



FCC Test Report

FCC ID : 2ABXLT8001
Equipment : Wireless Transceiver
Brand Name : Tile
Model Name : T8001
Applicant : Tile, Inc.
2121 S. El Camino Real Suite 900
San Mateo, CA 94403 USA
Manufacturer : Tile, Inc.
2121 S. El Camino Real Suite 900
San Mateo, CA 94403 USA
Standard : 47 CFR FCC Part 15.247

The product was received on Jun. 24, 2019, and testing was started from Jun. 27, 2019 and completed on Jun. 28, 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: 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

TEL : 886-3-3273456
FAX : 886-3-3270973
Report Template No.: HE1-C10 Ver3.5
FCC ID: 2ABXLT8001

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	FCC 15.203
3.1	15.207	AC Power-line Conducted Emissions	Not Required	FCC 15.207
3.2	15.247(a)	DTS Bandwidth	PASS	≥500kHz
3.3	15.247(b)	Maximum Conducted Output Power	PASS	Power [dBm]:30
3.4	15.247(e)	Power Spectral Density	PASS	PSD [dBm/3kHz]:8
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	Non-Restricted Bands: >30 dBc
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

Declaration of Conformity:

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

Comments and explanations:

None

Reviewed by: Sam Tsai

Report Producer: Michelle Tsai

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1.0	1TX

Note:

- ♦ Bluetooth LE uses a GFSK (1Mbps) modulation for DSSS.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Tile	-	PCB Trace antenna	-	-3.6

Note 1: The EUT has one antenna.

For BT function:

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

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

1.1.3 EUT Information

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

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-LE(1Mbps)	0.633	1.99	395.625u	3k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.2 Testing Applied Standards

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

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- KDB 558074 D01 v05r02

1.3 Testing Location Information

Testing Location			
<input checked="" type="checkbox"/>	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
<input type="checkbox"/>	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Tim	22~24°C / 61~65%	27/Jun/2019
Radiated	03CH03-HY	Justin	18.9~22.2°C / 51.5~52.3%	28/Jun/2019

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.54 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
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	3V

2.2 Test Channel Mode

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	default
2440MHz	default
2480MHz	default

2.3 The Worst Case Measurement Configuration

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

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

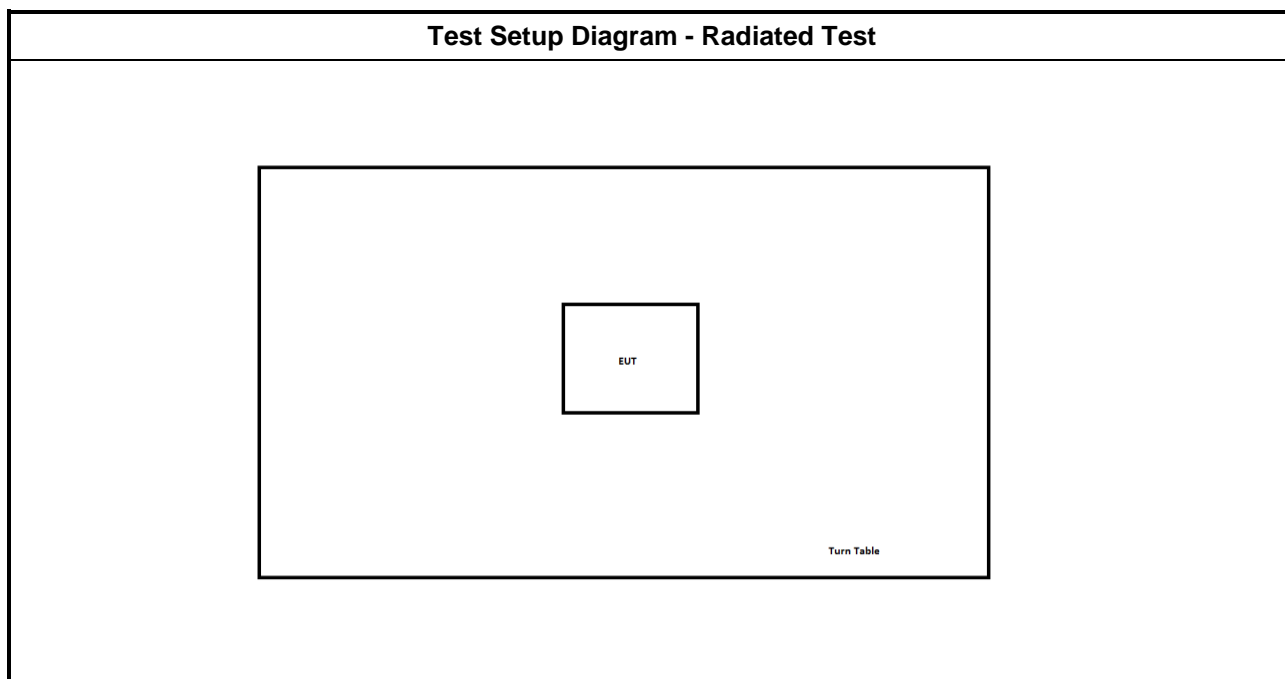
2.4 Accessories and Support Equipment

Accessories				
Battery	Brand Name	DURACELL	Model Name	CR2032
	Power Rating	3Vdc, 225mAh	Type	Coin Cell

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

Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	DC Power Supply	GW	GPR-351HD	-

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.

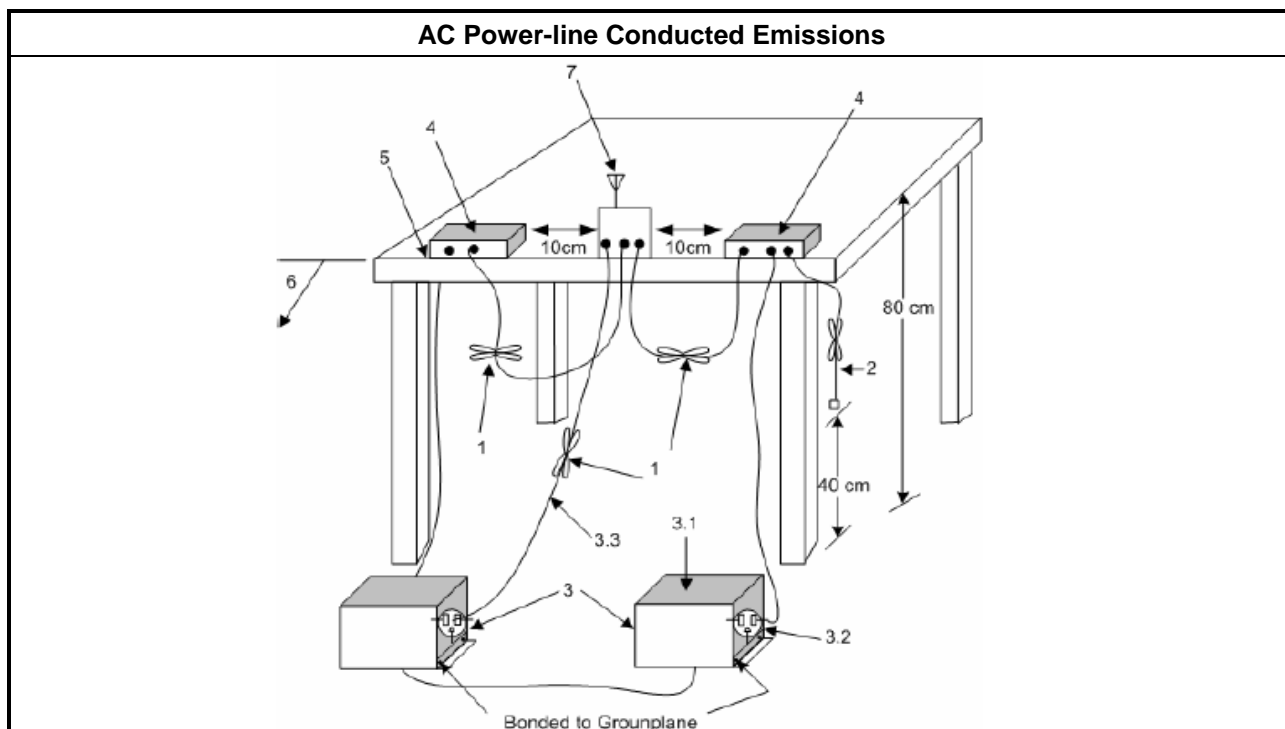
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
<ul style="list-style-type: none"> 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 FCC 15.207 which states, "Measurements to demonstrate compliance with the conducted limits are not required for devices employ Battery for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines".

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

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit	
Systems using digital modulation techniques:	
▪	6 dB bandwidth \geq 500 kHz.

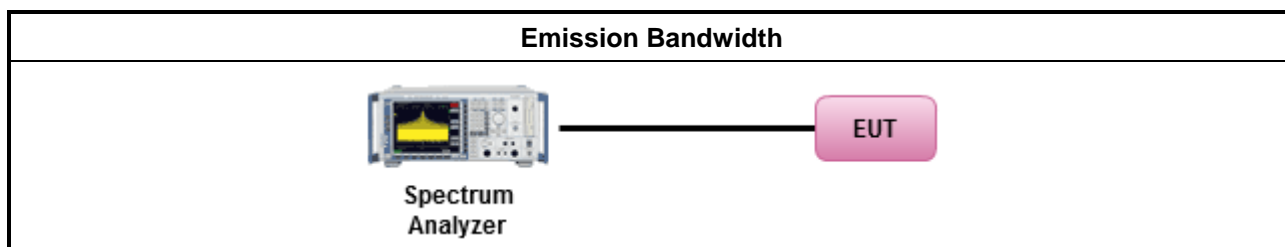
3.2.2 Measuring Instruments

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:	
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
<input type="checkbox"/>	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix A

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	<ul style="list-style-type: none"> If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	<ul style="list-style-type: none"> Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	<ul style="list-style-type: none"> Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> Smart antenna system (SAS):
	<ul style="list-style-type: none"> - Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - 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:	
	<ul style="list-style-type: none"> 2400-2483.5 MHz Band
	<ul style="list-style-type: none"> Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	<ul style="list-style-type: none"> Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	<ul style="list-style-type: none"> Smart antenna system (SAS)
	<ul style="list-style-type: none"> - Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	<ul style="list-style-type: none"> - Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	<ul style="list-style-type: none"> - 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.	

