



# FCC RADIO TEST REPORT

FCC ID : 2AST4-JB1010619  
Equipment : Speed Meter  
Brand Name : Jsports  
Model Name : JB101  
Applicant : JSPORTS TECHNOLOGY CO., LTD  
Rm. 3, 2F., No.700, Zhongzheng Rd., Zhonghe  
Dist., New Taipei City 23552, Taiwan (R.O.C.)  
Manufacturer : Chen Wei Electronics inc.  
No.12, Nanyuan Rd., Zhongli Dist., Taoyuan City  
32063, Taiwan (R.O.C.)  
Standard : 47 CFR FCC Part 15.247

The product was received on Jan. 21, 2019, and testing was started from Feb. 20, 2019 and completed on Mar. 12, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

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



Approved by: Sam Chen

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**  
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



# Table of Contents

**History of this test report.....3**

**Summary of Test Result.....4**

**1 General Description .....5**

1.1 Information.....5

1.2 Testing Applied Standards .....6

1.3 Testing Location Information .....6

1.4 Measurement Uncertainty .....7

**2 Test Configuration of EUT .....8**

2.1 Test Channel Mode .....8

2.2 The Worst Case Measurement Configuration .....9

2.3 EUT Operation during Test .....9

2.4 Accessories .....10

2.5 Support Equipment.....10

2.6 Test Setup Diagram .....11

**3 Transmitter Test Result .....13**

3.1 DTS Bandwidth .....13

3.2 Maximum Conducted Output Power .....14

3.3 Power Spectral Density .....16

3.4 Emissions in Non-restricted Frequency Bands .....18

3.5 Emissions in Restricted Frequency Bands.....19

**4 Test Equipment and Calibration Data .....23**

**Appendix A. Test Results of DTS Bandwidth**

**Appendix B. Test Results of Maximum Conducted Output Power**

**Appendix C. Test Results of Power Spectral Density**

**Appendix D. Test Results of Emissions in Non-restricted Frequency Bands**

**Appendix E. Test Results of Emissions in Restricted Frequency Bands**

**Appendix F. Test Photos**

**Photographs of EUT v01**



### History of this test report

Report No.	Version	Description	Issued Date
FR910727	01	Initial issue of report	Apr. 19, 2019



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
-	15.207	AC Power-line Conducted Emissions	N/A	Note
3.1	15.247(a)	DTS Bandwidth	PASS	-
3.2	15.247(b)	Maximum Conducted Output Power	PASS	-
3.3	15.247(e)	Power Spectral Density	PASS	-
3.4	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.5	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Note: It was supplied power by lithium battery (3V) for EUT, it's not necessary to apply to AC Power-line Conducted Emissions test.

**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:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: **Sam Chen**

Report Producer: **Cindy Peng**



# 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 modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2, 3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

### 1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	-	-	Printed Antenna	N/A	-2

Note: The above information was declared by manufacturer.

### 1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

Note:

- DC is Duty Cycle.
- DCF is Duty Cycle Factor.

### 1.1.4 EUT Operational Condition

<b>EUT Power Type</b>	From lithium battery (3V)		
<b>Function</b>	<input type="checkbox"/> Point-to-multipoint	<input checked="" type="checkbox"/> Point-to-point	
<b>Test Software Version</b>	SmartRF Studio v7 - Version 2.3.1		
<b>Support Mode</b>	<input checked="" type="checkbox"/> LE 1M PHY: 1 Mb/s		
	<input type="checkbox"/> LE Coded PHY (S=2): 500 Kb/s		
	<input type="checkbox"/> LE Coded PHY (S=8): 125 Kb/s		
	<input type="checkbox"/> LE 2M PHY: 2 Mb/s		

Note: The above information was declared by manufacturer.



### 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
- ♦ FCC KDB 558074 D01 v05r01

### 1.3 Testing Location Information

Testing Location		
<input 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
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Eddie Weng	22~24°C / 50~60%	Feb. 21, 2019
Radiated (below 1GHz)	03CH01-CB	KJ Chang	21~23°C / 53~55%	Mar. 12, 2019
Radiated (above 1GHz)	03CH01-CB	Esaon Chen	21~23°C / 53~55%	Feb. 20, 2019~Feb. 21, 2019

Test site Designation No. TW0006 with FCC.  
Test site registered number IC 4086B with Industry Canada.



### 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 (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	$9.74 \times 10^{-8}$	Confidence levels of 95%



## **2 Test Configuration of EUT**

### **2.1 Test Channel Mode**

<b>Mode</b>	<b>Power Setting</b>
BT-LE(1Mbps)	-
2402MHz	5
2440MHz	5
2480MHz	5





## 2.2 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.
The EUT was performed at X axis, Y axis and Z axis position for Emissions in Restricted Frequency Bands test, and the worst case was found at X axis for Emissions in Restricted Frequency Bands above 1GHz test. So the measurement will follow this same test configuration.	
<b>Operating Mode &lt; 1GHz</b>	CTX
1	EUT X axis
<b>Operating Mode &gt; 1GHz</b>	CTX
1	EUT X axis
2	EUT Y axis
3	EUT Z axis
Mode 1 has been evaluated to be the worst case after evaluating. Consequently, measurement will follow this same test mode.	

## 2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting/receiving mode.



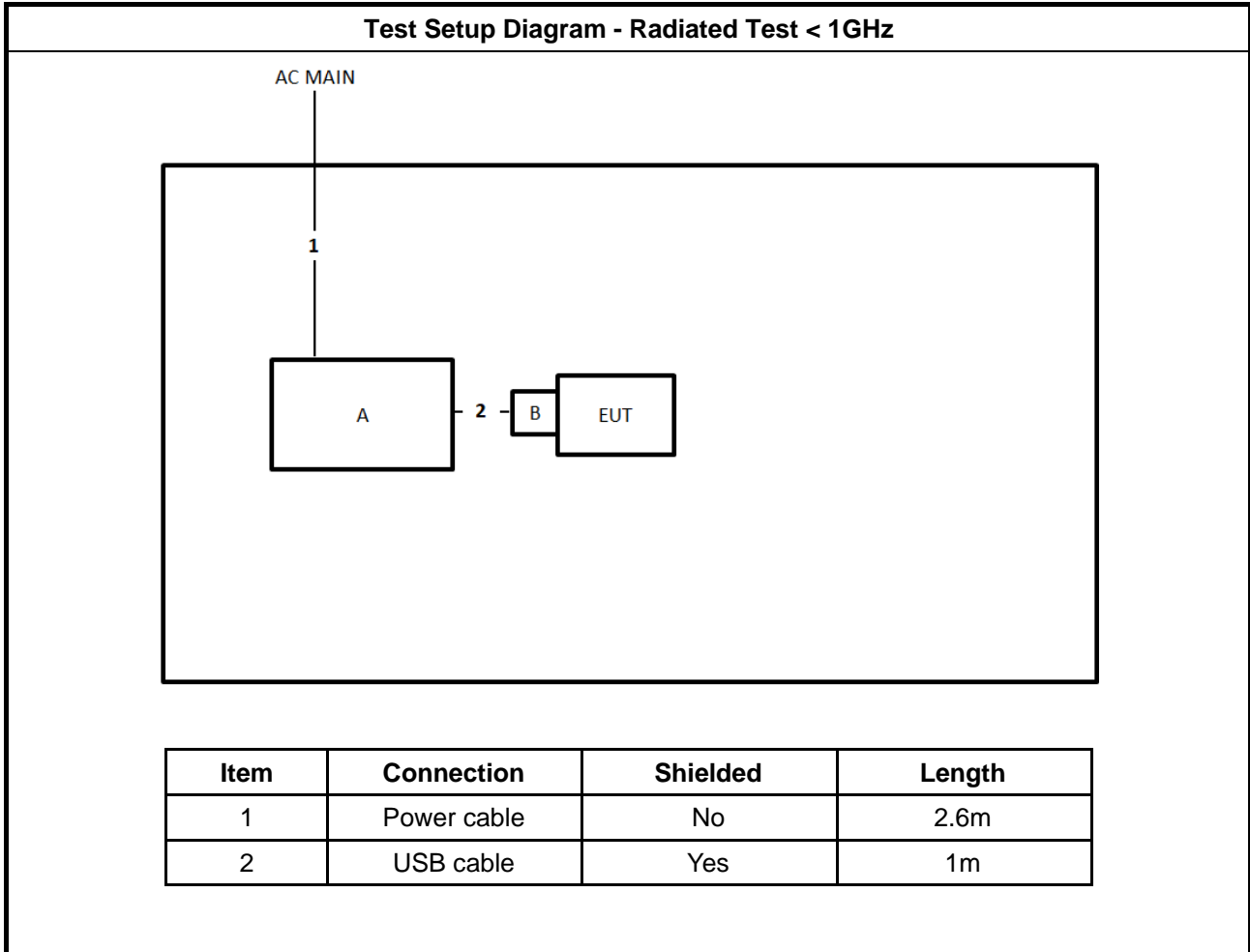
## 2.4 Accessories

Accessories				
No.	Equipment Name	Brand Name	Model Name	Rating
1	Lithium battery	maxell	CR2450	3V

