82	21.07	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	87.678k	48.47	108.73	-60.26	20.88	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	2.896M	41.76	69.50	-27.74	20.79	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	6.06M	40.10	69.50	-29.40	21.34	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	11.075M	41.06	69.50	-28.44	22.22	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	33.88M	30.33	40.00	-9.67	-15.32	3	Vertical	360	1.00	-
2440MHz	Pass	PK	105.66M	20.44	43.50	-23.06	-20.46	3	Vertical	360	1.00	-
2440MHz	Pass	PK	258.92M	16.57	46.00	-29.43	-15.81	3	Vertical	360	1.00	-
2440MHz	Pass	PK	371.44M	20.88	46.00	-25.12	-14.94	3	Vertical	360	1.00	-
2440MHz	Pass	PK	575.14M	23.02	46.00	-22.98	-10.84	3	Vertical	360	1.00	-
2440MHz	Pass	PK	773.02M	35.29	46.00	-10.71	-8.16	3	Vertical	360	1.00	-
2440MHz	Pass	PK	115.36M	27.63	43.50	-15.87	-19.61	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	245.34M	24.08	46.00	-21.92	-17.84	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	291.9M	26.16	46.00	-19.84	-16.85	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	493.66M	24.09	46.00	-21.91	-12.19	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	559.62M	22.62	46.00	-23.38	-10.31	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	771.08M	38.12	46.00	-7.88	-8.18	3	Horizontal	0	1.00	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

13/10/2018

2440MHz\_Battery



Lim.PK  
 PK  
 Lim.AV  
 AV

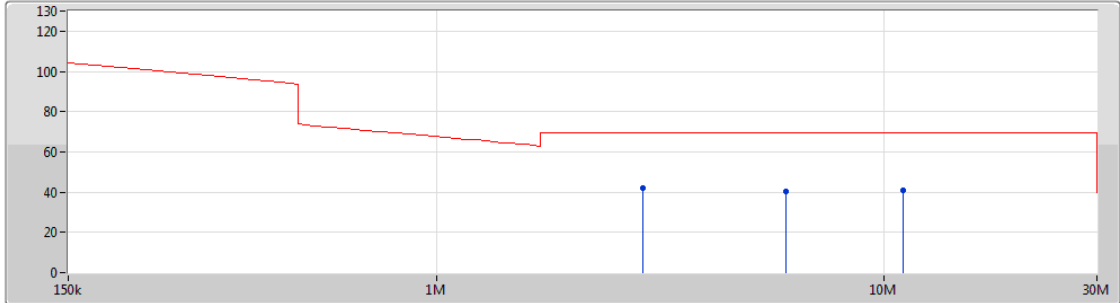
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	47.07k	55.68	114.13	-58.45	21.29	3	Horizontal	0	1.00	-
PK	62.862k	46.81	111.63	-64.82	21.07	3	Horizontal	0	1.00	-
PK	87.678k	48.47	108.73	-60.26	20.88	3	Horizontal	0	1.00	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

13/10/2018

2440MHz\_Battery



Lim.PK  
 PK  
 Lim.AV  
 AV

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.896M	41.76	69.50	-27.74	20.79	3	Horizontal	360	1.00	-
PK	6.06M	40.10	69.50	-29.40	21.34	3	Horizontal	360	1.00	-
PK	11.075M	41.06	69.50	-28.44	22.22	3	Horizontal	360	1.00	-

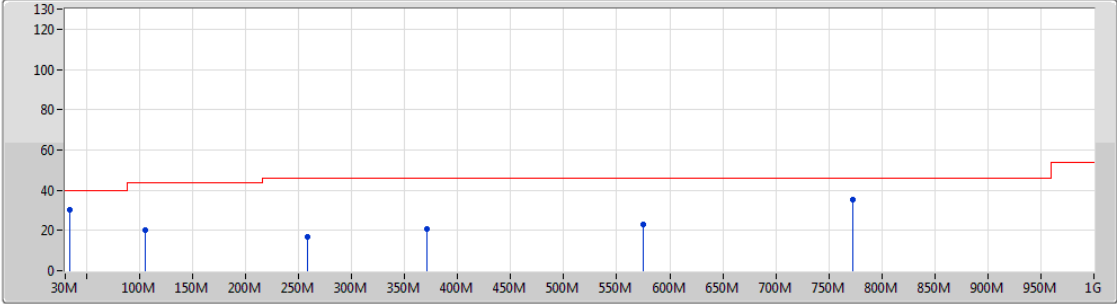




BT-LE(1Mbps)\_Nss1\_1TX(Port2)

21/09/2018

2440MHz\_Battery



Legend for the graph:

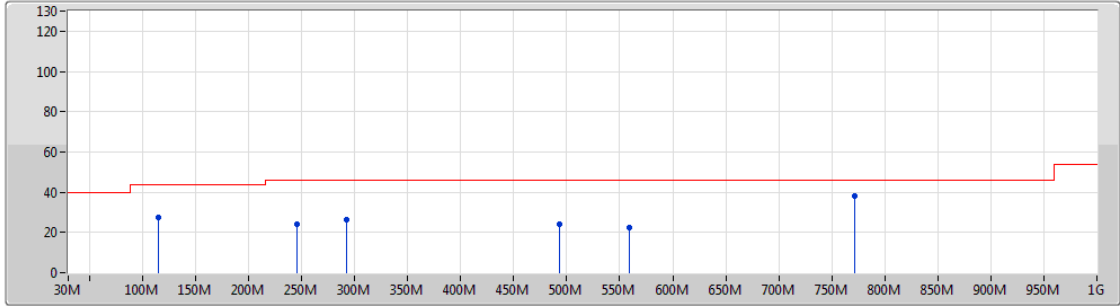
- Lim.PK
- PK
- Lim.AV
- AV

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	33.88M	30.33	40.00	-9.67	-15.32	3	Vertical	360	1.00	-
PK	105.66M	20.44	43.50	-23.06	-20.46	3	Vertical	360	1.00	-
PK	258.92M	16.57	46.00	-29.43	-15.81	3	Vertical	360	1.00	-
PK	371.44M	20.88	46.00	-25.12	-14.94	3	Vertical	360	1.00	-
PK	575.14M	23.02	46.00	-22.98	-10.84	3	Vertical	360	1.00	-
PK	773.02M	35.29	46.00	-10.71	-8.16	3	Vertical	360	1.00	-





BT-LE(1Mbps)\_Nss1\_1TX(Port2)

21/09/2018

2440MHz\_Battery



Legend for the spectrum plot:

- Lim.PK 
- PK 
- Lim.AV 
- AV 

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	115.36M	27.63	43.50	-15.87	-19.61	3	Horizontal	0	1.00	-
PK	245.34M	24.08	46.00	-21.92	-17.84	3	Horizontal	0	1.00	-
PK	291.9M	26.16	46.00	-19.84	-16.85	3	Horizontal	0	1.00	-
PK	493.66M	24.09	46.00	-21.91	-12.19	3	Horizontal	0	1.00	-
PK	559.62M	22.62	46.00	-23.38	-10.31	3	Horizontal	0	1.00	-
PK	771.08M	38.12	46.00	-7.88	-8.18	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)_Nss1_1TX(Port2)	Pass	PK	771.08M	38.12	46.00	-7.88	-8.18	3	Horizontal	0	1.00	-



Result

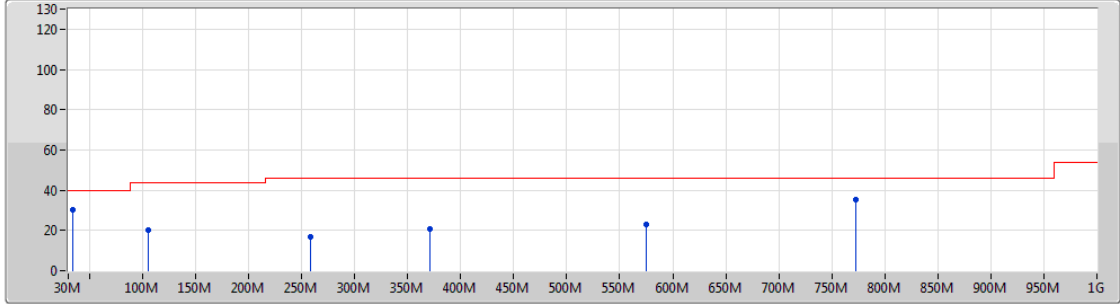
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)_Nss1_1TX(Port2)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	33.88M	30.33	40.00	-9.67	-15.32	3	Vertical	360	1.00	-
2440MHz	Pass	PK	105.66M	20.44	43.50	-23.06	-20.46	3	Vertical	360	1.00	-
2440MHz	Pass	PK	258.92M	16.57	46.00	-29.43	-15.81	3	Vertical	360	1.00	-
2440MHz	Pass	PK	371.44M	20.88	46.00	-25.12	-14.94	3	Vertical	360	1.00	-
2440MHz	Pass	PK	575.14M	23.02	46.00	-22.98	-10.84	3	Vertical	360	1.00	-
2440MHz	Pass	PK	773.02M	35.29	46.00	-10.71	-8.16	3	Vertical	360	1.00	-
2440MHz	Pass	PK	115.36M	27.63	43.50	-15.87	-19.61	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	245.34M	24.08	46.00	-21.92	-17.84	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	291.9M	26.16	46.00	-19.84	-16.85	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	493.66M	24.09	46.00	-21.91	-12.19	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	559.62M	22.62	46.00	-23.38	-10.31	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	771.08M	38.12	46.00	-7.88	-8.18	3	Horizontal	0	1.00	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

21/09/2018

2440MHz\_Battery

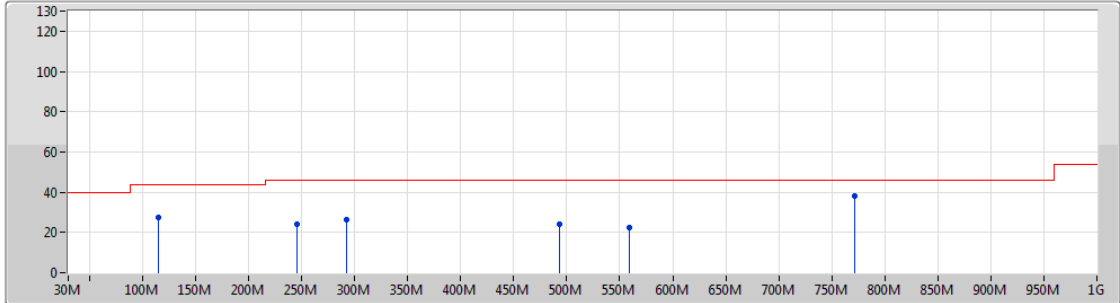


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	33.88M	30.33	40.00	-9.67	-15.32	3	Vertical	360	1.00	-
PK	105.66M	20.44	43.50	-23.06	-20.46	3	Vertical	360	1.00	-
PK	258.92M	16.57	46.00	-29.43	-15.81	3	Vertical	360	1.00	-
PK	371.44M	20.88	46.00	-25.12	-14.94	3	Vertical	360	1.00	-
PK	575.14M	23.02	46.00	-22.98	-10.84	3	Vertical	360	1.00	-
PK	773.02M	35.29	46.00	-10.71	-8.16	3	Vertical	360	1.00	-