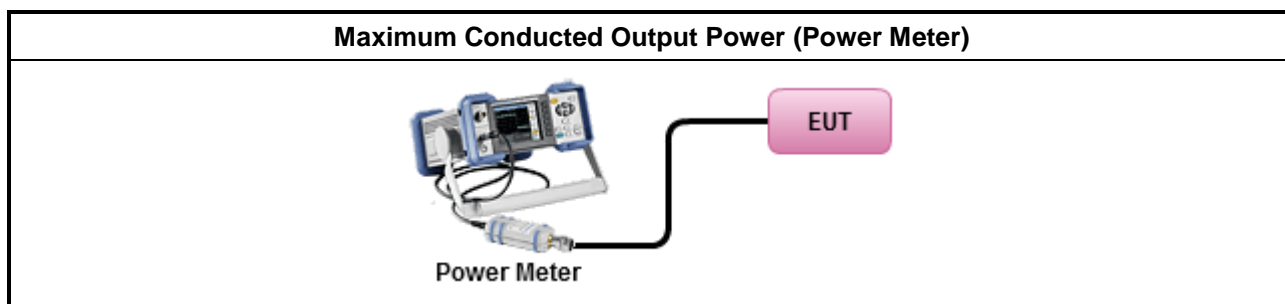
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Maximum Peak Conducted Output Power 	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
<ul style="list-style-type: none"> Maximum Average Conducted Output Power 	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
<ul style="list-style-type: none"> For conducted measurement. 	
<ul style="list-style-type: none"> 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. 	
<ul style="list-style-type: none"> 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

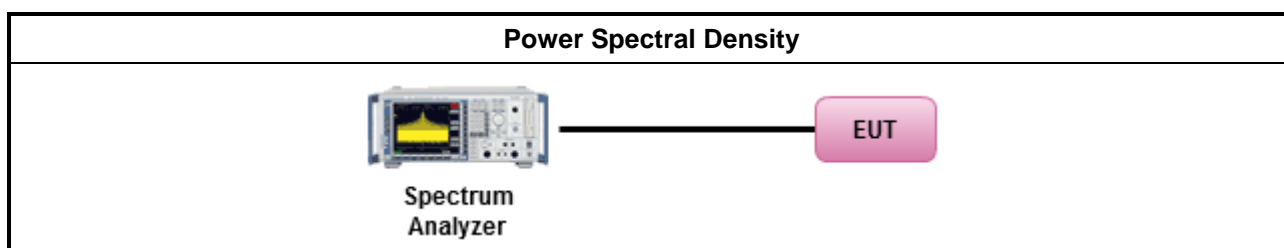
3.4.2 Measuring Instruments

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).
<input checked="" type="checkbox"/>	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
<p>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 level.</p> <p>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 level.</p>	

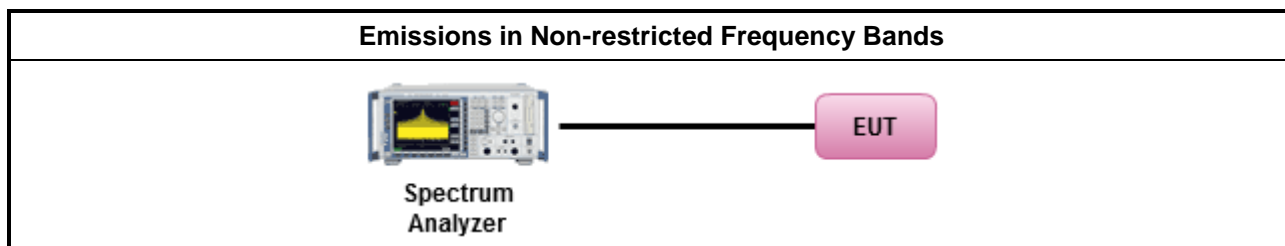
3.5.2 Measuring Instruments

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"> 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.

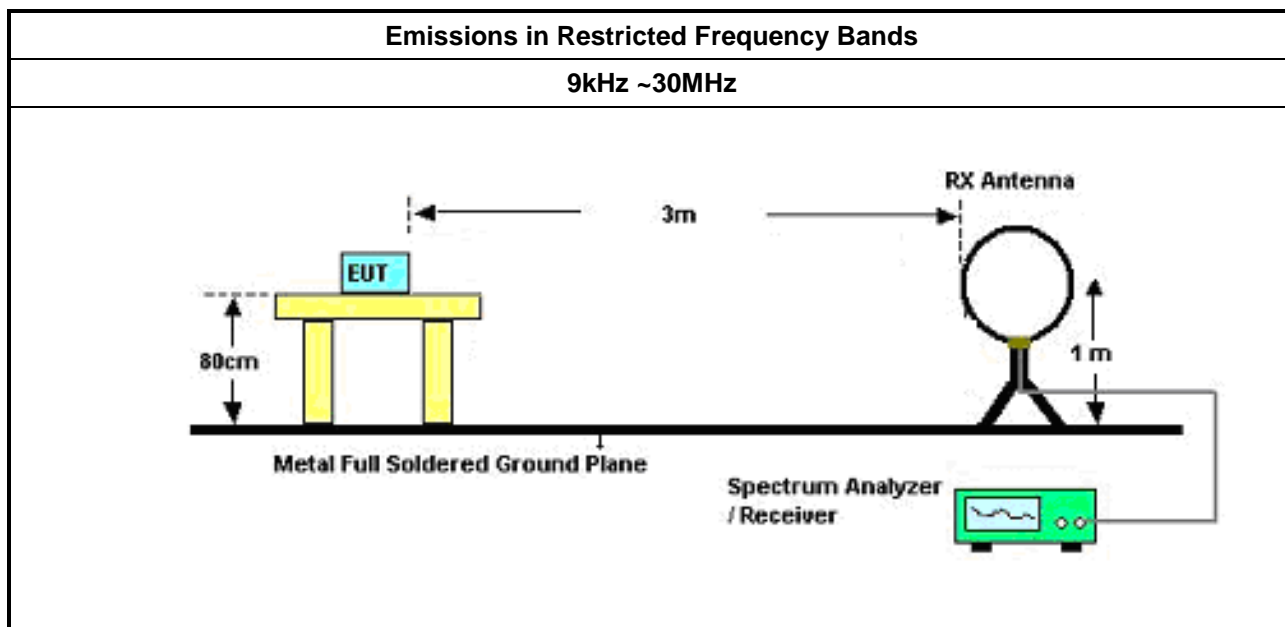
3.6.2 Measuring Instruments

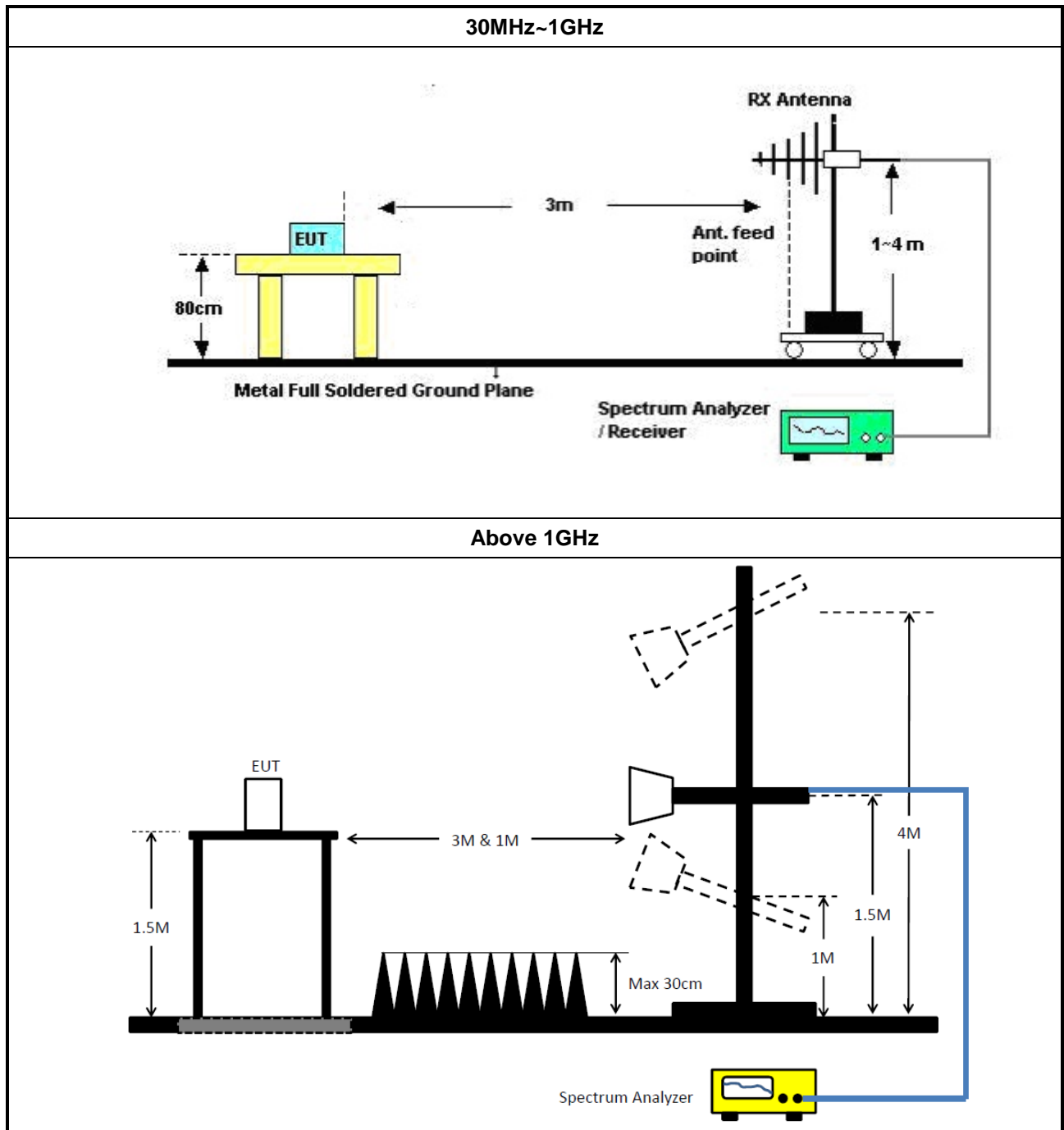
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor]. 	
<ul style="list-style-type: none"> Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. 	
<ul style="list-style-type: none"> For the transmitter unwanted emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
<ul style="list-style-type: none"> For the transmitter band-edge emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	<ul style="list-style-type: none"> Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	<ul style="list-style-type: none"> Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
<ul style="list-style-type: none"> Use the following spectrum analyzer settings: 	
	<ul style="list-style-type: none"> Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	<ul style="list-style-type: none"> Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.