## 2.5 Support Equipment

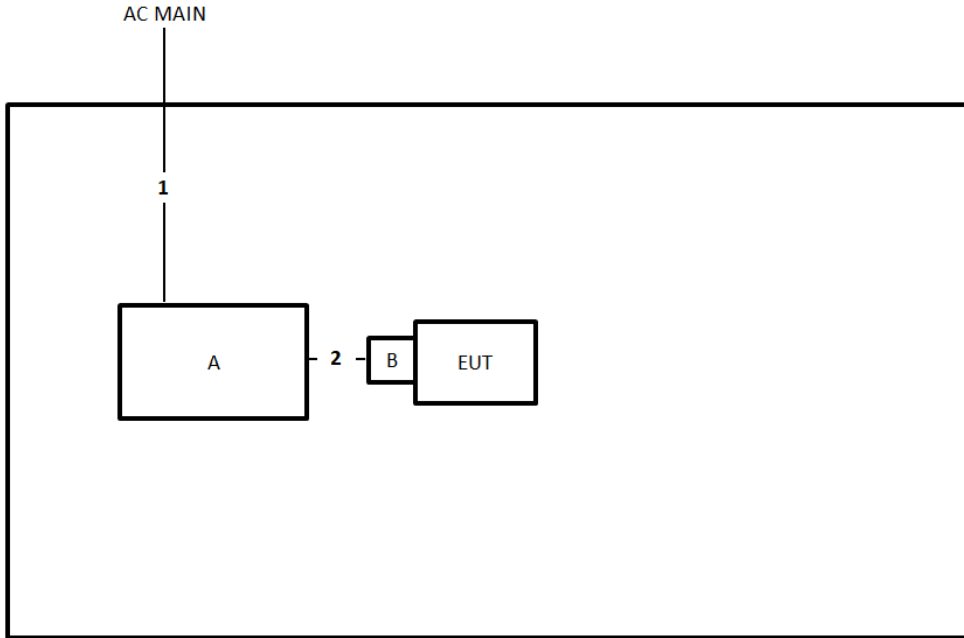
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Test Fixture	Texas Instruments	SmartRF06EB	N/A

## 2.6 Test Setup Diagram





Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	USB cable	Yes	1.75m

### 3 Transmitter Test Result

#### 3.1 DTS Bandwidth

##### 3.1.1 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>

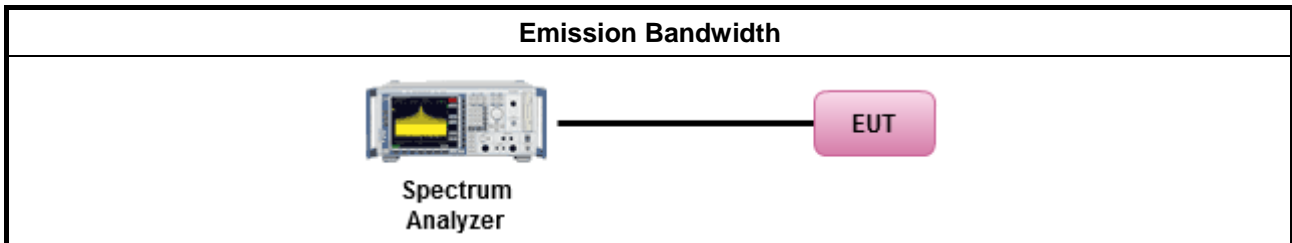
##### 3.1.2 Measuring Instruments

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>▪ For the emission bandwidth shall be measured using one of the options below:</li> </ul>
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

##### 3.1.4 Test Setup



##### 3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A



### 3.2 Maximum Conducted Output Power

#### 3.2.1 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>
$P_{Out}$ = maximum peak conducted output power or maximum conducted output power in dBm, $G_{TX}$ = the maximum transmitting antenna directional gain in dBi.	

#### 3.2.2 Measuring Instruments

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

#### 3.2.3 Test Procedures

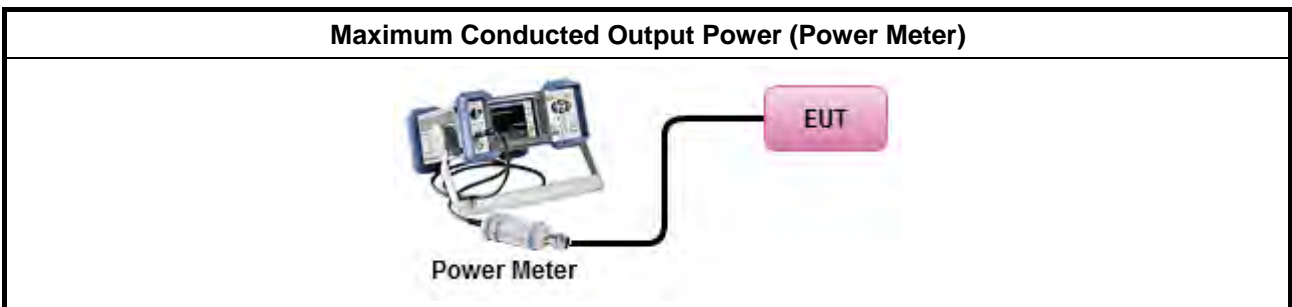
Test Method	
	<ul style="list-style-type: none"> <li>▪ Maximum Peak Conducted Output Power</li> </ul>
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW $\geq$ EBW method).
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
	<ul style="list-style-type: none"> <li>▪ Maximum Conducted Output Power</li> </ul>
	[duty cycle $\geq$ 98% or external video / power trigger]
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
	duty cycle < 98% and average over on/off periods with duty factor
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
	Measurement using a power meter (PM)
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).

- For conducted measurement.
  - If the EUT supports multiple transmit chains using options given below:  
Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
  - If multiple transmit chains, EIRP calculation could be following as methods:  

$$P_{total} = P_1 + P_2 + \dots + P_n$$
 (calculated in linear unit [mW] and transfer to log unit [dBm])  

$$EIRP_{total} = P_{total} + DG$$

**3.2.4 Test Setup**



**3.2.5 Test Result of Maximum Conducted Output Power**

Refer as Appendix B



### 3.3 Power Spectral Density

#### 3.3.1 Power Spectral Density Limit

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

#### 3.3.2 Measuring Instruments

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

#### 3.3.3 Test Procedures

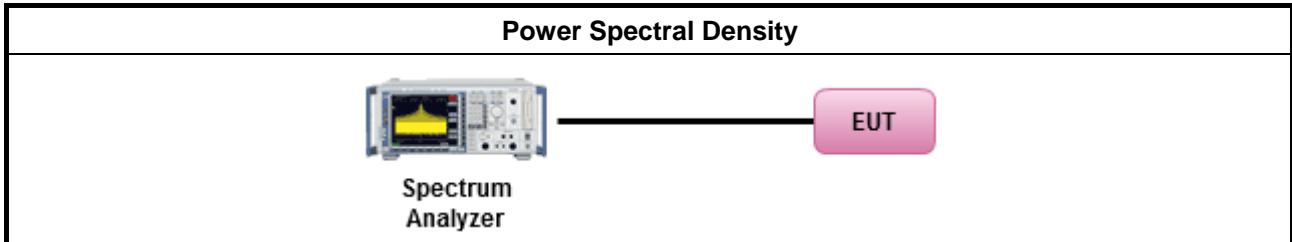
Test Method
<ul style="list-style-type: none"> <li>▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (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 FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.2 Method PKPSD. [duty cycle ≥ 98% or external video / power trigger]
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPSD-1.
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPSD-2.
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.7 Method AVGPSD-3.
duty cycle < 98% and average over on/off periods with duty factor
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.4 Method AVGPSD-1A. (alternative).
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPSD-2A. (alternative)
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.8 Method AVGPSD-3A. (alternative)
<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:           <ul style="list-style-type: none"> <li> <input checked="" type="checkbox"/> Option 1: Measure and sum the spectra across the outputs. Refer as FCC 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> <li> <input type="checkbox"/> Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,               </li> </ul> </li> </ul>





Option 3: Measure and add  $10 \log(N)$  dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with  $10 \log(N)$ . Or each transmit chains shall be add  $10 \log(N)$  to compared with the limit.

### 3.3.4 Test Setup



### 3.3.5 Test Result of Power Spectral Density

Refer as Appendix C

### 3.4 Emissions in Non-restricted Frequency Bands

#### 3.4.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dBc)
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.

