

NCC Test Report

Equipment : Active Stylus for Tablet
Brand Name : Wacom
Model Name : CS-321A
Applicant : 台灣和冠資訊科技股份有限公司
台北市中山區松江路 237 號 9 樓之 1
Manufacturer : Wacom Co., Ltd.
2-510-1 Toyonodai, Kazo-shi,
Saitama 349-1148 Japan
Standard : LP0002 Section 3.10 (2018-01-10)

The product was received on Aug. 22, 2018, and testing was started from Aug. 24, 2018 and completed on Aug. 31, 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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History of this test report

[illegible]

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	3.10.1.4	Antenna Requirement	PASS	LP0002-2.2
3.1	2.3	AC Power-line Conducted Emissions	Not Required	LP0002-2.3
3.2	3.10.1.6	DTS Bandwidth	PASS	≥500kHz
3.3	3.10.1.2	Maximum Conducted Output Power	PASS	Power [dBm]:30
3.4	3.10.1.6	Power Spectral Density	PASS	PSD [dBm/3kHz]:8
3.5	3.10.1.5	Emissions in Non-restricted Frequency Bands	PASS	Non-Restricted Bands: >30 dBc
3.6	3.10.1.5	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: LP0002-2.8
3.7	2.11	Receiver Radiated Unwanted Emissions	PASS	Restricted Bands: LP0002-2.8

Reviewed by: Sam Tsai

Report Producer: Ann Hou

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	Unictron Technologies Corporation	AA080	Chip Antenna	fixed on board

Ant.	Port	Gain (dBi)
		BT
1	1	-3.5

Note 1: The EUT has one antennas.

For BT function:

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

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

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From Battery		
EUT Function	☐ Point-to-multipoint	☒ Point-to-point	
Type of EUT			
☒	Stand-alone		
☐	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.: ...		
☐	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.: ...		
☐	Other:		

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-LE(1Mbps)	0.293	5.331	187.5u	10k

1.2 Testing Applied Standards

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

- ♦ LP0002 (2018-01-10)
- ♦ ANSI C63.10-2013
- ♦ KDB 558074 D01 v05
- ♦ ANSI C63.4-2014

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
☐	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 Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Andy	23.5°C / 65%	24/Aug/2018
Radiated	03CH09-HY	Lego	23°C / 61%	31/Aug/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	1.5V

2.2 Test Channel Mode

Test Software Version	RealTerm Serial Capture Program 2.0.0.70
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Mode	PowerSetting
BT-LE(1Mbps)	-
2402MHz	default
2440MHz	default
2480MHz	default

2.3 The Worst Case Measurement Configuration

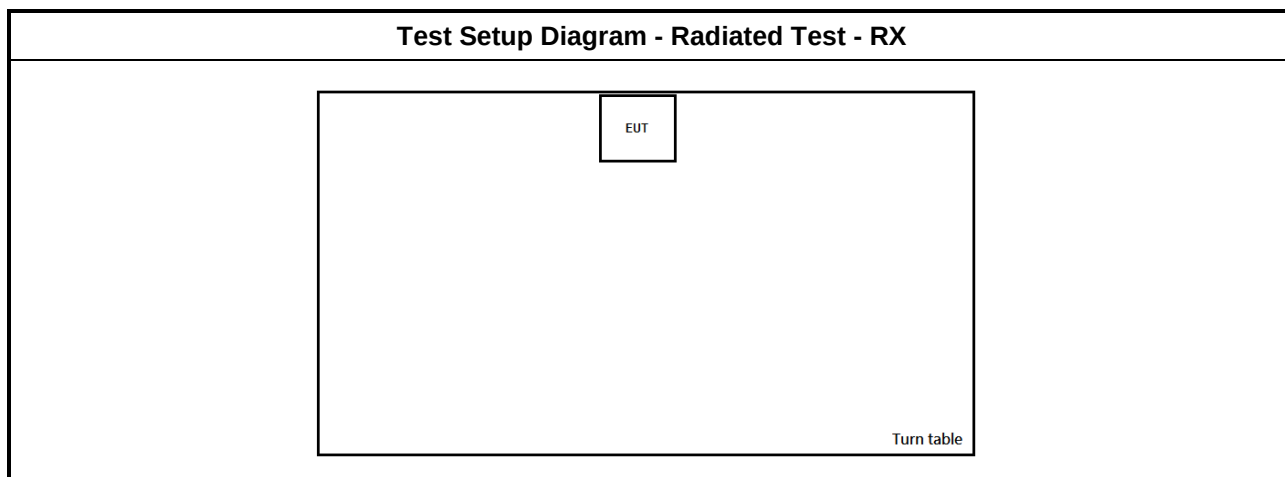
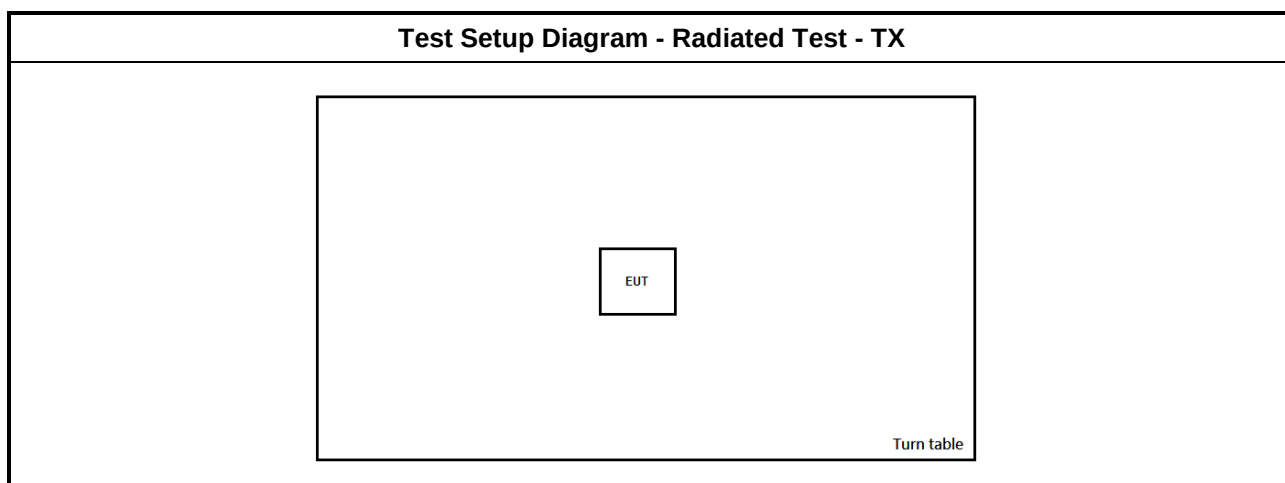
The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands Receiver Radiated Unwanted Emissions		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX/CRX		
1	Battery Mode		
Operating Mode > 1GHz	CTX/CRX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT			V

2.4 Support Equipment

Support Equipment - RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for Notebook	DELL	HA65NM130	DoC
3	DC Power Supply	GW	GPS-3030DD	-

2.5 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.

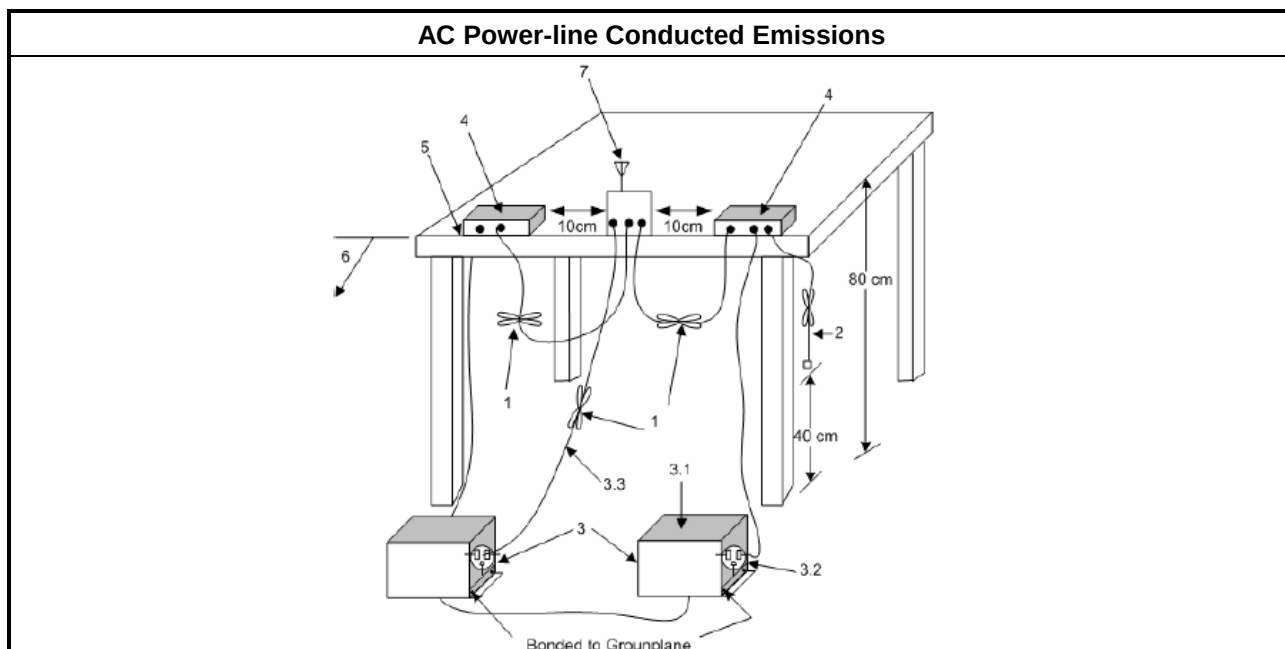
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Please refer to LP0002-2.3 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	
Systems using digital modulation techniques:	
▪	6 dB bandwidth $\geq$ 500 kHz.