3.6.4 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

4 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	13/Mar/2019	12/Mar/2020
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz ~18G	10/Jan/2019	09/Jan/2020
Cable 0.2m	HUBER	MY10711/4	RF Cable - 02	30MHz ~18G	10/Jan/2019	09/Jan/2020
Cable 0.5m	HUBER	MY39470/4	RF Cable - 29	30MHz ~18G	10/Jan/2019	09/Jan/2020
CABLE 1.5m	HUBER	MY33066/4	RF Cable - 30	1 to 18GHz	10/Jan/2019	09/Jan/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	30/Oct/2018	29/Oct/2019
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	30/Oct/2018	29/Oct/2019
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	22/Apr/2019	21/Apr/2020
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
Bilog Antenna with 5dB Pad	ETS	3142B & MTJ6102-05	00022055	26 MHz - 3 GHz	19/Nov/2018	18/Nov/2019
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	05/Sep/2018	04/Sep/2019
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	18/Jul/2018	17/Jul/2019
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	22/Mar/2019	21/Mar/2020
RF CABLE 6m	HUBER+SUHNER	SUOFLEX 104	SN 805801/4	1GHz ~ 40GHz	21/Mar/2019	20/Mar/2020
RF CABLE 7m	HUBER+SUHNER	SUOFLEX 104	SN 805805/4	1GHz ~ 40GHz	01/May/2019	30/Apr/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz ~ 40GHz	22/Mar/2019	21/Mar/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz ~ 18GHz	09/Mar/ 2019	08/Mar/2020
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	24/Aug/2018	23/Aug/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)	716.25k	1.044M	1M04F1D	706.25k	1.042M

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;

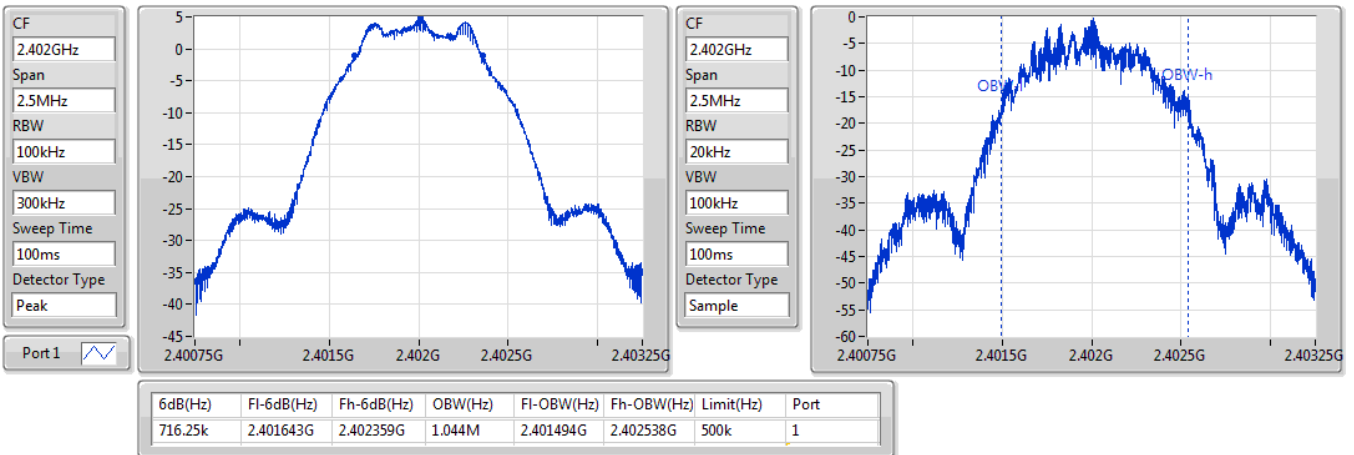
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	500k	716.25k	1.044M
2440MHz_TnomVnom	Pass	500k	711.25k	1.044M
2480MHz_TnomVnom	Pass	500k	706.25k	1.042M

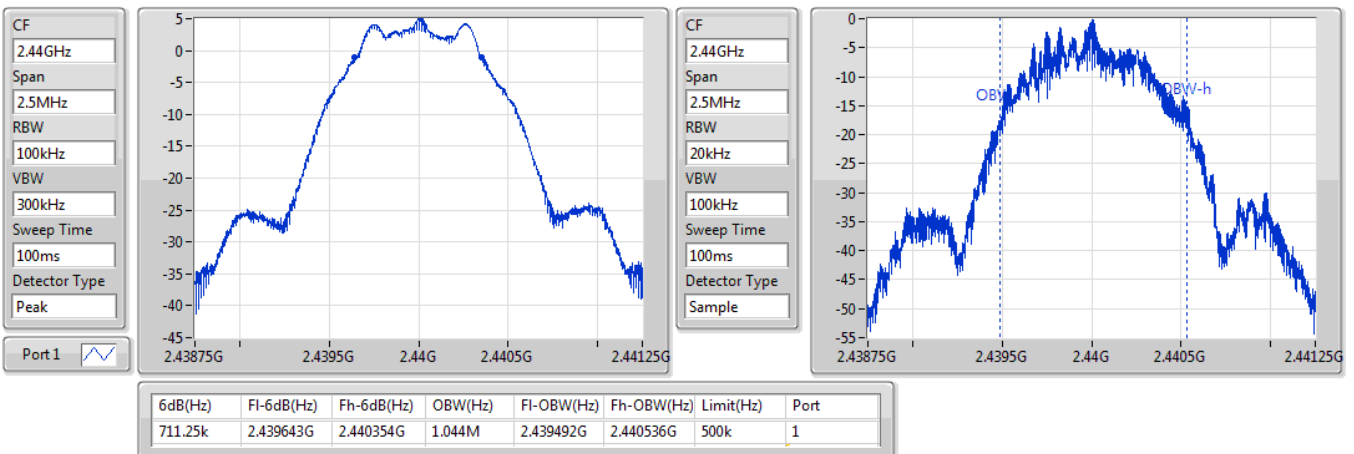
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-LE(1Mbps)
EBW
2402MHz

27/06/2019


BT-LE(1Mbps)
EBW
2440MHz

27/06/2019

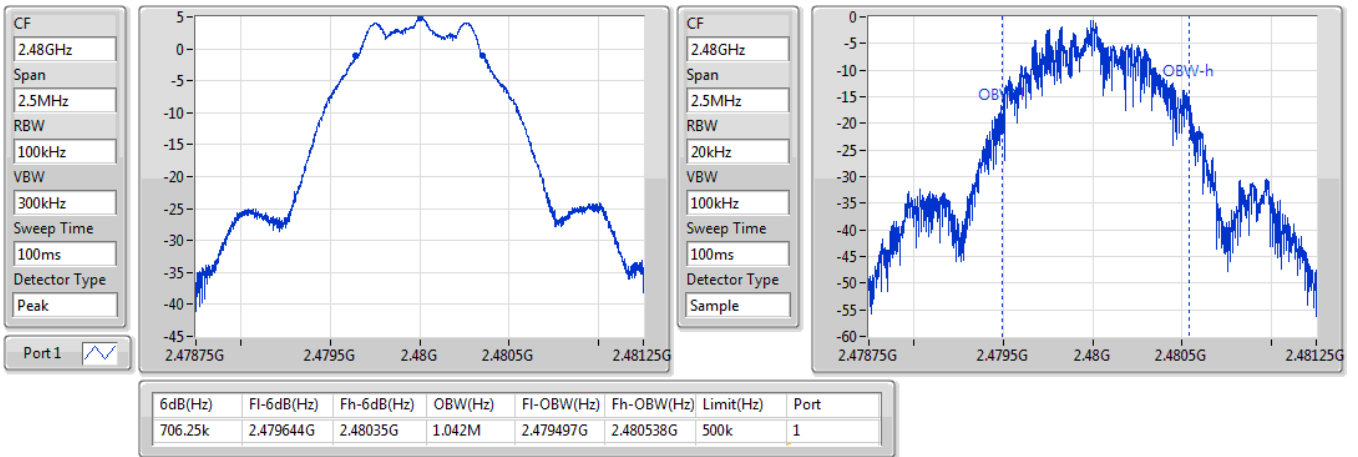


BT-LE(1Mbps)

2480MHz

EBW

27/06/2019





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	5.08	0.00322



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	-3.60	5.08	30.00
2440MHz_TnomVnom	Pass	-3.60	5.03	30.00
2480MHz_TnomVnom	Pass	-3.60	5.02	30.00

DG = Directional Gain; **Port X** = Port X output power



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	4.73	0.00297



Average Power-DTS

Appendix B.2

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	-3.60	4.73	30.00
2440MHz_TnomVnom	Pass	-3.60	4.61	30.00
2480MHz_TnomVnom	Pass	-3.60	4.63	30.00

DG = Directional Gain; **Port X** = Port X output power



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-10.77

RBW=3 kHz.



Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	-3.60	-10.77	8.00
2440MHz_TnomVnom	Pass	-3.60	-11.78	8.00
2480MHz_TnomVnom	Pass	-3.60	-11.27	8.00

DG = Directional Gain; RBW=3 kHz;

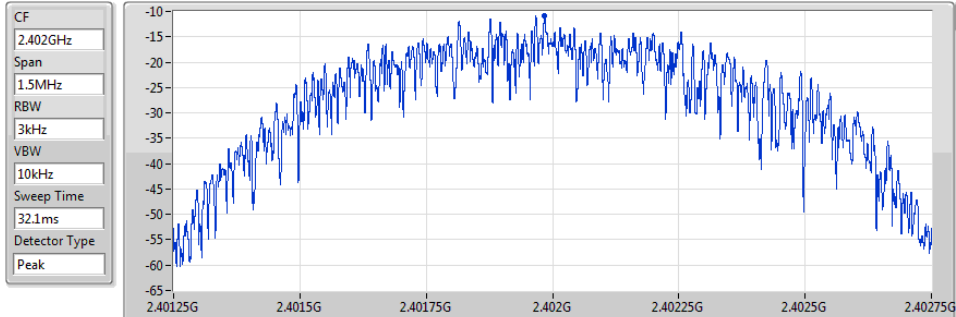
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

BT-LE(1Mbps)

PSD

2402MHz

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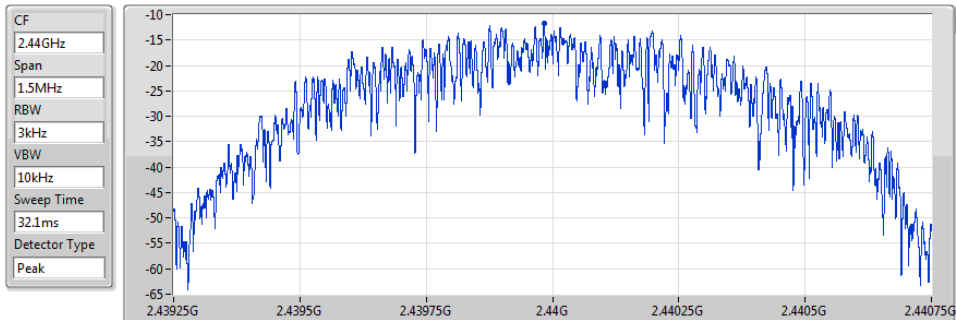
Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-10.77	-10.77	-10.77

BT-LE(1Mbps)

PSD

2440MHz

27/06/2019



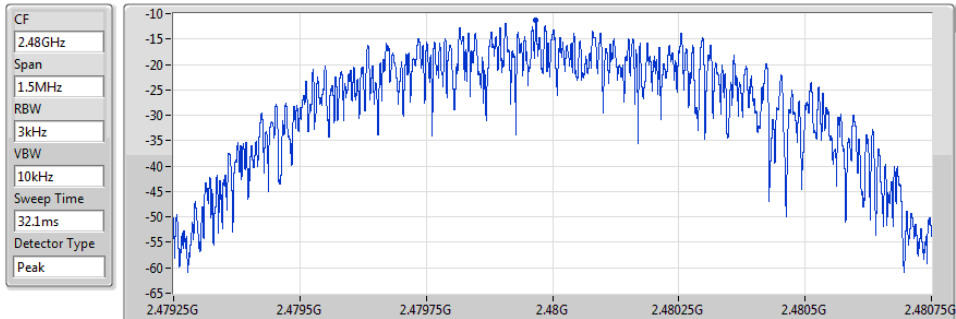
Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-11.78	-11.78	-11.78

BT-LE(1Mbps)

PSD

2480MHz

27/06/2019



Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-11.27	-11.27	-11.27



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	2.402G	4.86	-25.14	2.39415G	-44.36	2.39975G	-41.19	2.48442G	-52.84	16.23623G	-42.99	1

Result

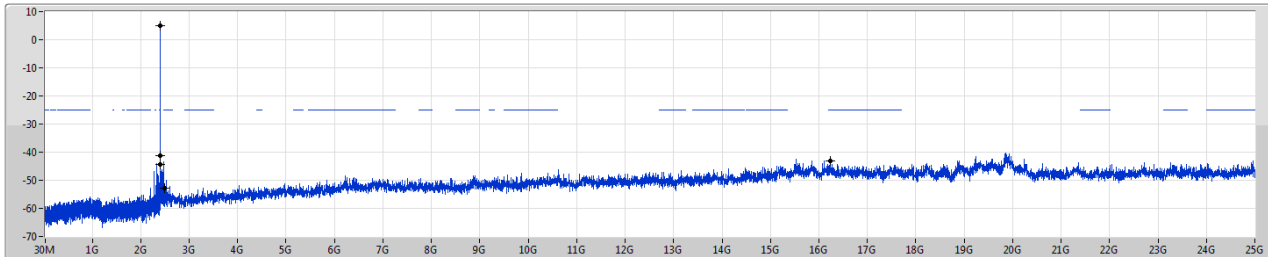
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.402G	4.86	-25.14	2.39415G	-44.36	2.39975G	-41.19	2.48442G	-52.84	16.23623G	-42.99	1
2440MHz_TnomVnom	Pass	2.402G	4.86	-25.14	2.39208G	-48.68	2.4G	-49.96	2.48518G	-53.03	24.07409G	-42.80	1
2480MHz_TnomVnom	Pass	2.402G	4.86	-25.14	2.39238G	-52.83	2.39995G	-51.45	2.48357G	-44.45	16.85819G	-42.52	1

BT-LE(1Mbps)

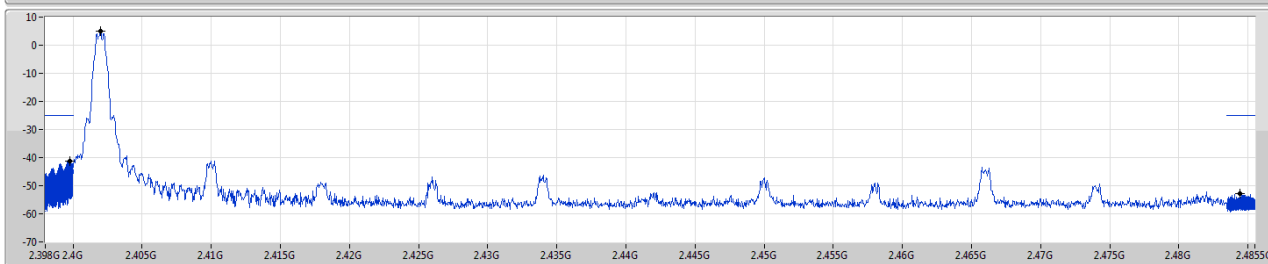
CSE NdB

2402MHz

27/06/2019



Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

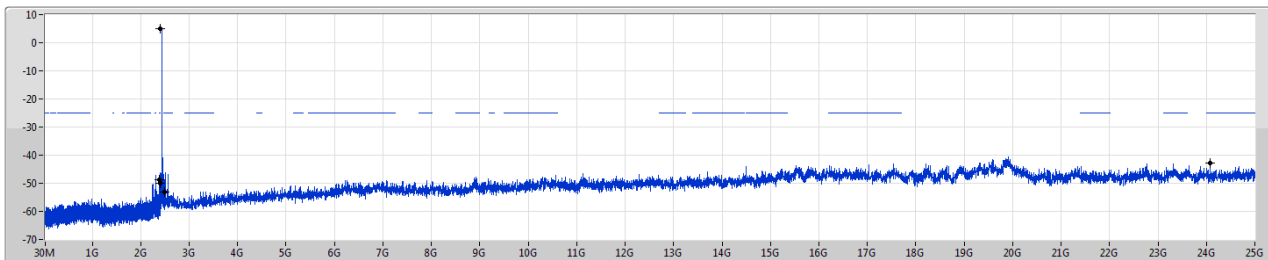
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2402G	4.86	-25.14	2.39415G	-44.36	2.39975G	-41.19	2.48442G	-52.84	16.23623G	-42.99	1

BT-LE(1Mbps)

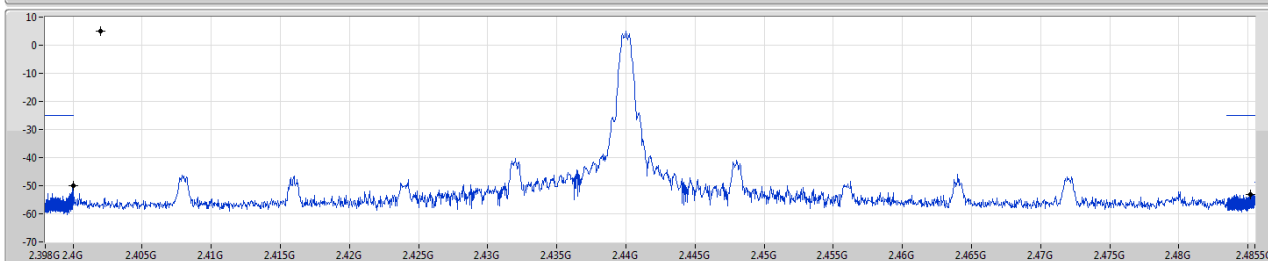
CSE NdB

2440MHz

27/06/2019



Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2402G	4.86	-25.14	2.39208G	-48.68	2.4G	-49.96	2.48518G	-53.03	24.07409G	-42.80	1

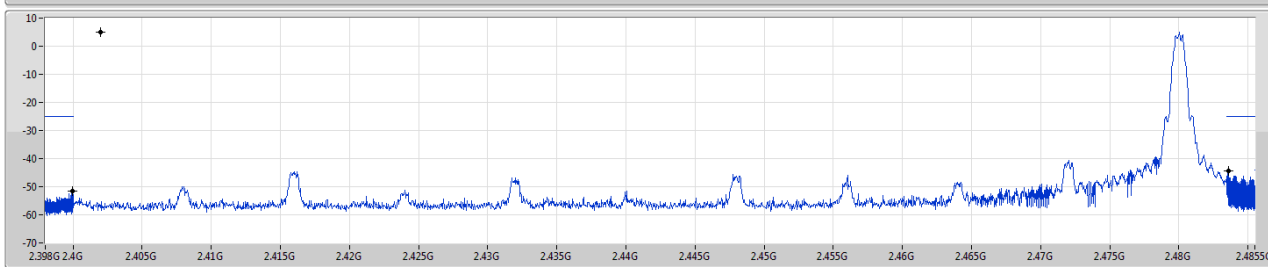
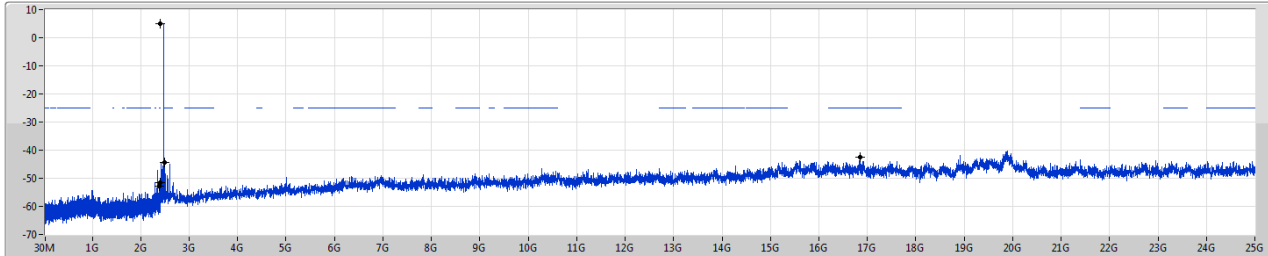
BT-LE(1Mbps)

