

FCC Test Report

FCC ID : VUI-DPCP700
Equipment : IP Desktop Phone
Brand Name : Unify
Model Name : OpenScape Desk Phone CP700
Applicant/ : PEGATRON CORPORATION
Manufacturer : 5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY
11259 Taiwan
Standard : 47 CFR FCC Part 15.247

The product was received on Mar. 12, 2020, and testing was started from Mar. 20, 2020 and completed on Apr. 18, 2020. 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.)

Table of Contents

HISTORY OF THIS TEST REPORT	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Information	5
1.2 Testing Applied Standards	6
1.3 Testing Location Information.....	6
1.4 Measurement Uncertainty	7
2 TEST CONFIGURATION OF EUT.....	8
2.1 Test Condition	8
2.2 Test Channel Mode	8
2.3 The Worst Case Measurement Configuration	9
2.4 Accessories	10
2.5 Support Equipment	10
2.6 Test Setup Diagram	11
3 TRANSMITTER TEST RESULT	13
3.1 AC Power-line Conducted Emissions	13
3.2 DTS Bandwidth	15
3.3 Maximum Conducted Output Power	16
3.4 Power Spectral Density.....	18
3.5 Emissions in Non-restricted Frequency Bands	19
3.6 Emissions in Restricted Frequency Bands	20
4 TEST EQUIPMENT AND CALIBRATION DATA.....	24
APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APPENDIX B. TEST RESULTS OF DTS BANDWIDTH	
APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APPENDIX D. TEST RESULTS OF POWER SPECTRAL DENSITY	
APPENDIX E. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	
APPENDIX F. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS	
APPENDIX G. TEST PHOTOS	
PHOTOGRAPHS OF EUT V01	



History of this test report

[illegible]

Summary of Test Result

Report Clause	Ref.Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

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: Yunha Liou

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.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	-	-	printed antenna	I-PEX	4.56

Note 1: The EUT has one antenna.

For BT function:

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

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

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From AC Adapter/PoE		
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)	0.625	2.04	390.938u	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
- ♦ KDB 414788 D01 v01r01

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
Test site Designation No. TW1190 with FCC.			
☐	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.			
☐	Wen Shan	ADD : No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)	
		TEL : 886-3-318-0787	FAX : 886-3-318-0287
Test site Designation No. TW1097 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Edward	21.4~22.5°C / 58~62%	23/Mar/2020~18/Apr/2020
RF Conducted	TH06-HY	Edward	20.1~22.4°C / 65~70%	20/Mar/2020~25/Mar/2020
Radiated	03CH03-HY	Jeff	22.5~24.7°C / 50~60%	23/Mar/2020~16/Apr/2020

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)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.0 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Test Software	Tera Term
---------------	-----------

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	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	AC Adapter mode
2	PoE 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	AC Adapter mode
2	PoE mode
Operating Mode > 1GHz	CTX
Orthogonal Planes of EUT	Z Plane
	

2.4 Accessories

Accessories				
AC Adapter (US Plug)	Brand Name	Salom Electric	Model Name	S30122-H7726-X
	Manufacturer	Salom Electric (Xiamen) Co.,Ltd.		
	Power Rating	I/P:100 - 240Vac, 0.6 A, O/P:38 Vdc, 0.42A		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		
4P4C Cable	Brand Name	NA	Model Name	NA
	Power Cord	4 meter, shielded or non-shielded cable		

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

2.5 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	RJ-11 Cable	-	-	-	Note 1
2	PoE	CERIO	POE-S48G2	DoC	Note 1
3	Adapter	L.T.E	LTE36ES-S5-1	DoC	Note 1
4	RJ45 cable	Power sync	CAT-6E-01	-	-
5	Bluetooth Tester	R&S	CBT	-	-

Note: No.1.2.3 was provided by customer.

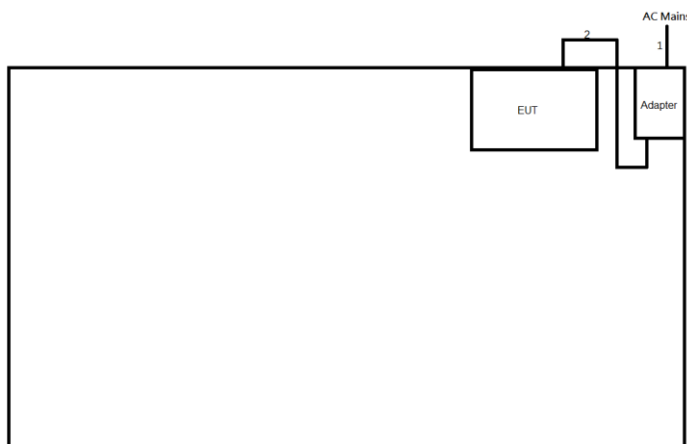
Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	DoC	-
2	Adapter for NB	DELL	HA65NM130	DoC	-
3	Bluetooth Tester	R&S	CBT	-	-
4	Fixture	-	-	-	-

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	RJ-11 Cable	-	-	-	-
2	Bluetooth Tester	R&S	CBT	-	-
3	PoE	CERIO	POE-S48G2	DoC	Note 1
4	Adapter	L.T.E	LTE36ES-S5-1	DoC	Note 1
5	Bluetooth Tester	R&S	CBT	-	-

Note: No.3.4 was provided by customer.

