

FCC Test Report

Equipment : BLE Bluetooth Module
Brand Name : LITE-ON
Model No. : WB100N
FCC ID : PPQ-WB100N
Standard : 47 CFR FCC Part 15.247
Frequency : 2400 MHz – 2483.5 MHz
Function : Point-to-multipoint; Point-to-point
Applicant : Lite-On Technology Corp.
Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City
23585, Taiwan, R.O.C
Manufacturer : LITE-ON TECHNOLOGY (Changzhou) CO., LTD
A9 Building, No.88 Yanghu Road, Wujin Hi-Tech
Industrial Development Zone, Changzhou City,
Jiangsu Province 213100 China

The product sample received on Aug. 10, 2017 and completely tested on Sep. 14, 2017. We, SPORTON, 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 test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.


Phoenix Chen
SPORTON INTERNATIONAL INC.





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PHOTOGRAPHS OF EUT v02



Summary of Test Result

Conformance Test Specifications				
Report Clause	Ref. Std. Clause	Description	Limit	Result
1.1.2	15.203	Antenna Requirement	FCC 15.203	Complied
3.1	15.207	AC Power-line Conducted Emissions	FCC 15.207	Complied
3.2	15.247(a)	DTS Bandwidth	≥500kHz	Complied
3.3	15.247(b)	Maximum Conducted Output Power	Power [dBm]:30	Complied
3.4	15.247(e)	Power Spectral Density	PSD [dBm/3kHz]:8	Complied
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	Non-Restricted Bands: >30 dBc	Complied
3.6	15.247(d)	Emissions in Restricted Frequency Bands	Restricted Bands: FCC 15.209	Complied



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.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	LYNwave	ALA110-222050-300011	PIFA Antenna	Mini I-PEX	3.5

1.1.3 EUT Information

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

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.929	0.32	1.091m	1k

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 v04

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	TH07-HY	Ryan	24.5°C / 66%	24/Aug/2017
Radiated	03CH03-HY	Thor	22.2°C / 51.8%	14/Sep/2017
AC Conduction	CO04-HY	Bear	22.5°C / 58%	22/Aug/2017

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 (30MHz ~ 1,000MHz)	2.1 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	2.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	2.9 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Condition

Condition Item	Abbreviation/Remark	Remark
TnomVnom	Tnom	20°C
	Vnom	3.3V

2.2 Test Channel Mode




Test Software	DoS
---------------	-----

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	0
2440MHz	0
2480MHz	0

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	USB Mode

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	USB mode		
Operating Mode > 1GHz	CTX		
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 NB	DELL	HA65NM130	DOC
3	Test Fixture	-	-	-

Note: Support equipment No.3 was provided by customer.

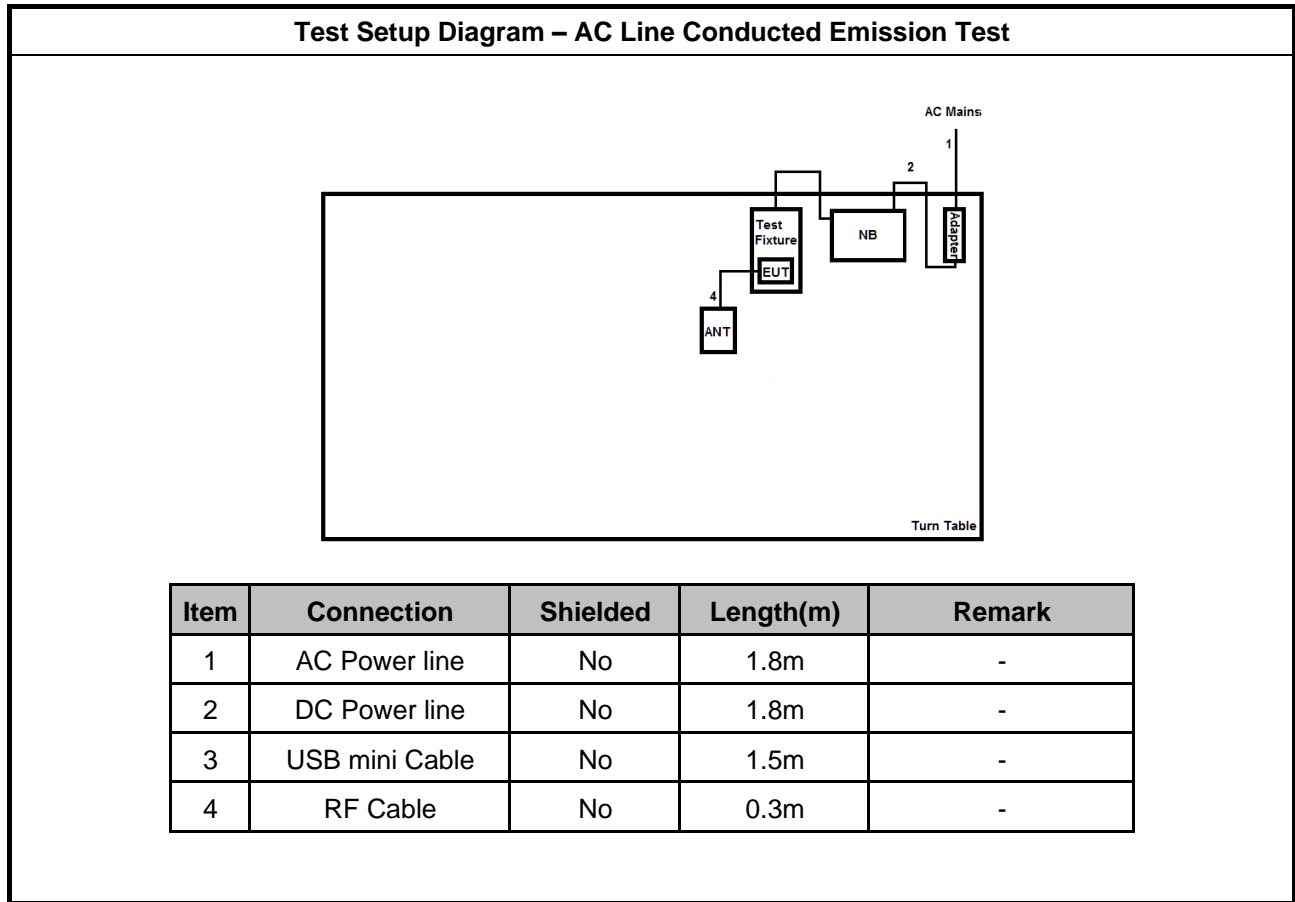
Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	R33002
2	Adapter for NB	DELL	LA65NS2-01	-
3	Test Fixture	EVB	WB100N	N/A

Note: Support equipment No.3 was provided by customer.

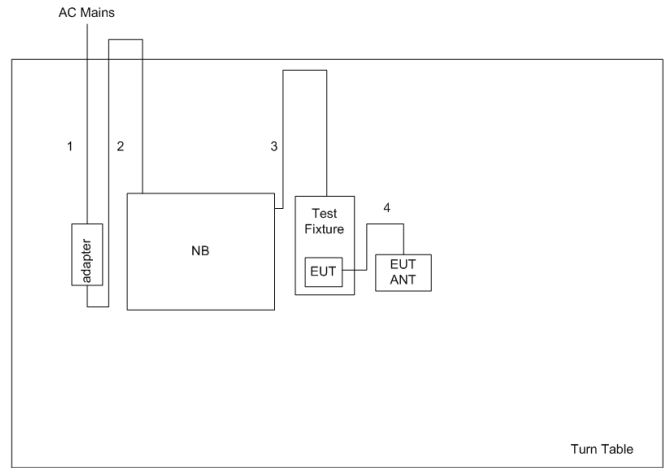
Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5430	R33002
2	Adapter for NB	DELL	LA65NS2-01	-
3	Test Fixture	EVB	WB100N	N/A

Note: Support equipment No.3 was provided by customer.

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.8m	-
2	DC Power line	No	1.8m	-
3	USB mini Cable	No	1.0m	-
4	RF Cable	No	0.3m	-

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.