2480MHz

CSE NdB

27/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	4.86	-25.14	2.39238G	-52.83	2.39995G	-51.45	2.48357G	-44.45	16.85819G	-42.52	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	95.96M	28.59	43.50	-14.91	-10.62	3	Vertical	360	1.00	-

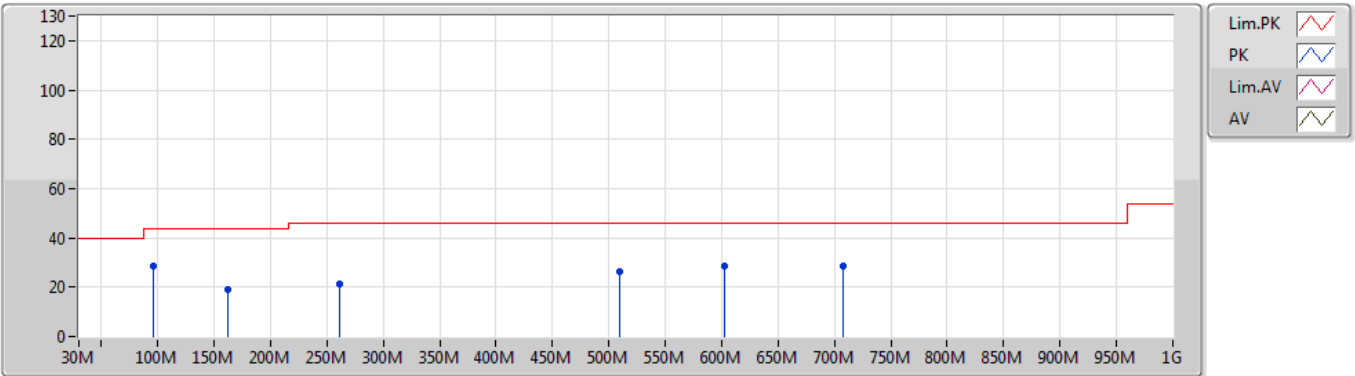
Result

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	95.96M	28.59	43.50	-14.91	-10.62	3	Vertical	360	1.00	-
2440MHz	Pass	PK	161.92M	19.18	43.50	-24.32	-10.14	3	Vertical	360	1.00	-
2440MHz	Pass	PK	260.86M	21.08	46.00	-24.92	-5.57	3	Vertical	360	1.00	-
2440MHz	Pass	PK	509.18M	26.24	46.00	-19.76	-1.57	3	Vertical	360	1.00	-
2440MHz	Pass	PK	602.3M	28.76	46.00	-17.24	-0.07	3	Vertical	360	1.00	-
2440MHz	Pass	PK	707.06M	28.51	46.00	-17.49	0.63	3	Vertical	360	1.00	-
2440MHz	Pass	PK	90.14M	22.24	43.50	-21.26	-12.12	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	169.68M	19.43	43.50	-24.07	-10.30	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	262.8M	20.70	46.00	-25.30	-5.69	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	404.42M	24.38	46.00	-21.62	-2.97	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	482.02M	26.12	46.00	-19.88	-1.52	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	544.1M	27.52	46.00	-18.48	-0.41	3	Horizontal	0	1.00	-

BT-LE(1Mbps)

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2440MHz_Battery

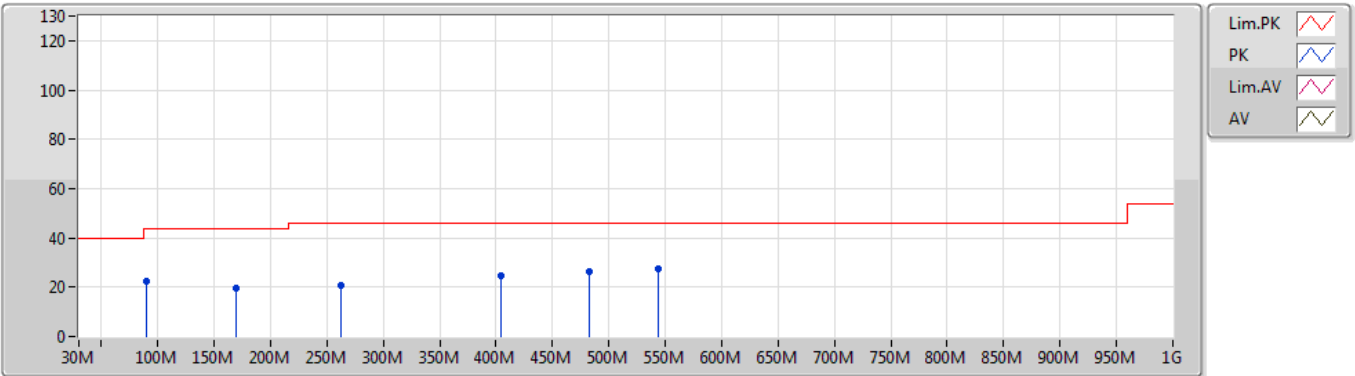


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	95.96M	28.59	43.50	-14.91	-10.62	3	Vertical	360	1.00	-	39.21	15.27	1.48	27.37
PK	161.92M	19.18	43.50	-24.32	-10.14	3	Vertical	360	1.00	-	29.32	14.97	1.96	27.07
PK	260.86M	21.08	46.00	-24.92	-5.57	3	Vertical	360	1.00	-	26.65	18.63	2.54	26.74
PK	509.18M	26.24	46.00	-19.76	-1.57	3	Vertical	360	1.00	-	27.81	22.61	3.64	27.82
PK	602.3M	28.76	46.00	-17.24	-0.07	3	Vertical	360	1.00	-	28.83	23.80	4.08	27.95
PK	707.06M	28.51	46.00	-17.49	0.63	3	Vertical	360	1.00	-	27.88	24.13	4.38	27.88

BT-LE(1Mbps)

28/06/2019

2440MHz_Battery



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	90.14M	22.24	43.50	-21.26	-12.12	3	Horizontal	0	1.00	-	34.36	13.84	1.43	27.39
PK	169.68M	19.43	43.50	-24.07	-10.30	3	Horizontal	0	1.00	-	29.73	14.72	2.02	27.04
PK	262.8M	20.70	46.00	-25.30	-5.69	3	Horizontal	0	1.00	-	26.39	18.49	2.55	26.73
PK	404.42M	24.38	46.00	-21.62	-2.97	3	Horizontal	0	1.00	-	27.35	21.13	3.20	27.30
PK	482.02M	26.12	46.00	-19.88	-1.52	3	Horizontal	0	1.00	-	27.64	22.66	3.53	27.71
PK	544.1M	27.52	46.00	-18.48	-0.41	3	Horizontal	0	1.00	-	27.93	23.71	3.75	27.87



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	2.4868G	49.01	54.00	-4.99	31.42	3	Horizontal	23	1.01	-

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	2.3768G	48.37	54.00	-5.63	31.57	3	Vertical	290	2.07	-
2402MHz	Pass	AV	2.402G	87.28	Inf	-Inf	31.51	3	Vertical	290	2.07	-
2402MHz	Pass	PK	2.3578G	58.81	74.00	-15.19	31.64	3	Vertical	290	2.07	-
2402MHz	Pass	PK	2.4016G	87.95	Inf	-Inf	31.51	3	Vertical	290	2.07	-
2402MHz	Pass	AV	2.3526G	48.26	54.00	-5.74	31.65	3	Horizontal	74	1.19	-
2402MHz	Pass	AV	2.402G	90.49	Inf	-Inf	31.51	3	Horizontal	74	1.19	-
2402MHz	Pass	PK	2.3728G	59.30	74.00	-14.70	31.59	3	Horizontal	74	1.19	-
2402MHz	Pass	PK	2.4018G	91.10	Inf	-Inf	31.51	3	Horizontal	74	1.19	-
2402MHz	Pass	PK	4.80358G	44.42	74.00	-29.58	2.76	3	Vertical	234	2.89	-
2402MHz	Pass	AV	4.80364G	36.93	54.00	-17.07	2.76	3	Vertical	234	2.89	-
2402MHz	Pass	AV	4.804G	38.09	54.00	-15.91	2.76	3	Horizontal	167	1.32	-
2402MHz	Pass	PK	4.80442G	45.17	74.00	-28.83	2.76	3	Horizontal	167	1.32	-
2440MHz	Pass	AV	2.3496G	48.29	54.00	-5.71	31.66	3	Vertical	282	2.95	-
2440MHz	Pass	AV	2.44G	89.19	Inf	-Inf	31.46	3	Vertical	282	2.95	-
2440MHz	Pass	AV	2.4996G	49.00	54.00	-5.00	31.40	3	Vertical	282	2.95	-
2440MHz	Pass	PK	2.3828G	59.20	74.00	-14.80	31.56	3	Vertical	282	2.95	-
2440MHz	Pass	PK	2.4396G	89.85	Inf	-Inf	31.46	3	Vertical	282	2.95	-
2440MHz	Pass	PK	2.49G	58.29	74.00	-15.71	31.41	3	Vertical	282	2.95	-
2440MHz	Pass	AV	2.3484G	48.56	54.00	-5.44	31.67	3	Horizontal	23	1.01	-
2440MHz	Pass	AV	2.44G	90.20	Inf	-Inf	31.46	3	Horizontal	23	1.01	-
2440MHz	Pass	AV	2.4868G	49.01	54.00	-4.99	31.42	3	Horizontal	23	1.01	-
2440MHz	Pass	PK	2.3412G	58.48	74.00	-15.52	31.69	3	Horizontal	23	1.01	-
2440MHz	Pass	PK	2.4396G	90.79	Inf	-Inf	31.46	3	Horizontal	23	1.01	-
2440MHz	Pass	PK	2.4876G	59.14	74.00	-14.86	31.41	3	Horizontal	23	1.01	-
2440MHz	Pass	AV	4.87976G	33.58	54.00	-20.42	2.89	3	Vertical	166	2.98	-
2440MHz	Pass	AV	7.31928G	48.47	54.00	-5.53	9.37	3	Vertical	129	2.92	-
2440MHz	Pass	PK	4.88066G	42.64	74.00	-31.36	2.89	3	Vertical	166	2.98	-
2440MHz	Pass	PK	7.31922G	54.62	74.00	-19.38	9.37	3	Vertical	129	2.92	-
2440MHz	Pass	AV	4.87952G	34.22	54.00	-19.78	2.89	3	Horizontal	79	1.08	-
2440MHz	Pass	AV	7.31934G	47.68	54.00	-6.32	9.37	3	Horizontal	67	2.99	-
2440MHz	Pass	PK	4.87964G	43.37	74.00	-30.63	2.89	3	Horizontal	79	1.08	-
2440MHz	Pass	PK	7.31994G	54.15	74.00	-19.85	9.36	3	Horizontal	67	2.99	-
2480MHz	Pass	AV	2.48G	89.12	Inf	-Inf	31.42	3	Vertical	269	2.70	-
2480MHz	Pass	AV	2.4878G	49.00	54.00	-5.00	31.41	3	Vertical	269	2.70	-
2480MHz	Pass	PK	2.4798G	89.78	Inf	-Inf	31.42	3	Vertical	269	2.70	-
2480MHz	Pass	PK	2.4844G	59.15	74.00	-14.85	31.42	3	Vertical	269	2.70	-
2480MHz	Pass	AV	2.48G	89.97	Inf	-Inf	31.42	3	Horizontal	13	2.30	-
2480MHz	Pass	AV	2.4868G	48.76	54.00	-5.24	31.42	3	Horizontal	13	2.30	-
2480MHz	Pass	PK	2.4798G	90.61	Inf	-Inf	31.42	3	Horizontal	13	2.30	-
2480MHz	Pass	PK	2.4978G	59.49	74.00	-14.51	31.40	3	Horizontal	13	2.30	-
2480MHz	Pass	AV	4.96006G	34.45	54.00	-19.55	3.15	3	Vertical	185	1.20	-
2480MHz	Pass	AV	7.43934G	46.62	54.00	-7.38	9.06	3	Vertical	136	2.93	-
2480MHz	Pass	PK	4.95964G	42.39	74.00	-31.61	3.15	3	Vertical	185	1.20	-
2480MHz	Pass	PK	7.44102G	53.10	74.00	-20.90	9.06	3	Vertical	136	2.93	-
2480MHz	Pass	AV	4.95988G	32.51	54.00	-21.49	3.15	3	Horizontal	117	1.05	-
2480MHz	Pass	AV	7.43934G	45.46	54.00	-8.54	9.06	3	Horizontal	303	2.76	-
2480MHz	Pass	PK	4.96474G	42.03	74.00	-31.97	3.16	3	Horizontal	117	1.05	-