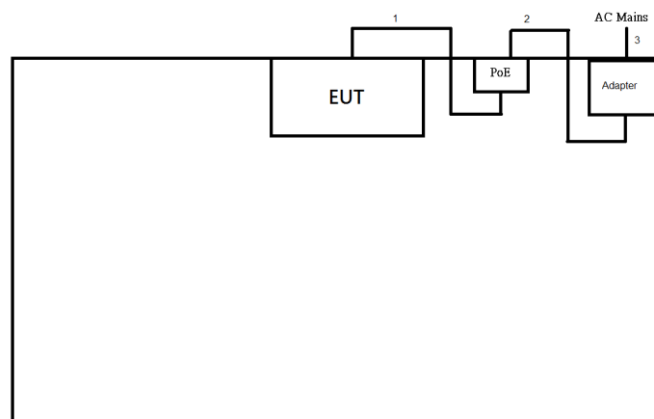
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test – Mode 1

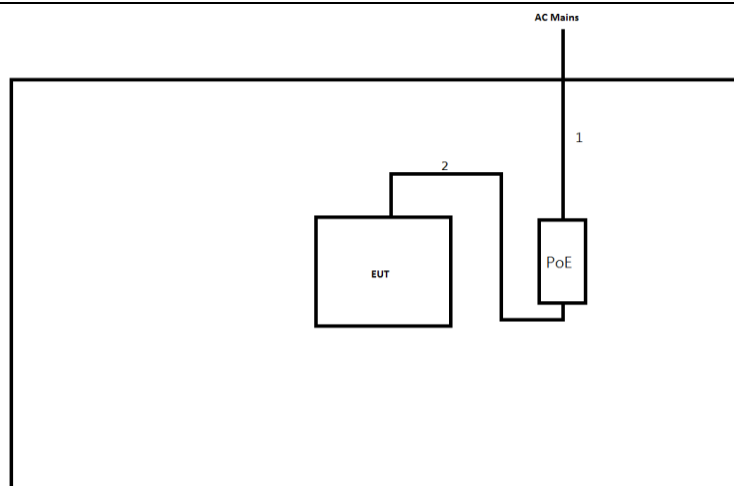


Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.5	-
2	RJ-11 Cable	No	2.0	-

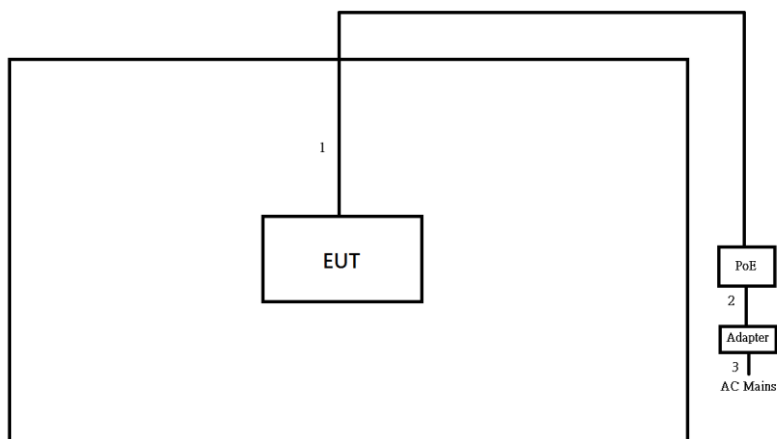
Test Setup Diagram – AC Line Conducted Emission Test – Mode 2



Item	Connection	Shielded	Length(m)	Remark
1	RJ45 cable	No	1.0	-
2	DC Power cable	No	1.8	-
3	AC Power cable	No	1.8	-

Test Setup Diagram - Radiated Test – Mode 1


Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.5	-
2	RJ-11 Cable	No	2.0	-

Test Setup Diagram - Radiated Test – Mode 2


Item	Connection	Shielded	Length(m)	Remark
1	RJ45 cable	No	10	-
2	DC Power cable	No	1.8	-
3	AC Power cable	No	1.8	-

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.		