BT-LE(1Mbps)\_Nss1\_1TX(Port2)

21/09/2018

2440MHz\_Battery



Legend:

- Lim.PK 
- PK 
- Lim.AV 
- AV 

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	115.36M	27.63	43.50	-15.87	-19.61	3	Horizontal	0	1.00	-
PK	245.34M	24.08	46.00	-21.92	-17.84	3	Horizontal	0	1.00	-
PK	291.9M	26.16	46.00	-19.84	-16.85	3	Horizontal	0	1.00	-
PK	493.66M	24.09	46.00	-21.91	-12.19	3	Horizontal	0	1.00	-
PK	559.62M	22.62	46.00	-23.38	-10.31	3	Horizontal	0	1.00	-
PK	771.08M	38.12	46.00	-7.88	-8.18	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)_Nss1_1TX(Port2)	Pass	AV	2.4835G	44.91	54.00	-9.09	30.69	3	Vertical	230	1.26	-



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)_Nss1_1TX(Port2)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3858G	42.89	54.00	-11.11	30.37	3	Vertical	232	1.01	-
2402MHz	Pass	AV	2.402G	96.55	Inf	-Inf	30.41	3	Vertical	232	1.01	-
2402MHz	Pass	PK	2.3876G	53.62	74.00	-20.38	30.37	3	Vertical	232	1.01	-
2402MHz	Pass	PK	2.402G	98.01	Inf	-Inf	30.41	3	Vertical	232	1.01	-
2402MHz	Pass	AV	2.3854G	42.77	54.00	-11.23	30.36	3	Horizontal	232	1.28	-
2402MHz	Pass	AV	2.402G	92.74	Inf	-Inf	30.41	3	Horizontal	232	1.28	-
2402MHz	Pass	PK	2.3864G	53.78	74.00	-20.22	30.37	3	Horizontal	232	1.28	-
2402MHz	Pass	PK	2.402G	94.17	Inf	-Inf	30.41	3	Horizontal	232	1.28	-
2402MHz	Pass	AV	4.80396G	33.93	54.00	-20.07	5.86	3	Vertical	140	2.41	-
2402MHz	Pass	PK	4.80376G	46.19	74.00	-27.81	5.86	3	Vertical	140	2.41	-
2402MHz	Pass	AV	4.80392G	34.73	54.00	-19.27	5.86	3	Horizontal	213	1.24	-
2402MHz	Pass	PK	4.80452G	46.31	74.00	-27.69	5.86	3	Horizontal	213	1.24	-
2440MHz	Pass	AV	2.382G	42.99	54.00	-11.01	30.35	3	Vertical	236	1.17	-
2440MHz	Pass	AV	2.44G	95.59	Inf	-Inf	30.55	3	Vertical	236	1.17	-
2440MHz	Pass	AV	2.4912G	43.45	54.00	-10.55	30.72	3	Vertical	236	1.17	-
2440MHz	Pass	PK	2.3752G	54.47	74.00	-19.53	30.33	3	Vertical	236	1.17	-
2440MHz	Pass	PK	2.44G	97.05	Inf	-Inf	30.55	3	Vertical	236	1.17	-
2440MHz	Pass	PK	2.4908G	54.89	74.00	-19.11	30.72	3	Vertical	236	1.17	-
2440MHz	Pass	AV	2.3884G	42.90	54.00	-11.10	30.37	3	Horizontal	315	2.47	-
2440MHz	Pass	AV	2.44G	92.20	Inf	-Inf	30.55	3	Horizontal	315	2.47	-
2440MHz	Pass	AV	2.4976G	43.43	54.00	-10.57	30.74	3	Horizontal	315	2.47	-
2440MHz	Pass	PK	2.3592G	53.44	74.00	-20.56	30.27	3	Horizontal	315	2.47	-
2440MHz	Pass	PK	2.44G	93.65	Inf	-Inf	30.55	3	Horizontal	315	2.47	-
2440MHz	Pass	PK	2.4844G	54.64	74.00	-19.36	30.69	3	Horizontal	315	2.47	-
2440MHz	Pass	AV	4.88G	35.04	54.00	-18.96	6.01	3	Vertical	212	2.50	-
2440MHz	Pass	AV	7.31944G	37.52	54.00	-16.48	11.24	3	Vertical	169	1.16	-
2440MHz	Pass	PK	4.87952G	47.13	74.00	-26.87	6.01	3	Vertical	212	2.50	-
2440MHz	Pass	PK	7.31948G	51.06	74.00	-22.94	11.24	3	Vertical	169	1.16	-
2440MHz	Pass	AV	4.87996G	34.66	54.00	-19.34	6.01	3	Horizontal	213	1.00	-
2440MHz	Pass	AV	7.31932G	37.92	54.00	-16.08	11.24	3	Horizontal	17	1.13	-
2440MHz	Pass	PK	4.88004G	46.46	74.00	-27.54	6.01	3	Horizontal	213	1.00	-
2440MHz	Pass	PK	7.31936G	51.20	74.00	-22.80	11.24	3	Horizontal	17	1.13	-
2480MHz	Pass	AV	2.48G	95.06	Inf	-Inf	30.68	3	Vertical	230	1.26	-
2480MHz	Pass	AV	2.4835G	44.91	54.00	-9.09	30.69	3	Vertical	230	1.26	-
2480MHz	Pass	PK	2.4802G	96.48	Inf	-Inf	30.68	3	Vertical	230	1.26	-
2480MHz	Pass	PK	2.4838G	57.61	74.00	-16.39	30.69	3	Vertical	230	1.26	-
2480MHz	Pass	AV	2.48G	91.66	Inf	-Inf	30.68	3	Horizontal	312	2.67	-
2480MHz	Pass	AV	2.4835G	43.88	54.00	-10.12	30.69	3	Horizontal	312	2.67	-
2480MHz	Pass	PK	2.4802G	93.09	Inf	-Inf	30.68	3	Horizontal	312	2.67	-
2480MHz	Pass	PK	2.4836G	55.06	74.00	-18.94	30.69	3	Horizontal	312	2.67	-
2480MHz	Pass	AV	4.95996G	34.14	54.00	-19.86	6.17	3	Vertical	225	2.20	-
2480MHz	Pass	AV	7.43944G	38.32	54.00	-15.68	11.57	3	Vertical	173	2.11	-
2480MHz	Pass	PK	4.96004G	46.18	74.00	-27.82	6.17	3	Vertical	225	2.20	-
2480MHz	Pass	PK	7.43916G	51.66	74.00	-22.34	11.57	3	Vertical	173	2.11	-
2480MHz	Pass	AV	4.96008G	34.00	54.00	-20.00	6.17	3	Horizontal	275	2.34	-
2480MHz	Pass	AV	7.43932G	38.29	54.00	-15.71	11.57	3	Horizontal	20	2.03	-
2480MHz	Pass	PK	4.95952G	46.18	74.00	-27.82	6.17	3	Horizontal	275	2.34	-





## RSE TX above 1GHz Result

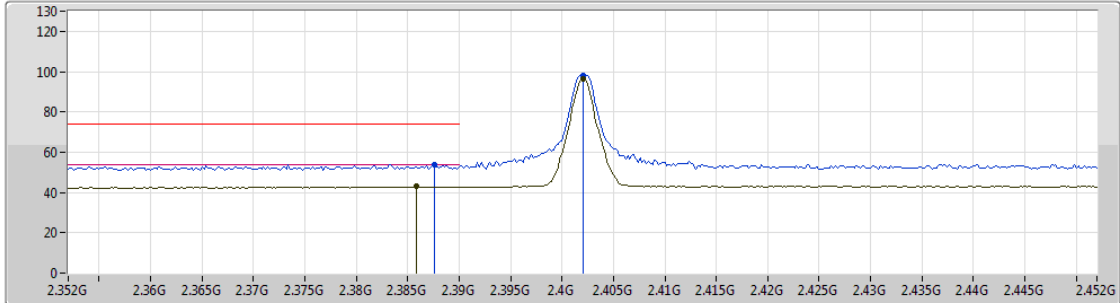
Appendix E.3





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	7.4314G	51.04	74.00	-22.96	11.54	3	Horizontal	20	2.03	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2402MHz\_TX



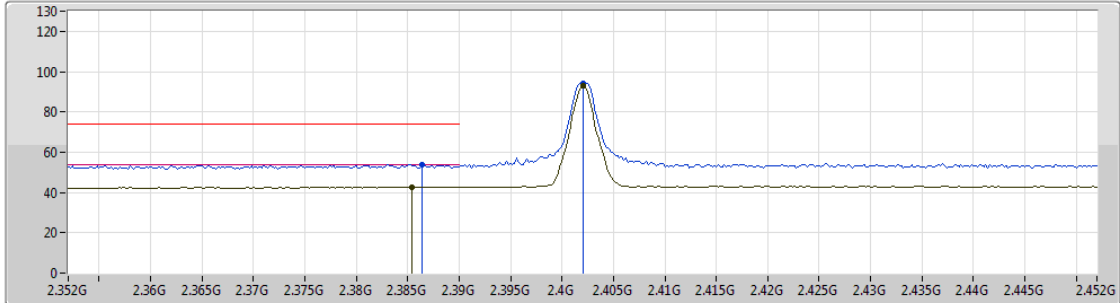
Lim.PK    
 PK    
 Lim.AV    
 AV  





Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3858G	42.89	54.00	-11.11	30.37	3	Vertical	232	1.01	-
AV	2.402G	96.55	Inf	-Inf	30.41	3	Vertical	232	1.01	-
PK	2.3876G	53.62	74.00	-20.38	30.37	3	Vertical	232	1.01	-
PK	2.402G	98.01	Inf	-Inf	30.41	3	Vertical	232	1.01	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2402MHz\_TX



Lim.PK    
 PK    
 Lim.AV    
 AV  

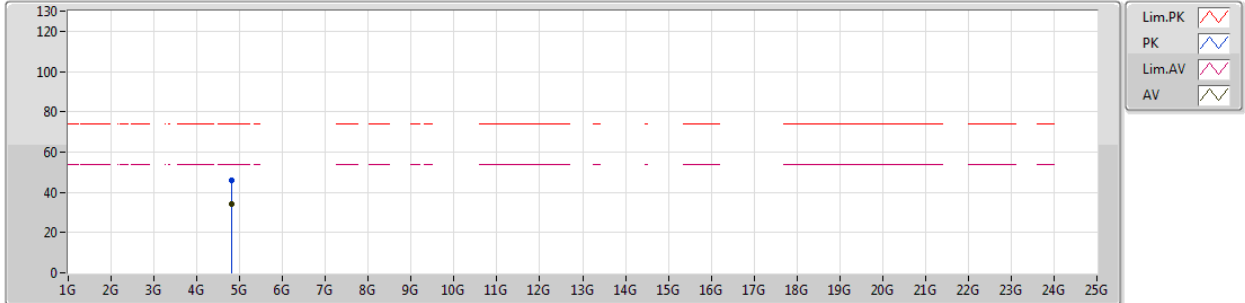
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3854G	42.77	54.00	-11.23	30.36	3	Horizontal	232	1.28	-
AV	2.402G	92.74	Inf	-Inf	30.41	3	Horizontal	232	1.28	-
PK	2.3864G	53.78	74.00	-20.22	30.37	3	Horizontal	232	1.28	-
PK	2.402G	94.17	Inf	-Inf	30.41	3	Horizontal	232	1.28	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2402MHz\_TX