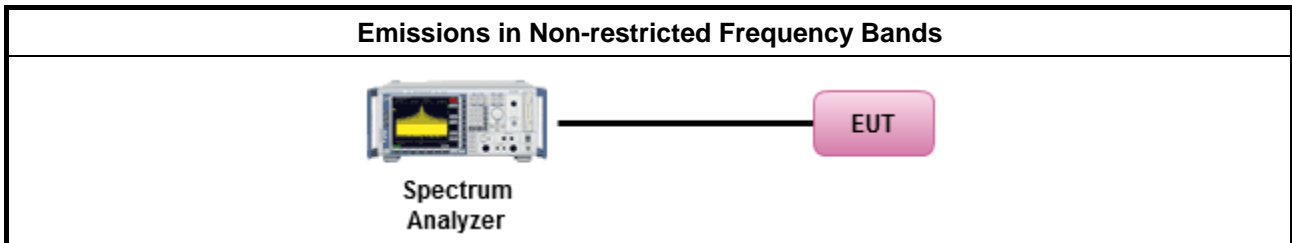
#### 3.4.2 Measuring Instruments

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>Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.</li> </ul>

#### 3.4.4 Test Setup



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

Refer as Appendix D



### 3.5 Emissions in Restricted Frequency Bands

#### 3.5.1 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.

#### 3.5.2 Measuring Instruments

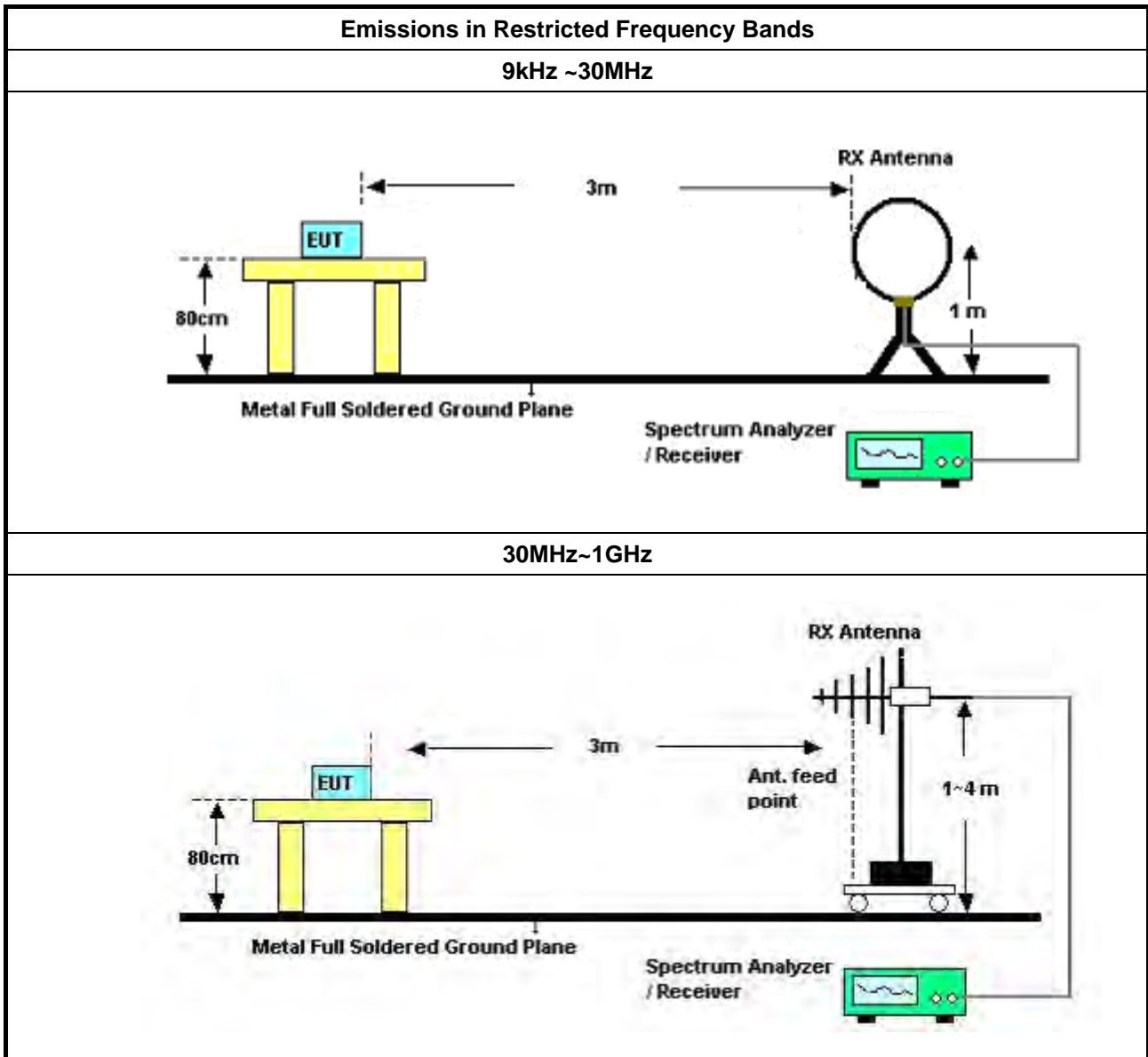
Refer a test equipment and calibration data table in this test report.

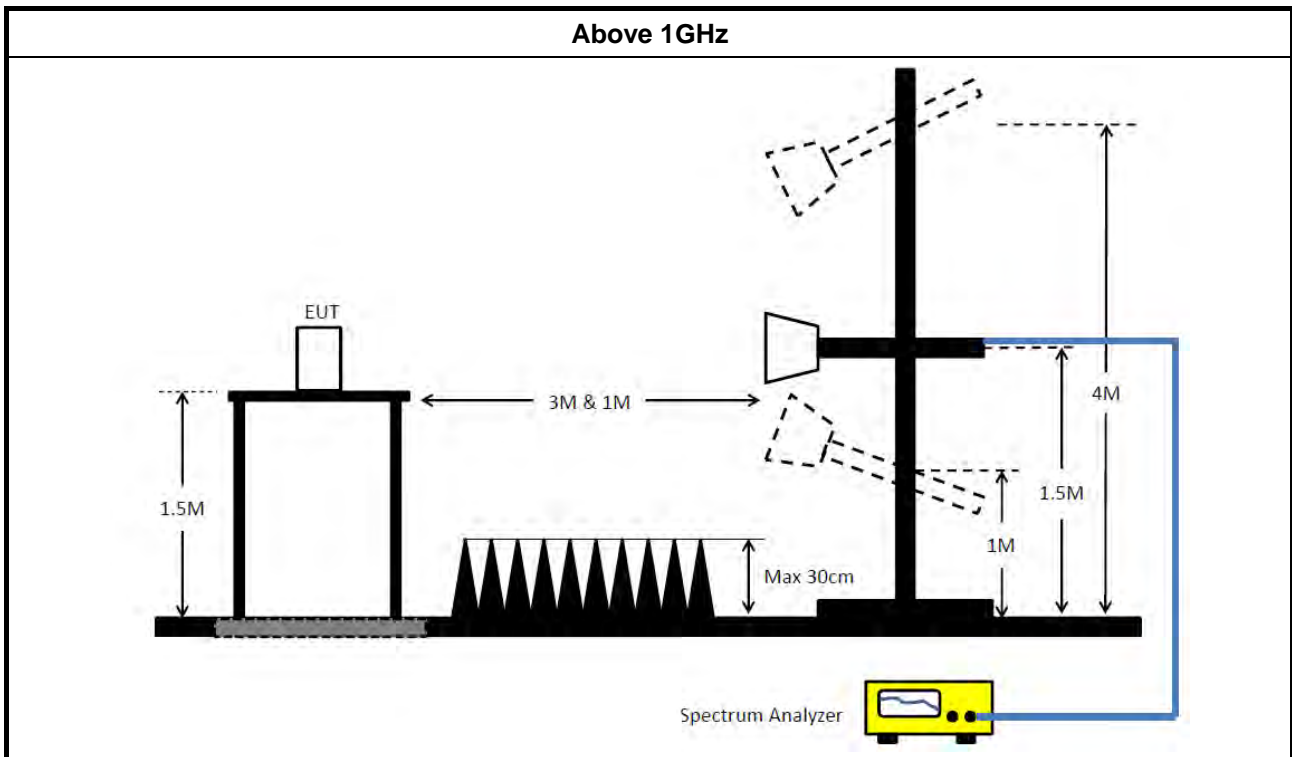


3.5.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> <li>▪ 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 FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.</li> </ul>
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle $\geq$ 98%).
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW $\geq$ 1/T).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq$ 1/T, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
<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 FCC KDB 558074 clause 8.7 &amp; c63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below:                (1) Measure and sum the spectra across the outputs or                (2) Measure and add 10 log(N) dB             </li> </ul>
	<ul style="list-style-type: none"> <li>▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.</li> </ul>

### 3.5.4 Test Setup





### 3.5.5 Emissions in Restricted Frequency Bands (Below 30MHz)

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

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10 harmonic or 40 GHz, whichever is appropriate.