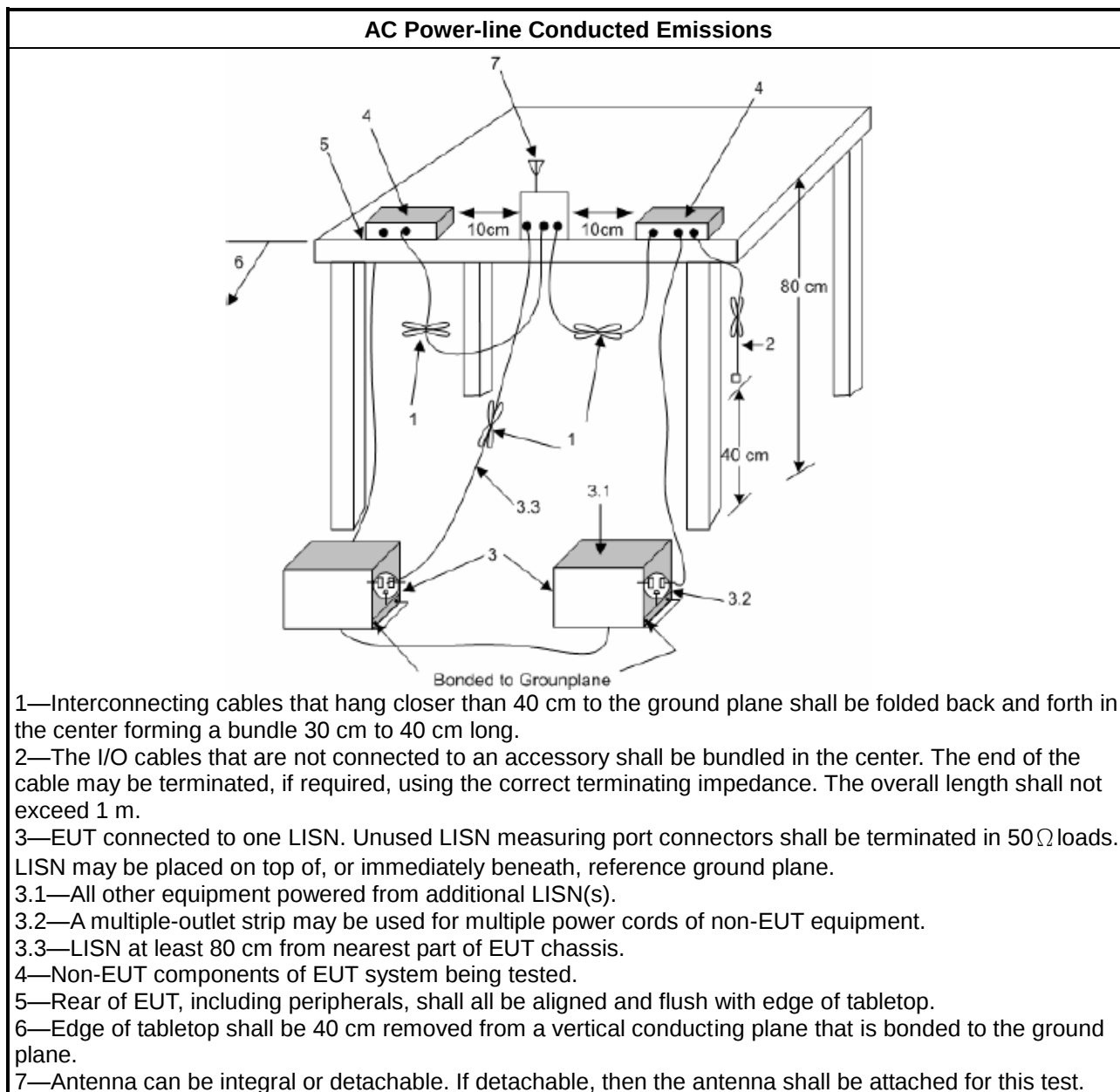
3.1.2 Measuring Instruments

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

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

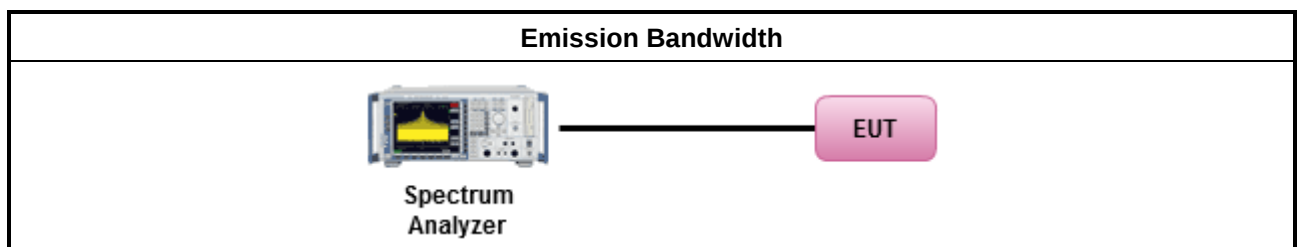
3.2.2 Measuring Instruments

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 (11.8 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 B

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.	

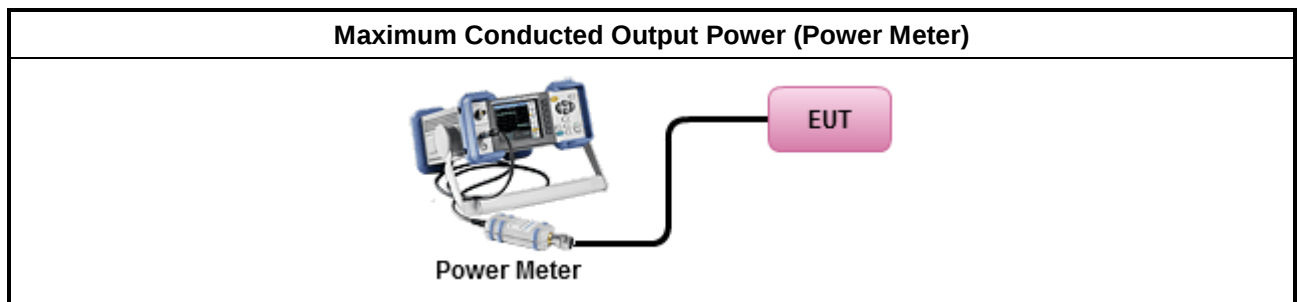
3.3.2 Measuring Instruments

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 C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

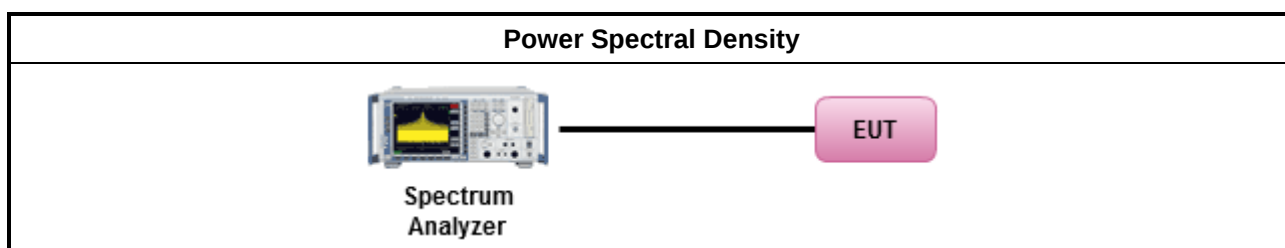
3.4.2 Measuring Instruments

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) Max. PSD.
▪	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 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 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 level.	