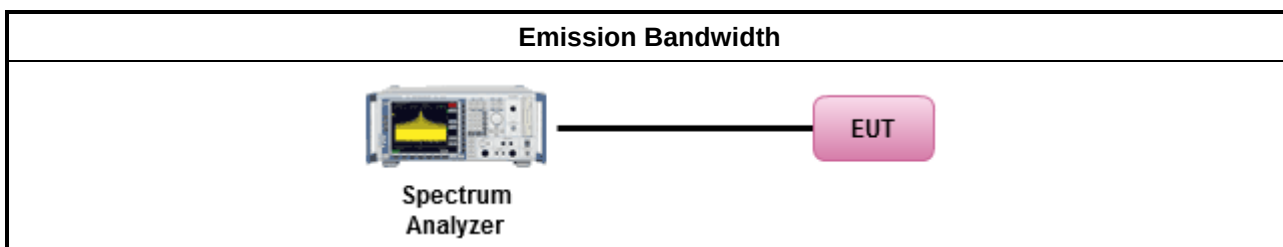
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪ For the emission bandwidth shall be measured using one of the options below:	
☒	Refer as KDB 558074, clause 8.2 (11.9.2.2 of ANSI C63.10) DTS bandwidth measurement.
☐	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
☐	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	
	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	Smart antenna system (SAS):
	- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
e.i.r.p. Power Limit:	
	2400-2483.5 MHz Band
	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	Smart antenna system (SAS)
	- Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

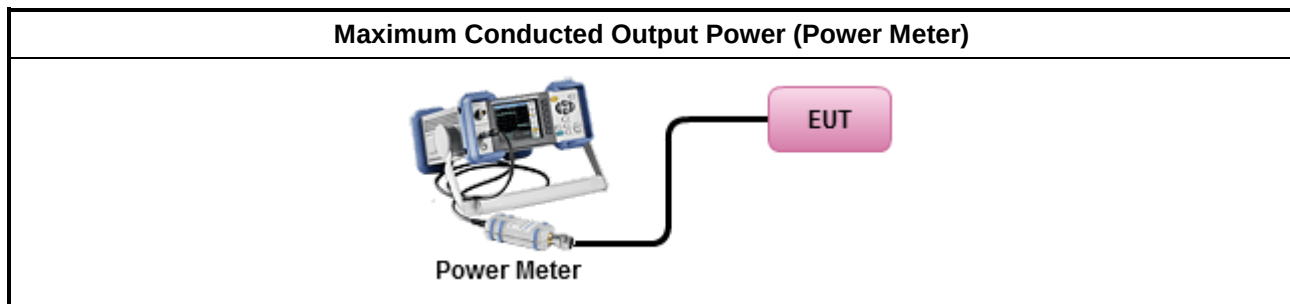
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
☐	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
☐	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
Maximum Average Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
☒	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

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
Power Spectral Density (PSD) ≤ 8 dBm/3kHz

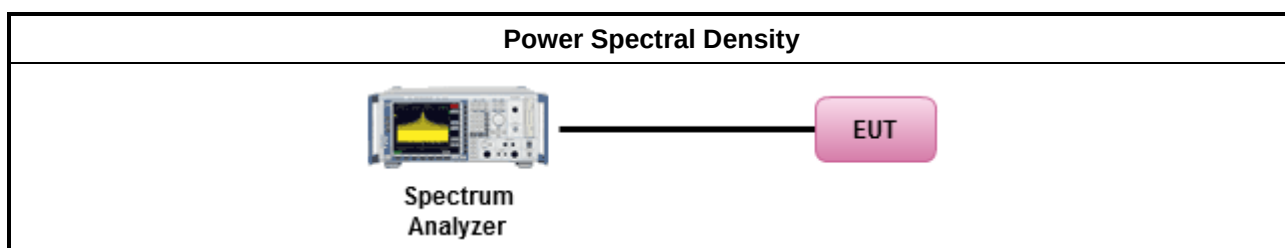
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method
Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒ Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Method PKPSD.
For conducted measurement.
If The EUT supports multiple transmit chains using options given below:
Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.4.4 Test Setup



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.	

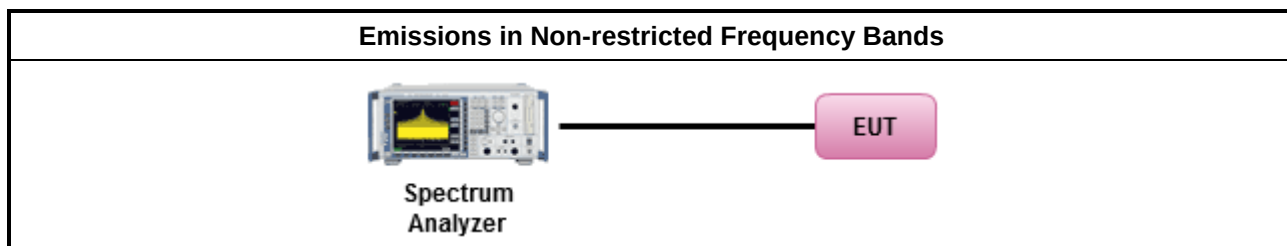
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.

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.

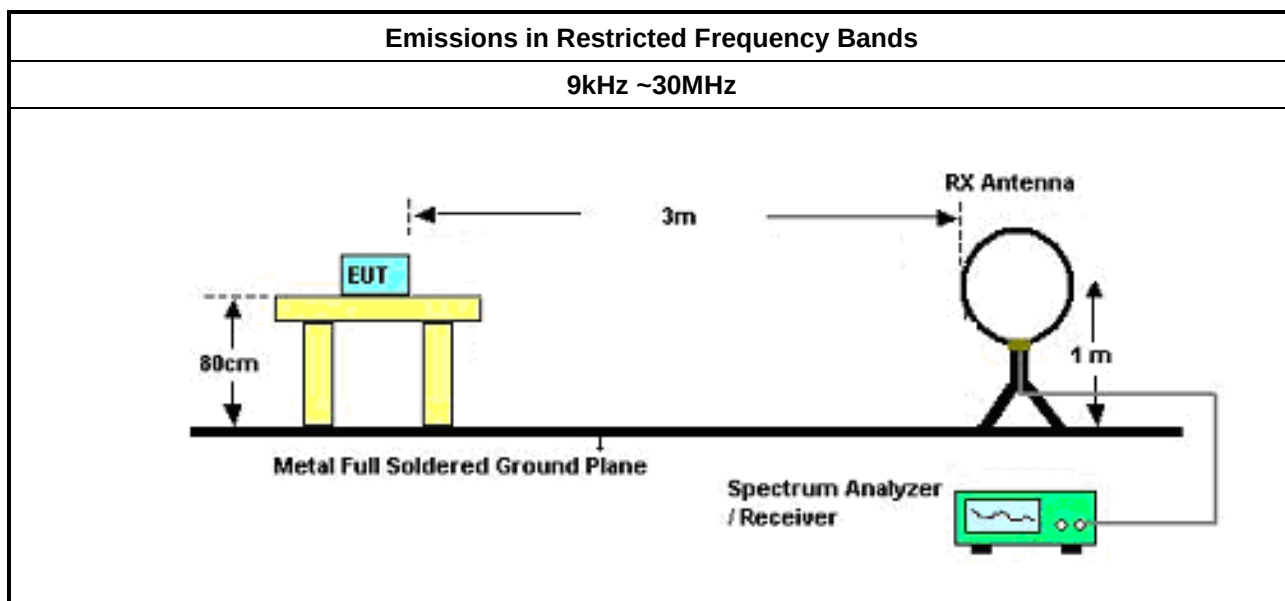
3.6.2 Measuring Instruments

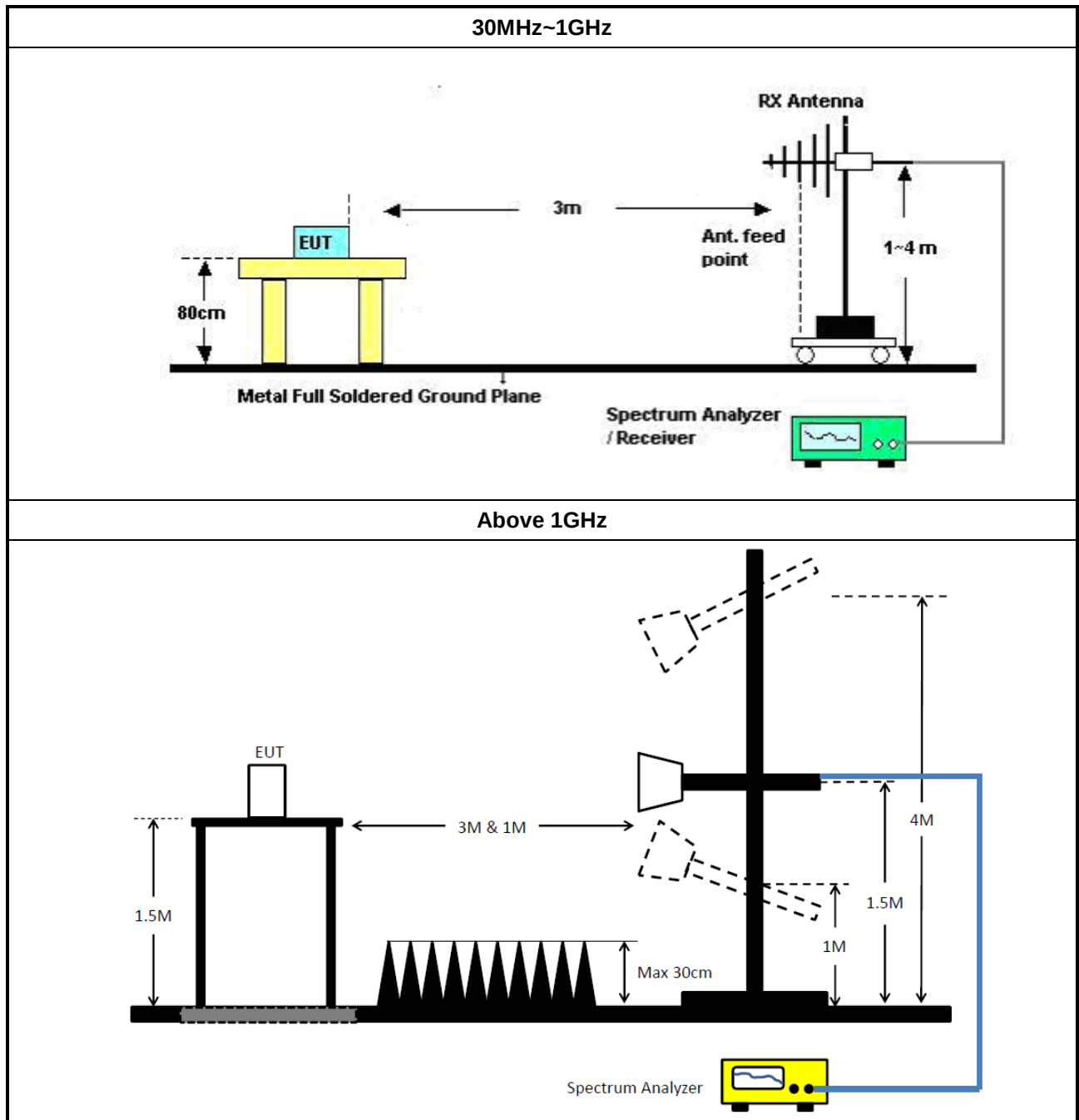
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
	- The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor]. - Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. - For the transmitter unwanted emissions shall be measured using following options below:
	Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
	For the transmitter band-edge emissions shall be measured using following options below:
	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.
	Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	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).