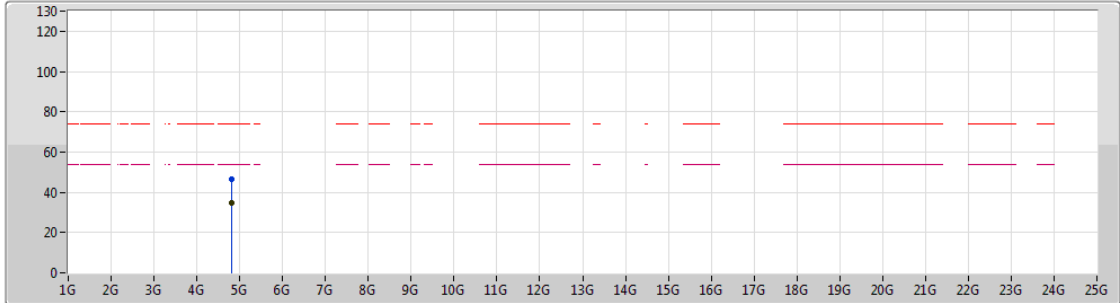
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.80396G	33.93	54.00	-20.07	5.86	3	Vertical	140	2.41	-
PK	4.80376G	46.19	74.00	-27.81	5.86	3	Vertical	140	2.41	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2402MHz\_TX



Legend for plot:

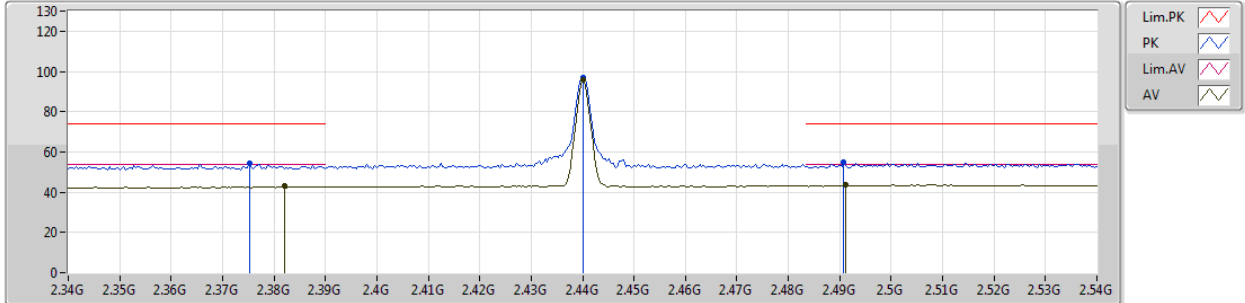
- Lim.PK
- PK
- Lim.AV
- AV

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.80392G	34.73	54.00	-19.27	5.86	3	Horizontal	213	1.24	-
PK	4.80452G	46.31	74.00	-27.69	5.86	3	Horizontal	213	1.24	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2440MHz\_TX

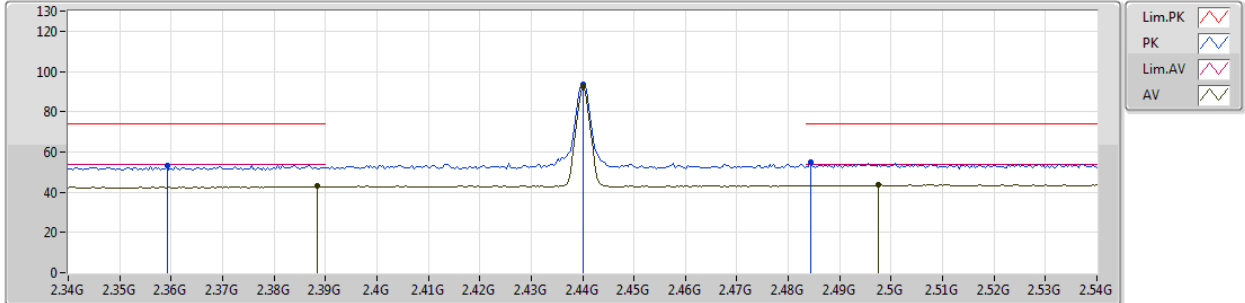


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.382G	42.99	54.00	-11.01	30.35	3	Vertical	236	1.17	-
AV	2.44G	95.59	Inf	-Inf	30.55	3	Vertical	236	1.17	-
AV	2.4912G	43.45	54.00	-10.55	30.72	3	Vertical	236	1.17	-
PK	2.3752G	54.47	74.00	-19.53	30.33	3	Vertical	236	1.17	-
PK	2.44G	97.05	Inf	-Inf	30.55	3	Vertical	236	1.17	-
PK	2.4908G	54.89	74.00	-19.11	30.72	3	Vertical	236	1.17	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2440MHz\_TX



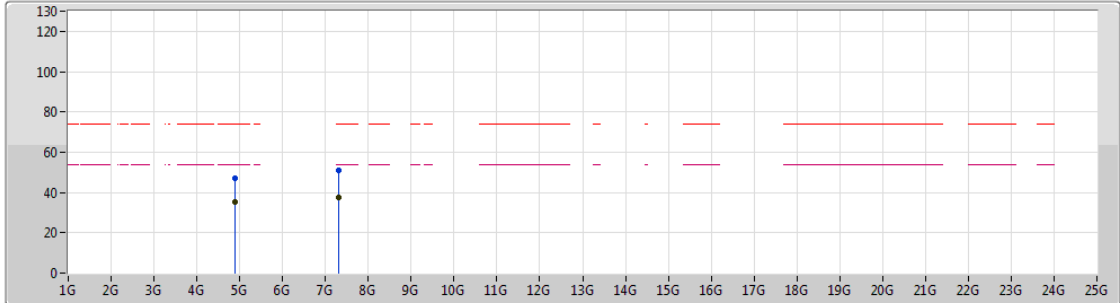
Type	Freq [Hz]	Level [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Factor [dB]	Dist [m]	Condition	Azimuth [°]	Height [m]	Comments
AV	2.3884G	42.90	54.00	-11.10	30.37	3	Horizontal	315	2.47	-
AV	2.44G	92.20	Inf	-Inf	30.55	3	Horizontal	315	2.47	-
AV	2.4976G	43.43	54.00	-10.57	30.74	3	Horizontal	315	2.47	-
PK	2.3592G	53.44	74.00	-20.56	30.27	3	Horizontal	315	2.47	-
PK	2.44G	93.65	Inf	-Inf	30.55	3	Horizontal	315	2.47	-
PK	2.4844G	54.64	74.00	-19.36	30.69	3	Horizontal	315	2.47	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2440MHz\_TX



Legend for the spectrum plot:

- Lim.PK: Red line with a downward-pointing triangle
- PK: Blue line with a downward-pointing triangle
- Lim.AV: Magenta line with a downward-pointing triangle
- AV: Black line with a downward-pointing triangle

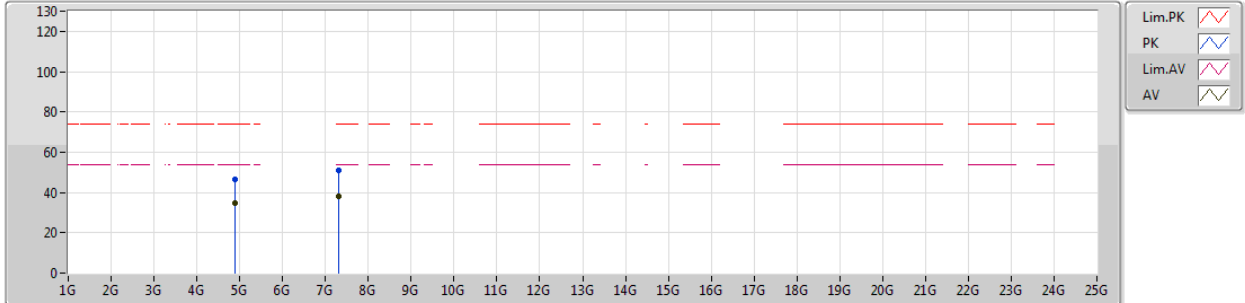
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.88G	35.04	54.00	-18.96	6.01	3	Vertical	212	2.50	-
AV	7.31944G	37.52	54.00	-16.48	11.24	3	Vertical	169	1.16	-
PK	4.87952G	47.13	74.00	-26.87	6.01	3	Vertical	212	2.50	-
PK	7.31948G	51.06	74.00	-22.94	11.24	3	Vertical	169	1.16	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2440MHz\_TX

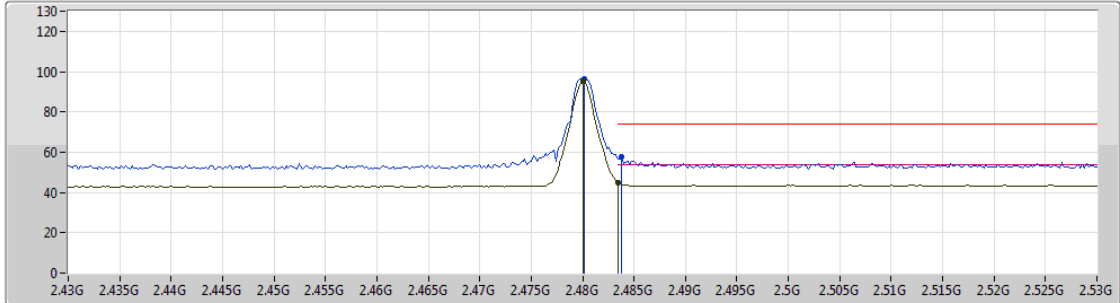






Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.87996G	34.66	54.00	-19.34	6.01	3	Horizontal	213	1.00	-
AV	7.31932G	37.92	54.00	-16.08	11.24	3	Horizontal	17	1.13	-
PK	4.88004G	46.46	74.00	-27.54	6.01	3	Horizontal	213	1.00	-
PK	7.31936G	51.20	74.00	-22.80	11.24	3	Horizontal	17	1.13	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2480MHz\_TX



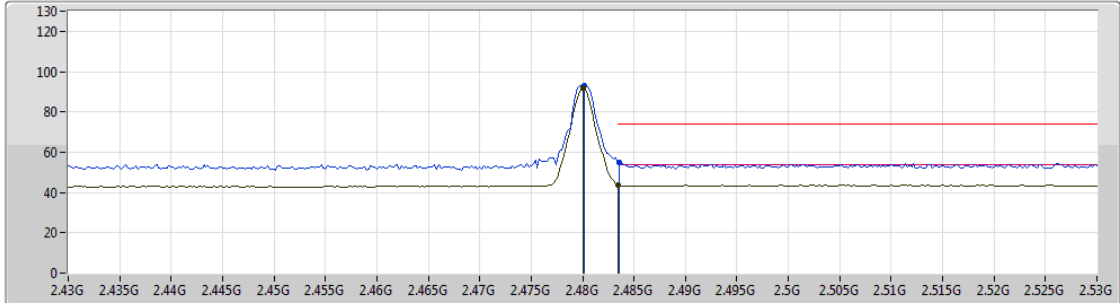
Lim.PK    
 PK    
 Lim.AV    
 AV  

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	95.06	Inf	-Inf	30.68	3	Vertical	230	1.26	-
AV	2.4835G	44.91	54.00	-9.09	30.69	3	Vertical	230	1.26	-
PK	2.4802G	96.48	Inf	-Inf	30.68	3	Vertical	230	1.26	-
PK	2.4838G	57.61	74.00	-16.39	30.69	3	Vertical	230	1.26	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2480MHz\_TX