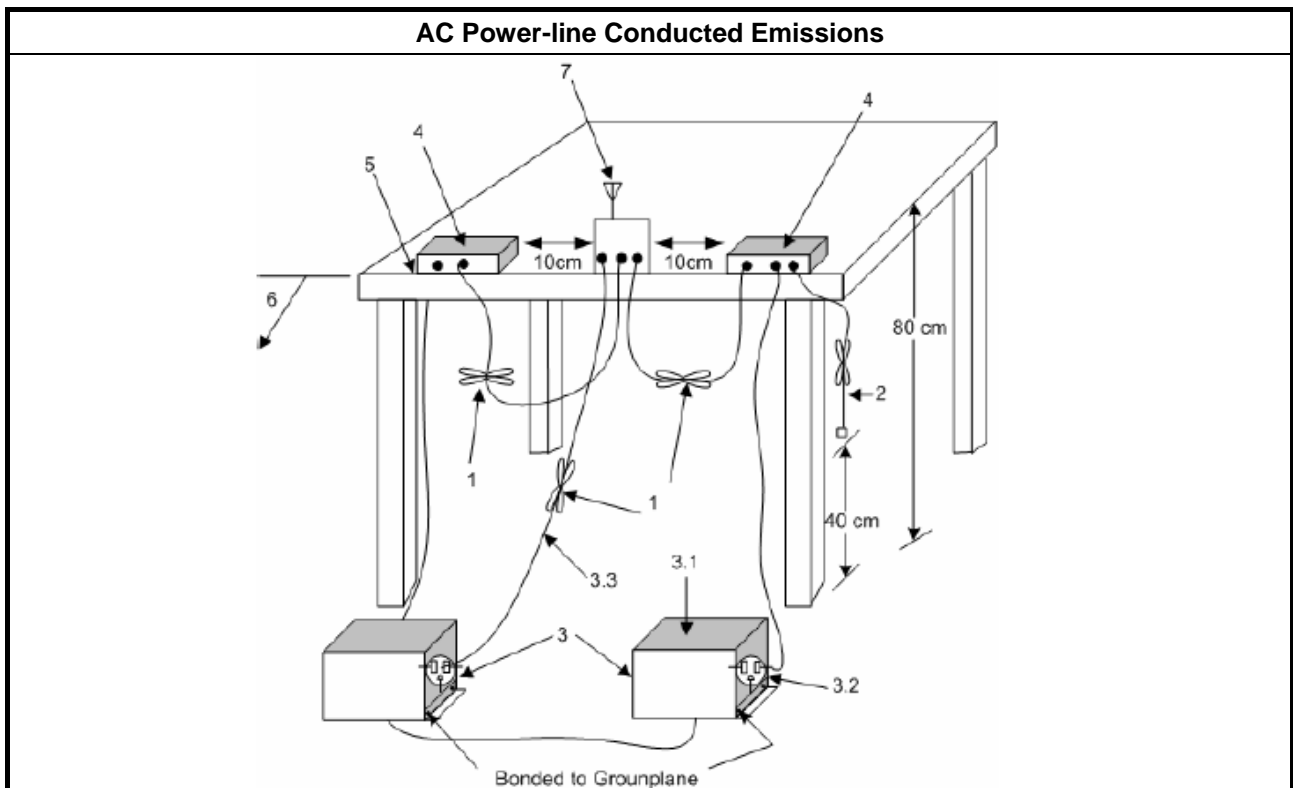
3.1.2 Measuring Instruments

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

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

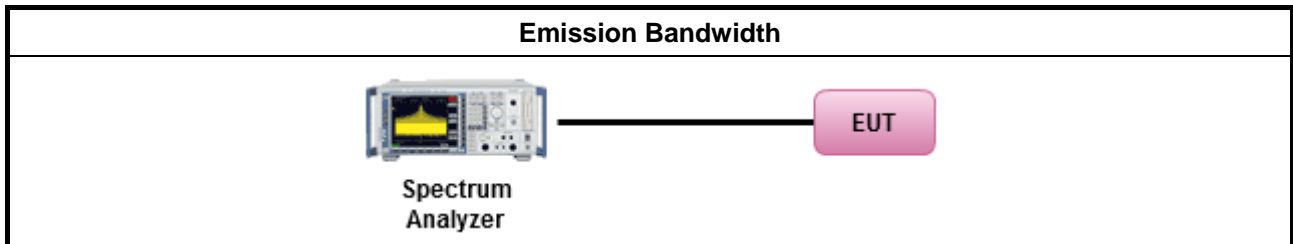
3.2.2 Measuring Instruments

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 8.1 Option 1 for 6 dB bandwidth measurement.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
<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 B

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 $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ 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>P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.</p>	

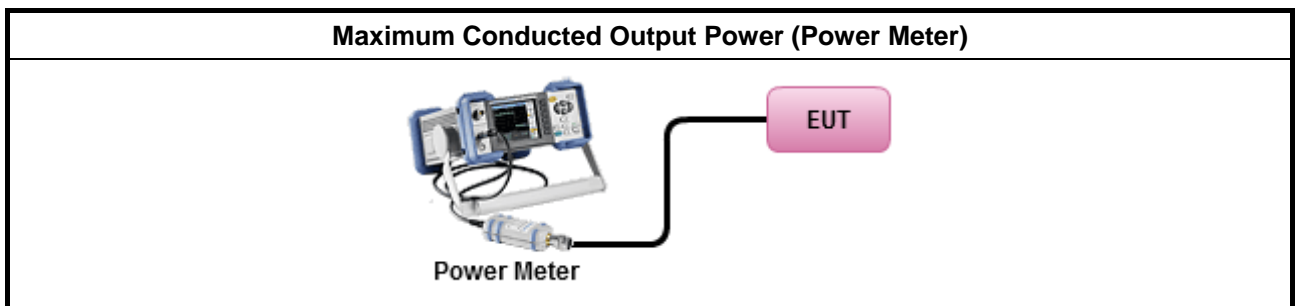
3.3.2 Measuring Instruments

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 9.1.1 Option 1 (RBW ≥ EBW method).
<input type="checkbox"/>	Refer as KDB 558074, clause 9.1.2 Option 2 (integrated band power method)
<input type="checkbox"/>	Refer as KDB 558074, clause 9.1.3 Option 3 (peak power meter for VBW ≥ DTS BW)
<ul style="list-style-type: none"> ▪ Maximum Average Conducted Output Power 	
Duty cycle ≥ 98%	
<input type="checkbox"/>	Refer as KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
Duty cycle < 98%	
<input type="checkbox"/>	Refer as KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)
RF power meter and average over on/off periods with duty factor or gated trigger	
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 9.2.3.1 Method AVGPM (using an RF average 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 C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

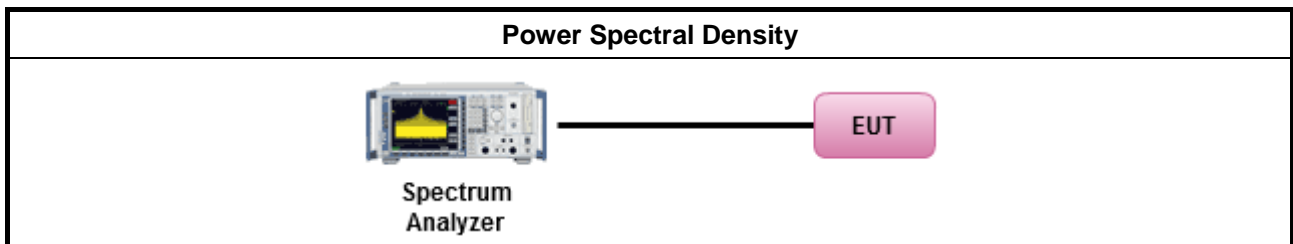
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
	<ul style="list-style-type: none"> ▪ 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 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak).
	<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:
	<ul style="list-style-type: none"> ▪ 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 D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

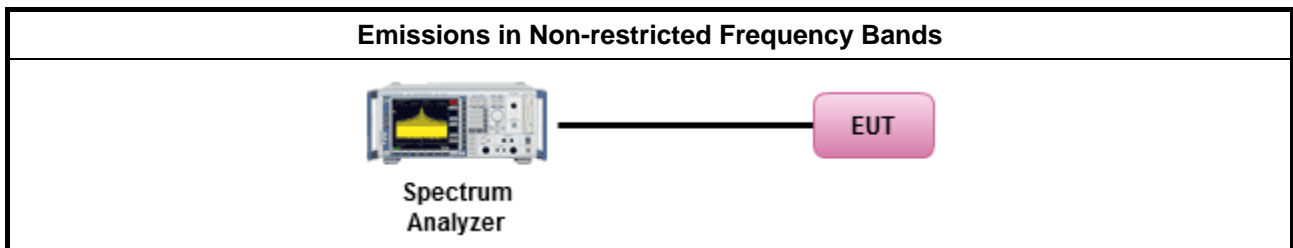
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as KDB 558074, clause 11 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E



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.

3.6.2 Measuring Instruments

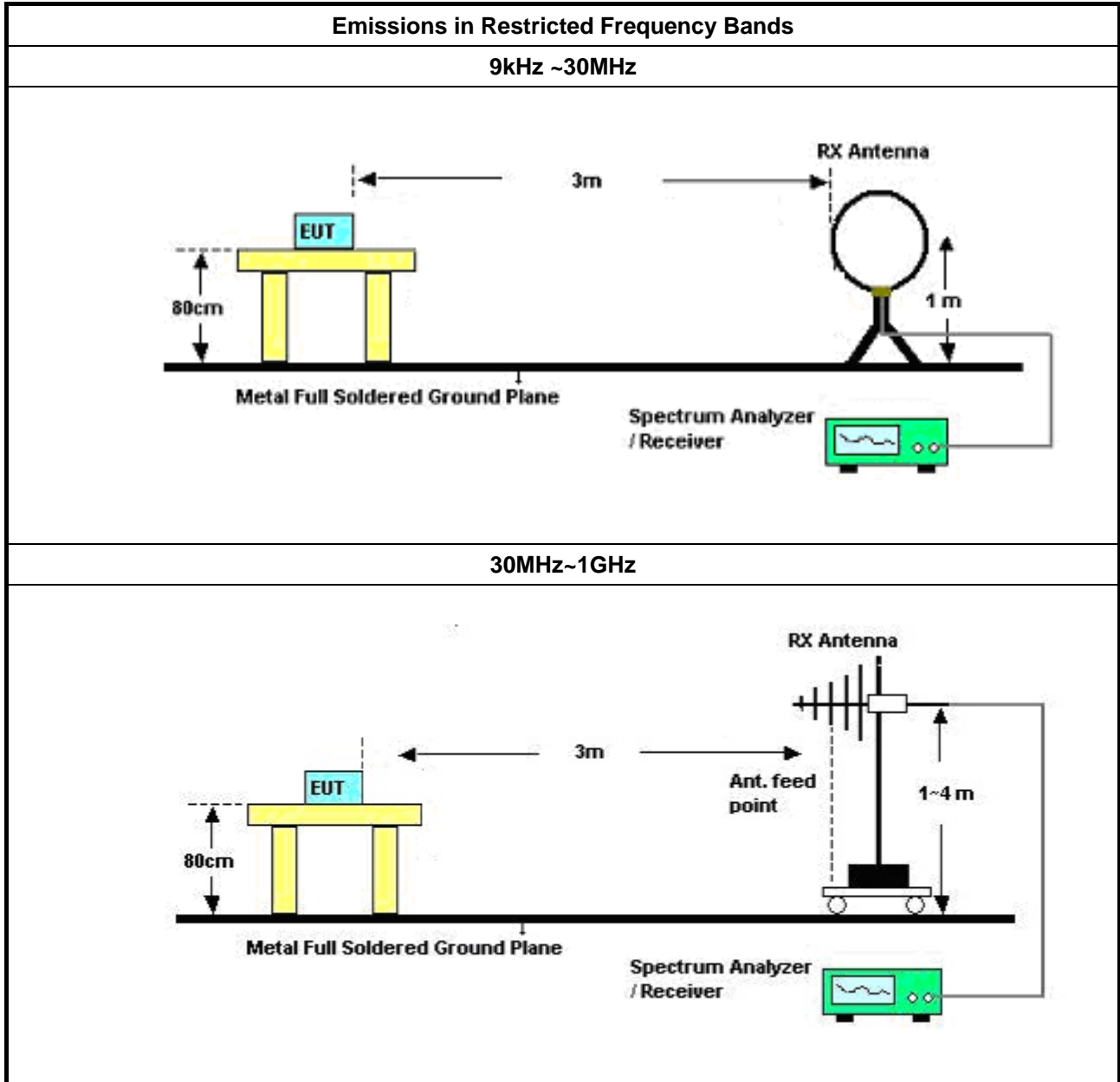
Refer a test equipment and calibration data table in this test report.