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

Refer as Appendix E



## 4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2018	Mar. 15, 2019	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 27, 2018	Aug. 26, 2019	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 13, 2018	Nov. 12, 2019	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2018	May 01, 2019	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 08, 2019	Jan. 07, 2020	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Jan. 31, 2019	Jan. 30, 2020	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS	100359	9kHz ~ 2.75GHz	Jul. 03, 2018	Jul. 02, 2019	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jun. 22, 2018	Jun. 21, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz –26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-CB)



<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Characteristics</b>	<b>Calibration Date</b>	<b>Calibration Due Date</b>	<b>Remark</b>
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 05, 2018	Nov. 04, 2019	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.





## EBW-DTS Result

Appendix A

### Summary

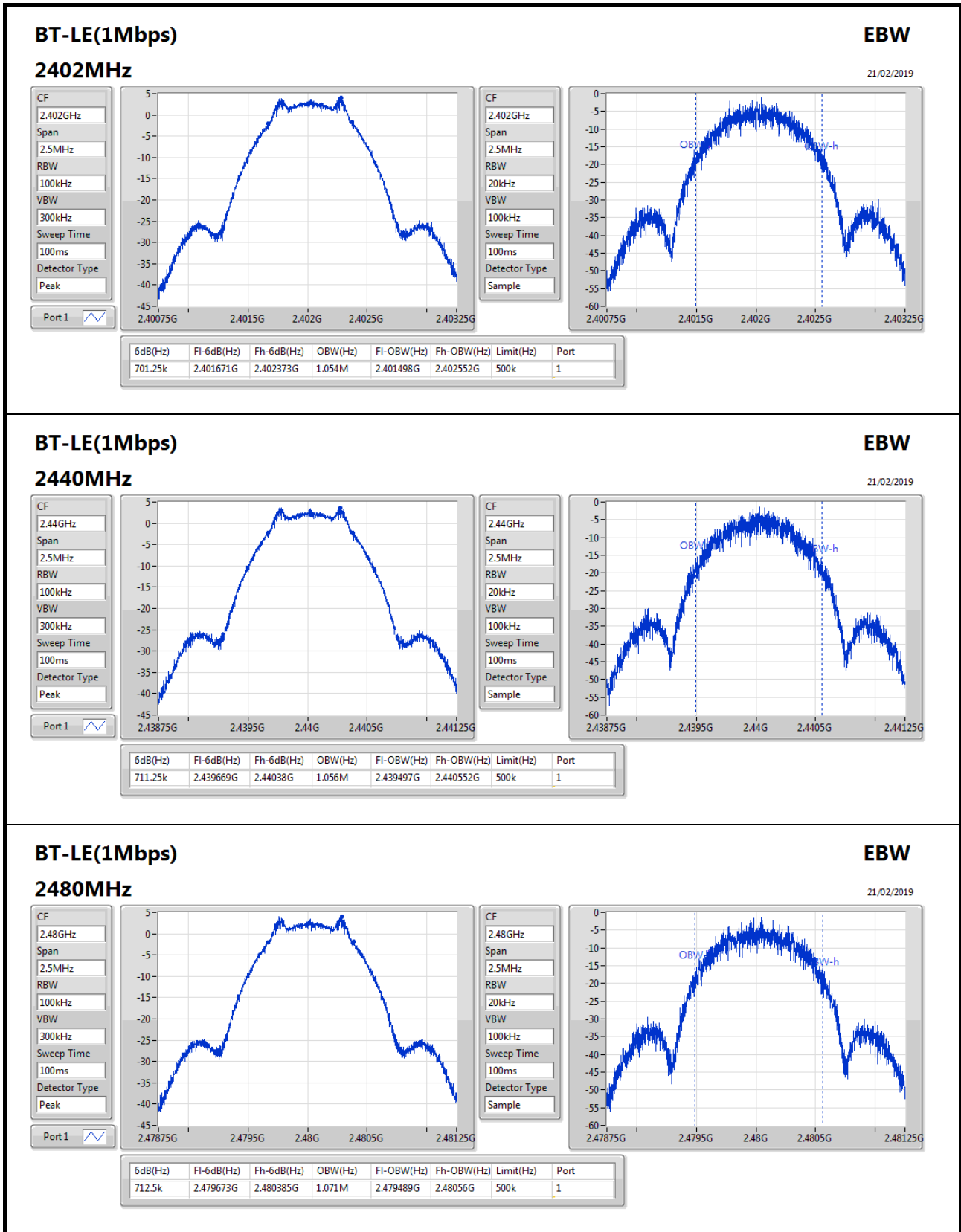
Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	712.5k	1.071M	1M07F1D	701.25k	1.054M

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

### Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	701.25k	1.054M
2440MHz	Pass	500k	711.25k	1.056M
2480MHz	Pass	500k	712.5k	1.071M

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





## AV Power-DTS Result

Appendix B

### Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	4.67	0.00293

### Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	-2.00	4.67	30.00
2440MHz	Pass	-2.00	4.28	30.00
2480MHz	Pass	-2.00	4.31	30.00



## PSD-DTS Result

Appendix C

### Summary

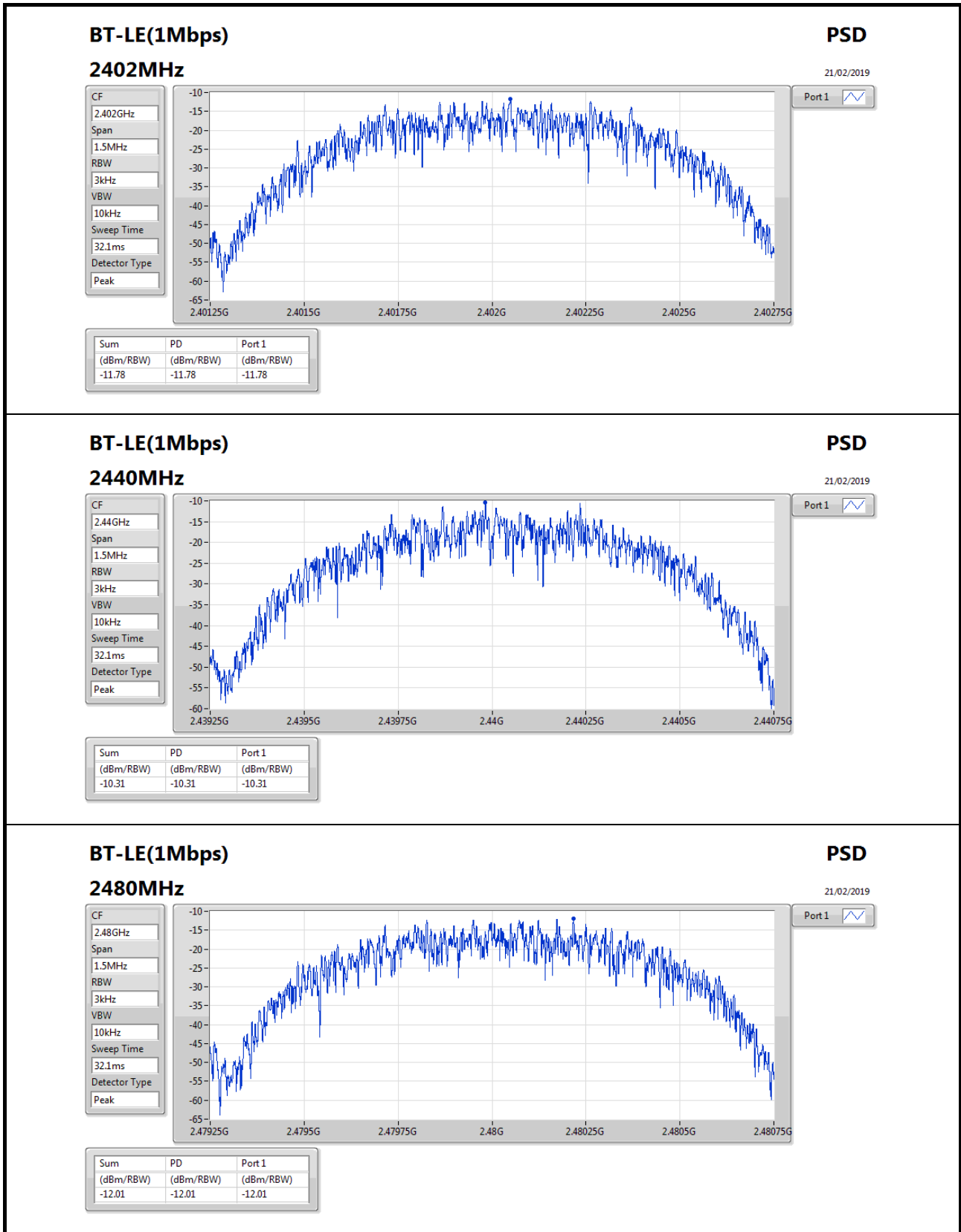
Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-10.31

RBW=3kHz.

### Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	-2.00	-11.78	8.00
2440MHz	Pass	-2.00	-10.31	8.00
2480MHz	Pass	-2.00	-12.01	8.00

RBW=3kHz.





**CSE Non-restricted Band-DTS Result**

**Appendix D**

**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	2.40225G	2.92	-27.08	1.63906G	-43.39	2.39938G	-43.21	2.48371G	-42.61	17.62932G	-33.83	1

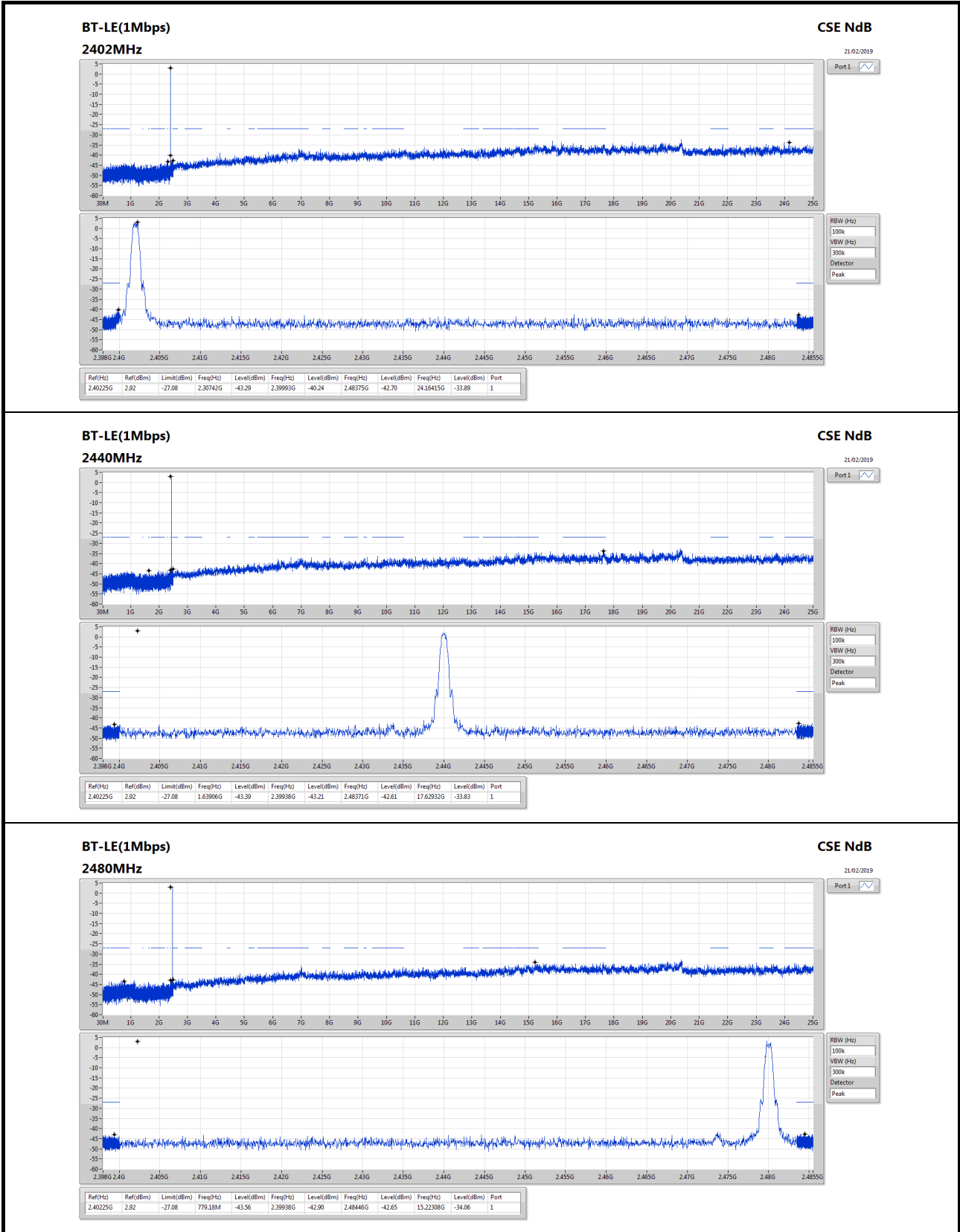
**Result**

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40225G	2.92	-27.08	2.30742G	-43.29	2.39993G	-40.24	2.48375G	-42.70	24.16415G	-33.89	1
2440MHz	Pass	2.40225G	2.92	-27.08	1.63906G	-43.39	2.39938G	-43.21	2.48371G	-42.61	17.62932G	-33.83	1
2480MHz	Pass	2.40225G	2.92	-27.08	779.18M	-43.56	2.39938G	-42.90	2.48446G	-42.65	15.22308G	-34.06	1



# CSE Non-restricted Band-DTS Result

# Appendix D





# RSE below 1GHz Result

RSE below 1GHz Result																																																																																																																											
Operating Mode	1	Polarization	Vertical																																																																																																																								
Operating Function	CTX																																																																																																																										
<p>The graph displays the RSE below 1GHz result. The y-axis represents Level (dBuV/m) from 0 to 100, and the x-axis represents Frequency (MHz) from 30 to 1000. A blue line shows the measured emission levels, and a red line shows the FCC CLASS-B limit. The limit is 40 dBuV/m from 30 MHz to 100 MHz, 30 dBuV/m from 100 MHz to 300 MHz, and 40 dBuV/m from 300 MHz to 1000 MHz. The measured levels are generally below the limit, with some peaks near 30 MHz and 959.99 MHz.</p>																																																																																																																											
<table border="1"> <thead> <tr> <th></th> <th>Freq</th> <th>Level</th> <th>Limit</th> <th>Over</th> <th>Read</th> <th>CableAntenna</th> <th>Preamp</th> <th>A/Pos</th> <th>T/Pos</th> <th>Remark</th> <th>Pol/Phase</th> </tr> <tr> <th></th> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB</th> <th>dB/m</th> <th>dB</th> <th>cm</th> <th>deg</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>30.00</td> <td>35.58</td> <td>40.00</td> <td>-4.42</td> <td>42.56</td> <td>1.40</td> <td>24.23</td> <td>32.61</td> <td>125</td> <td>251</td> <td>QP</td> </tr> <tr> <td>2</td> <td>62.98</td> <td>35.42</td> <td>40.00</td> <td>-4.58</td> <td>53.90</td> <td>2.10</td> <td>12.00</td> <td>32.58</td> <td>300</td> <td>23</td> <td>QP</td> </tr> <tr> <td>3</td> <td>67.83</td> <td>36.33</td> <td>40.00</td> <td>-3.67</td> <td>54.72</td> <td>2.19</td> <td>11.99</td> <td>32.57</td> <td>300</td> <td>31</td> <td>QP</td> </tr> <tr> <td>4</td> <td>72.68</td> <td>35.21</td> <td>40.00</td> <td>-4.79</td> <td>53.47</td> <td>2.27</td> <td>12.04</td> <td>32.57</td> <td>150</td> <td>98</td> <td>QP</td> </tr> <tr> <td>5</td> <td>77.53</td> <td>34.74</td> <td>40.00</td> <td>-5.26</td> <td>52.59</td> <td>2.35</td> <td>12.36</td> <td>32.56</td> <td>150</td> <td>98</td> <td>QP</td> </tr> <tr> <td>6</td> <td>82.38</td> <td>36.69</td> <td>40.00</td> <td>-3.31</td> <td>53.76</td> <td>2.43</td> <td>13.06</td> <td>32.56</td> <td>200</td> <td>170</td> <td>Peak</td> </tr> <tr> <td>7</td> <td>86.26</td> <td>34.63</td> <td>40.00</td> <td>-5.37</td> <td>50.88</td> <td>2.49</td> <td>13.82</td> <td>32.56</td> <td>125</td> <td>167</td> <td>Peak</td> </tr> <tr> <td>8</td> <td>959.99</td> <td>40.47</td> <td>46.00</td> <td>-5.53</td> <td>37.66</td> <td>7.53</td> <td>26.57</td> <td>31.29</td> <td>150</td> <td>148</td> <td>Peak</td> </tr> </tbody> </table>					Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		1	30.00	35.58	40.00	-4.42	42.56	1.40	24.23	32.61	125	251	QP	2	62.98	35.42	40.00	-4.58	53.90	2.10	12.00	32.58	300	23	QP	3	67.83	36.33	40.00	-3.67	54.72	2.19	11.99	32.57	300	31	QP	4	72.68	35.21	40.00	-4.79	53.47	2.27	12.04	32.57	150	98	QP	5	77.53	34.74	40.00	-5.26	52.59	2.35	12.36	32.56	150	98	QP	6	82.38	36.69	40.00	-3.31	53.76	2.43	13.06	32.56	200	170	Peak	7	86.26	34.63	40.00	-5.37	50.88	2.49	13.82	32.56	125	167	Peak	8	959.99	40.47	46.00	-5.53	37.66	7.53	26.57	31.29	150	148	Peak
	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase																																																																																																																
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg																																																																																																																	
1	30.00	35.58	40.00	-4.42	42.56	1.40	24.23	32.61	125	251	QP																																																																																																																
2	62.98	35.42	40.00	-4.58	53.90	2.10	12.00	32.58	300	23	QP																																																																																																																
3	67.83	36.33	40.00	-3.67	54.72	2.19	11.99	32.57	300	31	QP																																																																																																																
4	72.68	35.21	40.00	-4.79	53.47	2.27	12.04	32.57	150	98	QP																																																																																																																
5	77.53	34.74	40.00	-5.26	52.59	2.35	12.36	32.56	150	98	QP																																																																																																																
6	82.38	36.69	40.00	-3.31	53.76	2.43	13.06	32.56	200	170	Peak																																																																																																																
7	86.26	34.63	40.00	-5.37	50.88	2.49	13.82	32.56	125	167	Peak																																																																																																																
8	959.99	40.47	46.00	-5.53	37.66	7.53	26.57	31.29	150	148	Peak																																																																																																																
<p>Note 1: "&gt;20dB" means emission levels that exceed the level of 20 dB below the applicable limit.            Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)</p>																																																																																																																											