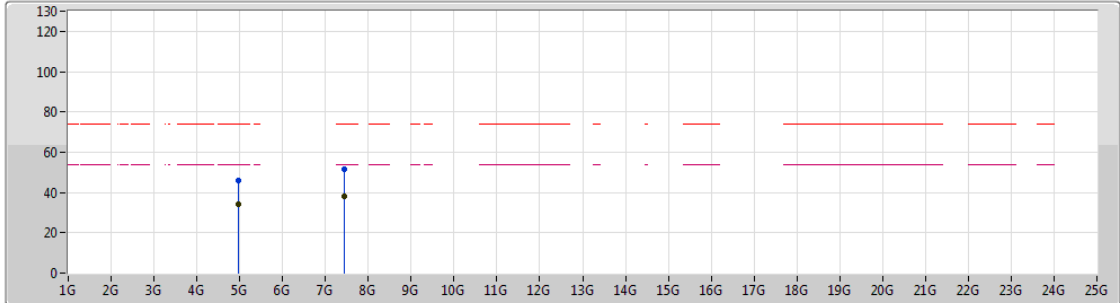


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	91.66	Inf	-Inf	30.68	3	Horizontal	312	2.67	-
AV	2.4835G	43.88	54.00	-10.12	30.69	3	Horizontal	312	2.67	-
PK	2.4802G	93.09	Inf	-Inf	30.68	3	Horizontal	312	2.67	-
PK	2.4836G	55.06	74.00	-18.94	30.69	3	Horizontal	312	2.67	-





BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2480MHz\_TX



Legend for the spectrum plot:

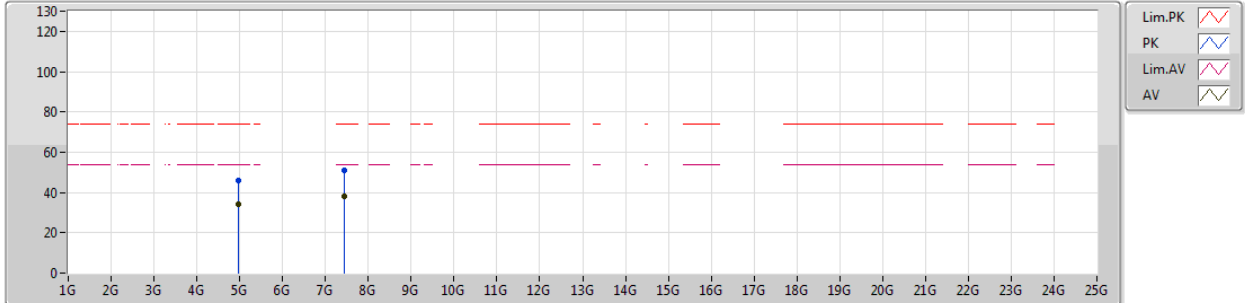
- Lim.PK 
- PK 
- Lim.AV 
- AV 

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.95996G	34.14	54.00	-19.86	6.17	3	Vertical	225	2.20	-
AV	7.43944G	38.32	54.00	-15.68	11.57	3	Vertical	173	2.11	-
PK	4.96004G	46.18	74.00	-27.82	6.17	3	Vertical	225	2.20	-
PK	7.43916G	51.66	74.00	-22.34	11.57	3	Vertical	173	2.11	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2480MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.96008G	34.00	54.00	-20.00	6.17	3	Horizontal	275	2.34	-
AV	7.43932G	38.29	54.00	-15.71	11.57	3	Horizontal	20	2.03	-
PK	4.95952G	46.18	74.00	-27.82	6.17	3	Horizontal	275	2.34	-
PK	7.4314G	51.04	74.00	-22.96	11.54	3	Horizontal	20	2.03	-



Summary

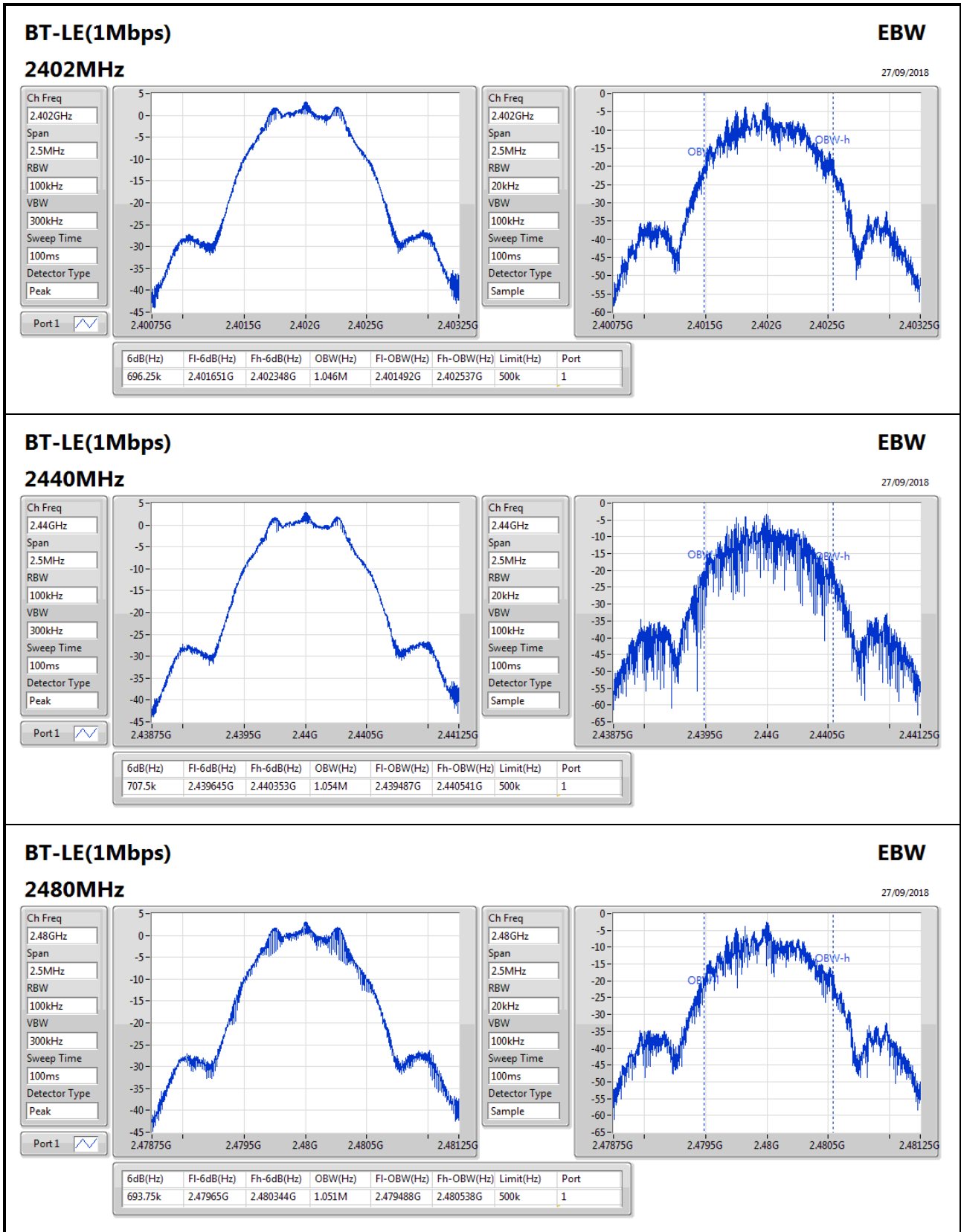
Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	707.5k	1.054M	1M05F1D	693.75k	1.046M

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	696.25k	1.046M
2440MHz_TnomVnom	Pass	500k	707.5k	1.054M
2480MHz_TnomVnom	Pass	500k	693.75k	1.051M

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





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	2.50	0.00178

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.57	2.50	30.00
2440MHz_TnomVnom	Pass	0.57	2.42	30.00
2480MHz_TnomVnom	Pass	0.57	2.34	30.00





Summary

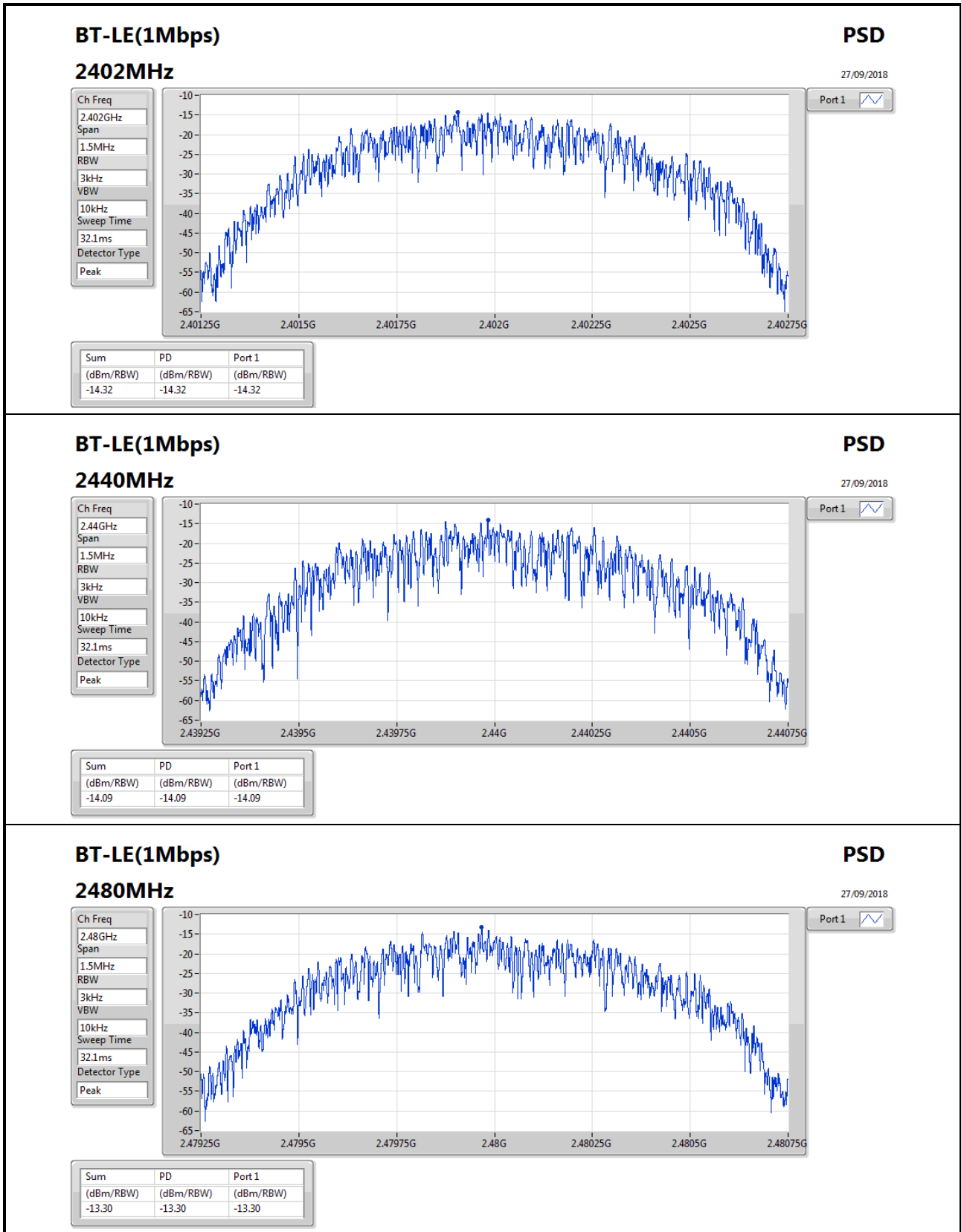
Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-13.30

RBW=3kHz.

Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.57	-14.32	8.00
2440MHz_TnomVnom	Pass	0.57	-14.09	8.00
2480MHz_TnomVnom	Pass	0.57	-13.30	8.00

RBW=3kHz.



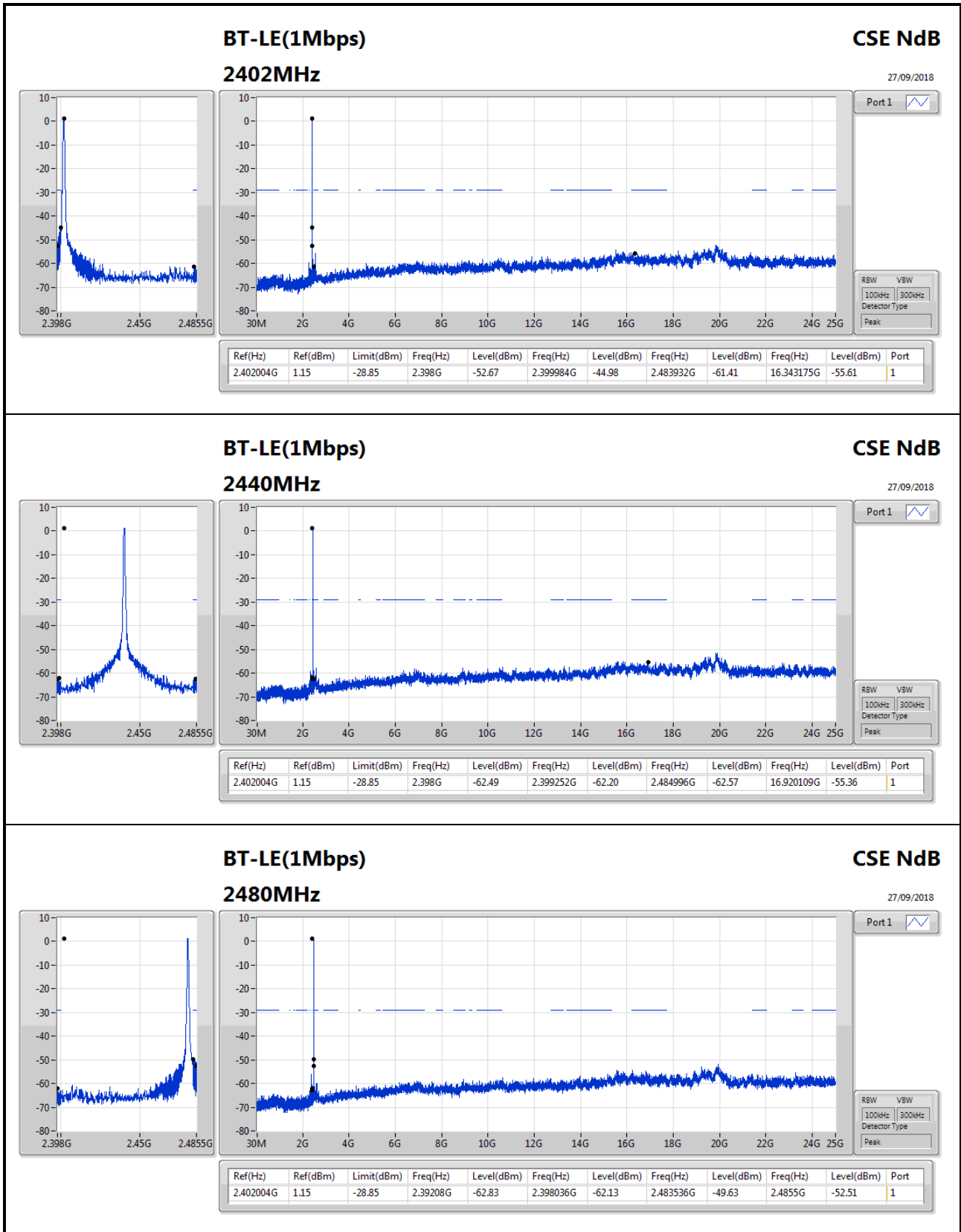


Summary

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	1.15	-28.85	2.398G	-52.67	2.399984G	-44.98	2.483932G	-61.41	16.343175G	-55.61	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	1.15	-28.85	2.398G	-52.67	2.399984G	-44.98	2.483932G	-61.41	16.343175G	-55.61	1
2440MHz_TnomVnom	Pass	2.402004G	1.15	-28.85	2.398G	-62.49	2.399252G	-62.20	2.484996G	-62.57	16.920109G	-55.36	1
2480MHz_TnomVnom	Pass	2.402004G	1.15	-28.85	2.39208G	-62.83	2.398036G	-62.13	2.483536G	-49.63	2.4855G	-52.51	1



**BT-LE(1Mbps)**

**2480MHz**

**CSE NdB**

27/09/2018

Port1

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	1.15	-28.85	2.39208G	-62.83	2.398036G	-62.13	2.483536G	-49.63	2.4855G	-52.51	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)_Nss1_1TX(Port2)	Pass	PK	771.08M	38.12	46.00	-7.88	-8.18	3	Horizontal	0	1.00	-



Result

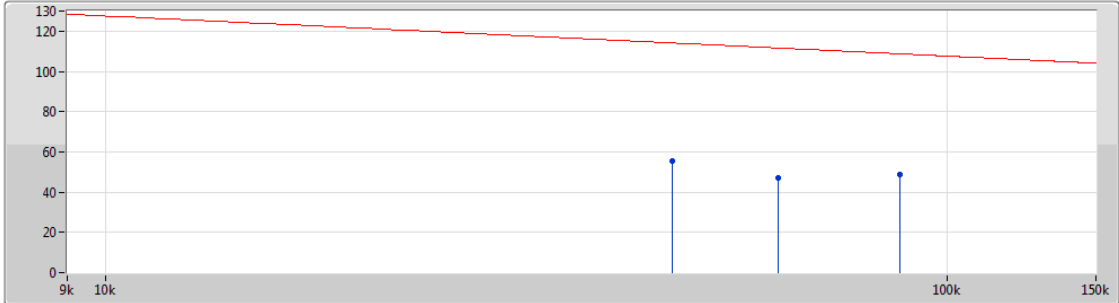
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)_Nss1_1TX(Port2)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	47.07k	55.68	114.13	-58.45	21.29	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	62.862k	46.81	111.63	-64.82	21.07	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	87.678k	48.47	108.73	-60.26	20.88	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	2.896M	41.76	69.50	-27.74	20.79	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	6.06M	40.10	69.50	-29.40	21.34	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	11.075M	41.06	69.50	-28.44	22.22	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	33.88M	30.33	40.00	-9.67	-15.32	3	Vertical	360	1.00	-
2440MHz	Pass	PK	105.66M	20.44	43.50	-23.06	-20.46	3	Vertical	360	1.00	-
2440MHz	Pass	PK	258.92M	16.57	46.00	-29.43	-15.81	3	Vertical	360	1.00	-
2440MHz	Pass	PK	371.44M	20.88	46.00	-25.12	-14.94	3	Vertical	360	1.00	-
2440MHz	Pass	PK	575.14M	23.02	46.00	-22.98	-10.84	3	Vertical	360	1.00	-
2440MHz	Pass	PK	773.02M	35.29	46.00	-10.71	-8.16	3	Vertical	360	1.00	-
2440MHz	Pass	PK	115.36M	27.63	43.50	-15.87	-19.61	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	245.34M	24.08	46.00	-21.92	-17.84	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	291.9M	26.16	46.00	-19.84	-16.85	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	493.66M	24.09	46.00	-21.91	-12.19	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	559.62M	22.62	46.00	-23.38	-10.31	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	771.08M	38.12	46.00	-7.88	-8.18	3	Horizontal	0	1.00	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

13/10/2018

2440MHz\_Battery



Lim.PK  
 PK  
 Lim.AV  
 AV

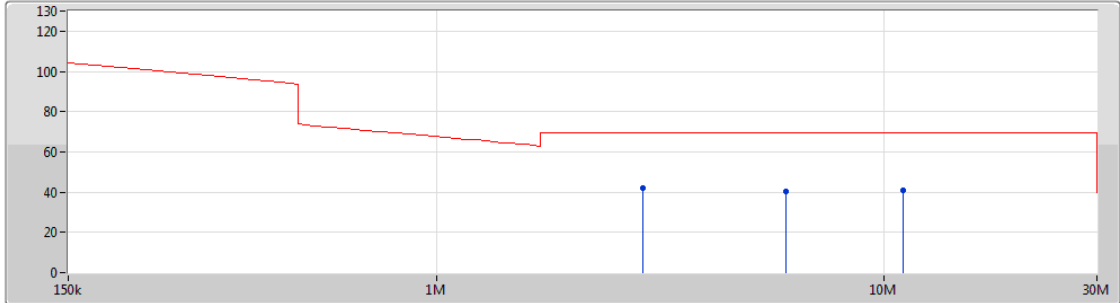
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	47.07k	55.68	114.13	-58.45	21.29	3	Horizontal	0	1.00	-
PK	62.862k	46.81	111.63	-64.82	21.07	3	Horizontal	0	1.00	-
PK	87.678k	48.47	108.73	-60.26	20.88	3	Horizontal	0	1.00	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

13/10/2018

2440MHz\_Battery



Lim.PK  
 PK  
 Lim.AV  
 AV

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.896M	41.76	69.50	-27.74	20.79	3	Horizontal	360	1.00	-
PK	6.06M	40.10	69.50	-29.40	21.34	3	Horizontal	360	1.00	-
PK	11.075M	41.06	69.50	-28.44	22.22	3	Horizontal	360	1.00	-

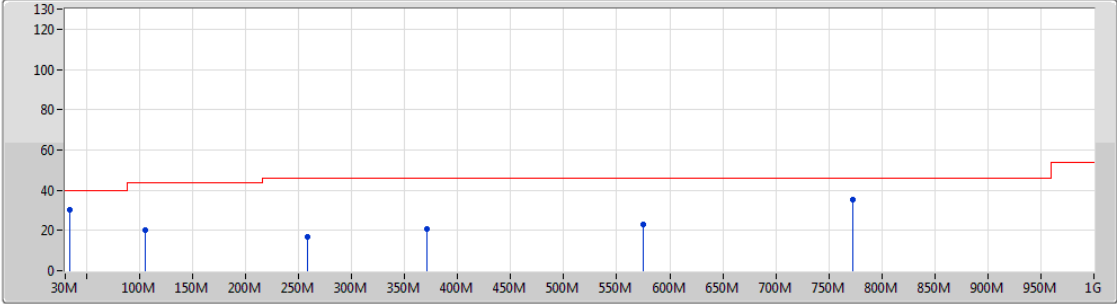




BT-LE(1Mbps)\_Nss1\_1TX(Port2)