RSE TX above 1GHz

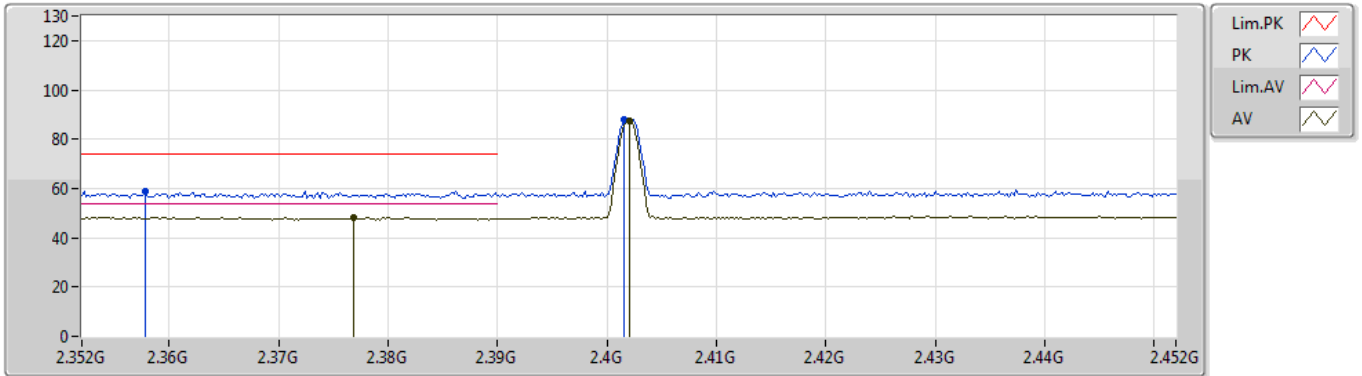
Appendix E.2

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz	Pass	PK	7.43916G	52.23	74.00	-21.77	9.06	3	Horizontal	303	2.76	-

BT-LE(1Mbps)

28/06/2019

2402MHz_TX

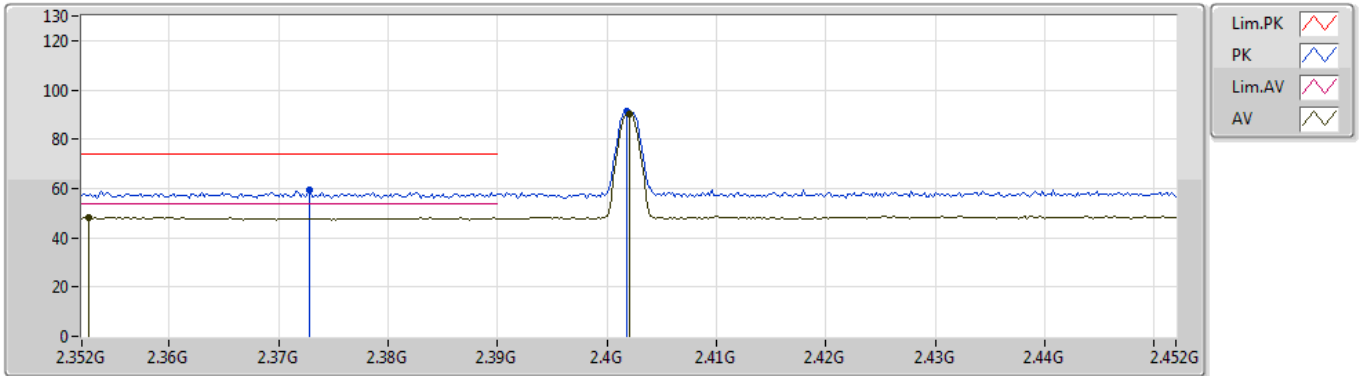


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3768G	48.37	54.00	-5.63	31.57	3	Vertical	290	2.07	-	16.80	27.59	3.98	-
AV	2.402G	87.28	Inf	-Inf	31.51	3	Vertical	290	2.07	-	55.77	27.50	4.01	-
PK	2.3578G	58.81	74.00	-15.19	31.64	3	Vertical	290	2.07	-	27.17	27.67	3.97	-
PK	2.4016G	87.95	Inf	-Inf	31.51	3	Vertical	290	2.07	-	56.44	27.50	4.01	-

BT-LE(1Mbps)

28/06/2019

2402MHz_TX

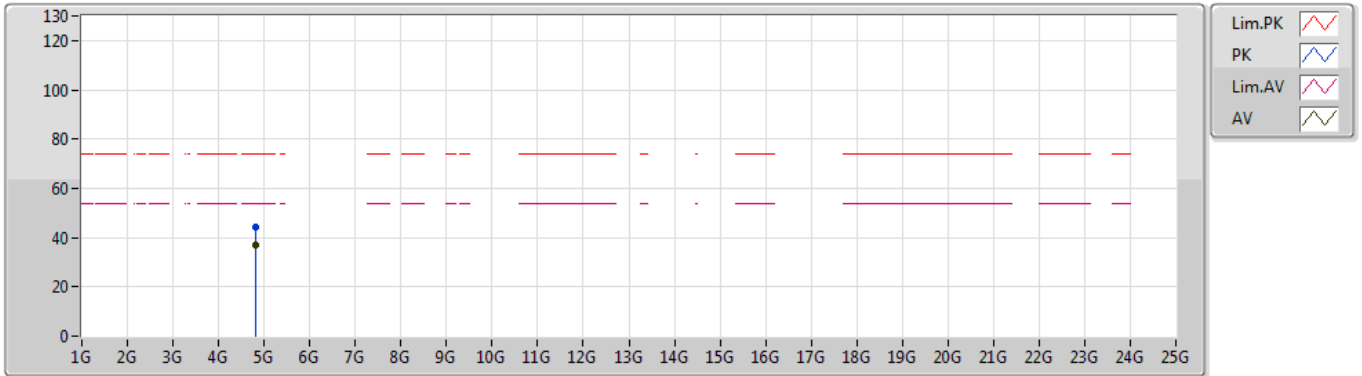


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3526G	48.26	54.00	-5.74	31.65	3	Horizontal	74	1.19	-	16.61	27.69	3.96	-
AV	2.402G	90.49	Inf	-Inf	31.51	3	Horizontal	74	1.19	-	58.98	27.50	4.01	-
PK	2.3728G	59.30	74.00	-14.70	31.59	3	Horizontal	74	1.19	-	27.71	27.61	3.98	-
PK	2.4018G	91.10	Inf	-Inf	31.51	3	Horizontal	74	1.19	-	59.59	27.50	4.01	-

BT-LE(1Mbps)