3.6.4 Test Setup





3.6.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

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

3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix E

3.7 Receiver Radiated Spurious Emissions

3.7.1 Receiver in Radiated Spurious Emissions Limit

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

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

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

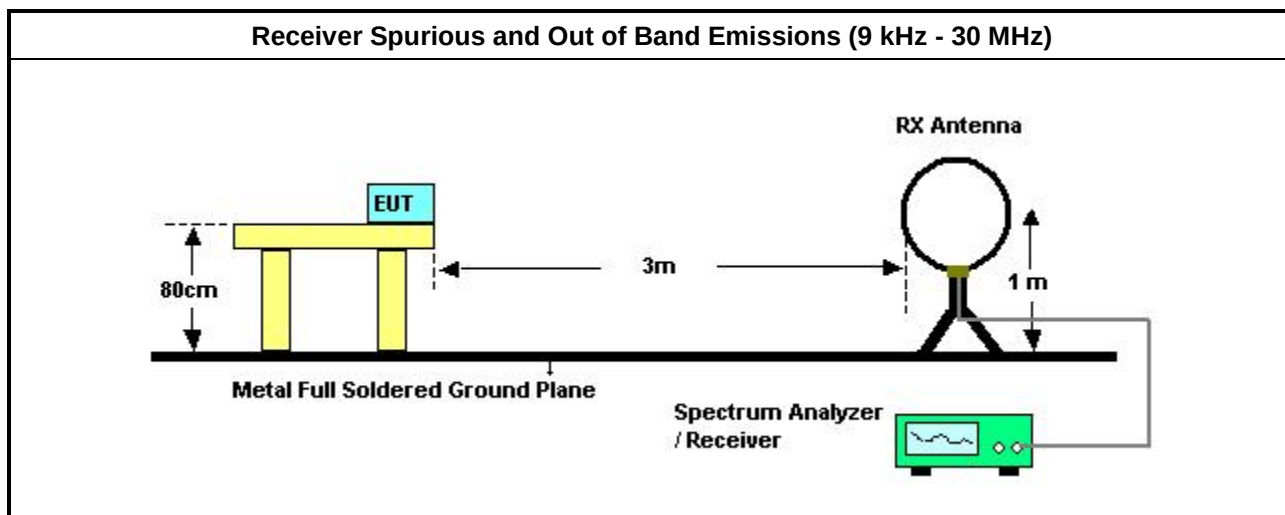
3.7.2 Measuring Instruments

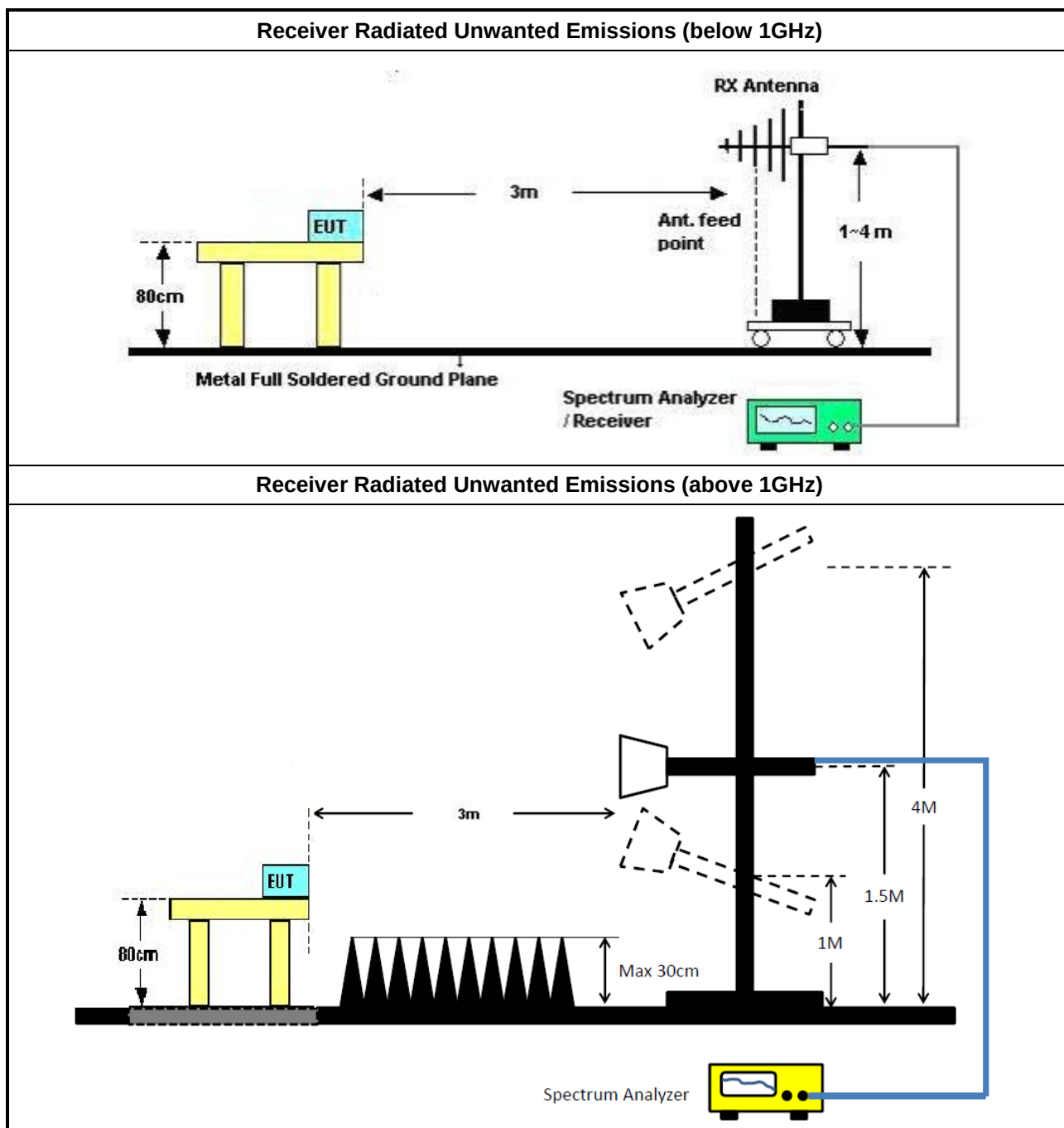
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

Test Method	
☒	The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is higher, without exceeding 40 GHz.
☒	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
☒	For radiated measurement, refer as ANSI C63.4, clause 8.3.
☒	Refer as ANSI C63.4, clause 8.3.1.1 and 8.3.2.1 for radiated emissions from below 30 MHz.
☒	Refer as ANSI C63.4, clause 8.3.1.1 and 8.3.2.1 for radiated emissions from 30 MHz-1 GHz. For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the QP-Limit so that the QP level does not need to be reported in addition.
☒	Refer as ANSI C63.4, clause 8.3.1.2 and 8.3.2.2 for radiated emissions from above 1 GHz. For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
☒	All amplitude of spurious emissions that are attenuated by more than 30 dB below the permissible value has no need to be reported.

3.7.4 Test Setup





3.7.5 Receiver Radiated Unwanted Emissions (Below 30MHz)

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

3.7.6 Test Result of Receiver Radiated Unwanted Emissions

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	ROHDE & SCHWARZ	FSP 40	100305	9kHz~40GHz	04/Jan/2018	03/Jan/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-1m	HUBER+SUHNER	MY37333/4	RF Cable - 45	1GHz~18GHz	26/Jan/2018	25/Jan/2019
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10710/4	30MHz~26.5GHz	26/Jul/2018	25/Jul/2019
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30MHz~26.5GHz	26/Jul/2018	25/Jul/2019
Signal Generator	R&S	SMR40	100116	10MHz~40GHz	26/Jul/2018	25/Jul/2019

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 & 5dB Attenuator	TESEQ & MTJ	CBL6111D & MTJ6102-05	35418 / 3	30MHz~1GHz	09/Sep/2017	08/Sep/2018
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120 D 1534	1GHz~18GHz	30/Apr/2018	29/Apr/2019
Broadband Horn Antenna	SCHWARZBECK	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	01/Feb/2018	31/Jan/2019
RF Cable-high	HUBER+SUHNER	SUCOFLEX104	SN 556626/4 + 556627	1GHz ~ 40GHz	14/Mar/2018	13/Mar/2019

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)	681.25k	966.25k	966KF1D	675k	956.25k

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;

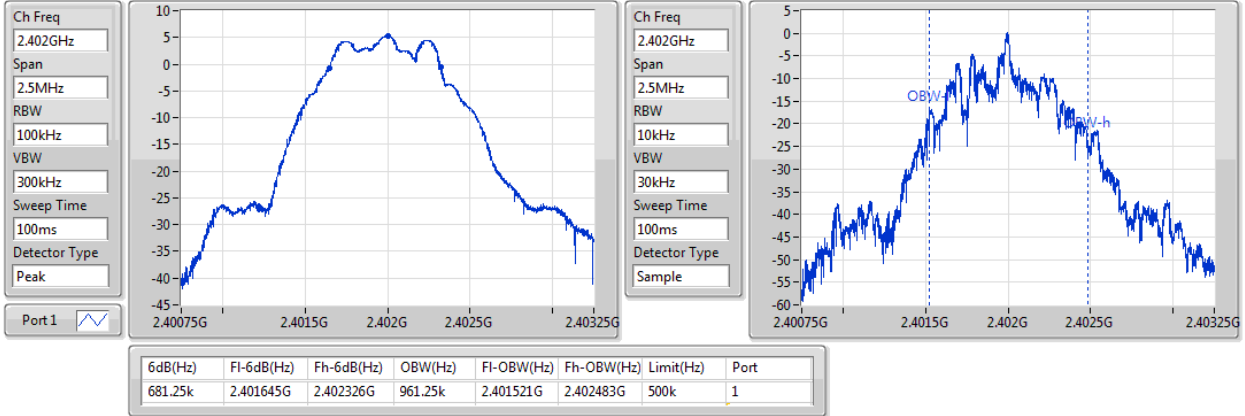
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	500k	681.25k	961.25k
2440MHz_TnomVnom	Pass	500k	681.25k	966.25k
2480MHz_TnomVnom	Pass	500k	675k	956.25k

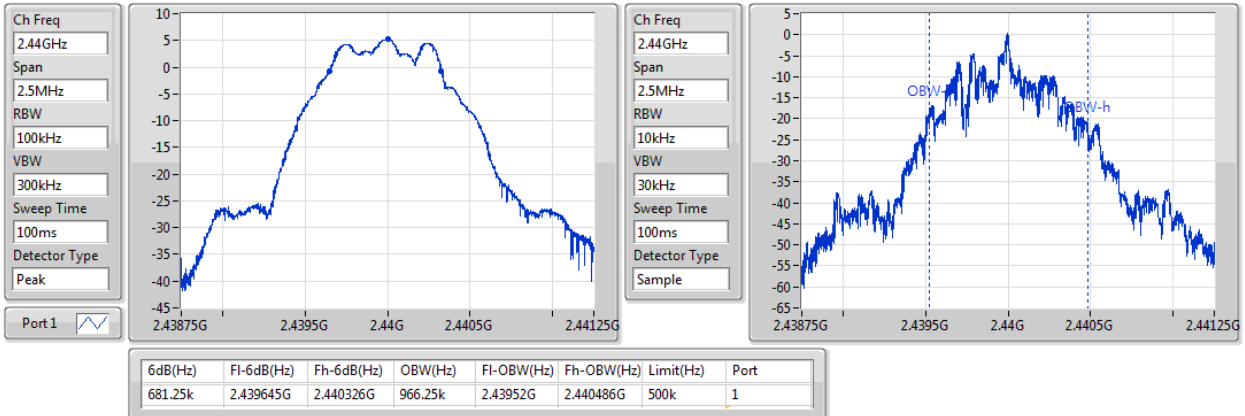
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-LE(1Mbps)
EBW
2402MHz

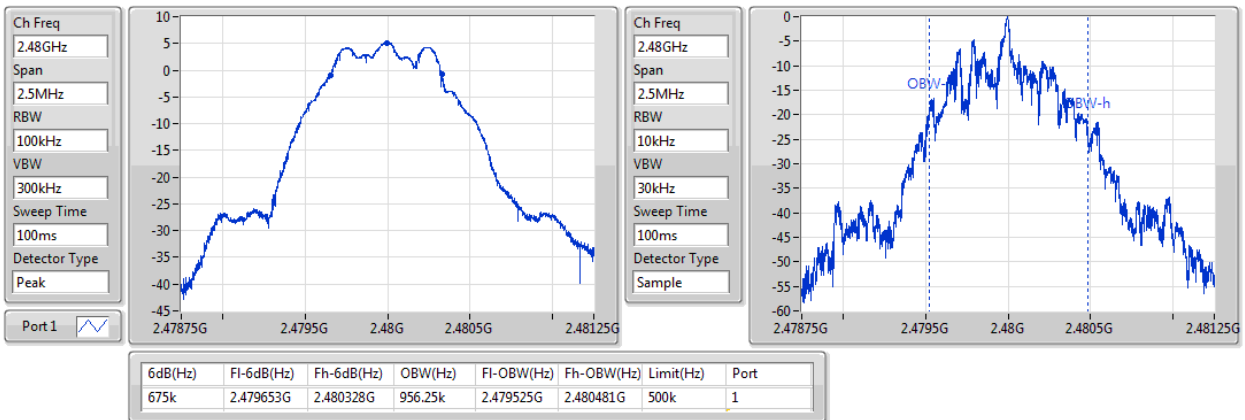
24/08/2018


BT-LE(1Mbps)
EBW
2440MHz

24/08/2018


BT-LE(1Mbps)
EBW
2480MHz

24/08/2018



**Summary**

Mode	Power	Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	3.87	0.00244

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	-3.50	3.79	30.00
2440MHz_TnomVnom	Pass	-3.50	3.87	30.00
2480MHz_TnomVnom	Pass	-3.50	3.71	30.00

**Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-9.06

RBW=3kHz.

Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	-3.50	-9.06	8.00
2440MHz_TnomVnom	Pass	-3.50	-9.17	8.00
2480MHz_TnomVnom	Pass	-3.50	-9.11	8.00

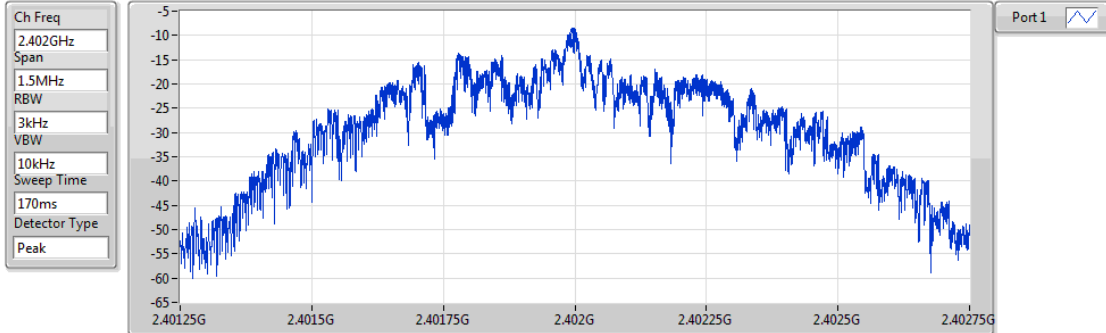
RBW=3kHz.

BT-LE(1Mbps)

PSD

2402MHz

24/08/2018



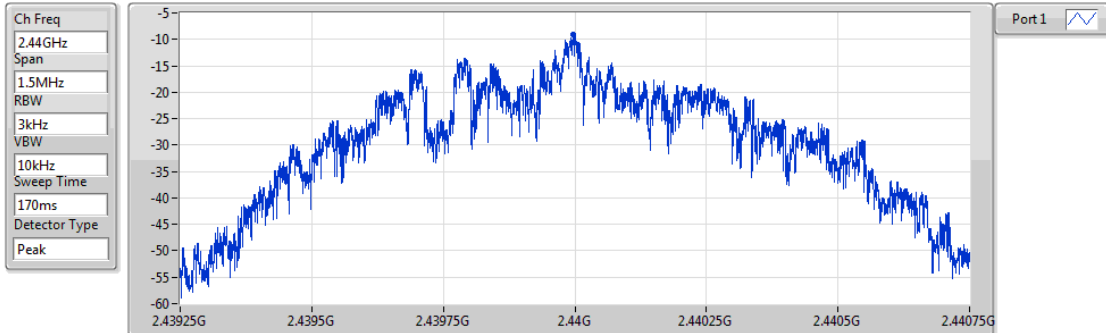
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.06	-9.06	-9.06

BT-LE(1Mbps)

PSD

2440MHz

24/08/2018



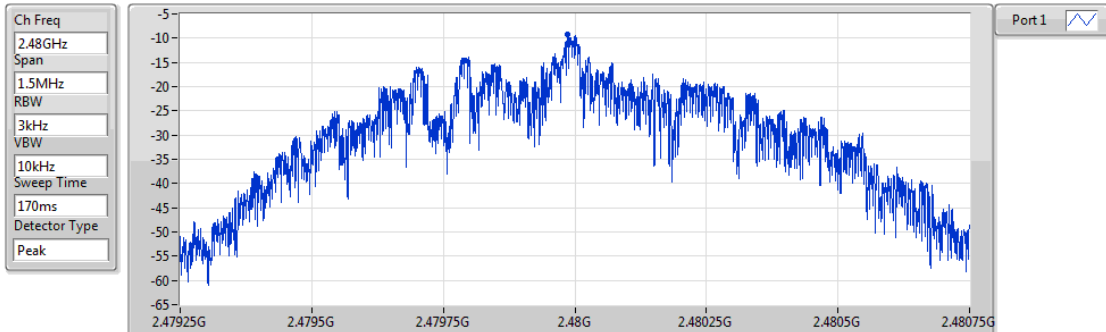
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.17	-9.17	-9.17

BT-LE(1Mbps)

PSD

2480MHz

24/08/2018



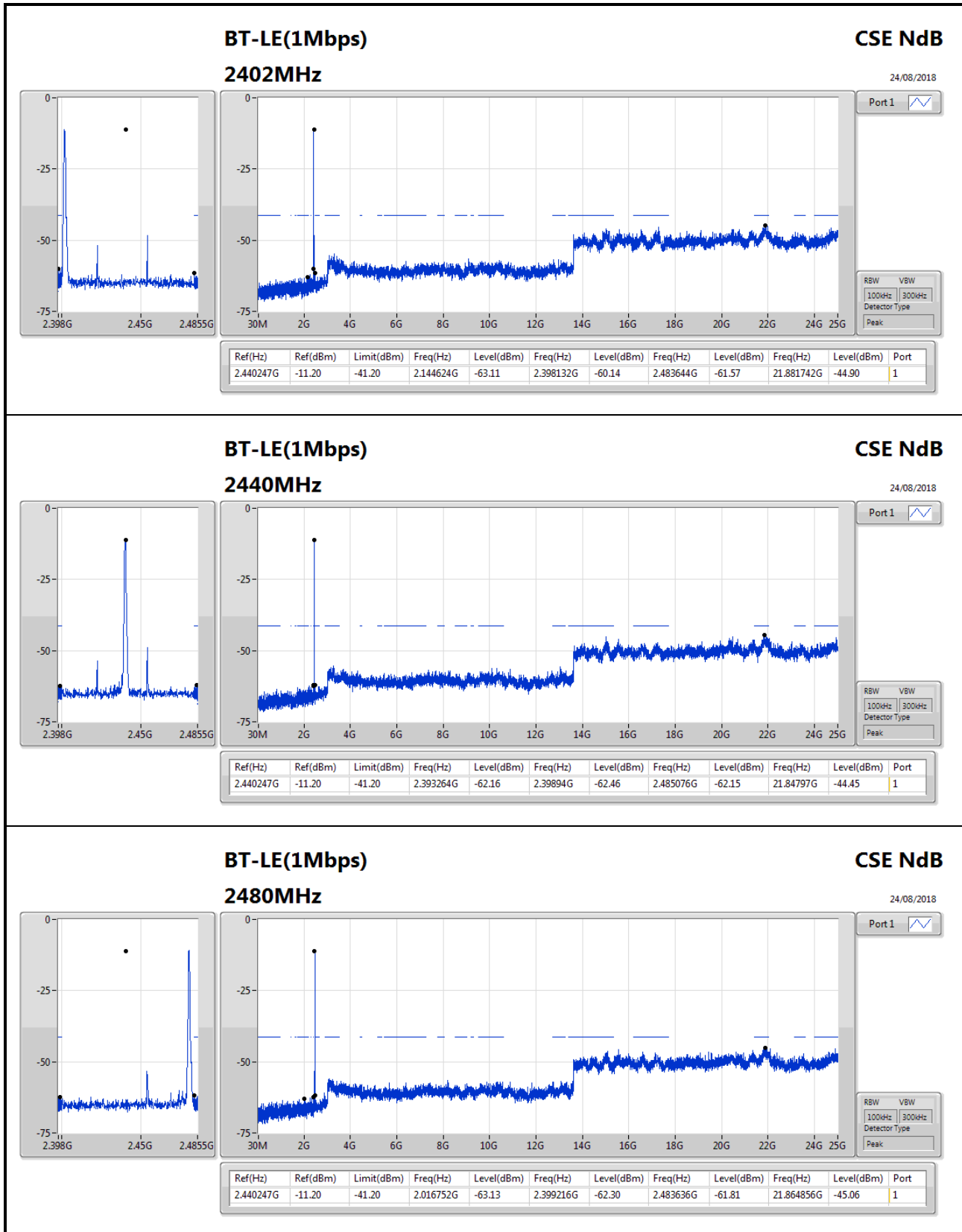
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.11	-9.11	-9.11

Summary

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.440247G	-11.20	-41.20	2.393264G	-62.16	2.39894G	-62.46	2.485076G	-62.15	21.84797G	-44.45	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	2.440247G	-11.20	-41.20	2.144624G	-63.11	2.398132G	-60.14	2.483644G	-61.57	21.881742G	-44.90	1
2440MHz_TnomVnom	Pass	2.440247G	-11.20	-41.20	2.393264G	-62.16	2.39894G	-62.46	2.485076G	-62.15	21.84797G	-44.45	1
2480MHz_TnomVnom	Pass	2.440247G	-11.20	-41.20	2.016752G	-63.13	2.399216G	-62.30	2.483636G	-61.81	21.864856G	-45.06	1





RSE TX below 1GHz Result

Appendix E.1

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	769.14M	42.56	46.00	-3.44	-8.20	3	Horizontal	360	2.00	-

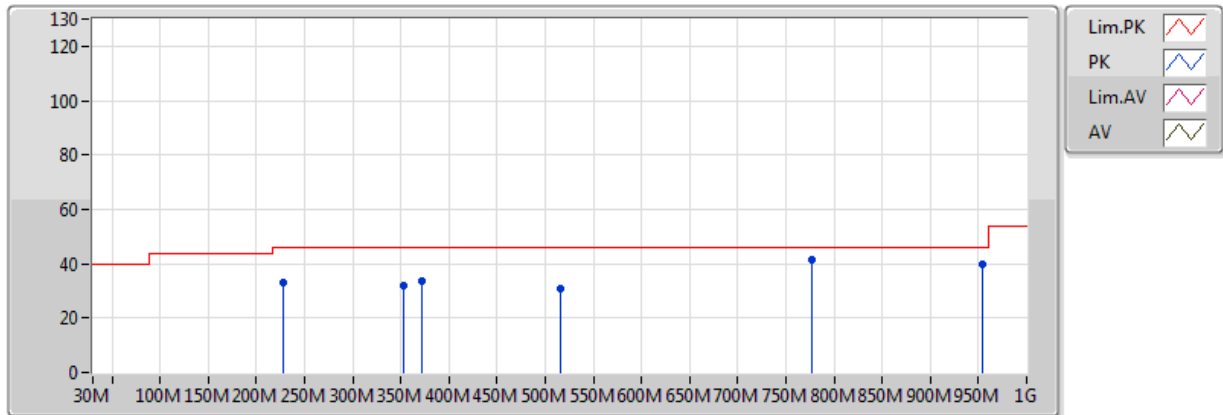
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	227.88M	32.84	46.00	-13.16	-20.02	3	Vertical	0	1.00	-
2440MHz	Pass	PK	352.04M	31.80	46.00	-14.20	-15.44	3	Vertical	0	1.00	-
2440MHz	Pass	PK	371.44M	33.67	46.00	-12.33	-14.94	3	Vertical	0	1.00	-
2440MHz	Pass	PK	515M	31.08	46.00	-14.92	-12.13	3	Vertical	0	1.00	-
2440MHz	Pass	PK	776.9M	41.47	46.00	-4.53	-8.12	3	Vertical	0	1.00	-
2440MHz	Pass	PK	953.44M	39.99	46.00	-6.01	-4.71	3	Vertical	0	1.00	-
2440MHz	Pass	PK	68.8M	26.60	40.00	-13.40	-25.22	3	Horizontal	360	2.00	-
2440MHz	Pass	PK	115.36M	25.86	43.50	-17.64	-19.61	3	Horizontal	360	2.00	-
2440MHz	Pass	PK	243.4M	28.18	46.00	-17.82	-18.13	3	Horizontal	360	2.00	-
2440MHz	Pass	PK	518.88M	34.91	46.00	-11.09	-12.13	3	Horizontal	360	2.00	-
2440MHz	Pass	PK	769.14M	42.56	46.00	-3.44	-8.20	3	Horizontal	360	2.00	-
2440MHz	Pass	PK	953.44M	39.45	46.00	-6.55	-4.71	3	Horizontal	360	2.00	-