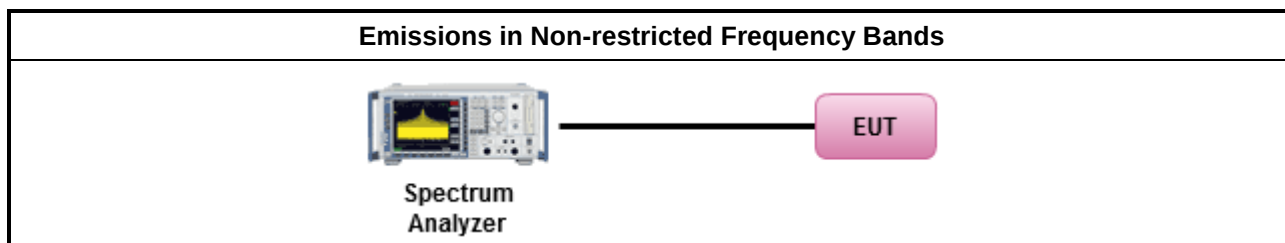
3.5.2 Measuring Instruments

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 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.

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.

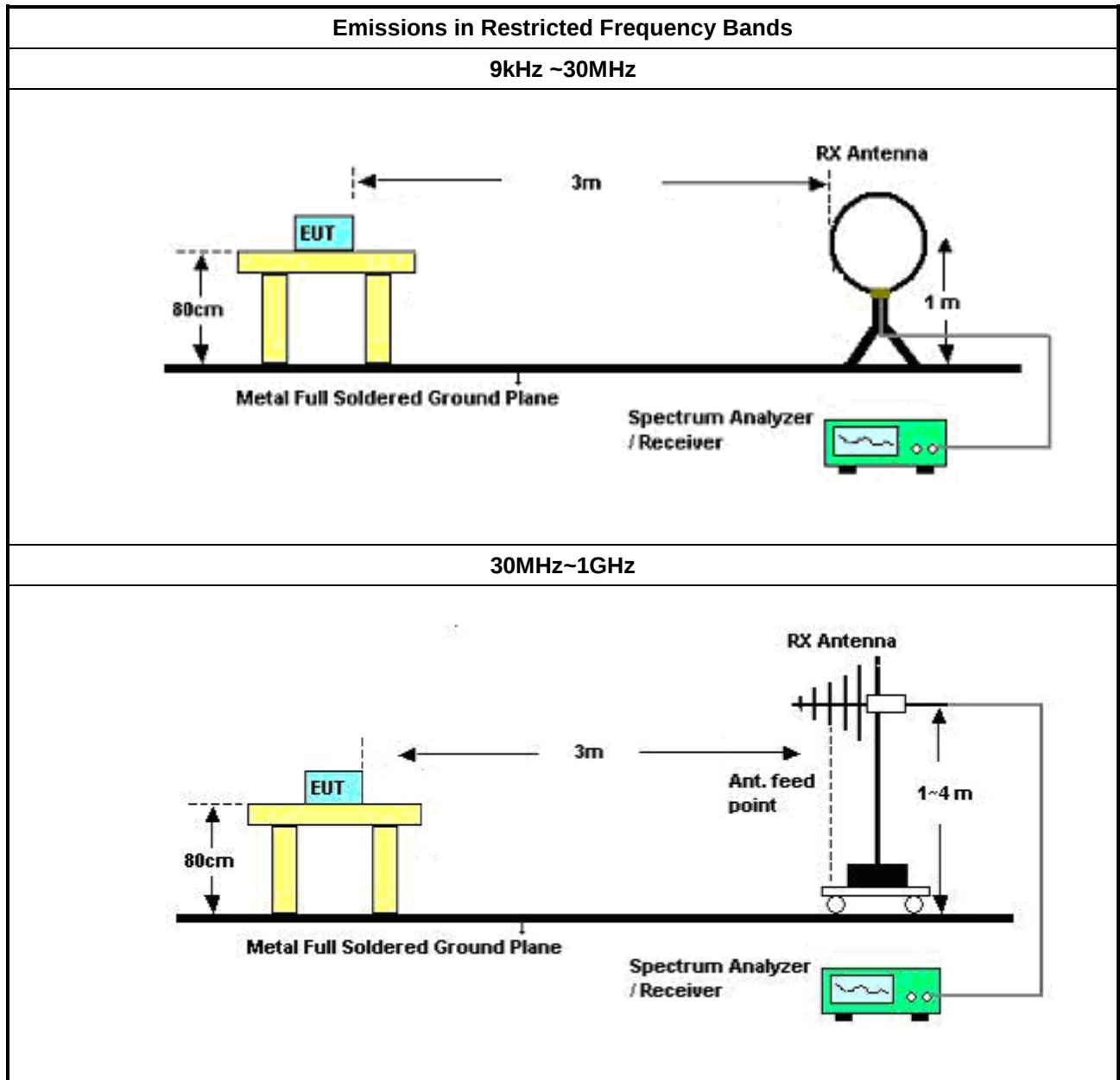
3.6.2 Measuring Instruments

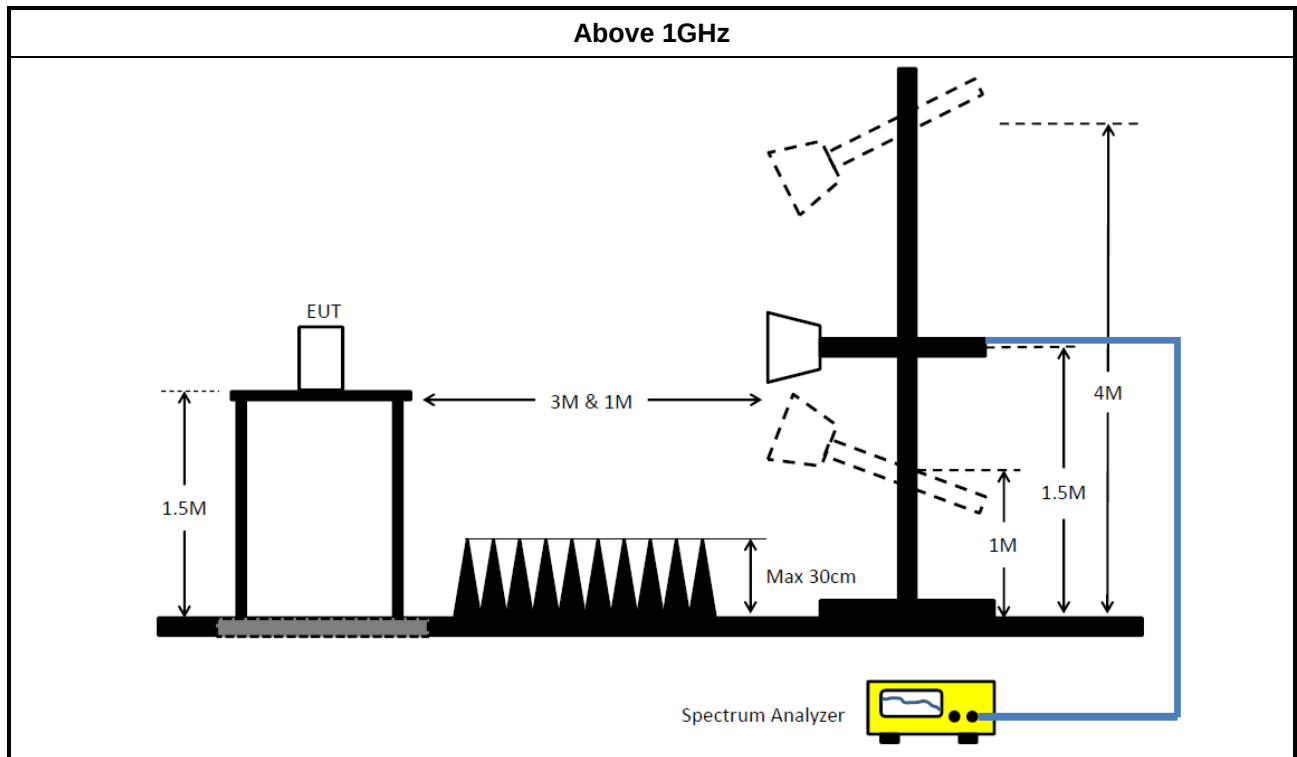
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 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.
Use the following spectrum analyzer settings:	
	Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.
KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.	
	Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

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 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	09/Apr/2019	08/Apr/2020
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	04/Nov/2019	05/Nov/2020
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	12/Sep/2019	11/Sep/2020
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	24/Sep/2019	23/Sep/2020

NCR : Non-Calibration Require

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	28/May/2019	27/May/2020
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	04/Nov/2019	05/Nov/2020