RSE below 1GHz Result																																																																																																			
Operating Mode	1	Polarization	Horizontal																																																																																																
Operating Function	CTX																																																																																																		
<table border="1"> <thead> <tr> <th></th> <th>Freq</th> <th>Level</th> <th>Limit</th> <th>Over</th> <th>Read</th> <th>CableAntenna</th> <th>Preamp</th> <th>A/Pos</th> <th>T/Pos</th> <th>Remark</th> <th>Pol/Phase</th> </tr> <tr> <th></th> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB</th> <th>dB/m</th> <th>dB</th> <th>cm</th> <th>deg</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>62.98</td> <td>35.47</td> <td>40.00</td> <td>-4.53</td> <td>53.95</td> <td>2.10</td> <td>12.00</td> <td>32.58</td> <td>300</td> <td>300</td> <td>QP</td> </tr> <tr> <td>2</td> <td>290.93</td> <td>39.15</td> <td>46.00</td> <td>-6.85</td> <td>48.41</td> <td>4.46</td> <td>18.72</td> <td>32.44</td> <td>125</td> <td>97</td> <td>Peak</td> </tr> <tr> <td>3</td> <td>399.57</td> <td>42.00</td> <td>46.00</td> <td>-4.00</td> <td>47.89</td> <td>5.15</td> <td>21.40</td> <td>32.44</td> <td>100</td> <td>336</td> <td>Peak</td> </tr> <tr> <td>4</td> <td>480.08</td> <td>41.50</td> <td>46.00</td> <td>-4.50</td> <td>45.27</td> <td>5.59</td> <td>23.08</td> <td>32.44</td> <td>200</td> <td>214</td> <td>QP</td> </tr> <tr> <td>5</td> <td>600.36</td> <td>38.97</td> <td>46.00</td> <td>-7.03</td> <td>41.07</td> <td>6.14</td> <td>24.29</td> <td>32.53</td> <td>150</td> <td>162</td> <td>Peak</td> </tr> <tr> <td>6</td> <td>959.99</td> <td>42.05</td> <td>46.00</td> <td>-3.95</td> <td>39.24</td> <td>7.53</td> <td>26.57</td> <td>31.29</td> <td>100</td> <td>204</td> <td>QP</td> </tr> </tbody> </table>					Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		1	62.98	35.47	40.00	-4.53	53.95	2.10	12.00	32.58	300	300	QP	2	290.93	39.15	46.00	-6.85	48.41	4.46	18.72	32.44	125	97	Peak	3	399.57	42.00	46.00	-4.00	47.89	5.15	21.40	32.44	100	336	Peak	4	480.08	41.50	46.00	-4.50	45.27	5.59	23.08	32.44	200	214	QP	5	600.36	38.97	46.00	-7.03	41.07	6.14	24.29	32.53	150	162	Peak	6	959.99	42.05	46.00	-3.95	39.24	7.53	26.57	31.29	100	204	QP
	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase																																																																																								
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg																																																																																									
1	62.98	35.47	40.00	-4.53	53.95	2.10	12.00	32.58	300	300	QP																																																																																								
2	290.93	39.15	46.00	-6.85	48.41	4.46	18.72	32.44	125	97	Peak																																																																																								
3	399.57	42.00	46.00	-4.00	47.89	5.15	21.40	32.44	100	336	Peak																																																																																								
4	480.08	41.50	46.00	-4.50	45.27	5.59	23.08	32.44	200	214	QP																																																																																								
5	600.36	38.97	46.00	-7.03	41.07	6.14	24.29	32.53	150	162	Peak																																																																																								
6	959.99	42.05	46.00	-3.95	39.24	7.53	26.57	31.29	100	204	QP																																																																																								
<p>Note 1: "&gt;20dB" means emission levels that exceed the level of 20 dB below the applicable limit.            Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)</p>																																																																																																			



## RSE TX above 1GHz Result

Appendix E.2

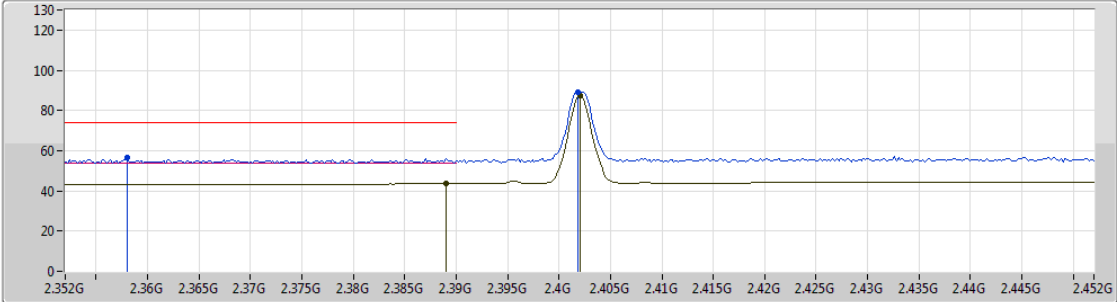
### Summary

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	4.804G	53.96	54.00	-0.04	5.06	3	Vertical	84	1.01	-

BT-LE(1Mbps)

21/02/2019

2402MHz\_TX



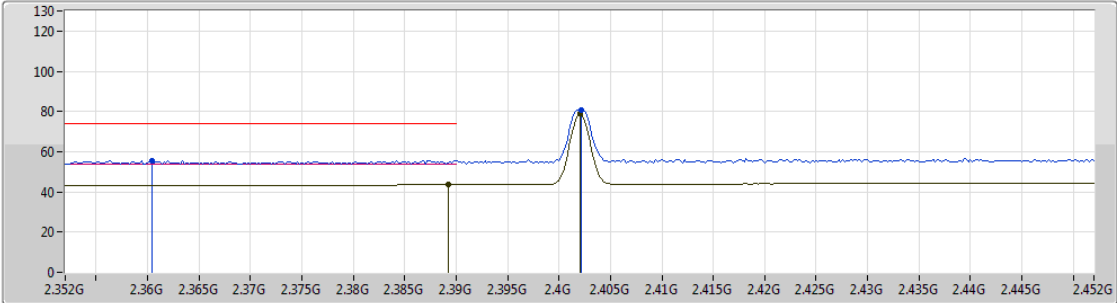
EUT\_X\_1TX  
Setting 5  
03-E-Z  
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.358G	56.52	74.00	-17.48	31.97	3	Vertical	46	1.54	-
AV	2.389G	43.52	54.00	-10.48	32.06	3	Vertical	46	1.54	-
PK	2.4018G	89.29	Inf	-Inf	32.10	3	Vertical	46	1.54	-
AV	2.402G	87.61	Inf	-Inf	32.10	3	Vertical	46	1.54	-

BT-LE(1Mbps)