BT-LE(1Mbps)

2440MHz_Battery

31/08/2018

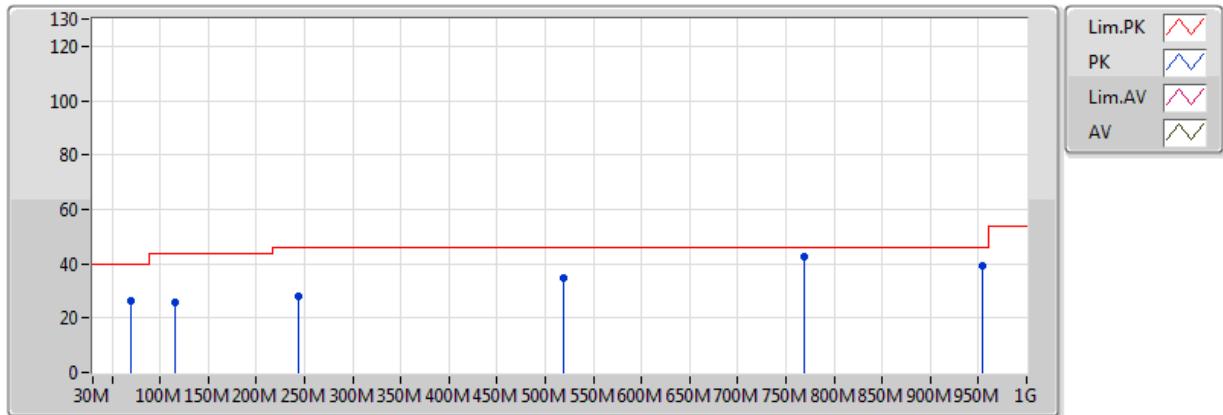


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	227.88M	32.84	46.00	-13.16	-20.02	3	Vertical	0	1.00	-
PK	352.04M	31.80	46.00	-14.20	-15.44	3	Vertical	0	1.00	-
PK	371.44M	33.67	46.00	-12.33	-14.94	3	Vertical	0	1.00	-
PK	515M	31.08	46.00	-14.92	-12.13	3	Vertical	0	1.00	-
PK	776.9M	41.47	46.00	-4.53	-8.12	3	Vertical	0	1.00	-
PK	953.44M	39.99	46.00	-6.01	-4.71	3	Vertical	0	1.00	-

BT-LE(1Mbps)

2440MHz_Battery

31/08/2018



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	68.8M	26.60	40.00	-13.40	-25.22	3	Horizontal	360	2.00	-
PK	115.36M	25.86	43.50	-17.64	-19.61	3	Horizontal	360	2.00	-
PK	243.4M	28.18	46.00	-17.82	-18.13	3	Horizontal	360	2.00	-
PK	518.88M	34.91	46.00	-11.09	-12.13	3	Horizontal	360	2.00	-
PK	769.14M	42.56	46.00	-3.44	-8.20	3	Horizontal	360	2.00	-
PK	953.44M	39.45	46.00	-6.55	-4.71	3	Horizontal	360	2.00	-



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	2.4862G	51.31	54.00	-2.69	31.12	3	Horizontal	347	1.10	-

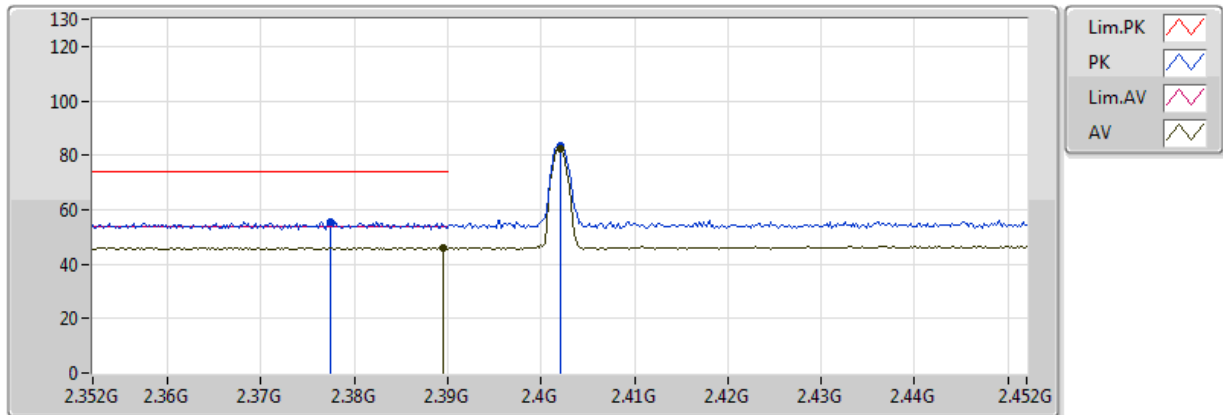
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3896G	46.14	54.00	-7.86	30.77	3	Vertical	114	1.99	-
2402MHz	Pass	AV	2.402G	82.18	Inf	-Inf	30.82	3	Vertical	114	1.99	-
2402MHz	Pass	PK	2.3774G	55.56	74.00	-18.44	30.73	3	Vertical	114	1.99	-
2402MHz	Pass	PK	2.402G	83.44	Inf	-Inf	30.82	3	Vertical	114	1.99	-
2402MHz	Pass	AV	2.3544G	46.42	54.00	-7.58	30.65	3	Horizontal	340	1.34	-
2402MHz	Pass	AV	2.402G	89.74	Inf	-Inf	30.82	3	Horizontal	340	1.34	-
2402MHz	Pass	PK	2.3792G	55.31	74.00	-18.69	30.74	3	Horizontal	340	1.34	-
2402MHz	Pass	PK	2.4018G	90.85	Inf	-Inf	30.82	3	Horizontal	340	1.34	-
2402MHz	Pass	AV	4.79596G	33.03	54.00	-20.97	2.06	3	Vertical	203	1.21	-
2402MHz	Pass	PK	4.80532G	42.75	74.00	-31.25	2.08	3	Vertical	203	1.21	-
2402MHz	Pass	AV	4.80334G	32.90	54.00	-21.10	2.08	3	Horizontal	301	1.64	-
2402MHz	Pass	PK	4.80022G	43.48	74.00	-30.52	2.07	3	Horizontal	301	1.64	-
2440MHz	Pass	AV	2.3596G	46.11	54.00	-7.89	30.67	3	Vertical	91	1.37	-
2440MHz	Pass	AV	2.44G	86.38	Inf	-Inf	30.95	3	Vertical	91	1.37	-
2440MHz	Pass	AV	2.4984G	46.80	54.00	-7.20	31.17	3	Vertical	91	1.37	-
2440MHz	Pass	PK	2.3544G	55.62	74.00	-18.38	30.65	3	Vertical	91	1.37	-
2440MHz	Pass	PK	2.4404G	87.54	Inf	-Inf	30.96	3	Vertical	91	1.37	-
2440MHz	Pass	PK	2.4904G	55.99	74.00	-18.01	31.13	3	Vertical	91	1.37	-
2440MHz	Pass	AV	2.3896G	46.11	54.00	-7.89	30.77	3	Horizontal	349	1.09	-
2440MHz	Pass	AV	2.44G	92.45	Inf	-Inf	30.95	3	Horizontal	349	1.09	-
2440MHz	Pass	AV	2.4892G	46.67	54.00	-7.33	31.13	3	Horizontal	349	1.09	-
2440MHz	Pass	PK	2.34G	56.07	74.00	-17.93	30.60	3	Horizontal	349	1.09	-
2440MHz	Pass	PK	2.4404G	93.58	Inf	-Inf	30.96	3	Horizontal	349	1.09	-
2440MHz	Pass	PK	2.4936G	56.91	74.00	-17.09	31.14	3	Horizontal	349	1.09	-
2440MHz	Pass	AV	4.89446G	33.27	54.00	-20.73	2.31	3	Vertical	212	1.48	-
2440MHz	Pass	PK	4.89152G	43.03	74.00	-30.97	2.30	3	Vertical	212	1.48	-
2440MHz	Pass	AV	4.88462G	33.20	54.00	-20.80	2.28	3	Horizontal	199	1.25	-
2440MHz	Pass	PK	4.88576G	42.59	74.00	-31.41	2.28	3	Horizontal	199	1.25	-
2480MHz	Pass	AV	2.48G	87.78	Inf	-Inf	31.10	3	Vertical	74	1.68	-
2480MHz	Pass	AV	2.4866G	47.56	54.00	-6.44	31.12	3	Vertical	74	1.68	-
2480MHz	Pass	PK	2.48G	88.91	Inf	-Inf	31.10	3	Vertical	74	1.68	-
2480MHz	Pass	PK	2.4866G	57.05	74.00	-16.95	31.12	3	Vertical	74	1.68	-
2480MHz	Pass	AV	2.48G	94.97	Inf	-Inf	31.10	3	Horizontal	347	1.10	-
2480MHz	Pass	AV	2.4862G	51.31	54.00	-2.69	31.12	3	Horizontal	347	1.10	-
2480MHz	Pass	PK	2.48G	95.96	Inf	-Inf	31.10	3	Horizontal	347	1.10	-
2480MHz	Pass	PK	2.4864G	60.79	74.00	-13.21	31.12	3	Horizontal	347	1.10	-
2480MHz	Pass	AV	4.9603G	33.63	54.00	-20.37	2.47	3	Vertical	192	1.62	-
2480MHz	Pass	PK	4.96222G	42.96	74.00	-31.04	2.48	3	Vertical	192	1.62	-
2480MHz	Pass	AV	4.96066G	33.47	54.00	-20.53	2.47	3	Horizontal	121	1.42	-
2480MHz	Pass	PK	4.97446G	43.12	74.00	-30.88	2.51	3	Horizontal	121	1.42	-

BT-LE(1Mbps)