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	12/Sep/2019	11/Sep/2020
AC POWER	APC	AFC-11005G	F310050055	47Hz ~ 63Hz 5 ~ 300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	24/Sep/2019	23/Sep/2020

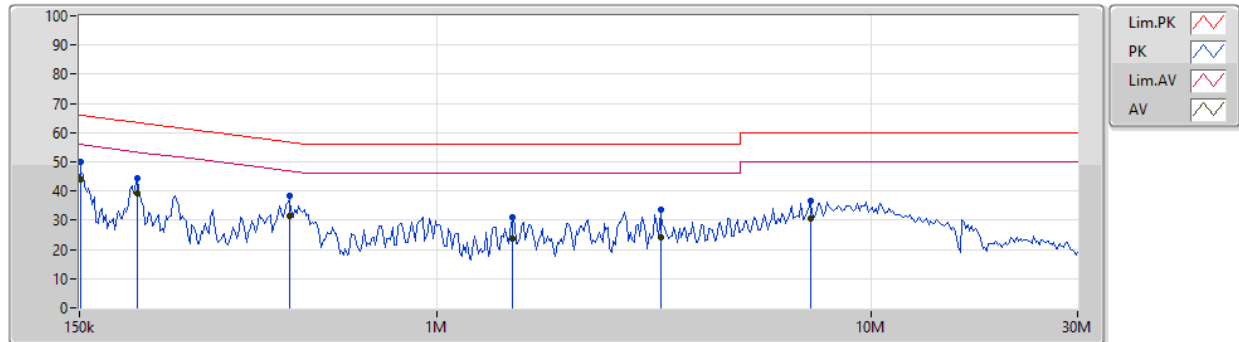
Instrument for Radiated Test

3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	30/Aug/2019	29/Aug/2020
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	30/Aug/2019	29/Aug/2020
EMI Test Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	28/May/2019	27/May/2020
Bilog Antenna & 6dB Attenuator	SCHAFFNER	CBL6111C & N-6-06	2737 & AT-N0603	30MHz ~ 1GHz	11/Oct/2019	10/Oct/2020
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	09/Sep/2019	08/Sep/2020
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	15/Aug/2019	14/Aug/2020
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	18/Mar/2020	17/Mar/2021
RF CABLE 5+6m	HUBER+SUHNER	SUOFLEX 104	SN 805801/4+SN 804300/4	1GHz ~ 40GHz	18/Mar/2020	17/Mar/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170614	18GHz~40GHz	22/May/2019	21/May/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 01543	1GHz ~ 18GHz	03/Jun/2019	02/Jun/2020
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	10/Mar/2020	09/Mar/2021
Loop Antenna	TESEQ	HLA 6120	31244	9kHz ~ 30MHz	16/Mar/2020	15/Mar/2021