2402MHz\_TX

21/02/2019



EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

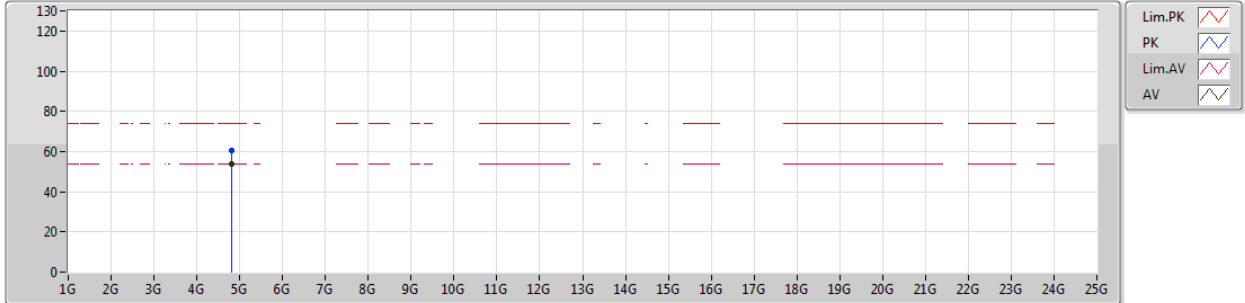
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.3604G	55.71	74.00	-18.29	31.97	3	Horizontal	51	1.42	-
AV	2.3892G	43.52	54.00	-10.48	32.06	3	Horizontal	51	1.42	-
PK	2.4022G	80.93	Inf	-Inf	32.10	3	Horizontal	51	1.42	-
AV	2.402G	79.01	Inf	-Inf	32.10	3	Horizontal	51	1.42	-



BT-LE(1Mbps)

21/02/2019

2402MHz\_TX



EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	4.80352G	60.40	74.00	-13.60	5.06	3	Vertical	84	1.01	-
AV	4.804G	53.96	54.00	-0.04	5.06	3	Vertical	84	1.01	-



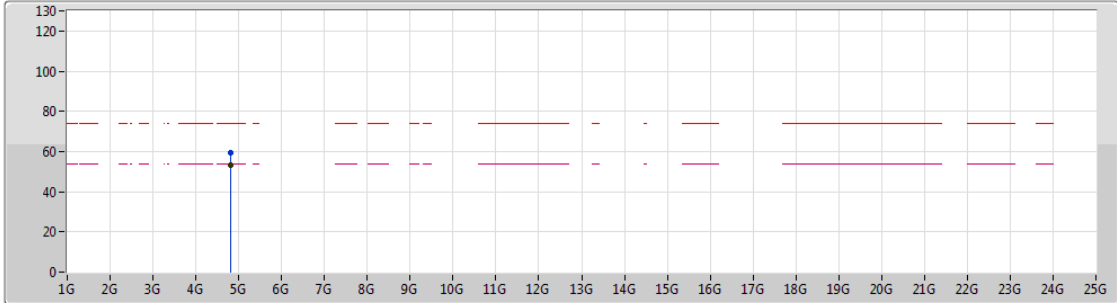
## RSE TX above 1GHz Result

Appendix E.2

**BT-LE(1Mbps)**

21/02/2019

**2402MHz\_TX**



Lim.PK   
 PK   
 Lim.AV   
 AV

EUT\_X\_1TX  
 Setting 5  
 03-E-2  
 FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	4.80354G	59.67	74.00	-14.33	5.06	3	Horizontal	9	1.01	-
AV	4.80403G	53.24	54.00	-0.76	5.06	3	Horizontal	9	1.01	-



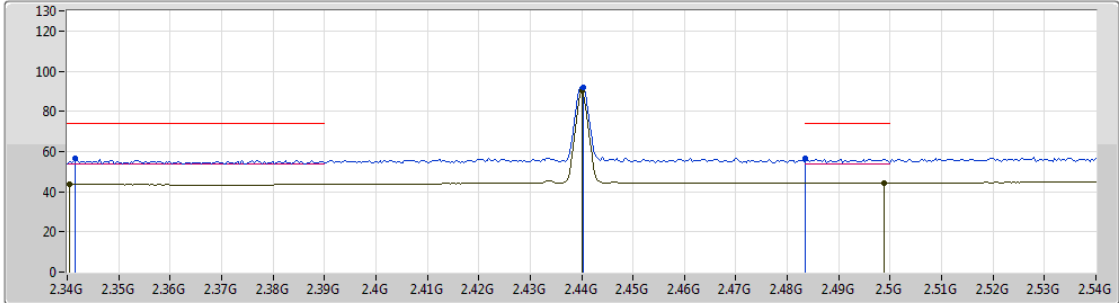
## RSE TX above 1GHz Result

Appendix E.2

**BT-LE(1Mbps)**

**2440MHz\_TX**

21/02/2019



Lim.PK   
 PK   
 Lim.AV   
 AV

EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

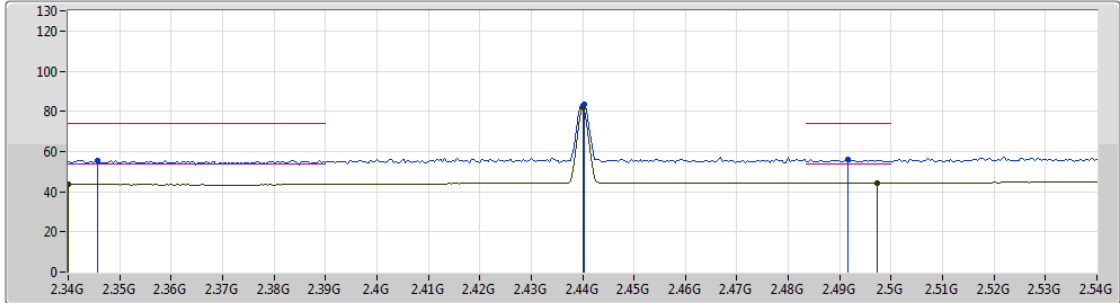
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.3416G	56.39	74.00	-17.61	31.92	3	Vertical	47	1.90	-
AV	2.3404G	43.67	54.00	-10.33	31.92	3	Vertical	47	1.90	-
PK	2.4404G	91.72	Inf	-Inf	32.24	3	Vertical	47	1.90	-
AV	2.44G	90.06	Inf	-Inf	32.24	3	Vertical	47	1.90	-
PK	2.4835G	56.32	74.00	-17.68	32.41	3	Vertical	47	1.90	-
AV	2.4988G	44.25	54.00	-9.75	32.47	3	Vertical	47	1.90	-



BT-LE(1Mbps)

2440MHz\_TX

21/02/2019



Legend for plot:

- Lim.PK (Red line)
- PK (Blue line)
- Lim.AV (Purple line)
- AV (Green line)

EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.3456G	55.67	74.00	-18.33	31.93	3	Horizontal	51	1.22	-
AV	2.34G	43.67	54.00	-10.33	31.92	3	Horizontal	51	1.22	-
PK	2.4404G	83.65	Inf	-Inf	32.24	3	Horizontal	51	1.22	-
AV	2.44G	81.84	Inf	-Inf	32.24	3	Horizontal	51	1.22	-
PK	2.4916G	56.03	74.00	-17.97	32.43	3	Horizontal	51	1.22	-
AV	2.4972G	44.22	54.00	-9.78	32.46	3	Horizontal	51	1.22	-

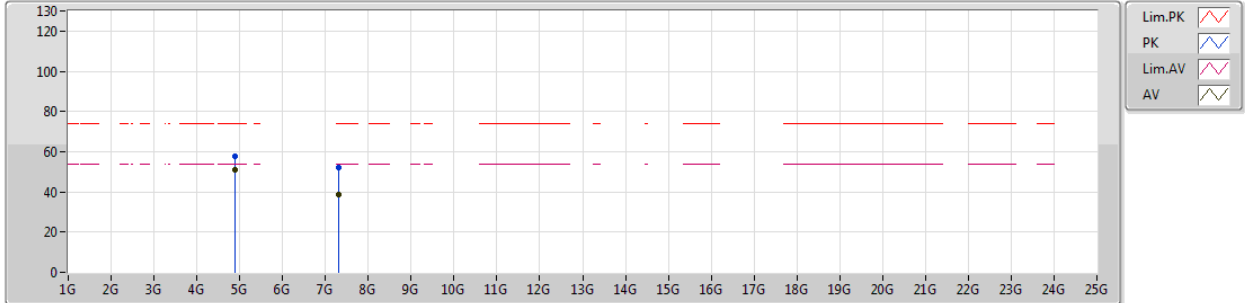




BT-LE(1Mbps)

21/02/2019

2440MHz\_TX



EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	4.88064G	57.81	74.00	-16.19	5.25	3	Vertical	128	1.02	-
AV	4.8801G	50.86	54.00	-3.14	5.25	3	Vertical	128	1.02	-
PK	7.32084G	52.05	74.00	-21.95	9.90	3	Vertical	0	1.09	-
AV	7.32072G	38.41	54.00	-15.59	9.90	3	Vertical	0	1.09	-