28/06/2019

2402MHz_TX

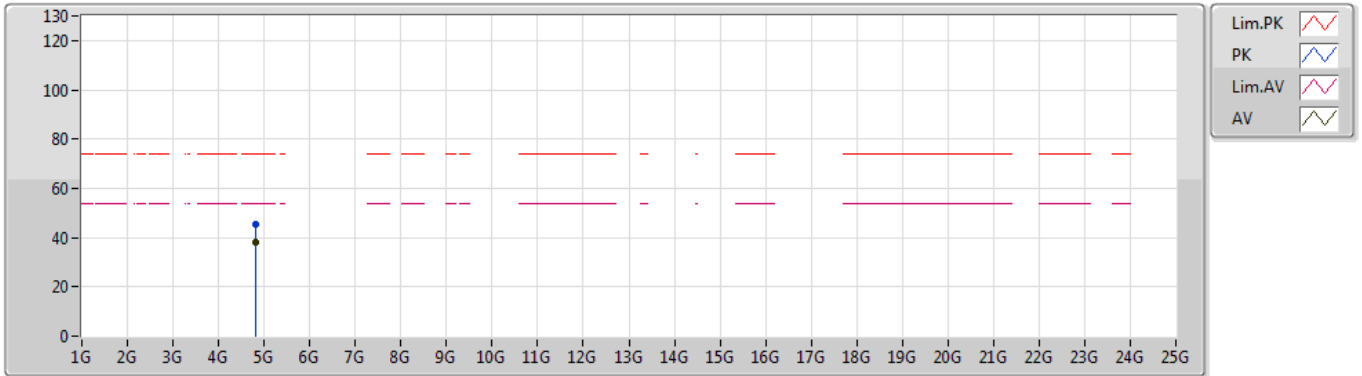


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	4.80358G	44.42	74.00	-29.58	2.76	3	Vertical	234	2.89	-	41.66	31.10	5.78	34.12
AV	4.80364G	36.93	54.00	-17.07	2.76	3	Vertical	234	2.89	-	34.17	31.10	5.78	34.12

BT-LE(1Mbps)

28/06/2019

2402MHz_TX

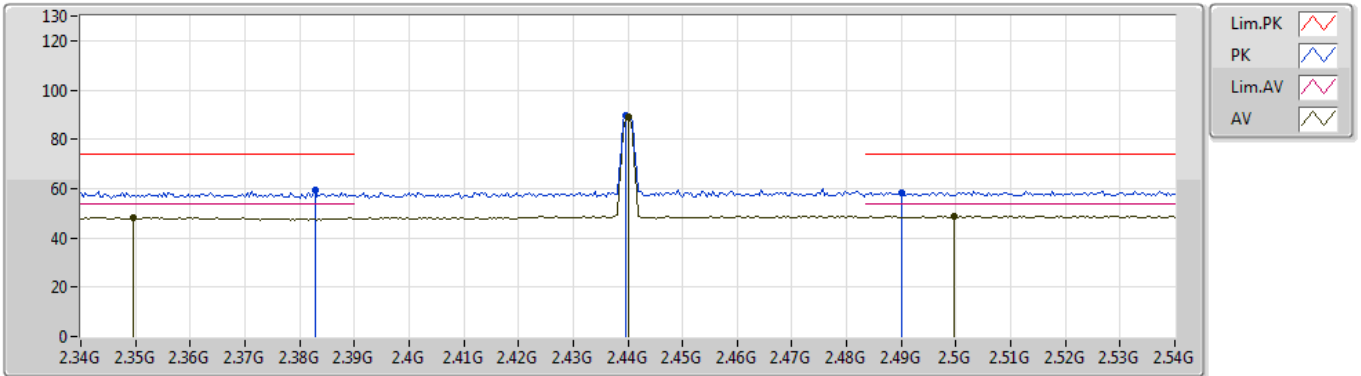


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.804G	38.09	54.00	-15.91	2.76	3	Horizontal	167	1.32	-	35.33	31.10	5.78	34.12
PK	4.80442G	45.17	74.00	-28.83	2.76	3	Horizontal	167	1.32	-	42.41	31.10	5.78	34.12

BT-LE(1Mbps)

2440MHz_TX

28/06/2019

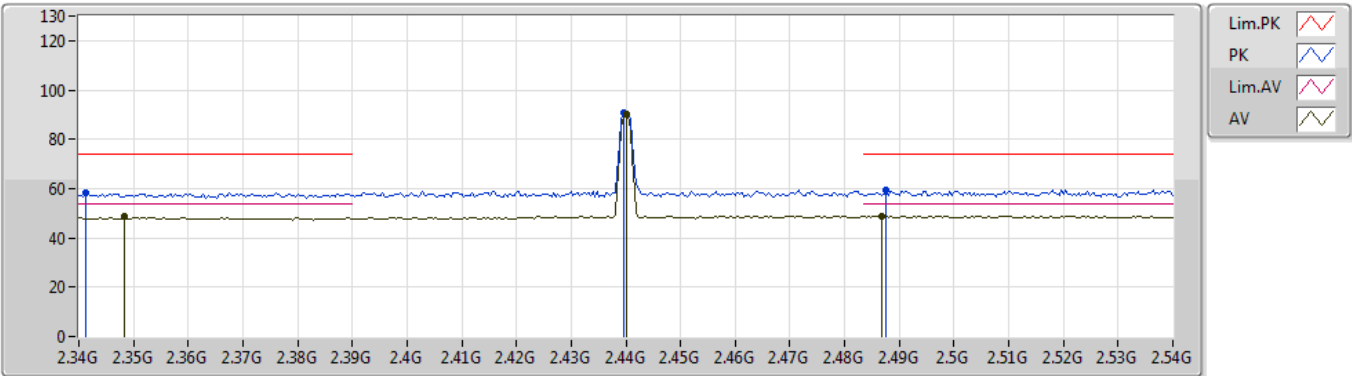


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3496G	48.29	54.00	-5.71	31.66	3	Vertical	282	2.95	-	16.63	27.70	3.96	-
AV	2.44G	89.19	Inf	-Inf	31.46	3	Vertical	282	2.95	-	57.73	27.42	4.04	-
AV	2.4996G	49.00	54.00	-5.00	31.40	3	Vertical	282	2.95	-	17.60	27.30	4.10	-
PK	2.3828G	59.20	74.00	-14.80	31.56	3	Vertical	282	2.95	-	27.64	27.57	3.99	-
PK	2.4396G	89.85	Inf	-Inf	31.46	3	Vertical	282	2.95	-	58.39	27.42	4.04	-
PK	2.49G	58.29	74.00	-15.71	31.41	3	Vertical	282	2.95	-	26.88	27.32	4.09	-

BT-LE(1Mbps)

28/06/2019

2440MHz_TX

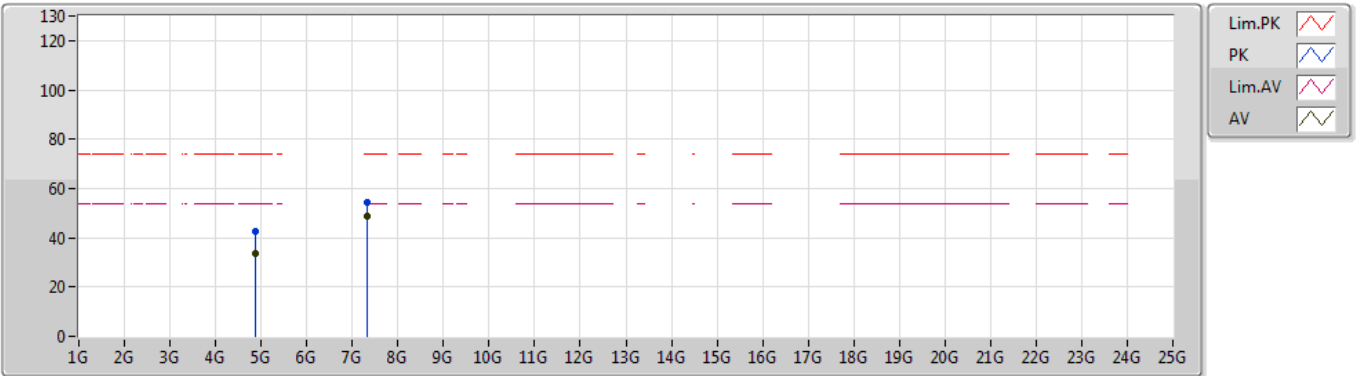


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3484G	48.56	54.00	-5.44	31.67	3	Horizontal	23	1.01	-	16.89	27.71	3.96	-
AV	2.44G	90.20	Inf	-Inf	31.46	3	Horizontal	23	1.01	-	58.74	27.42	4.04	-
AV	2.4868G	49.01	54.00	-4.99	31.42	3	Horizontal	23	1.01	-	17.59	27.33	4.09	-
PK	2.3412G	58.48	74.00	-15.52	31.69	3	Horizontal	23	1.01	-	26.79	27.74	3.95	-
PK	2.4396G	90.79	Inf	-Inf	31.46	3	Horizontal	23	1.01	-	59.33	27.42	4.04	-
PK	2.4876G	59.14	74.00	-14.86	31.41	3	Horizontal	23	1.01	-	27.73	27.32	4.09	-

BT-LE(1Mbps)

28/06/2019

2440MHz_TX

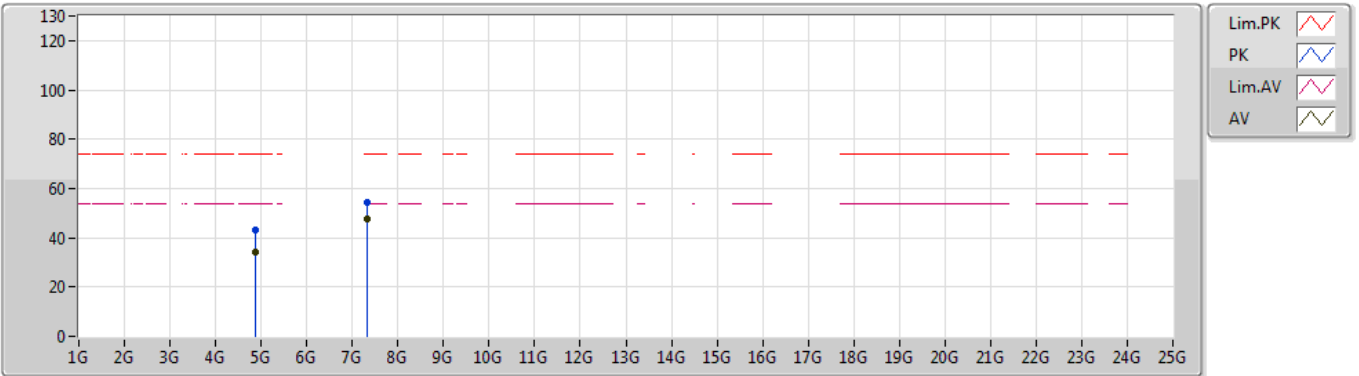


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87976G	33.58	54.00	-20.42	2.89	3	Vertical	166	2.98	-	30.69	31.18	5.83	34.12
AV	7.31928G	48.47	54.00	-5.53	9.37	3	Vertical	129	2.92	-	39.10	36.28	7.46	34.37
PK	4.88066G	42.64	74.00	-31.36	2.89	3	Vertical	166	2.98	-	39.75	31.18	5.83	34.12
PK	7.31922G	54.62	74.00	-19.38	9.37	3	Vertical	129	2.92	-	45.25	36.28	7.46	34.37