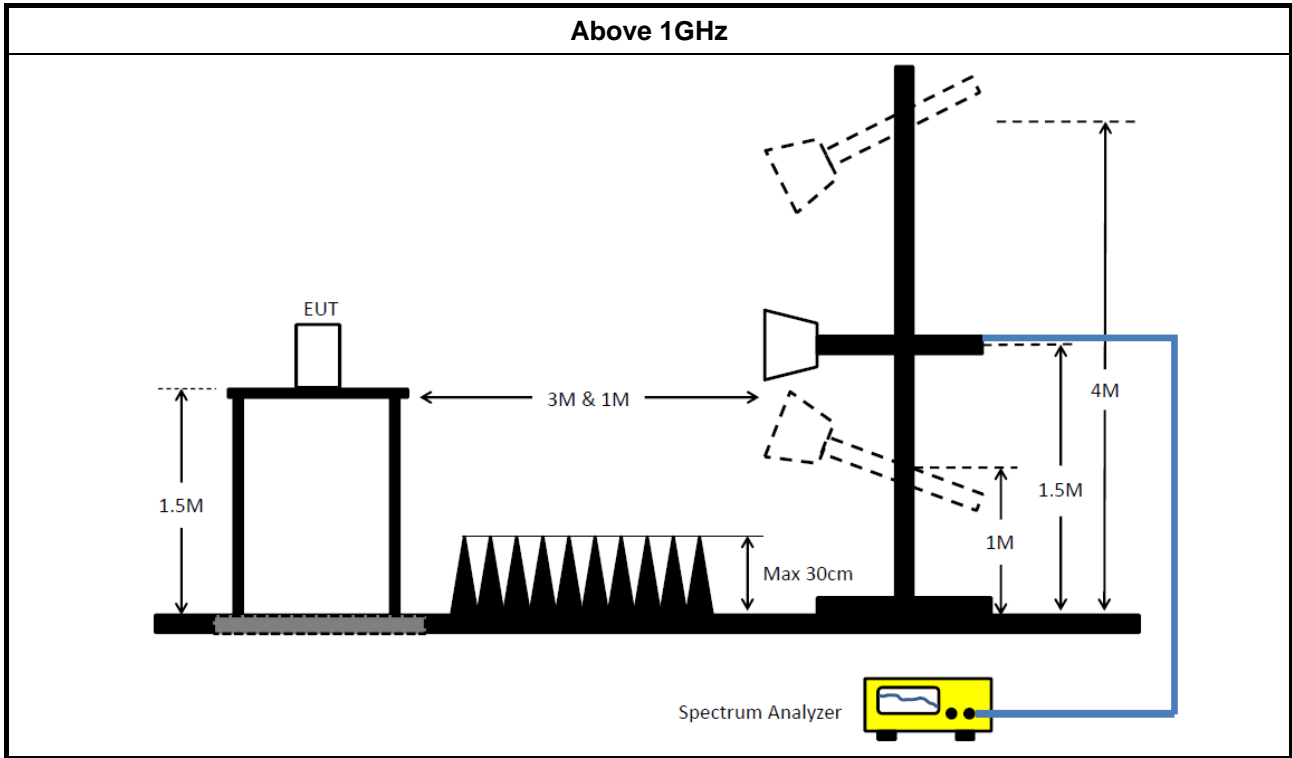


3.6.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. 	
<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. 	
<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below: 	
<ul style="list-style-type: none"> ▪ Refer as KDB 558074, clause 12 for unwanted emissions into restricted bands. 	
	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Refer as KDB 558074, clause 12.2.5.3 (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW\geq1/T.
	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Refer as KDB 558074, clause 12.2.4 measurement procedure peak limit.
<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 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. 	
<ul style="list-style-type: none"> ▪ Refer as KDB 558074, clause 13.2 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements. 	
<ul style="list-style-type: none"> ▪ Refer as KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz). 	
<ul style="list-style-type: none"> ▪ For conducted and cabinet radiation measurement, refer as KDB 558074, clause 12.2.2. 	
<ul style="list-style-type: none"> ▪ 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 	
<ul style="list-style-type: none"> ▪ For 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. 	

3.6.4 Test Setup





3.6.5 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	15/Nov/2016	14/Nov/2017
RF Cable-CON	HUBER+SUHNER	RG213/U	0761183202000 1	9kHz ~ 30MHz	24/Oct/2016	23/Oct/2017
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Puls e Limiter	R&S	ESH3-Z2	100921	10 kHz ~ 30 MHz	21/Oct/2016	20/Oct/2017

NCR : Non-Calibration Require

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	28/Nov/2016	27/Nov/2017
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz	16/Dec/2016	15/Dec/2017
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	19/Apr/2017	18/Apr/2018
Amplifier	KEYSIGHT	83017A	MY53270197	1GHz ~ 26.5GHz	29/Aug/2016	28/Aug/2017
Spectrum	R&S	FSV40	101500	9kHz ~ 40GHz	28/Jun/2017	27/Jun/2018
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30MHz ~ 1GHz	08/Jul/2017	07/Jul/2018
Horn Antenna	SCHWARZBECK	BBHA 9120D	BBHA 9120D 1531	1GHz ~ 18GHz	25/Apr/2017	24/Apr/2018
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz ~ 40GHz	06/Feb/2017	05/Feb/2018
Loop Antenna	TESEQ	HLA 6120	24155	9 kHz~30 MHz	02/Mar/2017	01/Mar/2018
RF-Cable-high	SUHNER	SUHNER	CB222	1GHz ~ 40GHz	26/Jan/2017	25/Jan/2018
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	26/Jan/2017	25/Jan/2018
Receiver	R&S	ESU-26	100422/026	20Hz ~ 26.5GHz	21/Sep/2016	20/Sep/2017



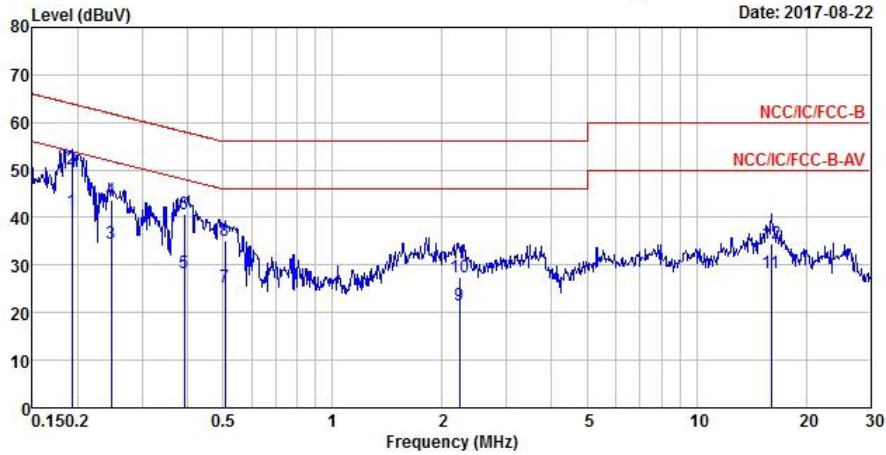
Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101500	9kHz~40GHz	28/Jun/2017	27/Jun/2018
Power Sensor	Anritsu	MA2411B	1027452	300MHz ~ 40GHz	27/Oct/2016	26/Oct/2017
Power Meter	Anritsu	ML2495A	1124009	300MHz ~ 40GHz	27/Oct/2016	26/Oct/2017
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	27/Jul/2017	26/Jul/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30MHz ~ 26.5GHz	02/Oct/2016	01/Oct/2017
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10710/4	30MHz ~ 26.5GHz	02/Oct/2016	01/Oct/2017
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10713/4	30MHz ~ 26.5GHz	02/Oct/2016	01/Oct/2017



AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	USB Mode		



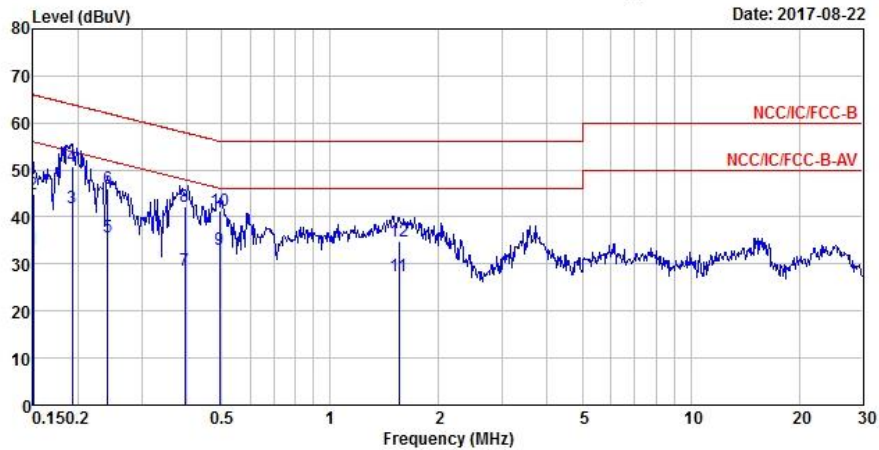
	Freq	Level	Over	Limit	Read	LISM	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	MAX	0.19	41.33	-12.60	53.93	31.38	9.66	0.29 Average
2		0.19	50.32	-13.61	63.93	40.37	9.66	0.29 QP
3		0.25	34.53	-17.33	51.86	24.63	9.66	0.24 Average
4		0.25	43.64	-18.22	61.86	33.74	9.66	0.24 QP
5		0.39	28.46	-19.57	48.03	18.72	9.63	0.11 Average
6		0.39	40.60	-17.43	58.03	30.86	9.63	0.11 QP
7		0.51	25.30	-20.70	46.00	15.58	9.62	0.10 Average
8		0.51	35.13	-20.87	56.00	25.41	9.62	0.10 QP
9		2.24	21.49	-24.51	46.00	11.56	9.66	0.27 Average
10		2.24	27.58	-28.42	56.00	17.65	9.66	0.27 QP
11		16.05	28.30	-21.70	50.00	18.26	9.84	0.20 Average
12		16.05	34.68	-25.32	60.00	24.64	9.84	0.20 QP

Note 1: ">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.)



AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	USB Mode		



	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.15	32.93	-23.07	56.00	23.05	9.66	0.22	Average
2	0.15	44.86	-21.14	66.00	34.98	9.66	0.22	QP
3	0.19	41.90	-12.03	53.93	31.96	9.65	0.29	Average
4	0.19	50.67	-13.26	63.93	40.73	9.65	0.29	QP
5	0.24	35.58	-16.46	52.04	25.68	9.66	0.24	Average
6	0.24	45.91	-16.13	62.04	36.01	9.66	0.24	QP
7	0.40	28.60	-19.35	47.95	18.82	9.68	0.10	Average
8	0.40	42.14	-15.81	57.95	32.36	9.68	0.10	QP
9	0.49	33.06	-13.04	46.10	23.29	9.67	0.10	Average
10	0.49	41.19	-14.91	56.10	31.42	9.67	0.10	QP
11	1.55	27.34	-18.66	46.00	17.38	9.73	0.23	Average
12	1.55	34.97	-21.03	56.00	25.01	9.73	0.23	QP

Note 1: ">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.)