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Adapter Mode		

23/03/2020

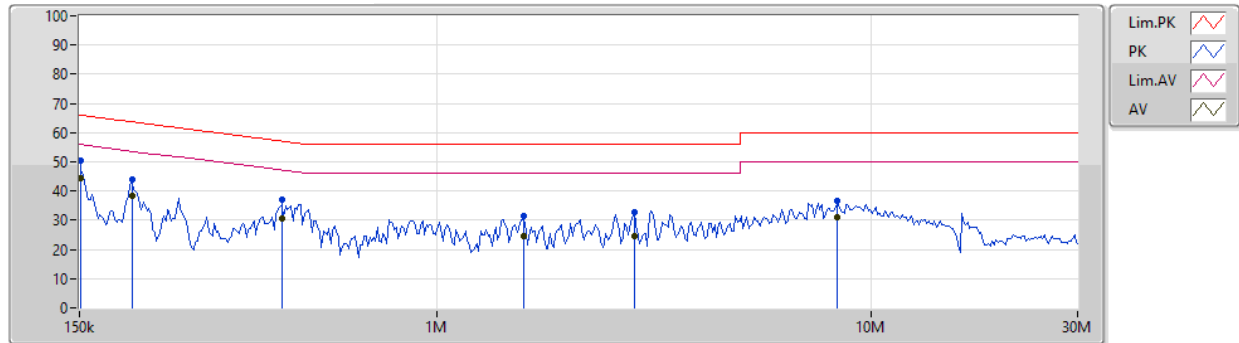


Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	151.5k	49.90	65.92	-16.02	19.63	Neutral	-	30.27	9.65	0.11	9.87			
AV	151.5k	43.97	55.92	-11.95	19.63	Neutral	"Worst"	24.34	9.65	0.11	9.87			
QP	204.199k	44.27	63.44	-19.17	19.62	Neutral	-	24.65	9.64	0.11	9.87			
AV	204.199k	39.42	53.44	-14.02	19.62	Neutral	-	19.80	9.64	0.11	9.87			
QP	457.178k	38.17	56.75	-18.58	19.63	Neutral	-	18.54	9.63	0.13	9.87			
AV	457.178k	31.49	46.75	-15.26	19.63	Neutral	-	11.86	9.63	0.13	9.87			
QP	1.494M	30.98	56.00	-25.02	19.64	Neutral	-	11.34	9.64	0.13	9.87			
AV	1.494M	23.84	46.00	-22.16	19.64	Neutral	-	4.20	9.64	0.13	9.87			
QP	3.279M	33.69	56.00	-22.31	19.72	Neutral	-	13.97	9.66	0.18	9.88			
AV	3.279M	24.21	46.00	-21.79	19.72	Neutral	-	4.49	9.66	0.18	9.88			
QP	7.268M	36.46	60.00	-23.54	19.81	Neutral	-	16.65	9.69	0.24	9.88			
AV	7.268M	30.65	50.00	-19.35	19.81	Neutral	-	10.84	9.69	0.24	9.88			

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Adapter Mode		

23/03/2020

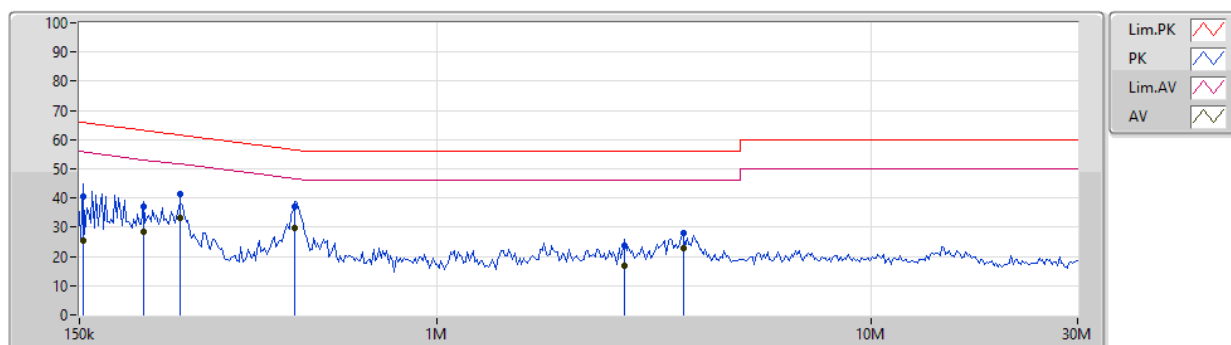


Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	151.5k	50.46	65.92	-15.46	19.64	Line	-	30.82	9.66	0.11	9.87			
AV	151.5k	44.26	55.92	-11.66	19.64	Line	"Worst"	24.62	9.66	0.11	9.87			
QP	198.194k	43.92	63.69	-19.77	19.63	Line	-	24.29	9.65	0.11	9.87			
AV	198.194k	38.19	53.69	-15.50	19.63	Line	-	18.56	9.65	0.11	9.87			
QP	439.339k	36.97	57.07	-20.10	19.64	Line	-	17.33	9.64	0.13	9.87			
AV	439.339k	30.78	47.07	-16.29	19.64	Line	-	11.14	9.64	0.13	9.87			
QP	1.586M	31.37	56.00	-24.63	19.66	Line	-	11.71	9.65	0.14	9.87			
AV	1.586M	24.59	46.00	-21.41	19.66	Line	-	4.93	9.65	0.14	9.87			
QP	2.852M	32.63	56.00	-23.37	19.71	Line	-	12.92	9.66	0.17	9.88			
AV	2.852M	24.49	46.00	-21.51	19.71	Line	-	4.78	9.66	0.17	9.88			
QP	8.355M	36.84	60.00	-23.16	19.81	Line	-	17.03	9.68	0.25	9.88			
AV	8.355M	31.12	50.00	-18.88	19.81	Line	-	11.31	9.68	0.25	9.88			