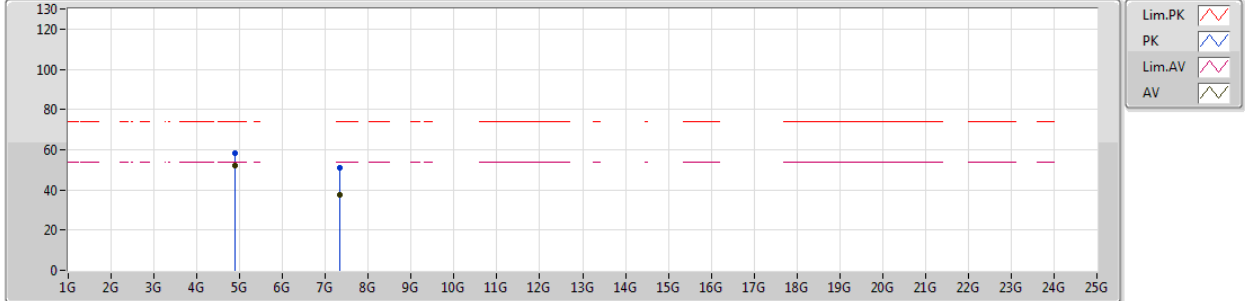
# RSE TX above 1GHz Result

Appendix E.2

## BT-LE(1Mbps)

21/02/2019

### 2440MHz\_TX



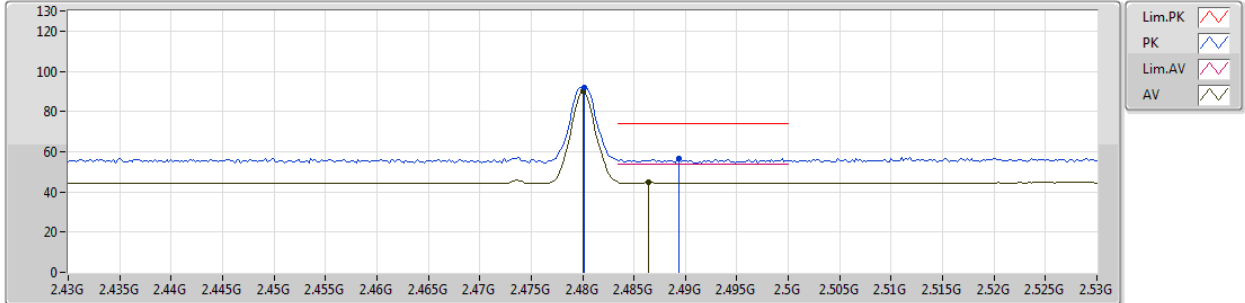
EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	4.8805G	58.55	74.00	-15.45	5.25	3	Horizontal	337	1.00	-
AV	4.88011G	52.18	54.00	-1.82	5.25	3	Horizontal	337	1.00	-
PK	7.323G	50.93	74.00	-23.07	9.90	3	Horizontal	110	1.50	-
AV	7.33128G	37.31	54.00	-16.69	9.90	3	Horizontal	110	1.50	-

BT-LE,X\_Nss1\_1TX

20/02/2019

2480MHz\_TX



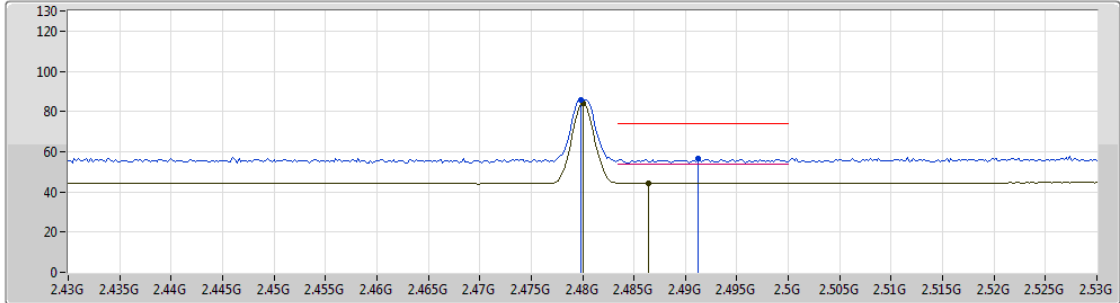
EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.4802G	91.69	Inf	-Inf	32.39	3	Vertical	56	1.65	-
AV	2.48G	90.03	Inf	-Inf	32.39	3	Vertical	56	1.65	-
PK	2.4894G	56.76	74.00	-17.24	32.43	3	Vertical	56	1.65	-
AV	2.4864G	44.78	54.00	-9.22	32.42	3	Vertical	56	1.65	-

BT-LE,X\_Nss1\_1TX

2480MHz\_TX

20/02/2019



EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

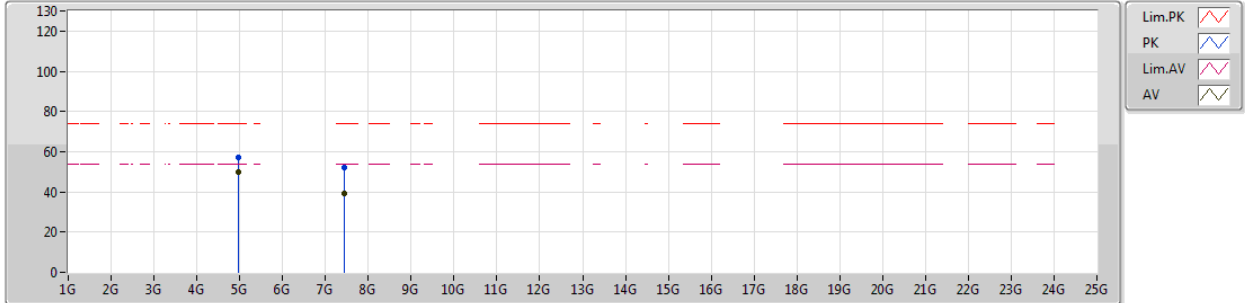
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.4798G	85.97	Inf	-Inf	32.39	3	Horizontal	49	2.20	-
AV	2.48G	84.18	Inf	-Inf	32.39	3	Horizontal	49	2.20	-
PK	2.4912G	56.54	74.00	-17.46	32.43	3	Horizontal	49	2.20	-
AV	2.4864G	44.26	54.00	-9.74	32.42	3	Horizontal	49	2.20	-



BT-LE,X\_Nss1\_1TX

20/02/2019

2480MHz\_TX



EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	4.96065G	57.28	74.00	-16.72	5.44	3	Vertical	344	2.63	-
AV	4.95996G	49.63	54.00	-4.37	5.44	3	Vertical	344	2.63	-
PK	7.4394G	51.89	74.00	-22.11	9.88	3	Vertical	172	1.07	-
AV	7.43936G	39.02	54.00	-14.98	9.88	3	Vertical	172	1.07	-



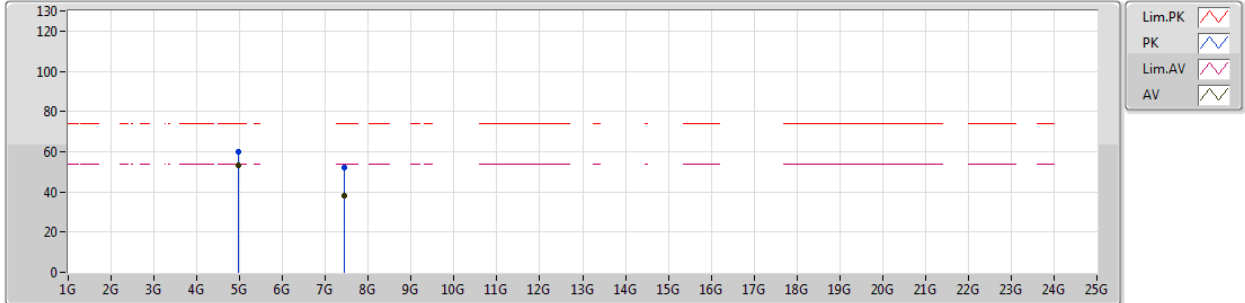
RSE TX above 1GHz Result

Appendix E.2

BT-LE,X\_Nss1\_1TX

20/02/2019

2480MHz\_TX



EUT\_X\_1TX  
Setting 5  
03-E-2  
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	4.9595G	59.89	74.00	-14.11	5.44	3	Horizontal	356	1.00	-
AV	4.96014G	53.19	54.00	-0.81	5.44	3	Horizontal	356	1.00	-
PK	7.4397G	52.17	74.00	-21.83	9.88	3	Horizontal	177	1.07	-
AV	7.44068G	37.94	54.00	-16.06	9.88	3	Horizontal	177	1.07	-