Summary

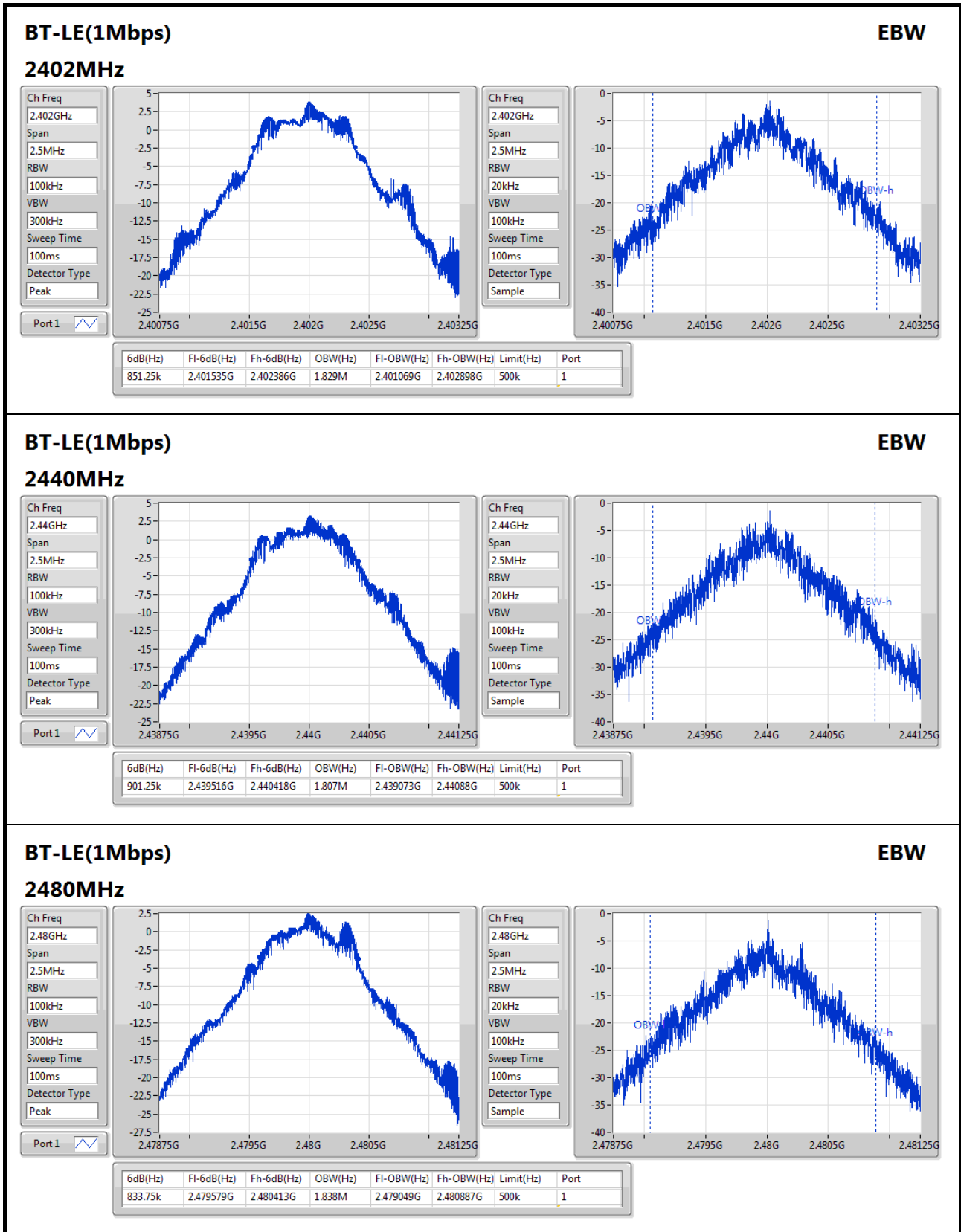
Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-	-
2.4-2.4835GHz	901.25k	1.838M	1M84F1D	833.75k	1.807M

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	851.25k	1.829M
2440MHz	Pass	500k	901.25k	1.807M
2480MHz	Pass	500k	833.75k	1.838M

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





Summary

Mode	Power (dBm)	Power (W)
BT-LE(1Mbps)	-	-
2.4-2.4835GHz	3.25	0.00211

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	3.50	3.25	30.00
2440MHz	Pass	3.50	2.76	30.00
2480MHz	Pass	3.50	1.99	30.00



Summary

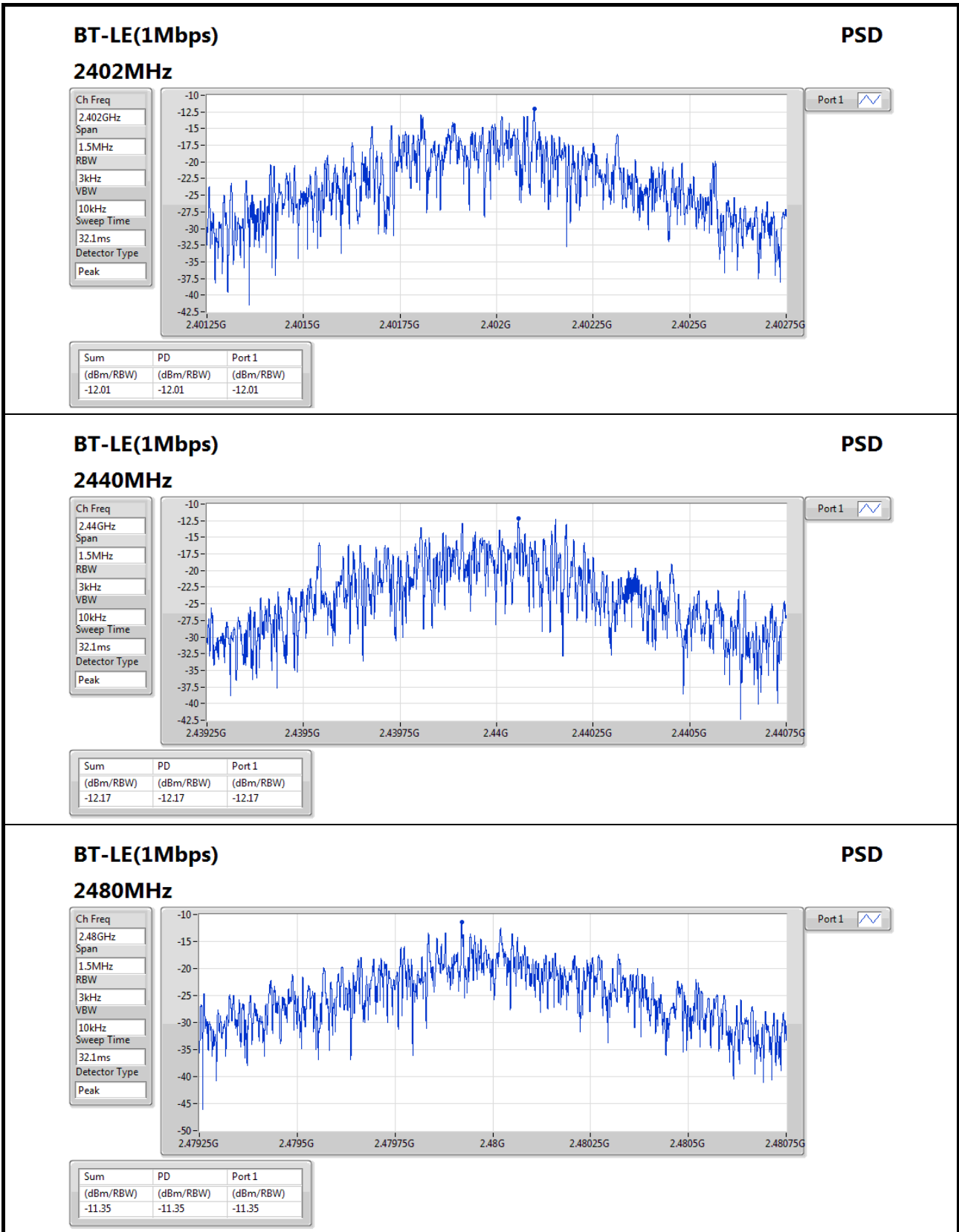
Mode	PD (dBm/RBW)
BT-LE(1Mbps)	-
2.4-2.4835GHz	-11.35

RBW=3kHz.

Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	3.50	-12.01	8.00
2440MHz	Pass	3.50	-12.17	8.00
2480MHz	Pass	3.50	-11.35	8.00

RBW=3kHz.