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	PoE mode		

18/04/2020

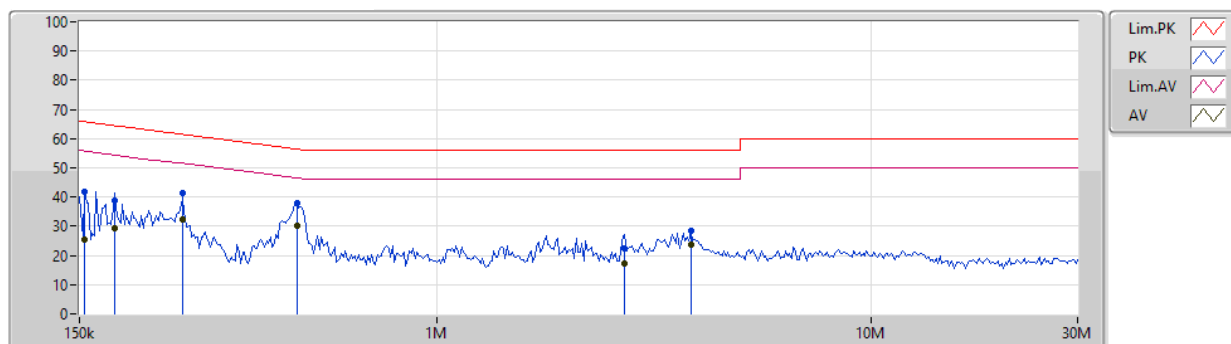


Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	153.015k	40.41	65.83	-25.42	19.63	Neutral	-	20.78	9.65	0.11	9.87			
AV	153.015k	25.38	55.83	-30.45	19.63	Neutral	-	5.75	9.65	0.11	9.87			
QP	210.387k	37.27	63.19	-25.92	19.62	Neutral	-	17.65	9.64	0.11	9.87			
AV	210.387k	28.61	53.19	-24.58	19.62	Neutral	-	8.99	9.64	0.11	9.87			
QP	256.712k	41.55	61.54	-19.99	19.63	Neutral	-	21.92	9.64	0.12	9.87			
AV	256.712k	32.99	51.54	-18.55	19.63	Neutral	-	13.36	9.64	0.12	9.87			
QP	471.031k	36.92	56.50	-19.58	19.63	Neutral	-	17.29	9.63	0.13	9.87			
AV	471.031k	29.74	46.50	-16.76	19.63	Neutral	"Worst"	10.11	9.63	0.13	9.87			
QP	2.714M	23.67	56.00	-32.33	19.69	Neutral	-	3.98	9.65	0.17	9.87			
AV	2.714M	16.87	46.00	-29.13	19.69	Neutral	-	-2.82	9.65	0.17	9.87			
QP	3.695M	27.91	56.00	-28.09	19.72	Neutral	-	8.19	9.66	0.18	9.88			
AV	3.695M	23.05	46.00	-22.95	19.72	Neutral	-	3.33	9.66	0.18	9.88			

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	PoE mode		

18/04/2020



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	154.545k	41.63	65.75	-24.12	19.64	Line	-	21.99	9.66	0.11	9.87			
AV	154.545k	25.56	55.75	-30.19	19.64	Line	-	5.92	9.66	0.11	9.87			
QP	181.216k	38.87	64.43	-25.56	19.63	Line	-	19.24	9.65	0.11	9.87			
AV	181.216k	29.21	54.43	-25.22	19.63	Line	-	9.58	9.65	0.11	9.87			
QP	259.279k	41.34	61.45	-20.11	19.64	Line	-	21.70	9.65	0.12	9.87			
AV	259.279k	32.22	51.45	-19.23	19.64	Line	-	12.58	9.65	0.12	9.87			
QP	475.741k	37.91	56.42	-18.51	19.64	Line	-	18.27	9.64	0.13	9.87			
AV	475.741k	30.33	46.42	-16.09	19.64	Line	"Worst"	10.69	9.64	0.13	9.87			
QP	2.714M	22.38	56.00	-33.62	19.69	Line	-	2.69	9.65	0.17	9.87			
AV	2.714M	17.11	46.00	-28.89	19.69	Line	-	-2.58	9.65	0.17	9.87			
QP	3.845M	28.52	56.00	-27.48	19.73	Line	-	8.79	9.66	0.19	9.88			
AV	3.845M	23.50	46.00	-22.50	19.73	Line	-	3.77	9.66	0.19	9.88			



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	1.056M	1M06F1D	711.25k	1.053M

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;

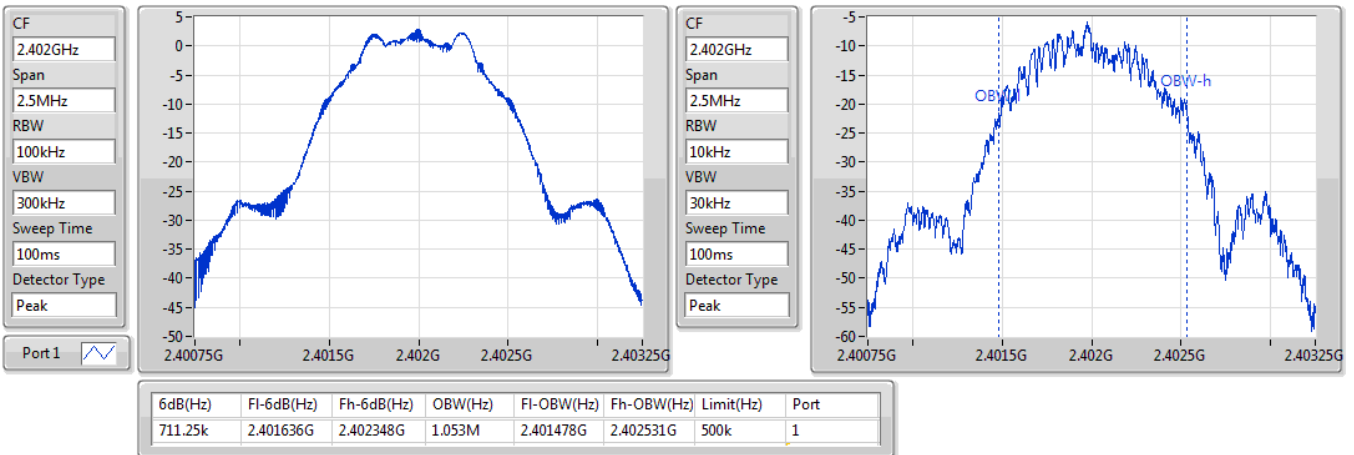
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	711.25k	1.053M
2440MHz	Pass	500k	716.25k	1.054M
2480MHz	Pass	500k	713.75k	1.056M