2402MHz_TX

31/08/2018

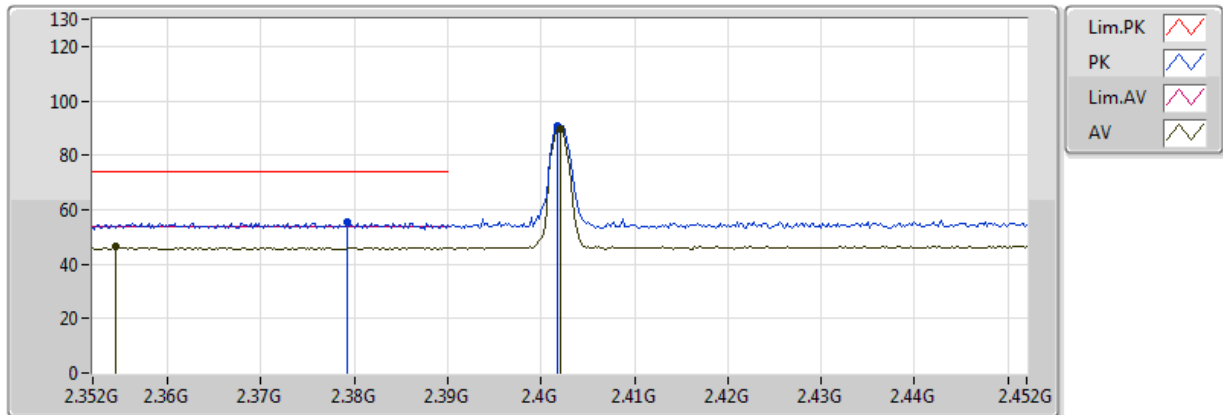


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3896G	46.14	54.00	-7.86	30.77	3	Vertical	114	1.99	-
AV	2.402G	82.18	Inf	-Inf	30.82	3	Vertical	114	1.99	-
PK	2.3774G	55.56	74.00	-18.44	30.73	3	Vertical	114	1.99	-
PK	2.402G	83.44	Inf	-Inf	30.82	3	Vertical	114	1.99	-

BT-LE(1Mbps)

2402MHz_TX

31/08/2018

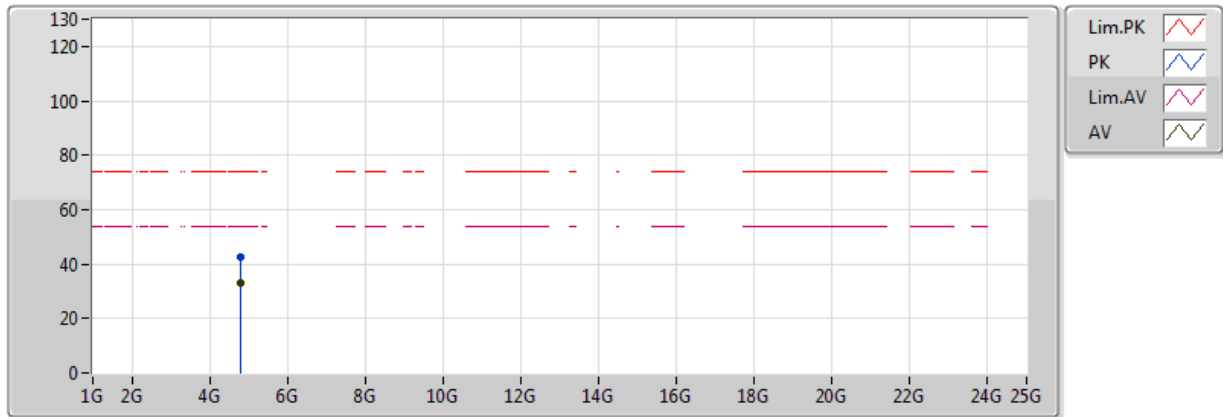


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3544G	46.42	54.00	-7.58	30.65	3	Horizontal	340	1.34	-
AV	2.402G	89.74	Inf	-Inf	30.82	3	Horizontal	340	1.34	-
PK	2.3792G	55.31	74.00	-18.69	30.74	3	Horizontal	340	1.34	-
PK	2.4018G	90.85	Inf	-Inf	30.82	3	Horizontal	340	1.34	-

BT-LE(1Mbps)

2402MHz_TX

31/08/2018

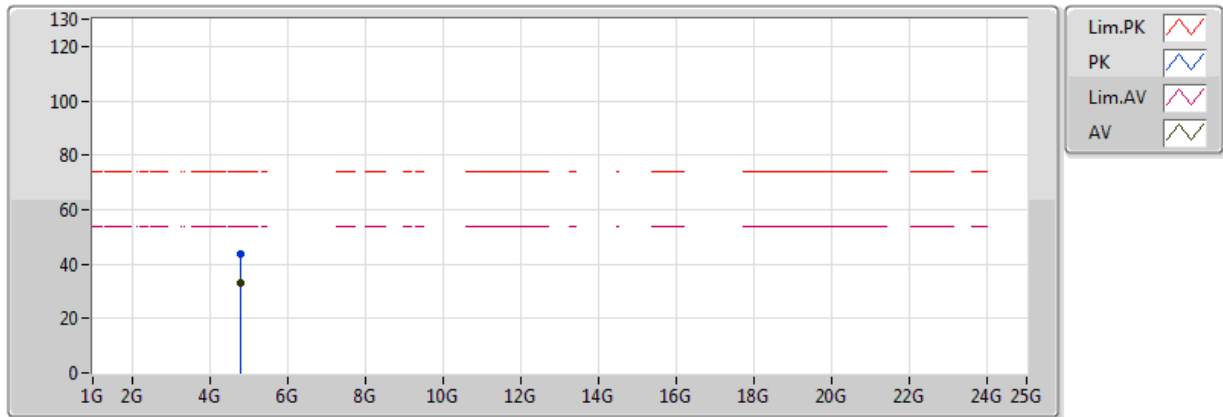


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.79596G	33.03	54.00	-20.97	2.06	3	Vertical	203	1.21	-
PK	4.80532G	42.75	74.00	-31.25	2.08	3	Vertical	203	1.21	-

BT-LE(1Mbps)

2402MHz_TX

31/08/2018

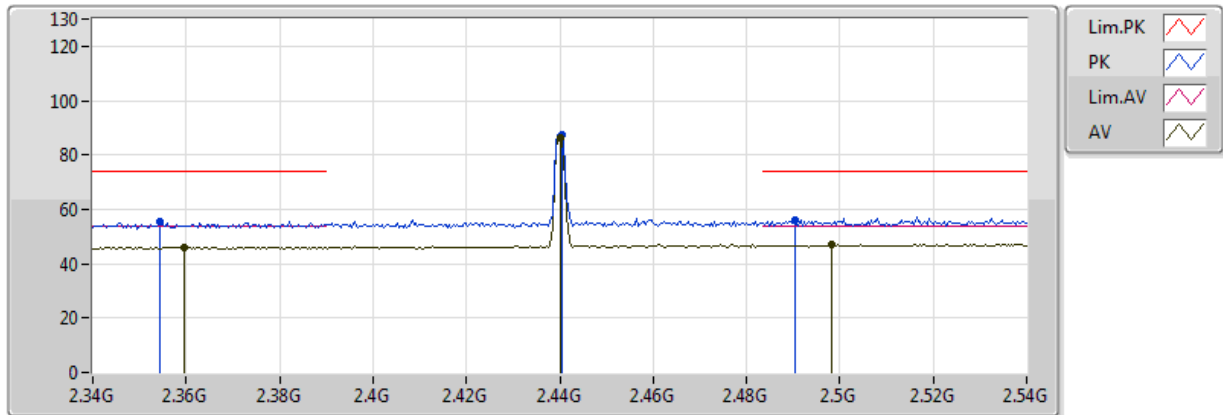


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.80334G	32.90	54.00	-21.10	2.08	3	Horizontal	301	1.64	-
PK	4.80022G	43.48	74.00	-30.52	2.07	3	Horizontal	301	1.64	-

BT-LE(1Mbps)

2440MHz_TX

31/08/2018

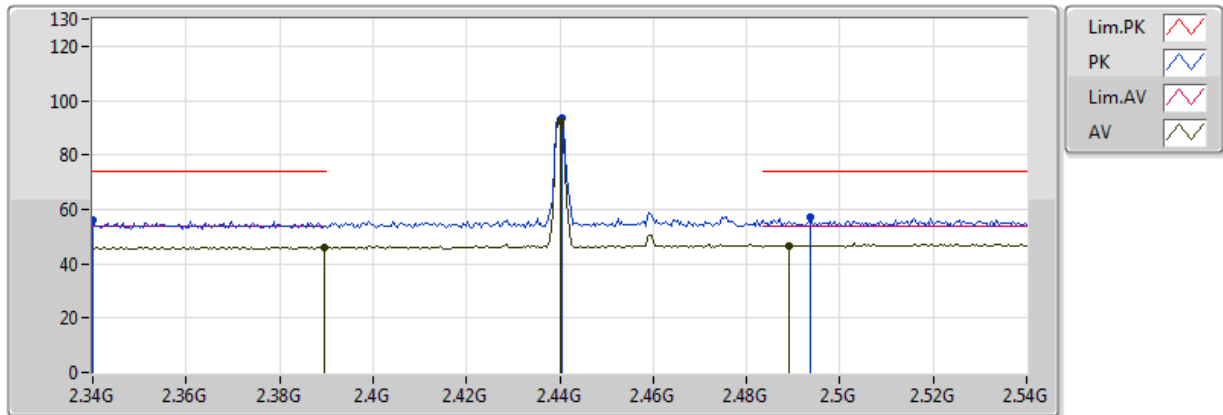


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3596G	46.11	54.00	-7.89	30.67	3	Vertical	91	1.37	-
AV	2.44G	86.38	Inf	-Inf	30.95	3	Vertical	91	1.37	-
AV	2.4984G	46.80	54.00	-7.20	31.17	3	Vertical	91	1.37	-
PK	2.3544G	55.62	74.00	-18.38	30.65	3	Vertical	91	1.37	-
PK	2.4404G	87.54	Inf	-Inf	30.96	3	Vertical	91	1.37	-
PK	2.4904G	55.99	74.00	-18.01	31.13	3	Vertical	91	1.37	-

BT-LE(1Mbps)

2440MHz_TX

31/08/2018

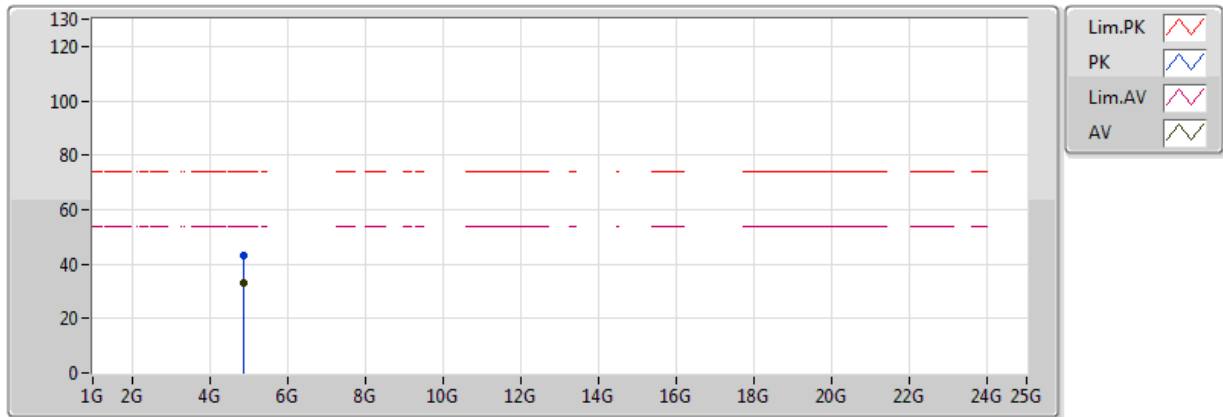


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3896G	46.11	54.00	-7.89	30.77	3	Horizontal	349	1.09	-
AV	2.44G	92.45	Inf	-Inf	30.95	3	Horizontal	349	1.09	-
AV	2.4892G	46.67	54.00	-7.33	31.13	3	Horizontal	349	1.09	-
PK	2.34G	56.07	74.00	-17.93	30.60	3	Horizontal	349	1.09	-
PK	2.4404G	93.58	Inf	-Inf	30.96	3	Horizontal	349	1.09	-
PK	2.4936G	56.91	74.00	-17.09	31.14	3	Horizontal	349	1.09	-