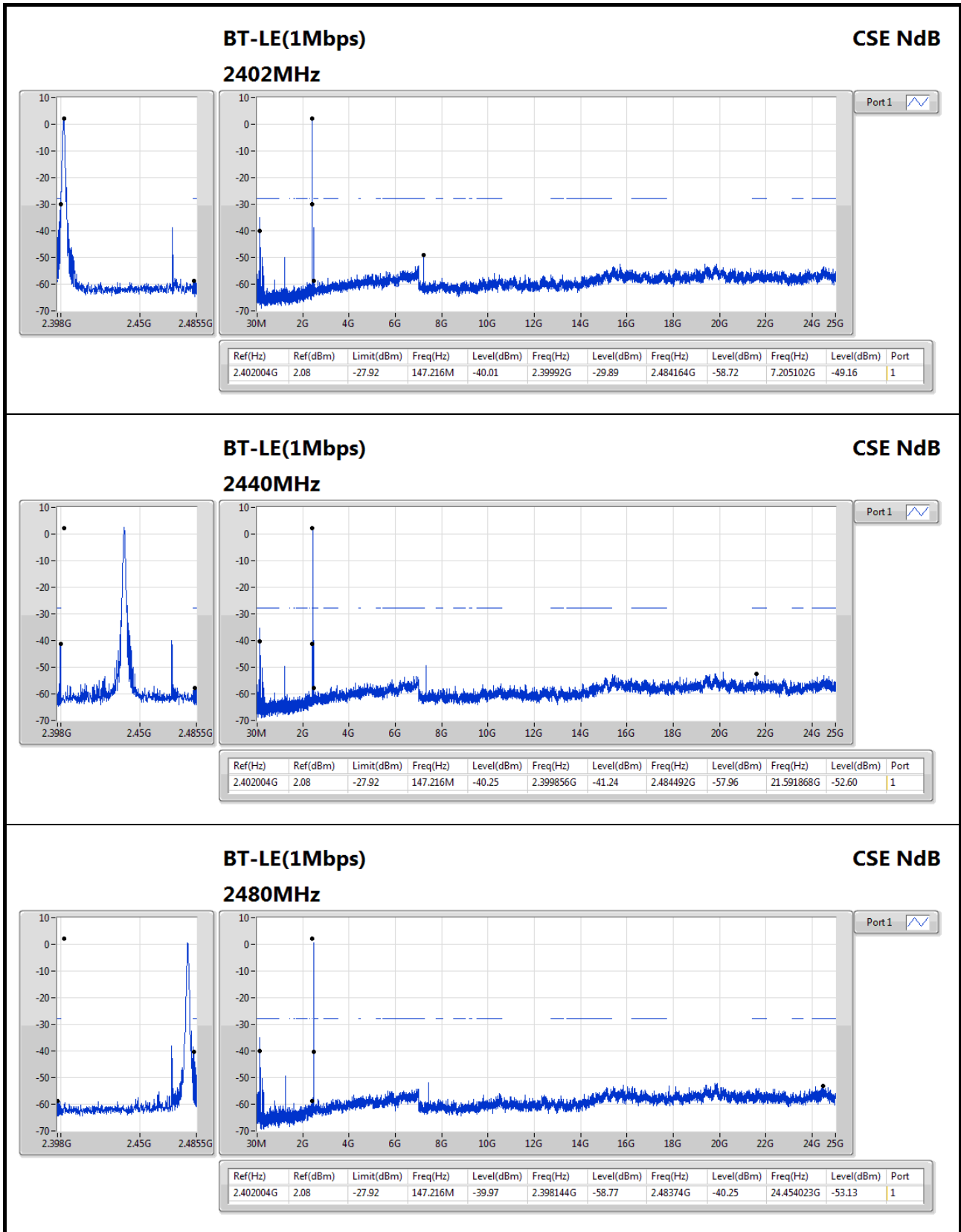


Summary

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	2.402004G	2.08	-27.92	147.216M	-40.01	2.39992G	-29.89	2.484164G	-58.72	7.205102G	-49.16	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	2.402004G	2.08	-27.92	147.216M	-40.01	2.39992G	-29.89	2.484164G	-58.72	7.205102G	-49.16	1
2440MHz	Pass	2.402004G	2.08	-27.92	147.216M	-40.25	2.399856G	-41.24	2.484492G	-57.96	21.591868G	-52.60	1
2480MHz	Pass	2.402004G	2.08	-27.92	147.216M	-39.97	2.398144G	-58.77	2.48374G	-40.25	24.454023G	-53.13	1





Summary

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	262.8M	34.57	46.00	-11.43	-5.76	3	Horizontal	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	30M	26.61	40.00	-13.39	-2.39	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	167.74M	25.26	43.50	-18.24	-9.79	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	239.52M	33.37	46.00	-12.63	-7.72	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	262.8M	34.57	46.00	-11.43	-5.76	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	577.08M	31.49	46.00	-14.51	-0.75	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	608.12M	31.12	46.00	-14.88	-0.39	3	Horizontal	360	1.00	-

BT-LE(1Mbps)

2440MHz_USB MODE

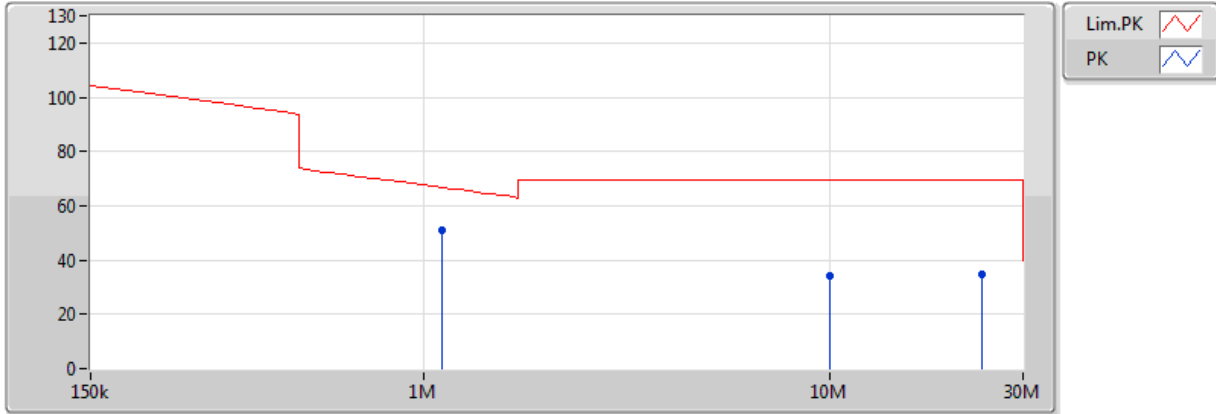


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	9.846k	63.25	128.44	-65.19	21.88	3	Horizontal	0	1.00	-	41.37	21.80	0.08	-
PK	36.636k	60.90	126.51	-65.61	21.78	3	Horizontal	0	1.00	-	39.12	21.70	0.08	-
PK	104.034k	57.76	121.64	-63.88	20.78	3	Horizontal	0	1.00	-	36.98	20.70	0.08	-

BT-LE(1Mbps)

2440MHz_USB MODE



EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	23.6718M	34.93	69.50	-34.57	23.06	3	Horizontal	0	1.00	-	11.87	22.51	0.55	-
PK	10.0005M	34.40	69.50	-35.10	21.78	3	Horizontal	0	1.00	-	12.62	21.50	0.28	-
PK	1.1052M	50.84	68.33	-17.49	20.79	3	Horizontal	0	1.00	-	30.05	20.69	0.10	-



Summary

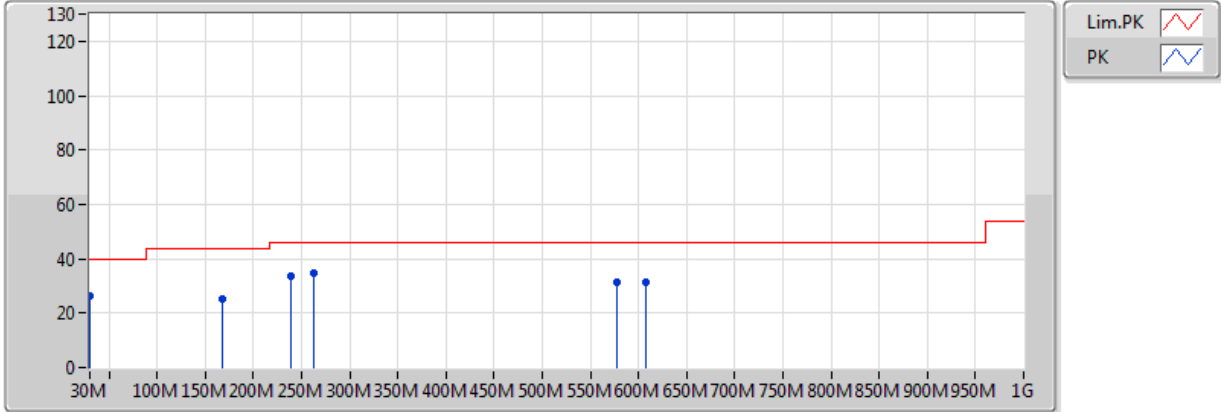
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	PK	239.52M	42.70	46.00	-3.30	-7.72	3	Horizontal	0	1.00	-



Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	95.96M	30.03	43.50	-13.47	-10.10	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	216.24M	37.85	46.00	-8.15	-9.98	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	239.52M	42.70	46.00	-3.30	-7.72	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	311.3M	35.67	46.00	-10.33	-5.55	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	336.52M	32.15	46.00	-13.85	-5.12	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	551.86M	30.11	46.00	-15.89	-0.38	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	30M	26.61	40.00	-13.39	-2.39	3	Vertical	360	1.00	-
2440MHz	Pass	PK	167.74M	25.26	43.50	-18.24	-9.79	3	Vertical	360	1.00	-
2440MHz	Pass	PK	239.52M	33.37	46.00	-12.63	-7.72	3	Vertical	360	1.00	-
2440MHz	Pass	PK	262.8M	34.57	46.00	-11.43	-5.76	3	Vertical	360	1.00	-
2440MHz	Pass	PK	577.08M	31.49	46.00	-14.51	-0.75	3	Vertical	360	1.00	-
2440MHz	Pass	PK	608.12M	31.12	46.00	-14.88	-0.39	3	Vertical	360	1.00	-

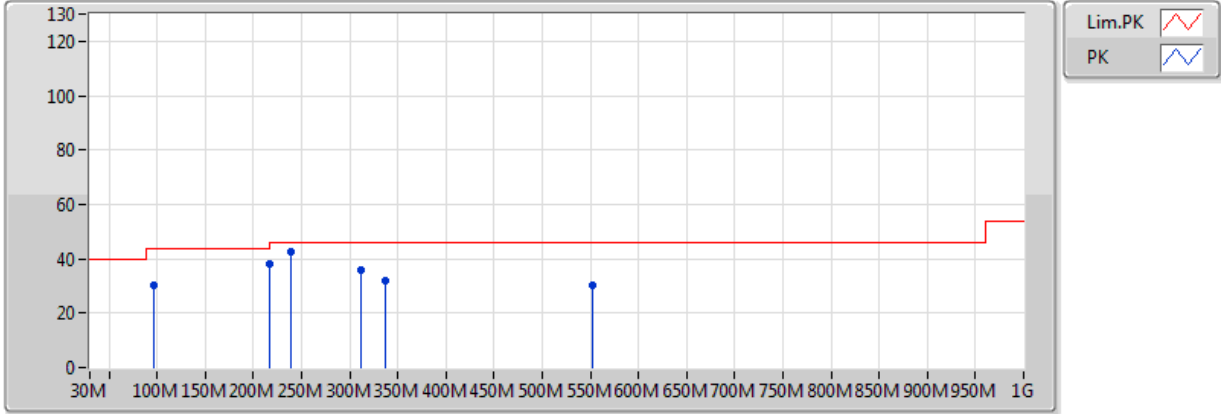
BT-LE(1Mbps)
2440MHz_USB MODE



EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	30M	26.61	40.00	-13.39	-2.39	3	Vertical	360	1.00	-	29.00	23.48	1.71	27.58
PK	167.74M	25.26	43.50	-18.24	-9.79	3	Vertical	360	1.00	-	35.05	14.78	2.49	27.06
PK	239.52M	33.37	46.00	-12.63	-7.72	3	Vertical	360	1.00	-	41.09	16.49	2.61	26.82
PK	262.8M	34.57	46.00	-11.43	-5.76	3	Vertical	360	1.00	-	40.33	18.64	2.36	26.76
PK	577.08M	31.49	46.00	-14.51	-0.75	3	Vertical	360	1.00	-	32.24	23.51	3.69	27.95
PK	608.12M	31.12	46.00	-14.88	-0.39	3	Vertical	360	1.00	-	31.51	23.81	3.79	27.99