BT-LE(1Mbps)

28/06/2019

2440MHz_TX

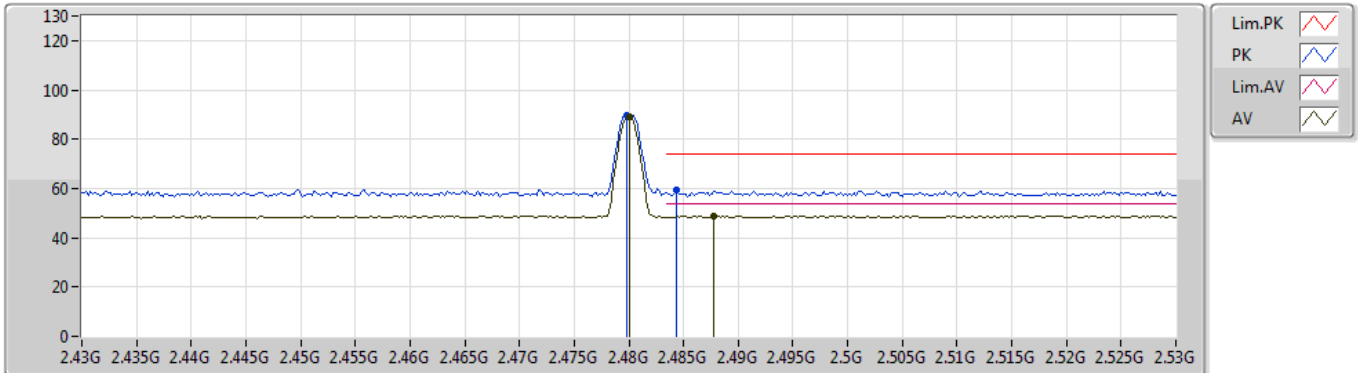


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87952G	34.22	54.00	-19.78	2.89	3	Horizontal	79	1.08	-	31.33	31.18	5.83	34.12
AV	7.31934G	47.68	54.00	-6.32	9.37	3	Horizontal	67	2.99	-	38.31	36.28	7.46	34.37
PK	4.87964G	43.37	74.00	-30.63	2.89	3	Horizontal	79	1.08	-	40.48	31.18	5.83	34.12
PK	7.31994G	54.15	74.00	-19.85	9.36	3	Horizontal	67	2.99	-	44.79	36.28	7.46	34.38

BT-LE(1Mbps)

2480MHz_TX

28/06/2019

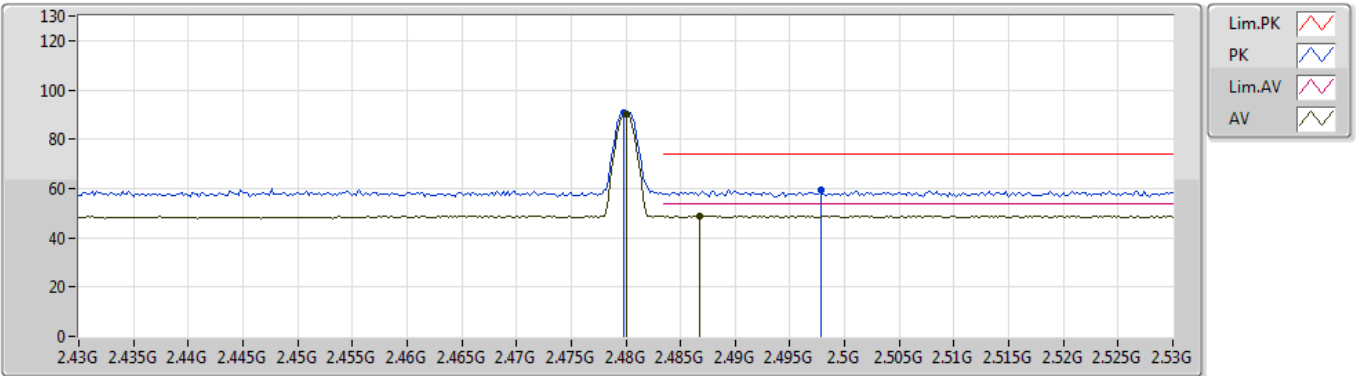


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	89.12	Inf	-Inf	31.42	3	Vertical	269	2.70	-	57.70	27.34	4.08	-
AV	2.4878G	49.00	54.00	-5.00	31.41	3	Vertical	269	2.70	-	17.59	27.32	4.09	-
PK	2.4798G	89.78	Inf	-Inf	31.42	3	Vertical	269	2.70	-	58.36	27.34	4.08	-
PK	2.4844G	59.15	74.00	-14.85	31.42	3	Vertical	269	2.70	-	27.73	27.33	4.09	-

BT-LE(1Mbps)

2480MHz_TX

28/06/2019

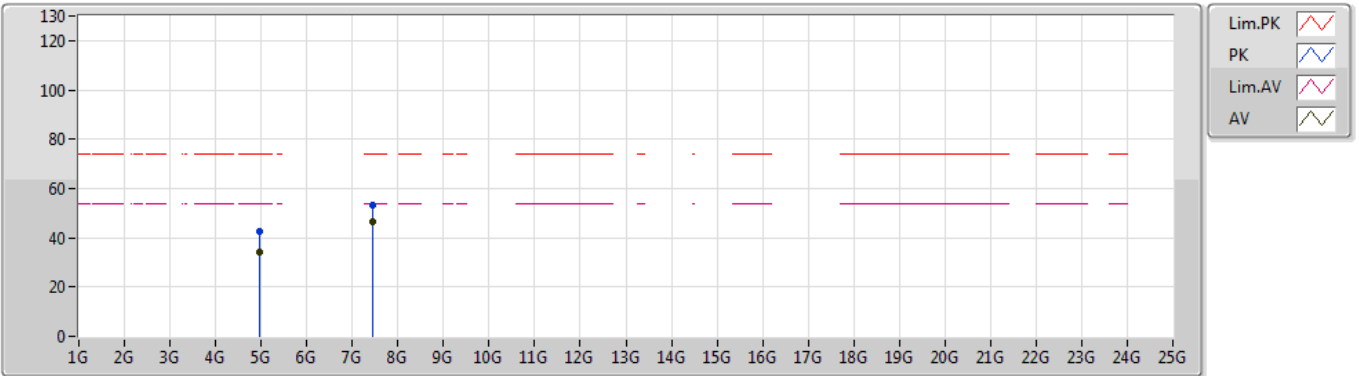


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	89.97	Inf	-Inf	31.42	3	Horizontal	13	2.30	-	58.55	27.34	4.08	-
AV	2.4868G	48.76	54.00	-5.24	31.42	3	Horizontal	13	2.30	-	17.34	27.33	4.09	-
PK	2.4798G	90.61	Inf	-Inf	31.42	3	Horizontal	13	2.30	-	59.19	27.34	4.08	-
PK	2.4978G	59.49	74.00	-14.51	31.40	3	Horizontal	13	2.30	-	28.09	27.30	4.10	-

BT-LE(1Mbps)

28/06/2019

2480MHz_TX

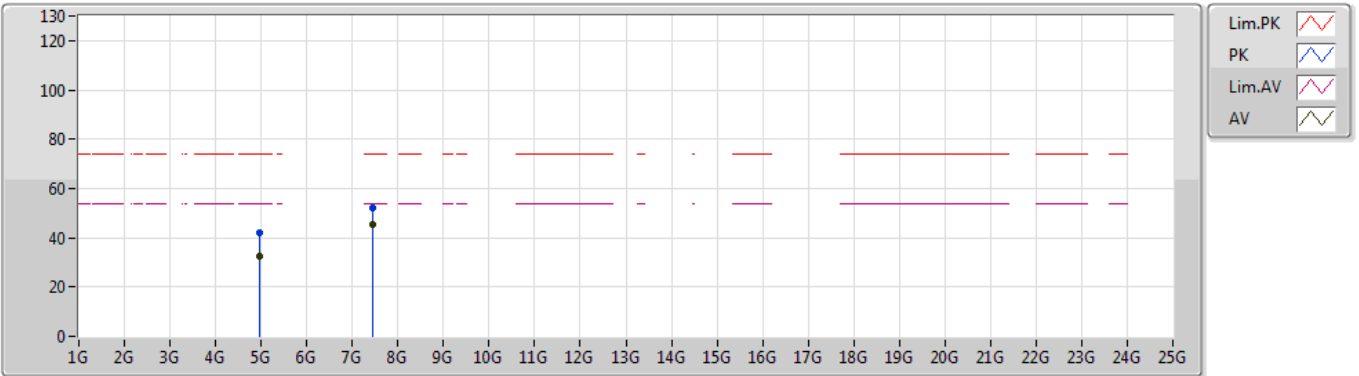


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96006G	34.45	54.00	-19.55	3.15	3	Vertical	185	1.20	-	31.30	31.38	5.89	34.12
AV	7.43934G	46.62	54.00	-7.38	9.06	3	Vertical	136	2.93	-	37.56	36.24	7.24	34.42
PK	4.95964G	42.39	74.00	-31.61	3.15	3	Vertical	185	1.20	-	39.24	31.38	5.89	34.12
PK	7.44102G	53.10	74.00	-20.90	9.06	3	Vertical	136	2.93	-	44.04	36.24	7.24	34.42

BT-LE(1Mbps)

28/06/2019

2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95988G	32.51	54.00	-21.49	3.15	3	Horizontal	117	1.05	-	29.36	31.38	5.89	34.12
AV	7.43934G	45.46	54.00	-8.54	9.06	3	Horizontal	303	2.76	-	36.40	36.24	7.24	34.42
PK	4.96474G	42.03	74.00	-31.97	3.16	3	Horizontal	117	1.05	-	38.87	31.39	5.89	34.12
PK	7.43916G	52.23	74.00	-21.77	9.06	3	Horizontal	303	2.76	-	43.17	36.24	7.24	34.42