BT-LE(1Mbps)

2440MHz_TX

31/08/2018

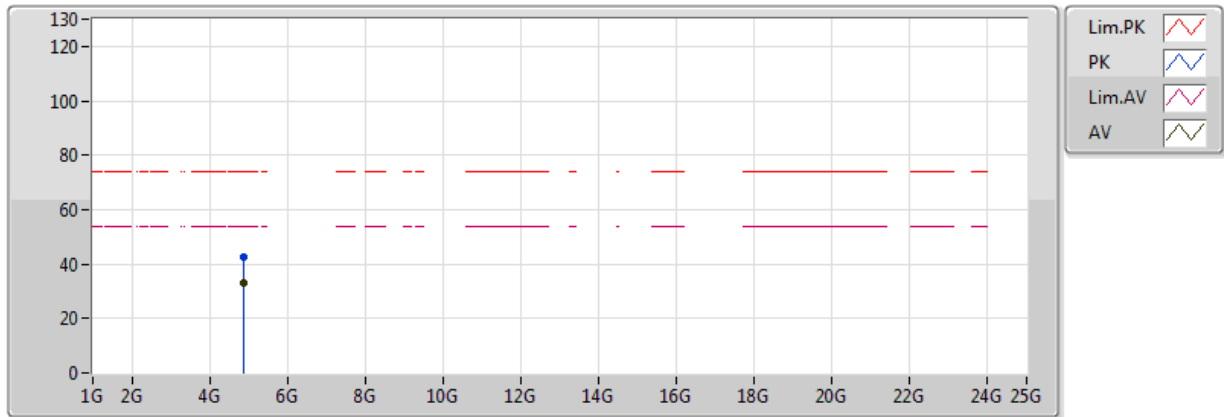


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.89446G	33.27	54.00	-20.73	2.31	3	Vertical	212	1.48	-
PK	4.89152G	43.03	74.00	-30.97	2.30	3	Vertical	212	1.48	-

BT-LE(1Mbps)

2440MHz_TX

31/08/2018

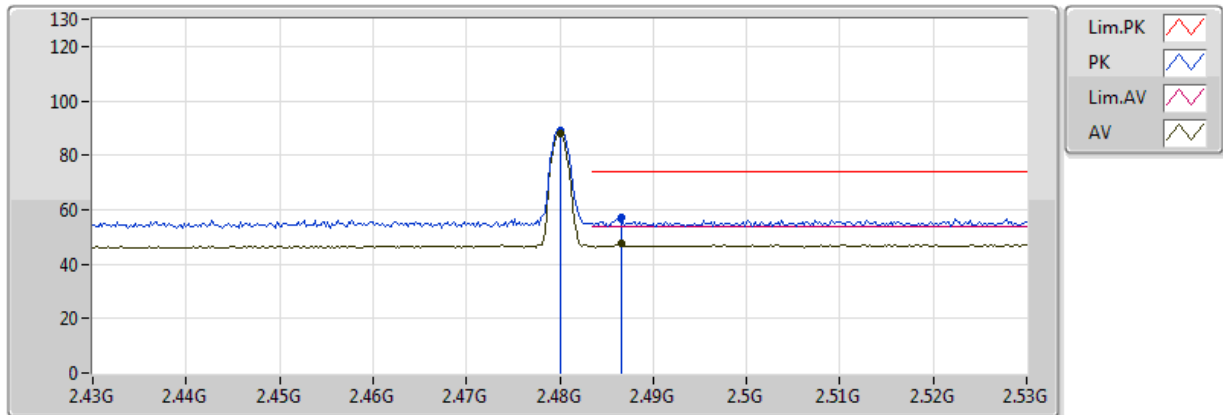


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.88462G	33.20	54.00	-20.80	2.28	3	Horizontal	199	1.25	-
PK	4.88576G	42.59	74.00	-31.41	2.28	3	Horizontal	199	1.25	-

BT-LE(1Mbps)

2480MHz_TX

31/08/2018

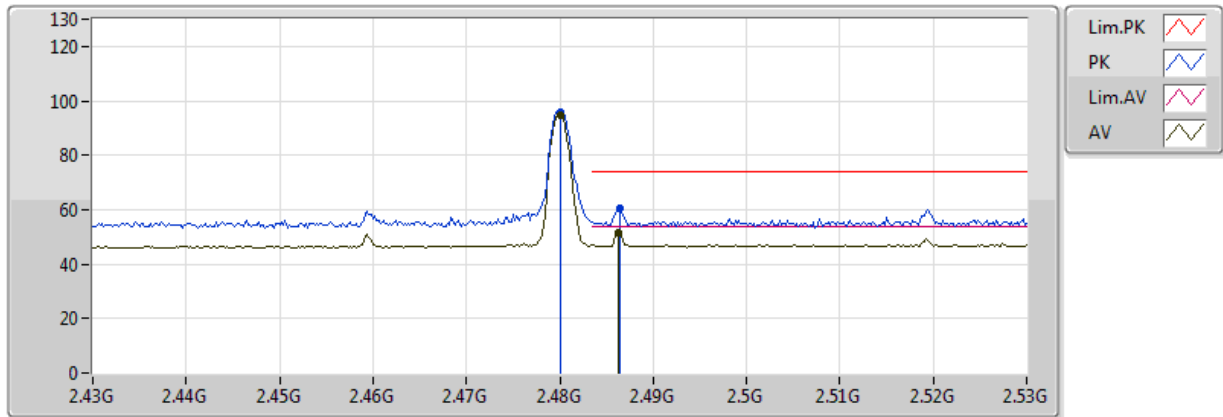


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	87.78	Inf	-Inf	31.10	3	Vertical	74	1.68	-
AV	2.4866G	47.56	54.00	-6.44	31.12	3	Vertical	74	1.68	-
PK	2.48G	88.91	Inf	-Inf	31.10	3	Vertical	74	1.68	-
PK	2.4866G	57.05	74.00	-16.95	31.12	3	Vertical	74	1.68	-

BT-LE(1Mbps)

2480MHz_TX

31/08/2018

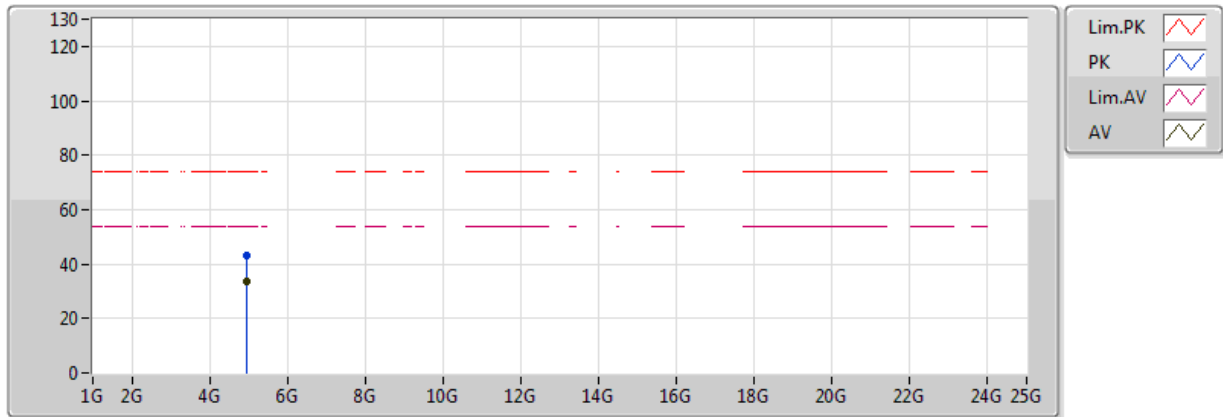


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	94.97	Inf	-Inf	31.10	3	Horizontal	347	1.10	-
AV	2.4862G	51.31	54.00	-2.69	31.12	3	Horizontal	347	1.10	-
PK	2.48G	95.96	Inf	-Inf	31.10	3	Horizontal	347	1.10	-
PK	2.4864G	60.79	74.00	-13.21	31.12	3	Horizontal	347	1.10	-

BT-LE(1Mbps)

2480MHz_TX

31/08/2018

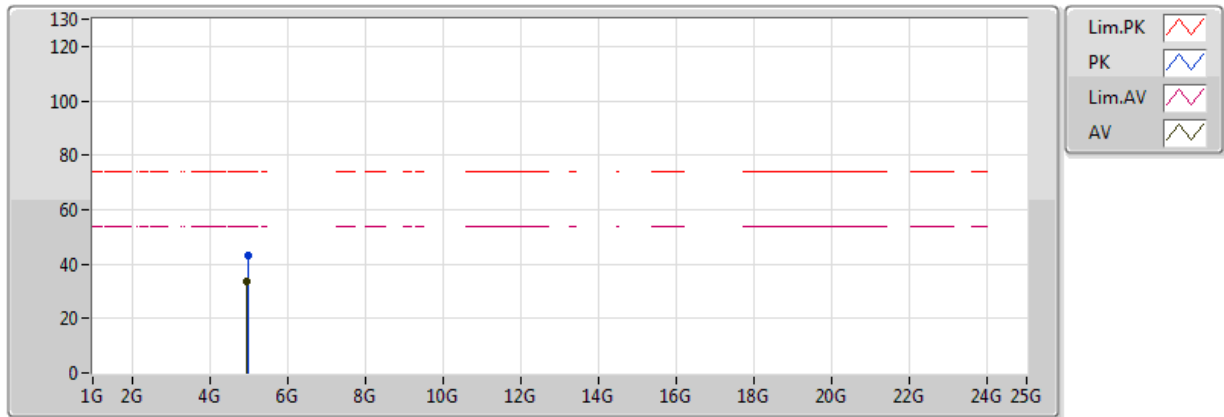


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.9603G	33.63	54.00	-20.37	2.47	3	Vertical	192	1.62	-
PK	4.96222G	42.96	74.00	-31.04	2.48	3	Vertical	192	1.62	-

BT-LE(1Mbps)

2480MHz_TX

31/08/2018



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.96066G	33.47	54.00	-20.53	2.47	3	Horizontal	121	1.42	-
PK	4.97446G	43.12	74.00	-30.88	2.51	3	Horizontal	121	1.42	-



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	769.14M	42.66	46.00	-3.34	-8.20	3	Vertical	360	1.00	-