BT-LE(1Mbps)
2440MHz_USB MODE



EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	95.96M	30.03	43.50	-13.47	-10.10	3	Horizontal	0	1.00	-	40.13	15.34	1.94	27.38
PK	216.24M	37.85	46.00	-8.15	-9.98	3	Horizontal	0	1.00	-	47.83	14.32	2.58	26.87
PK	239.52M	42.70	46.00	-3.30	-7.72	3	Horizontal	0	1.00	-	50.42	16.49	2.61	26.82
PK	311.3M	35.67	46.00	-10.33	-5.55	3	Horizontal	0	1.00	-	41.22	18.67	2.53	26.75
PK	336.52M	32.15	46.00	-13.85	-5.12	3	Horizontal	0	1.00	-	37.27	18.96	2.82	26.90
PK	551.86M	30.11	46.00	-15.89	-0.38	3	Horizontal	0	1.00	-	30.49	23.87	3.66	27.91



Summary

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)	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	AV	2.483502G	50.20	54.00	-3.80	31.53	3	Horizontal	121	3.25	-

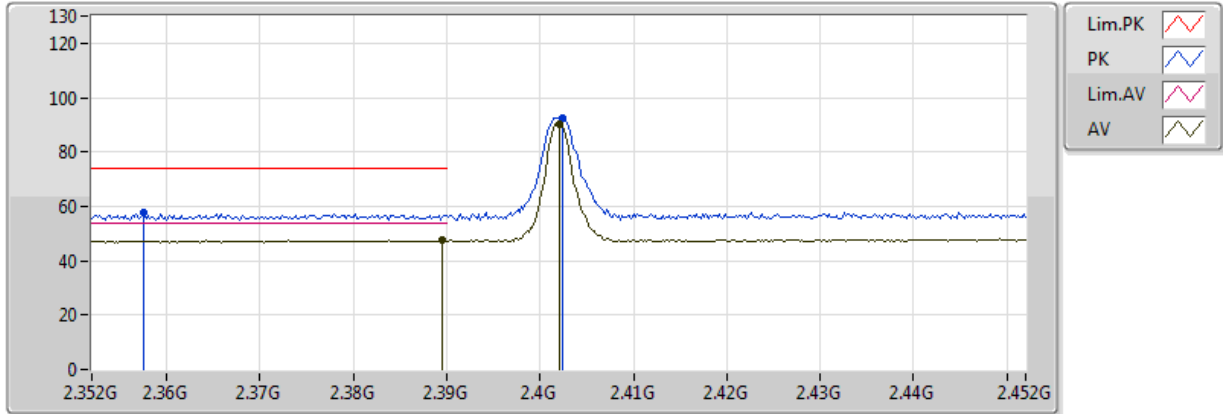


Result

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	2.3836G	47.43	54.00	-6.57	31.15	3	Horizontal	116	2.78	-
2402MHz	Pass	AV	2.402G	97.90	Inf	-Inf	31.22	3	Horizontal	116	2.78	-
2402MHz	Pass	PK	2.39G	58.30	74.00	-15.70	31.17	3	Horizontal	116	2.78	-
2402MHz	Pass	PK	2.4016G	100.06	Inf	-Inf	31.22	3	Horizontal	116	2.78	-
2402MHz	Pass	AV	2.3896G	47.67	54.00	-6.33	31.17	3	Vertical	204	3.50	-
2402MHz	Pass	AV	2.402G	90.47	Inf	-Inf	31.22	3	Vertical	204	3.50	-
2402MHz	Pass	PK	2.3576G	57.57	74.00	-16.43	31.04	3	Vertical	204	3.50	-
2402MHz	Pass	PK	2.4024G	92.65	Inf	-Inf	31.22	3	Vertical	204	3.50	-
2402MHz	Pass	AV	4.80674G	32.91	54.00	-21.09	2.45	3	Horizontal	99	1.50	-
2402MHz	Pass	PK	4.80674G	44.70	74.00	-29.30	2.46	3	Horizontal	99	1.50	-
2402MHz	Pass	AV	4.80266G	32.94	54.00	-21.06	2.45	3	Vertical	277	1.50	-
2402MHz	Pass	PK	4.80266G	44.56	74.00	-29.44	2.45	3	Vertical	277	1.50	-
2440MHz	Pass	AV	2.3576G	47.49	54.00	-6.51	31.04	3	Horizontal	114	3.35	-
2440MHz	Pass	AV	2.44G	98.35	Inf	-Inf	31.36	3	Horizontal	114	3.35	-
2440MHz	Pass	AV	2.486G	48.37	54.00	-5.63	31.54	3	Horizontal	114	3.35	-
2440MHz	Pass	PK	2.3704G	57.74	74.00	-16.26	31.09	3	Horizontal	114	3.35	-
2440MHz	Pass	PK	2.4396G	100.56	Inf	-Inf	31.36	3	Horizontal	114	3.35	-
2440MHz	Pass	PK	2.4948G	59.03	74.00	-14.97	31.57	3	Horizontal	114	3.35	-
2440MHz	Pass	AV	2.3836G	47.41	54.00	-6.59	31.15	3	Vertical	204	3.69	-
2440MHz	Pass	AV	2.44G	89.46	Inf	-Inf	31.36	3	Vertical	204	3.69	-
2440MHz	Pass	AV	2.4964G	48.18	54.00	-5.82	31.58	3	Vertical	204	3.69	-
2440MHz	Pass	PK	2.3748G	57.43	74.00	-16.57	31.11	3	Vertical	204	3.69	-
2440MHz	Pass	PK	2.4404G	91.69	Inf	-Inf	31.36	3	Vertical	204	3.69	-
2440MHz	Pass	PK	2.496G	58.02	74.00	-15.98	31.57	3	Vertical	204	3.69	-
2440MHz	Pass	AV	7.31892G	43.94	54.00	-10.06	8.43	3	Horizontal	155	2.02	-
2440MHz	Pass	PK	7.31866G	53.78	74.00	-20.22	8.43	3	Horizontal	155	2.02	-
2440MHz	Pass	AV	7.31884G	44.51	54.00	-9.49	8.43	3	Vertical	215	3.65	-
2440MHz	Pass	PK	7.32102G	53.94	74.00	-20.06	8.44	3	Vertical	215	3.65	-
2480MHz	Pass	AV	2.48G	95.24	Inf	-Inf	31.51	3	Horizontal	121	3.25	-
2480MHz	Pass	AV	2.483502G	50.20	54.00	-3.80	31.53	3	Horizontal	121	3.25	-
2480MHz	Pass	PK	2.4796G	97.40	Inf	-Inf	31.51	3	Horizontal	121	3.25	-
2480MHz	Pass	PK	2.483502G	62.99	74.00	-11.01	31.53	3	Horizontal	121	3.25	-
2480MHz	Pass	AV	2.48G	79.09	Inf	-Inf	31.51	3	Vertical	329	1.50	-
2480MHz	Pass	AV	2.4862G	48.35	54.00	-5.65	31.54	3	Vertical	329	1.50	-
2480MHz	Pass	PK	2.4798G	81.45	Inf	-Inf	31.51	3	Vertical	329	1.50	-
2480MHz	Pass	PK	2.4958G	58.03	74.00	-15.97	31.57	3	Vertical	329	1.50	-
2480MHz	Pass	AV	7.43892G	46.67	54.00	-7.33	8.58	3	Horizontal	139	2.19	-
2480MHz	Pass	PK	7.44096G	55.98	74.00	-18.02	8.59	3	Horizontal	139	2.19	-
2480MHz	Pass	AV	7.43896G	45.98	54.00	-8.02	8.58	3	Vertical	183	3.03	-
2480MHz	Pass	PK	7.441G	54.73	74.00	-19.27	8.59	3	Vertical	183	3.03	-

BT-LE(1Mbps)

2402MHz_TX

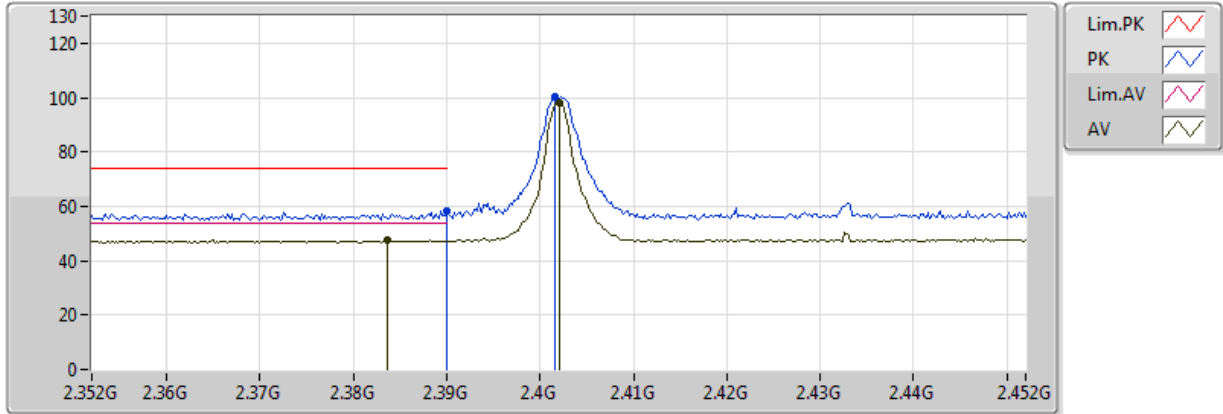


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3896G	47.67	54.00	-6.33	31.17	3	Vertical	204	3.50	-	16.51	26.99	4.18	-
AV	2.402G	90.47	Inf	-Inf	31.22	3	Vertical	204	3.50	-	59.25	27.03	4.19	-
PK	2.3576G	57.57	74.00	-16.43	31.04	3	Vertical	204	3.50	-	26.53	26.90	4.14	-
PK	2.4024G	92.65	Inf	-Inf	31.22	3	Vertical	204	3.50	-	61.43	27.03	4.19	-

BT-LE(1Mbps)