21/09/2018

2440MHz\_Battery

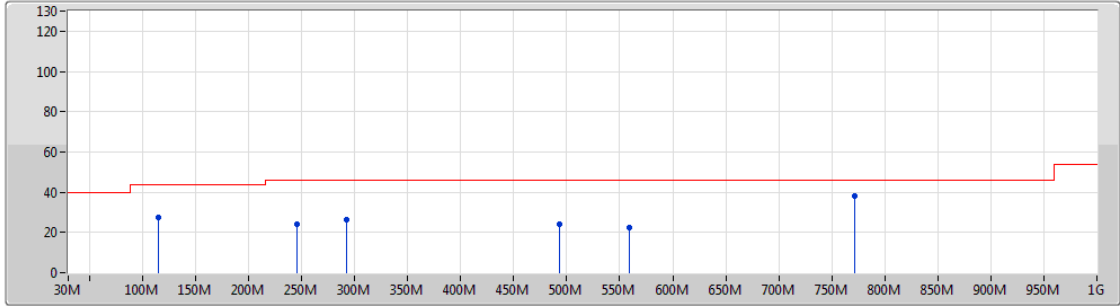






Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	33.88M	30.33	40.00	-9.67	-15.32	3	Vertical	360	1.00	-
PK	105.66M	20.44	43.50	-23.06	-20.46	3	Vertical	360	1.00	-
PK	258.92M	16.57	46.00	-29.43	-15.81	3	Vertical	360	1.00	-
PK	371.44M	20.88	46.00	-25.12	-14.94	3	Vertical	360	1.00	-
PK	575.14M	23.02	46.00	-22.98	-10.84	3	Vertical	360	1.00	-
PK	773.02M	35.29	46.00	-10.71	-8.16	3	Vertical	360	1.00	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

21/09/2018

2440MHz\_Battery



Lim.PK   
 PK   
 Lim.AV   
 AV 

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	115.36M	27.63	43.50	-15.87	-19.61	3	Horizontal	0	1.00	-
PK	245.34M	24.08	46.00	-21.92	-17.84	3	Horizontal	0	1.00	-
PK	291.9M	26.16	46.00	-19.84	-16.85	3	Horizontal	0	1.00	-
PK	493.66M	24.09	46.00	-21.91	-12.19	3	Horizontal	0	1.00	-
PK	559.62M	22.62	46.00	-23.38	-10.31	3	Horizontal	0	1.00	-
PK	771.08M	38.12	46.00	-7.88	-8.18	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)_Nss1_1TX(Port2)	Pass	PK	771.08M	38.12	46.00	-7.88	-8.18	3	Horizontal	0	1.00	-



Result

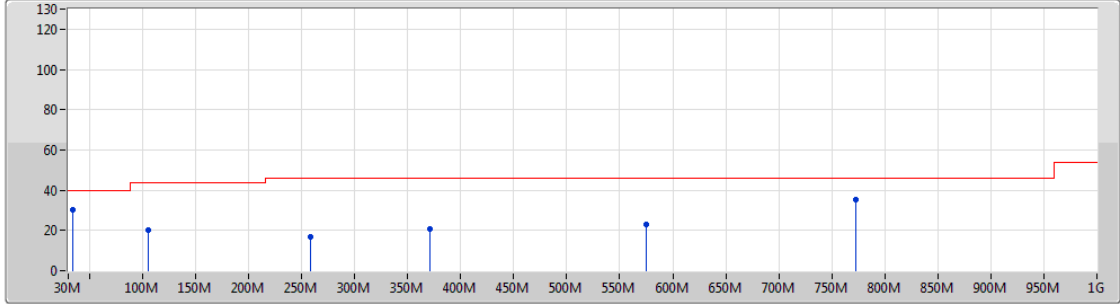
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)_Nss1_1TX(Port2)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	33.88M	30.33	40.00	-9.67	-15.32	3	Vertical	360	1.00	-
2440MHz	Pass	PK	105.66M	20.44	43.50	-23.06	-20.46	3	Vertical	360	1.00	-
2440MHz	Pass	PK	258.92M	16.57	46.00	-29.43	-15.81	3	Vertical	360	1.00	-
2440MHz	Pass	PK	371.44M	20.88	46.00	-25.12	-14.94	3	Vertical	360	1.00	-
2440MHz	Pass	PK	575.14M	23.02	46.00	-22.98	-10.84	3	Vertical	360	1.00	-
2440MHz	Pass	PK	773.02M	35.29	46.00	-10.71	-8.16	3	Vertical	360	1.00	-
2440MHz	Pass	PK	115.36M	27.63	43.50	-15.87	-19.61	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	245.34M	24.08	46.00	-21.92	-17.84	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	291.9M	26.16	46.00	-19.84	-16.85	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	493.66M	24.09	46.00	-21.91	-12.19	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	559.62M	22.62	46.00	-23.38	-10.31	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	771.08M	38.12	46.00	-7.88	-8.18	3	Horizontal	0	1.00	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

21/09/2018

2440MHz\_Battery

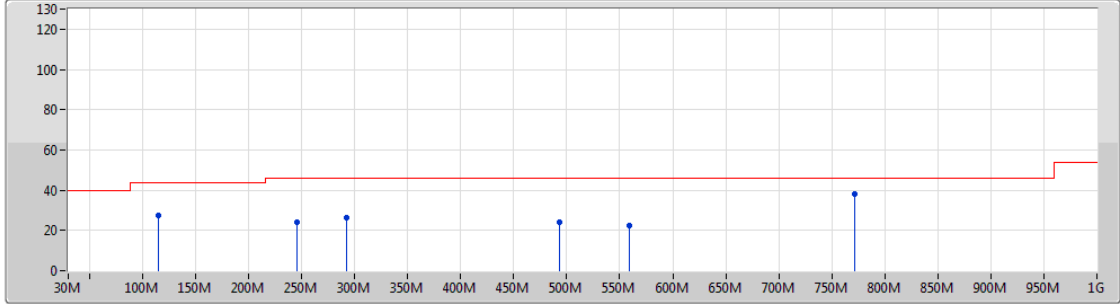


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	33.88M	30.33	40.00	-9.67	-15.32	3	Vertical	360	1.00	-
PK	105.66M	20.44	43.50	-23.06	-20.46	3	Vertical	360	1.00	-
PK	258.92M	16.57	46.00	-29.43	-15.81	3	Vertical	360	1.00	-
PK	371.44M	20.88	46.00	-25.12	-14.94	3	Vertical	360	1.00	-
PK	575.14M	23.02	46.00	-22.98	-10.84	3	Vertical	360	1.00	-
PK	773.02M	35.29	46.00	-10.71	-8.16	3	Vertical	360	1.00	-





BT-LE(1Mbps)\_Nss1\_1TX(Port2)

21/09/2018

2440MHz\_Battery



Legend for the spectrum plot:

- Lim.PK 
- PK 
- Lim.AV 
- AV 

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	115.36M	27.63	43.50	-15.87	-19.61	3	Horizontal	0	1.00	-
PK	245.34M	24.08	46.00	-21.92	-17.84	3	Horizontal	0	1.00	-
PK	291.9M	26.16	46.00	-19.84	-16.85	3	Horizontal	0	1.00	-
PK	493.66M	24.09	46.00	-21.91	-12.19	3	Horizontal	0	1.00	-
PK	559.62M	22.62	46.00	-23.38	-10.31	3	Horizontal	0	1.00	-
PK	771.08M	38.12	46.00	-7.88	-8.18	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)_Nss1_1TX(Port2)	Pass	AV	2.4835G	44.91	54.00	-9.09	30.69	3	Vertical	230	1.26	-



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)_Nss1_1TX(Port2)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3858G	42.89	54.00	-11.11	30.37	3	Vertical	232	1.01	-
2402MHz	Pass	AV	2.402G	96.55	Inf	-Inf	30.41	3	Vertical	232	1.01	-
2402MHz	Pass	PK	2.3876G	53.62	74.00	-20.38	30.37	3	Vertical	232	1.01	-
2402MHz	Pass	PK	2.402G	98.01	Inf	-Inf	30.41	3	Vertical	232	1.01	-
2402MHz	Pass	AV	2.3854G	42.77	54.00	-11.23	30.36	3	Horizontal	232	1.28	-
2402MHz	Pass	AV	2.402G	92.74	Inf	-Inf	30.41	3	Horizontal	232	1.28	-
2402MHz	Pass	PK	2.3864G	53.78	74.00	-20.22	30.37	3	Horizontal	232	1.28	-
2402MHz	Pass	PK	2.402G	94.17	Inf	-Inf	30.41	3	Horizontal	232	1.28	-
2402MHz	Pass	AV	4.80396G	33.93	54.00	-20.07	5.86	3	Vertical	140	2.41	-
2402MHz	Pass	PK	4.80376G	46.19	74.00	-27.81	5.86	3	Vertical	140	2.41	-
2402MHz	Pass	AV	4.80392G	34.73	54.00	-19.27	5.86	3	Horizontal	213	1.24	-
2402MHz	Pass	PK	4.80452G	46.31	74.00	-27.69	5.86	3	Horizontal	213	1.24	-
2440MHz	Pass	AV	2.382G	42.99	54.00	-11.01	30.35	3	Vertical	236	1.17	-
2440MHz	Pass	AV	2.44G	95.59	Inf	-Inf	30.55	3	Vertical	236	1.17	-
2440MHz	Pass	AV	2.4912G	43.45	54.00	-10.55	30.72	3	Vertical	236	1.17	-
2440MHz	Pass	PK	2.3752G	54.47	74.00	-19.53	30.33	3	Vertical	236	1.17	-
2440MHz	Pass	PK	2.44G	97.05	Inf	-Inf	30.55	3	Vertical	236	1.17	-
2440MHz	Pass	PK	2.4908G	54.89	74.00	-19.11	30.72	3	Vertical	236	1.17	-
2440MHz	Pass	AV	2.3884G	42.90	54.00	-11.10	30.37	3	Horizontal	315	2.47	-
2440MHz	Pass	AV	2.44G	92.20	Inf	-Inf	30.55	3	Horizontal	315	2.47	-
2440MHz	Pass	AV	2.4976G	43.43	54.00	-10.57	30.74	3	Horizontal	315	2.47	-
2440MHz	Pass	PK	2.3592G	53.44	74.00	-20.56	30.27	3	Horizontal	315	2.47	-
2440MHz	Pass	PK	2.44G	93.65	Inf	-Inf	30.55	3	Horizontal	315	2.47	-
2440MHz	Pass	PK	2.4844G	54.64	74.00	-19.36	30.69	3	Horizontal	315	2.47	-
2440MHz	Pass	AV	4.88G	35.04	54.00	-18.96	6.01	3	Vertical	212	2.50	-
2440MHz	Pass	AV	7.31944G	37.52	54.00	-16.48	11.24	3	Vertical	169	1.16	-
2440MHz	Pass	PK	4.87952G	47.13	74.00	-26.87	6.01	3	Vertical	212	2.50	-
2440MHz	Pass	PK	7.31948G	51.06	74.00	-22.94	11.24	3	Vertical	169	1.16	-
2440MHz	Pass	AV	4.87996G	34.66	54.00	-19.34	6.01	3	Horizontal	213	1.00	-
2440MHz	Pass	AV	7.31932G	37.92	54.00	-16.08	11.24	3	Horizontal	17	1.13	-
2440MHz	Pass	PK	4.88004G	46.46	74.00	-27.54	6.01	3	Horizontal	213	1.00	-
2440MHz	Pass	PK	7.31936G	51.20	74.00	-22.80	11.24	3	Horizontal	17	1.13	-
2480MHz	Pass	AV	2.48G	95.06	Inf	-Inf	30.68	3	Vertical	230	1.26	-
2480MHz	Pass	AV	2.4835G	44.91	54.00	-9.09	30.69	3	Vertical	230	1.26	-
2480MHz	Pass	PK	2.4802G	96.48	Inf	-Inf	30.68	3	Vertical	230	1.26	-
2480MHz	Pass	PK	2.4838G	57.61	74.00	-16.39	30.69	3	Vertical	230	1.26	-
2480MHz	Pass	AV	2.48G	91.66	Inf	-Inf	30.68	3	Horizontal	312	2.67	-
2480MHz	Pass	AV	2.4835G	43.88	54.00	-10.12	30.69	3	Horizontal	312	2.67	-
2480MHz	Pass	PK	2.4802G	93.09	Inf	-Inf	30.68	3	Horizontal	312	2.67	-
2480MHz	Pass	PK	2.4836G	55.06	74.00	-18.94	30.69	3	Horizontal	312	2.67	-
2480MHz	Pass	AV	4.95996G	34.14	54.00	-19.86	6.17	3	Vertical	225	2.20	-
2480MHz	Pass	AV	7.43944G	38.32	54.00	-15.68	11.57	3	Vertical	173	2.11	-
2480MHz	Pass	PK	4.96004G	46.18	74.00	-27.82	6.17	3	Vertical	225	2.20	-
2480MHz	Pass	PK	7.43916G	51.66	74.00	-22.34	11.57	3	Vertical	173	2.11	-
2480MHz	Pass	AV	4.96008G	34.00	54.00	-20.00	6.17	3	Horizontal	275	2.34	-
2480MHz	Pass	AV	7.43932G	38.29	54.00	-15.71	11.57	3	Horizontal	20	2.03	-
2480MHz	Pass	PK	4.95952G	46.18	74.00	-27.82	6.17	3	Horizontal	275	2.34	-