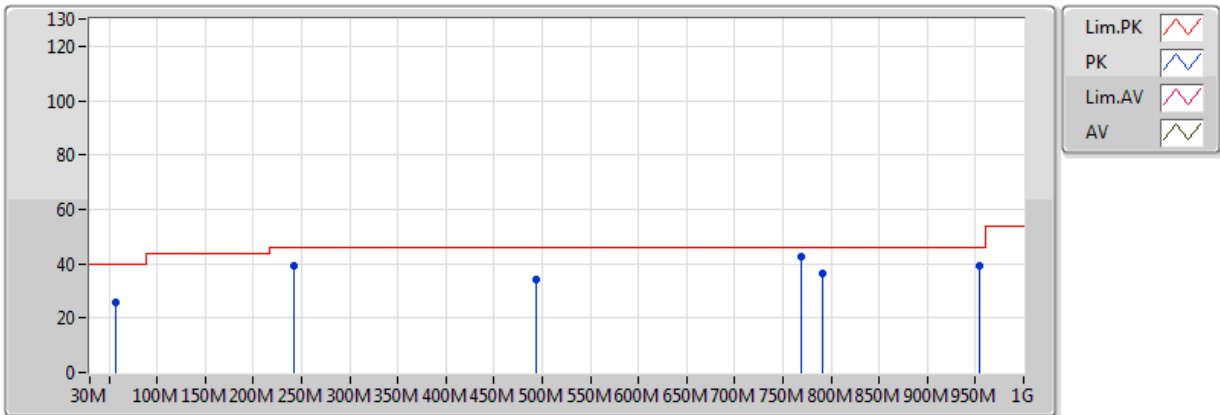
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	57.16M	25.60	40.00	-14.40	-25.37	3	Vertical	360	1.00	-
2440MHz	Pass	PK	241.46M	39.19	46.00	-6.81	-18.42	3	Vertical	360	1.00	-
2440MHz	Pass	PK	493.66M	34.27	46.00	-11.73	-12.19	3	Vertical	360	1.00	-
2440MHz	Pass	PK	769.14M	42.66	46.00	-3.34	-8.20	3	Vertical	360	1.00	-
2440MHz	Pass	PK	790.48M	36.55	46.00	-9.45	-8.12	3	Vertical	360	1.00	-
2440MHz	Pass	PK	953.44M	38.98	46.00	-7.02	-4.71	3	Vertical	360	1.00	-
2440MHz	Pass	PK	55.22M	34.87	40.00	-5.13	-25.16	3	Horizontal	0	2.00	-
2440MHz	Pass	PK	313.24M	30.86	46.00	-15.14	-16.48	3	Horizontal	0	2.00	-
2440MHz	Pass	PK	493.66M	38.30	46.00	-7.70	-12.19	3	Horizontal	0	2.00	-
2440MHz	Pass	PK	769.14M	41.04	46.00	-4.96	-8.20	3	Horizontal	0	2.00	-
2440MHz	Pass	PK	776.9M	39.52	46.00	-6.48	-8.12	3	Horizontal	0	2.00	-
2440MHz	Pass	PK	953.44M	39.81	46.00	-6.19	-4.71	3	Horizontal	0	2.00	-

BT-LE(1Mbps)RX

2440MHz_Battery

31/08/2018

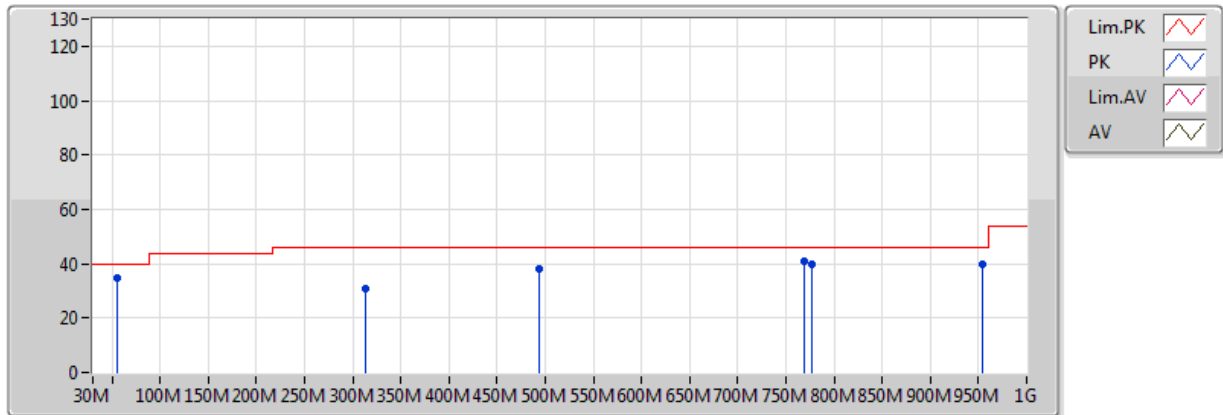


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	57.16M	25.60	40.00	-14.40	-25.37	3	Vertical	360	1.00	-
PK	241.46M	39.19	46.00	-6.81	-18.42	3	Vertical	360	1.00	-
PK	493.66M	34.27	46.00	-11.73	-12.19	3	Vertical	360	1.00	-
PK	769.14M	42.66	46.00	-3.34	-8.20	3	Vertical	360	1.00	-
PK	790.48M	36.55	46.00	-9.45	-8.12	3	Vertical	360	1.00	-
PK	953.44M	38.98	46.00	-7.02	-4.71	3	Vertical	360	1.00	-

BT-LE(1Mbps)RX

2440MHz_Battery

31/08/2018



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	55.22M	34.87	40.00	-5.13	-25.16	3	Horizontal	0	2.00	-
PK	313.24M	30.86	46.00	-15.14	-16.48	3	Horizontal	0	2.00	-
PK	493.66M	38.30	46.00	-7.70	-12.19	3	Horizontal	0	2.00	-
PK	769.14M	41.04	46.00	-4.96	-8.20	3	Horizontal	0	2.00	-
PK	776.9M	39.52	46.00	-6.48	-8.12	3	Horizontal	0	2.00	-
PK	953.44M	39.81	46.00	-6.19	-4.71	3	Horizontal	0	2.00	-



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	4.52G	38.43	54.00	-15.57	1.38	3	Horizontal	45	1.42	-

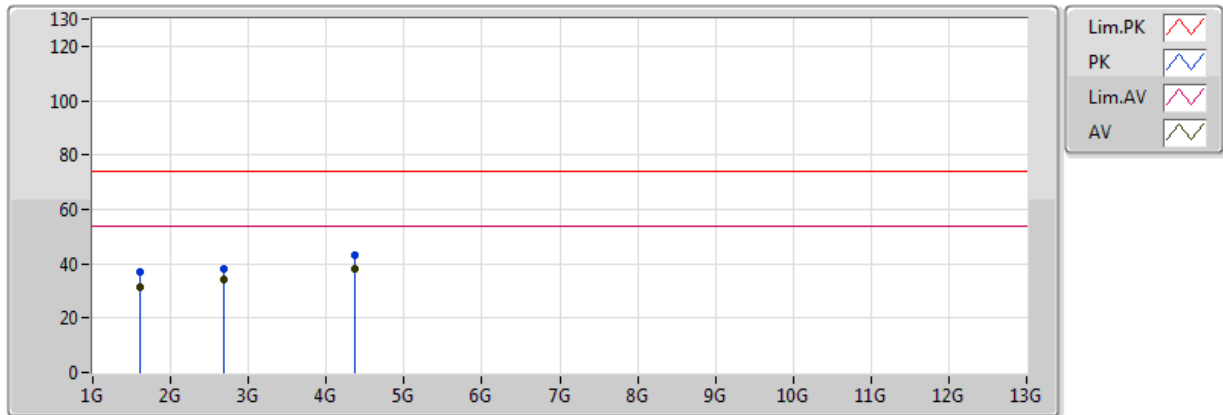
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	AV	1.6G	31.12	54.00	-22.88	-5.66	3	Vertical	178	1.24	-
2440MHz	Pass	AV	2.68G	34.07	54.00	-19.93	-2.84	3	Vertical	54	1.56	-
2440MHz	Pass	AV	4.36G	38.04	54.00	-15.96	0.92	3	Vertical	210	1.52	-
2440MHz	Pass	PK	1.6G	37.01	74.00	-36.99	-5.66	3	Vertical	178	1.24	-
2440MHz	Pass	PK	2.68G	38.30	74.00	-35.70	-2.84	3	Vertical	54	1.56	-
2440MHz	Pass	PK	4.36G	42.87	74.00	-31.13	0.92	3	Vertical	210	1.52	-
2440MHz	Pass	AV	2.18G	32.21	54.00	-21.79	-4.33	3	Horizontal	175	1.12	-
2440MHz	Pass	AV	3.3G	35.11	54.00	-18.89	-1.66	3	Horizontal	112	1.59	-
2440MHz	Pass	AV	4.52G	38.43	54.00	-15.57	1.38	3	Horizontal	45	1.42	-
2440MHz	Pass	PK	2.18G	37.36	74.00	-36.64	-4.33	3	Horizontal	175	1.12	-
2440MHz	Pass	PK	3.3G	39.67	74.00	-34.33	-1.66	3	Horizontal	112	1.59	-
2440MHz	Pass	PK	4.52G	42.70	74.00	-31.30	1.38	3	Horizontal	45	1.42	-

BT-LE(1Mbps)RX

2440MHz_RX

31/08/2018

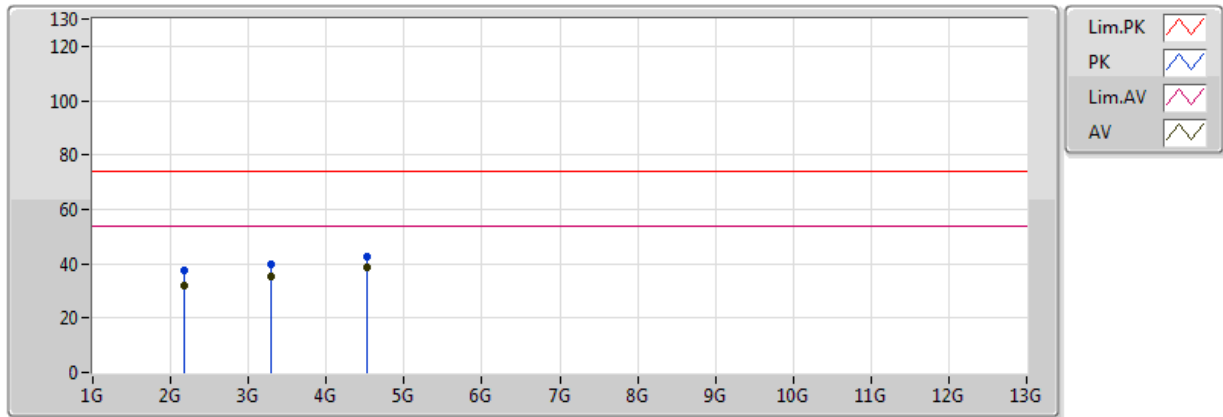


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	1.6G	31.12	54.00	-22.88	-5.66	3	Vertical	178	1.24	-
AV	2.68G	34.07	54.00	-19.93	-2.84	3	Vertical	54	1.56	-
AV	4.36G	38.04	54.00	-15.96	0.92	3	Vertical	210	1.52	-
PK	1.6G	37.01	74.00	-36.99	-5.66	3	Vertical	178	1.24	-
PK	2.68G	38.30	74.00	-35.70	-2.84	3	Vertical	54	1.56	-
PK	4.36G	42.87	74.00	-31.13	0.92	3	Vertical	210	1.52	-

BT-LE(1Mbps)RX

2440MHz_RX

31/08/2018



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.18G	32.21	54.00	-21.79	-4.33	3	Horizontal	175	1.12	-
AV	3.3G	35.11	54.00	-18.89	-1.66	3	Horizontal	112	1.59	-
AV	4.52G	38.43	54.00	-15.57	1.38	3	Horizontal	45	1.42	-
PK	2.18G	37.36	74.00	-36.64	-4.33	3	Horizontal	175	1.12	-
PK	3.3G	39.67	74.00	-34.33	-1.66	3	Horizontal	112	1.59	-
PK	4.52G	42.70	74.00	-31.30	1.38	3	Horizontal	45	1.42	-