2402MHz_TX

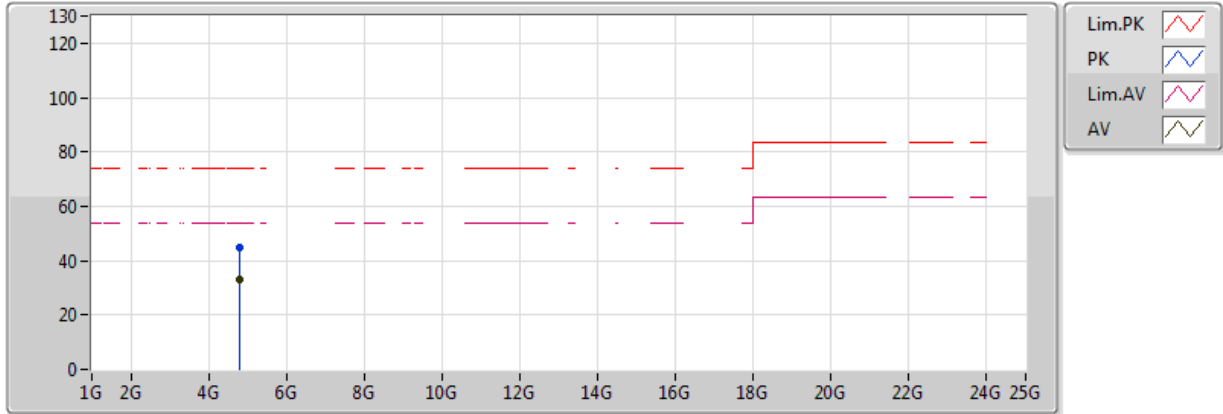


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3836G	47.43	54.00	-6.57	31.15	3	Horizontal	116	2.78	-	16.28	26.97	4.17	-
AV	2.402G	97.90	Inf	-Inf	31.22	3	Horizontal	116	2.78	-	66.69	27.03	4.19	-
PK	2.39G	58.30	74.00	-15.70	31.17	3	Horizontal	116	2.78	-	27.13	26.99	4.18	-
PK	2.4016G	100.06	Inf	-Inf	31.22	3	Horizontal	116	2.78	-	68.85	27.02	4.19	-

BT-LE(1Mbps)

2402MHz_TX

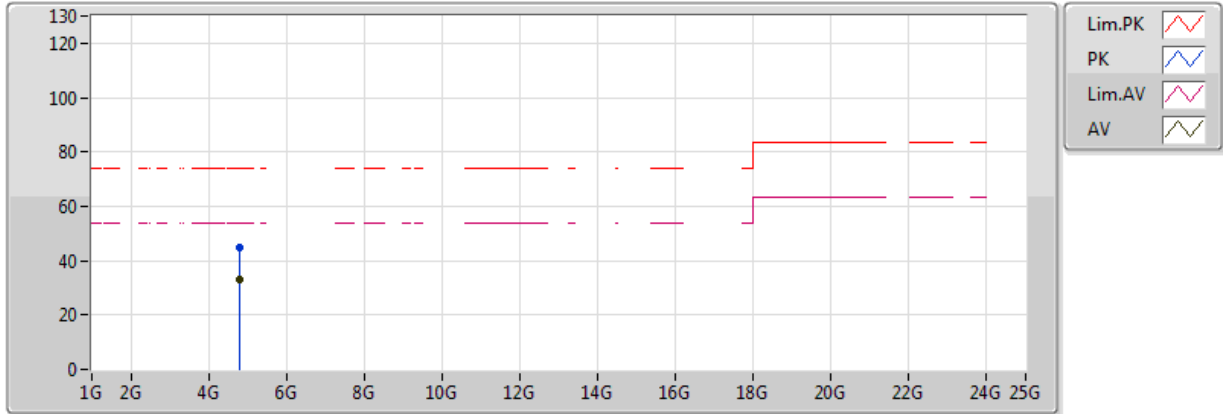


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80266G	32.94	54.00	-21.06	2.45	3	Vertical	277	1.50	-	30.49	31.18	6.44	35.17
PK	4.80266G	44.56	74.00	-29.44	2.45	3	Vertical	277	1.50	-	42.10	31.18	6.44	35.17

BT-LE(1Mbps)

2402MHz_TX

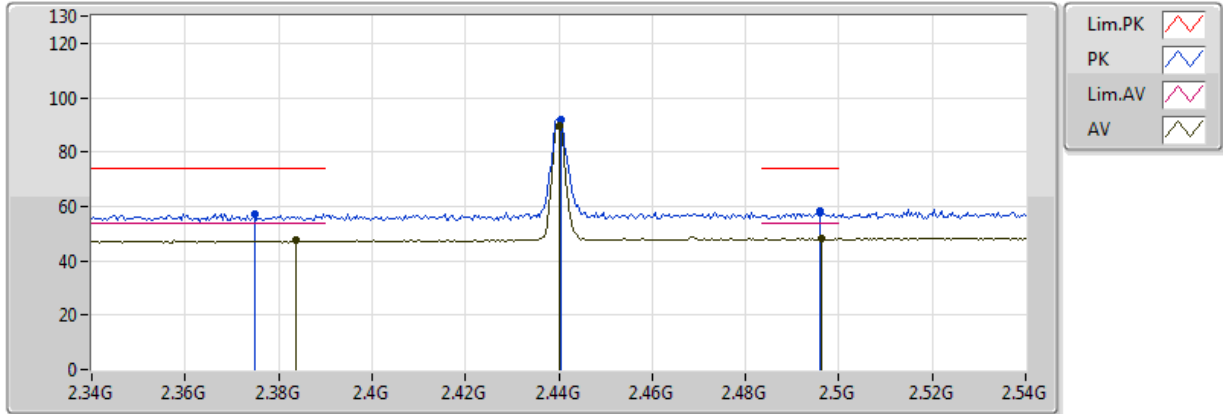


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80674G	32.91	54.00	-21.09	2.45	3	Horizontal	99	1.50	-	30.46	31.18	6.44	35.17
PK	4.80674G	44.70	74.00	-29.30	2.46	3	Horizontal	99	1.50	-	42.24	31.19	6.44	35.17

BT-LE(1Mbps)

2440MHz_TX

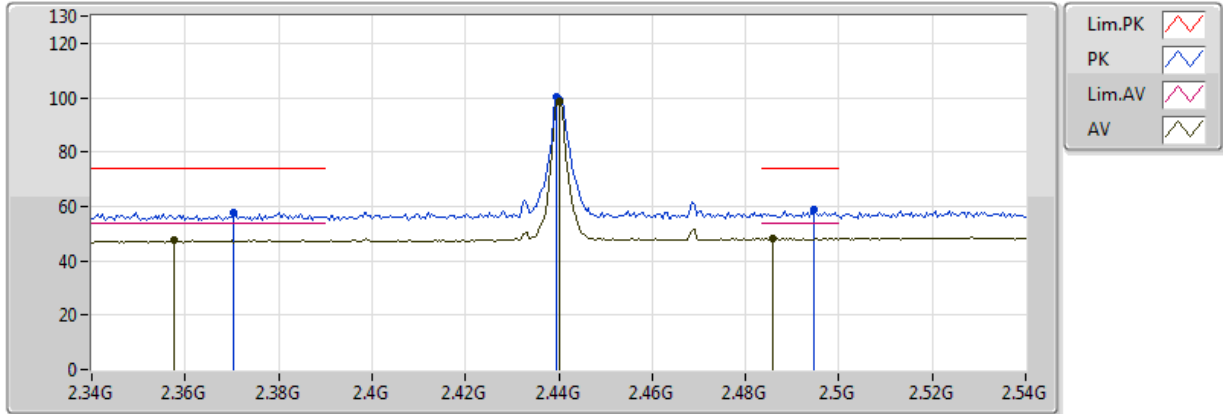


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3836G	47.41	54.00	-6.59	31.15	3	Vertical	204	3.69	-	16.26	26.97	4.17	-
AV	2.4964G	48.18	54.00	-5.82	31.58	3	Vertical	204	3.69	-	16.61	27.29	4.29	-
AV	2.44G	89.46	Inf	-Inf	31.36	3	Vertical	204	3.69	-	58.10	27.13	4.23	-
PK	2.3748G	57.43	74.00	-16.57	31.11	3	Vertical	204	3.69	-	26.32	26.95	4.16	-
PK	2.496G	58.02	74.00	-15.98	31.57	3	Vertical	204	3.69	-	26.45	27.29	4.29	-
PK	2.4404G	91.69	Inf	-Inf	31.36	3	Vertical	204	3.69	-	60.32	27.13	4.23	-

BT-LE(1Mbps)

2440MHz_TX

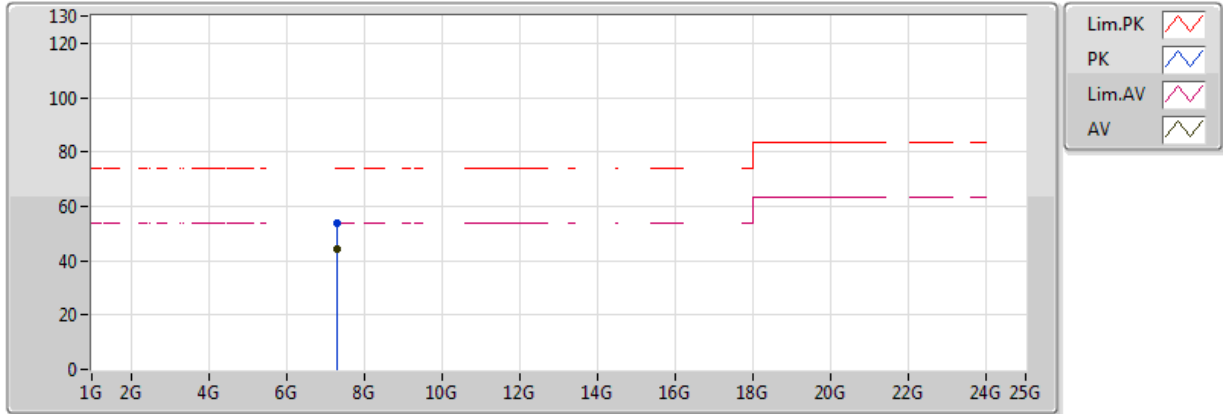


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3576G	47.49	54.00	-6.51	31.04	3	Horizontal	114	3.35	-	16.45	26.90	4.14	-
AV	2.486G	48.37	54.00	-5.63	31.54	3	Horizontal	114	3.35	-	16.84	27.26	4.28	-
AV	2.44G	98.35	Inf	-Inf	31.36	3	Horizontal	114	3.35	-	66.99	27.13	4.23	-
PK	2.3704G	57.74	74.00	-16.26	31.09	3	Horizontal	114	3.35	-	26.64	26.94	4.16	-
PK	2.4948G	59.03	74.00	-14.97	31.57	3	Horizontal	114	3.35	-	27.46	27.29	4.28	-
PK	2.4396G	100.56	Inf	-Inf	31.36	3	Horizontal	114	3.35	-	69.20	27.13	4.23	-

BT-LE(1Mbps)