## RSE TX above 1GHz Result

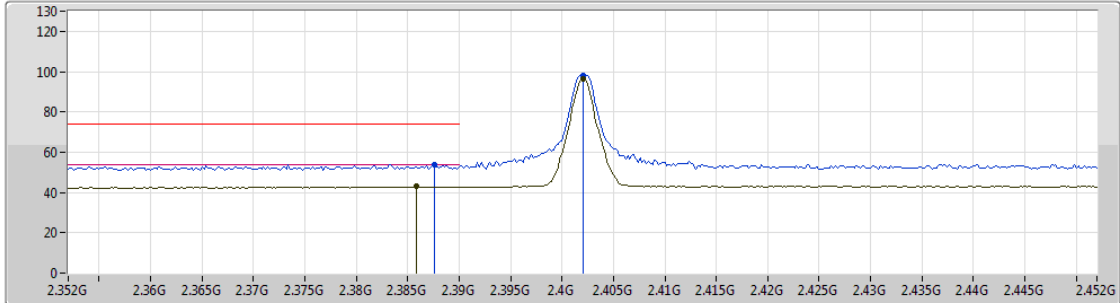
Appendix E.3

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	7.4314G	51.04	74.00	-22.96	11.54	3	Horizontal	20	2.03	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2402MHz\_TX

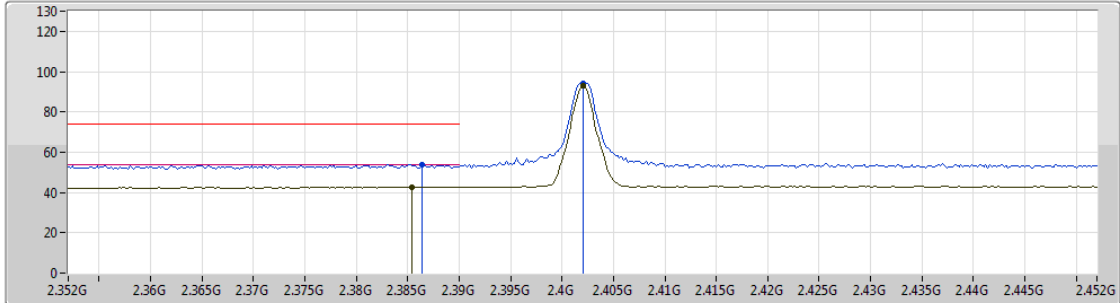


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3858G	42.89	54.00	-11.11	30.37	3	Vertical	232	1.01	-
AV	2.402G	96.55	Inf	-Inf	30.41	3	Vertical	232	1.01	-
PK	2.3876G	53.62	74.00	-20.38	30.37	3	Vertical	232	1.01	-
PK	2.402G	98.01	Inf	-Inf	30.41	3	Vertical	232	1.01	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2402MHz\_TX



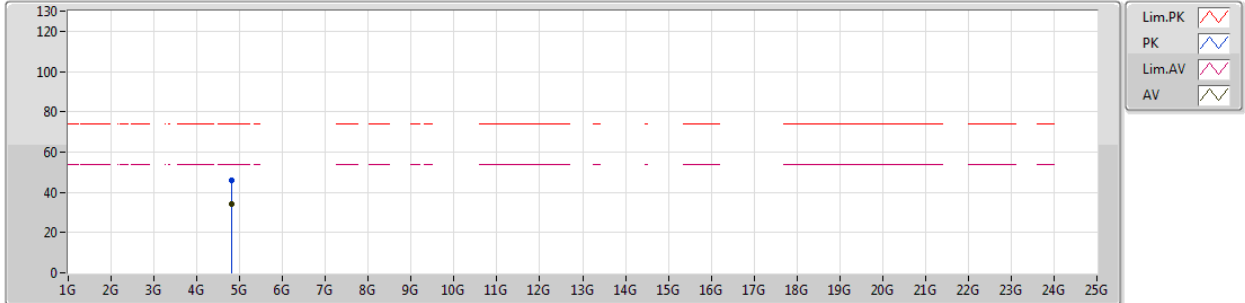
Lim.PK  
 PK  
 Lim.AV  
 AV

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3854G	42.77	54.00	-11.23	30.36	3	Horizontal	232	1.28	-
AV	2.402G	92.74	Inf	-Inf	30.41	3	Horizontal	232	1.28	-
PK	2.3864G	53.78	74.00	-20.22	30.37	3	Horizontal	232	1.28	-
PK	2.402G	94.17	Inf	-Inf	30.41	3	Horizontal	232	1.28	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2402MHz\_TX



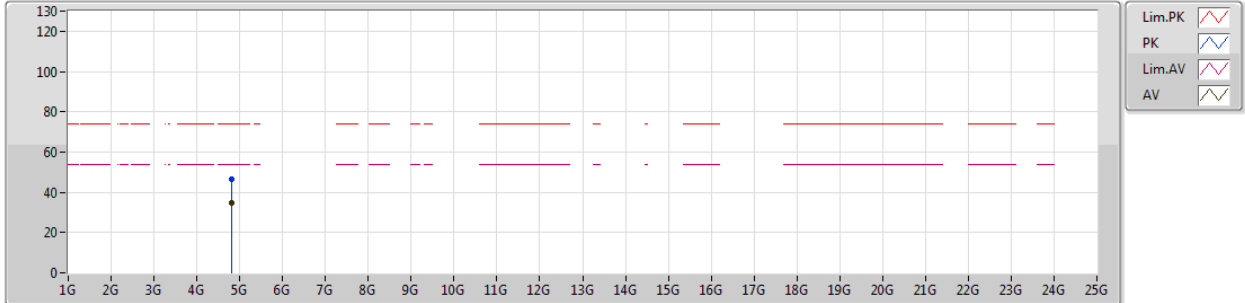
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.80396G	33.93	54.00	-20.07	5.86	3	Vertical	140	2.41	-
PK	4.80376G	46.19	74.00	-27.81	5.86	3	Vertical	140	2.41	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2402MHz\_TX

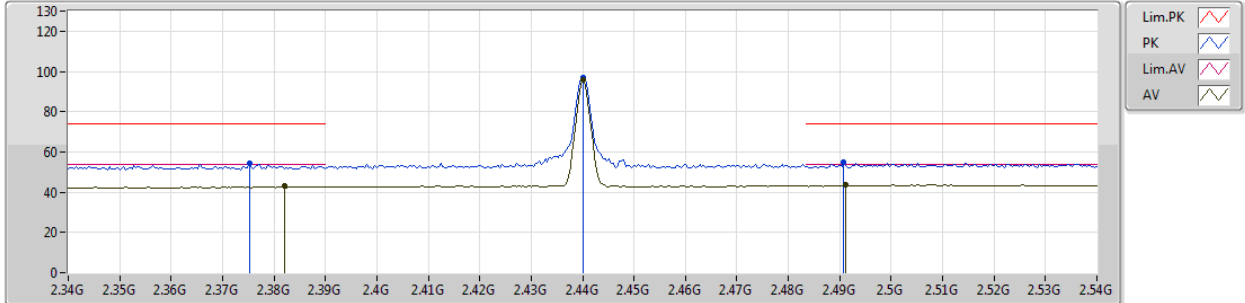


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.80392G	34.73	54.00	-19.27	5.86	3	Horizontal	213	1.24	-
PK	4.80452G	46.31	74.00	-27.69	5.86	3	Horizontal	213	1.24	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2440MHz\_TX

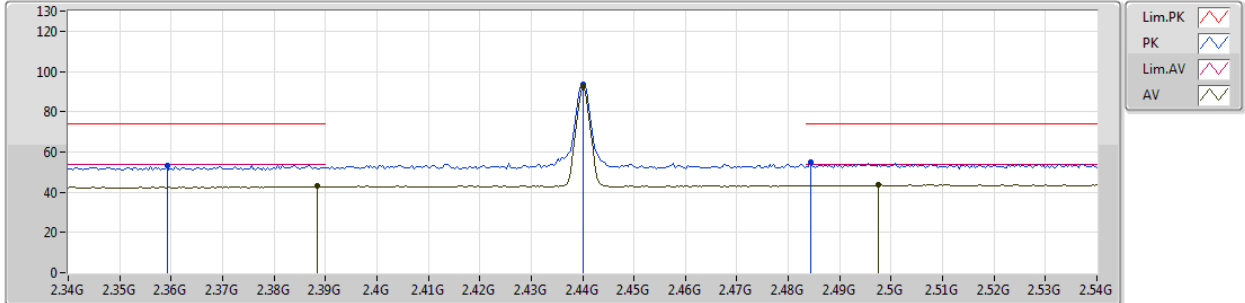


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.382G	42.99	54.00	-11.01	30.35	3	Vertical	236	1.17	-
AV	2.44G	95.59	Inf	-Inf	30.55	3	Vertical	236	1.17	-
AV	2.4912G	43.45	54.00	-10.55	30.72	3	Vertical	236	1.17	-
PK	2.3752G	54.47	74.00	-19.53	30.33	3	Vertical	236	1.17	-
PK	2.44G	97.05	Inf	-Inf	30.55	3	Vertical	236	1.17	-
PK	2.4908G	54.89	74.00	-19.11	30.72	3	Vertical	236	1.17	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2440MHz\_TX



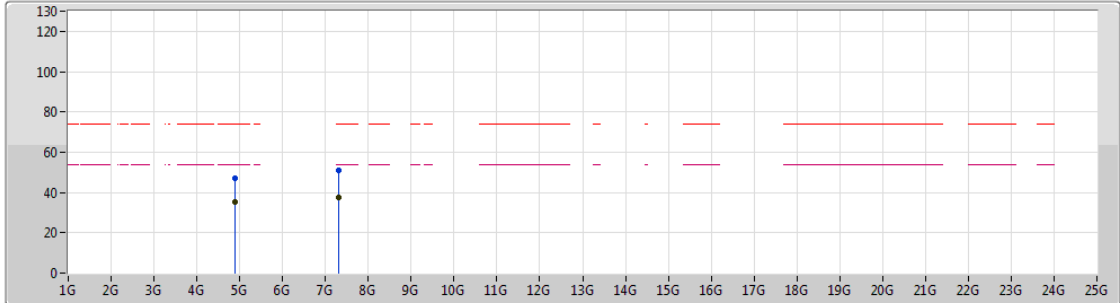
Type	Freq [Hz]	Level [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Factor [dB]	Dist [m]	Condition	Azimuth [°]	Height [m]	Comments
AV	2.3884G	42.90	54.00	-11.10	30.37	3	Horizontal	315	2.47	-
AV	2.44G	92.20	Inf	-Inf	30.55	3	Horizontal	315	2.47	-
AV	2.4976G	43.43	54.00	-10.57	30.74	3	Horizontal	315	2.47	-
PK	2.3592G	53.44	74.00	-20.56	30.27	3	Horizontal	315	2.47	-
PK	2.44G	93.65	Inf	-Inf	30.55	3	Horizontal	315	2.47	-
PK	2.4844G	54.64	74.00	-19.36	30.69	3	Horizontal	315	2.47	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2440MHz\_TX



Legend for the spectrum plot:

- Lim.PK
- PK
- Lim.AV
- AV

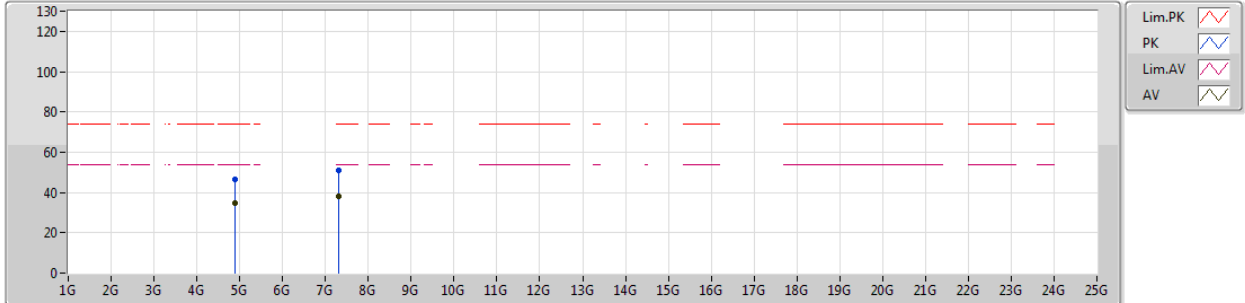
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.88G	35.04	54.00	-18.96	6.01	3	Vertical	212	2.50	-
AV	7.31944G	37.52	54.00	-16.48	11.24	3	Vertical	169	1.16	-
PK	4.87952G	47.13	74.00	-26.87	6.01	3	Vertical	212	2.50	-
PK	7.31948G	51.06	74.00	-22.94	11.24	3	Vertical	169	1.16	-



BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2440MHz\_TX

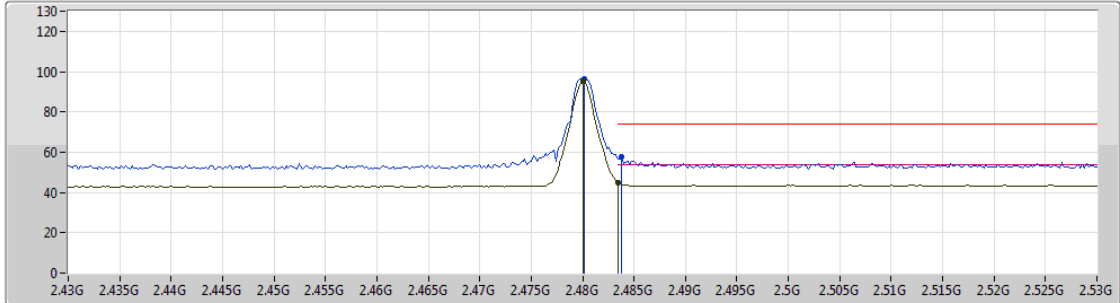






Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.87996G	34.66	54.00	-19.34	6.01	3	Horizontal	213	1.00	-
AV	7.31932G	37.92	54.00	-16.08	11.24	3	Horizontal	17	1.13	-
PK	4.88004G	46.46	74.00	-27.54	6.01	3	Horizontal	213	1.00	-
PK	7.31936G	51.20	74.00	-22.80	11.24	3	Horizontal	17	1.13	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2480MHz\_TX



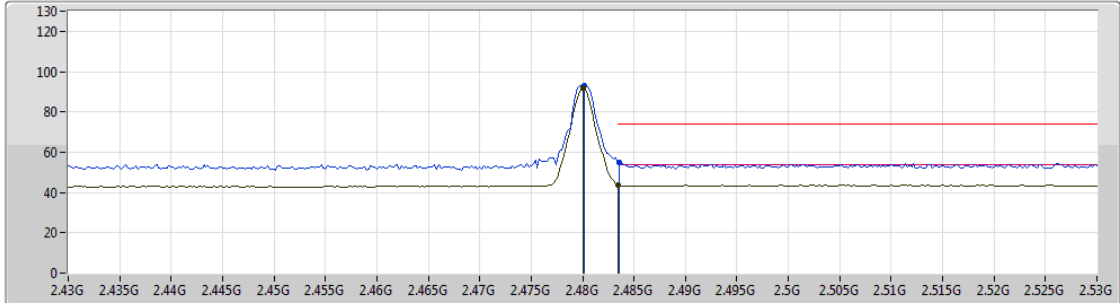
Lim.PK    
 PK    
 Lim.AV    
 AV  

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	95.06	Inf	-Inf	30.68	3	Vertical	230	1.26	-
AV	2.4835G	44.91	54.00	-9.09	30.69	3	Vertical	230	1.26	-
PK	2.4802G	96.48	Inf	-Inf	30.68	3	Vertical	230	1.26	-
PK	2.4838G	57.61	74.00	-16.39	30.69	3	Vertical	230	1.26	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2480MHz\_TX

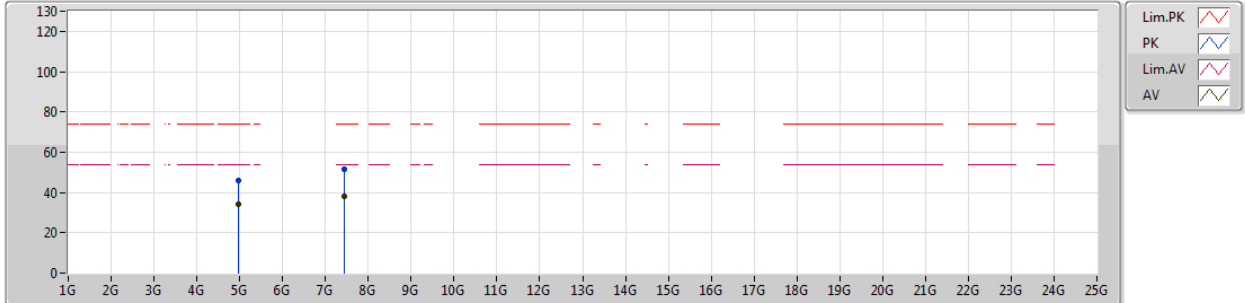


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	91.66	Inf	-Inf	30.68	3	Horizontal	312	2.67	-
AV	2.4835G	43.88	54.00	-10.12	30.69	3	Horizontal	312	2.67	-
PK	2.4802G	93.09	Inf	-Inf	30.68	3	Horizontal	312	2.67	-
PK	2.4836G	55.06	74.00	-18.94	30.69	3	Horizontal	312	2.67	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2480MHz\_TX

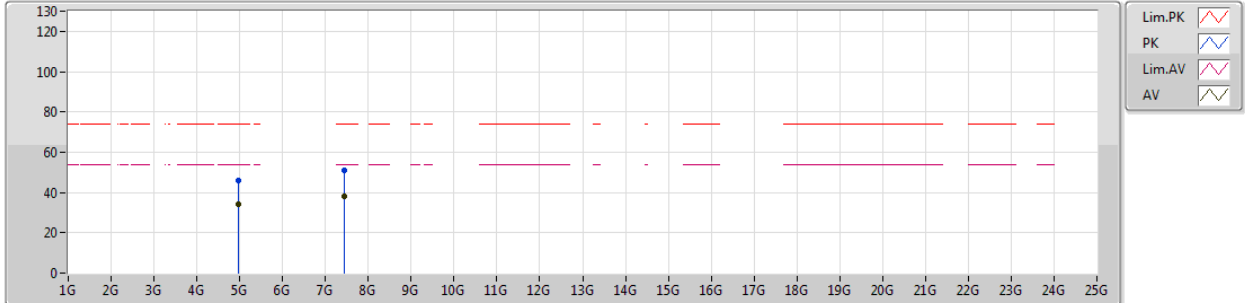


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.95996G	34.14	54.00	-19.86	6.17	3	Vertical	225	2.20	-
AV	7.43944G	38.32	54.00	-15.68	11.57	3	Vertical	173	2.11	-
PK	4.96004G	46.18	74.00	-27.82	6.17	3	Vertical	225	2.20	-
PK	7.43916G	51.66	74.00	-22.34	11.57	3	Vertical	173	2.11	-

BT-LE(1Mbps)\_Nss1\_1TX(Port2)

26/09/2018

2480MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.96008G	34.00	54.00	-20.00	6.17	3	Horizontal	275	2.34	-
AV	7.43932G	38.29	54.00	-15.71	11.57	3	Horizontal	20	2.03	-
PK	4.95952G	46.18	74.00	-27.82	6.17	3	Horizontal	275	2.34	-
PK	7.4314G	51.04	74.00	-22.96	11.54	3	Horizontal	20	2.03	-