2440MHz_TX

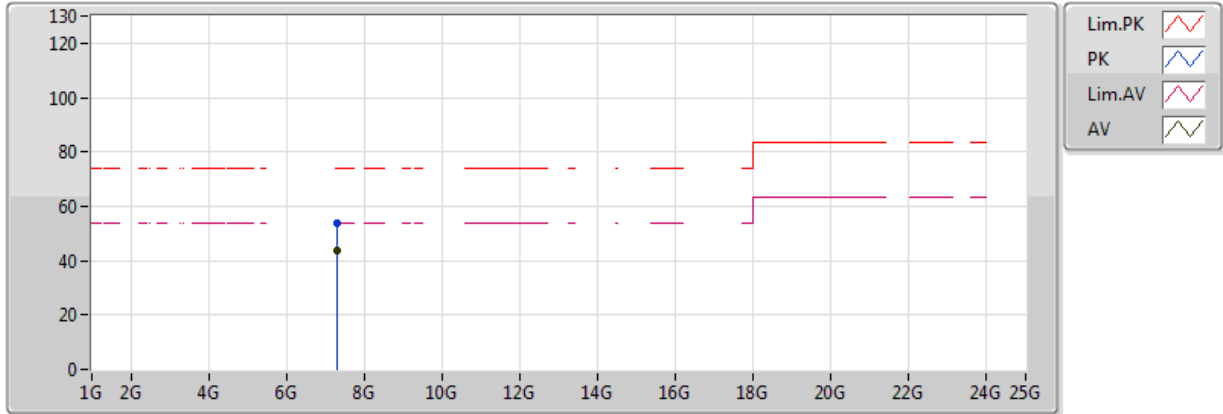


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	7.31884G	44.51	54.00	-9.49	8.43	3	Vertical	215	3.65	-	36.08	36.03	7.68	35.28
PK	7.32102G	53.94	74.00	-20.06	8.44	3	Vertical	215	3.65	-	45.50	36.03	7.68	35.28

BT-LE(1Mbps)

2440MHz_TX

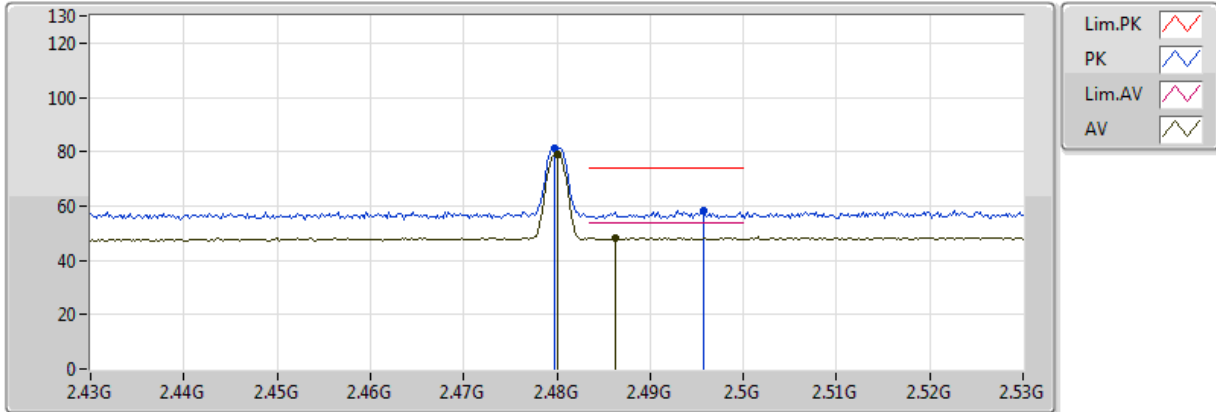


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	7.31892G	43.94	54.00	-10.06	8.43	3	Horizontal	155	2.02	-	35.51	36.03	7.68	35.28
PK	7.31866G	53.78	74.00	-20.22	8.43	3	Horizontal	155	2.02	-	45.35	36.03	7.68	35.28

BT-LE(1Mbps)

2480MHz_TX

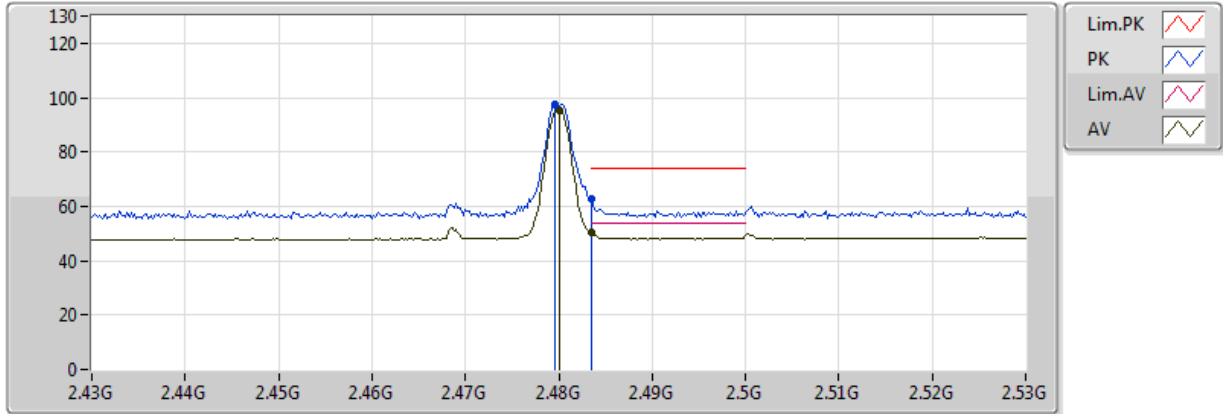


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.4862G	48.35	54.00	-5.65	31.54	3	Vertical	329	1.50	-	16.82	27.26	4.28	-
AV	2.48G	79.09	Inf	-Inf	31.51	3	Vertical	329	1.50	-	47.58	27.24	4.27	-
PK	2.4958G	58.03	74.00	-15.97	31.57	3	Vertical	329	1.50	-	26.45	27.29	4.29	-
PK	2.4798G	81.45	Inf	-Inf	31.51	3	Vertical	329	1.50	-	49.93	27.24	4.27	-

BT-LE(1Mbps)

2480MHz_TX

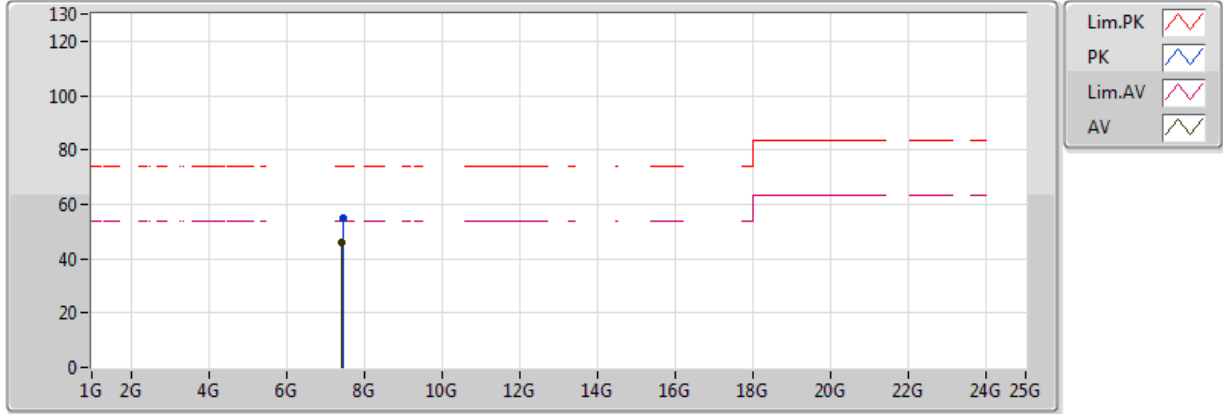


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.483502G	50.20	54.00	-3.80	31.53	3	Horizontal	121	3.25	-	18.67	27.25	4.27	-
AV	2.48G	95.24	Inf	-Inf	31.51	3	Horizontal	121	3.25	-	63.73	27.24	4.27	-
PK	2.483502G	62.99	74.00	-11.01	31.53	3	Horizontal	121	3.25	-	31.47	27.25	4.27	-
PK	2.4796G	97.40	Inf	-Inf	31.51	3	Horizontal	121	3.25	-	65.89	27.24	4.27	-

BT-LE(1Mbps)

2480MHz_TX

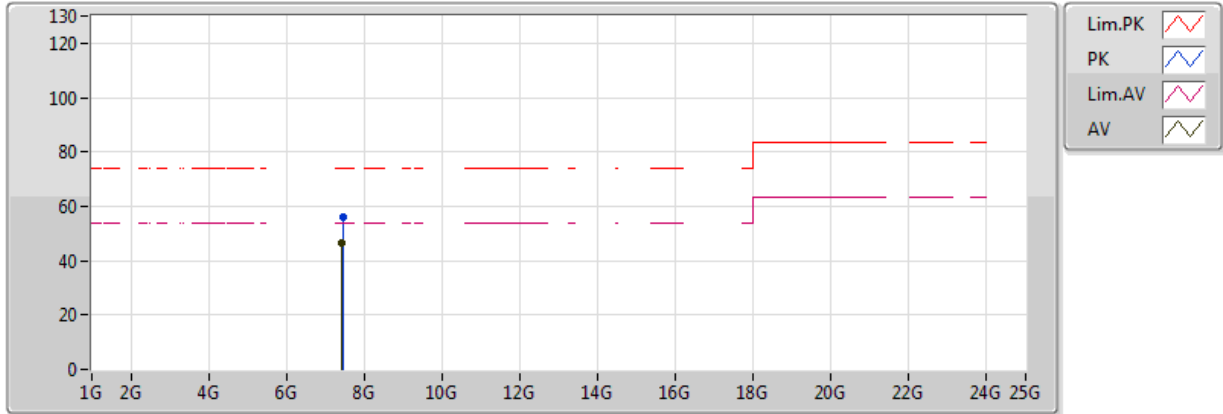


EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	7.43896G	45.98	54.00	-8.02	8.58	3	Vertical	183	3.03	-	37.39	36.34	7.55	35.31
PK	7.441G	54.73	74.00	-19.27	8.59	3	Vertical	183	3.03	-	46.14	36.35	7.55	35.31

BT-LE(1Mbps)

2480MHz_TX



EUT=Z,ANT=Z

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	7.43892G	46.67	54.00	-7.33	8.58	3	Horizontal	139	2.19	-	38.09	36.34	7.55	35.31
PK	7.44096G	55.98	74.00	-18.02	8.59	3	Horizontal	139	2.19	-	47.39	36.35	7.55	35.31