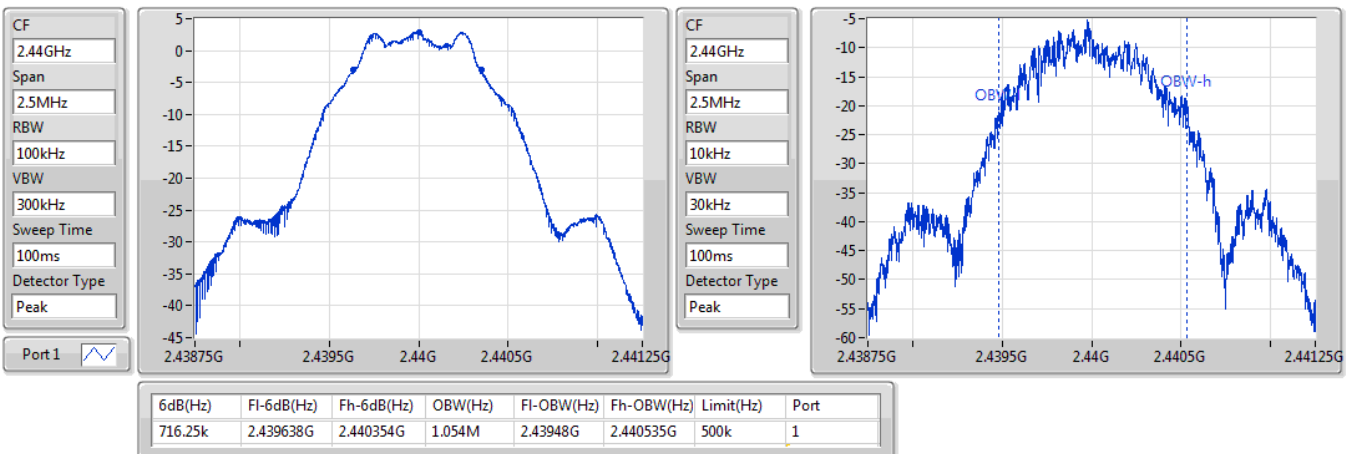
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-LE(1Mbps)
2402MHz

20/03/2020


BT-LE(1Mbps)
2440MHz

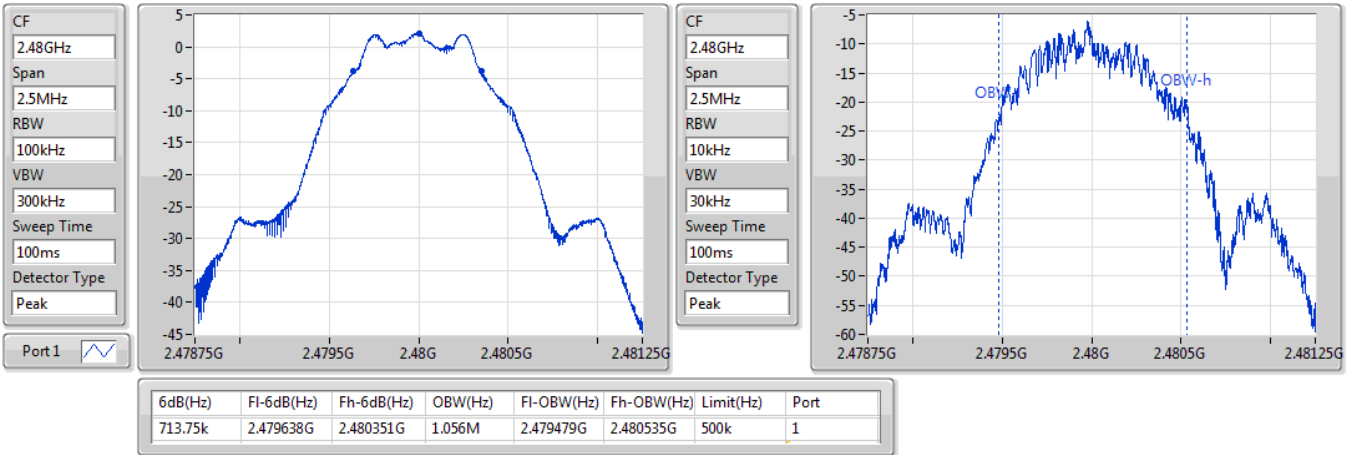
20/03/2020



BT-LE(1Mbps)

2480MHz

20/03/2020





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	3.49	0.00223



Average Power-DTS

Appendix C

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	4.56	2.94	30.00
2440MHz	Pass	4.56	3.49	30.00
2480MHz	Pass	4.56	2.73	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-10.64

RBW=3 kHz.



Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	4.56	-12.15	8.00
2440MHz	Pass	4.56	-10.64	8.00
2480MHz	Pass	4.56	-11.60	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;

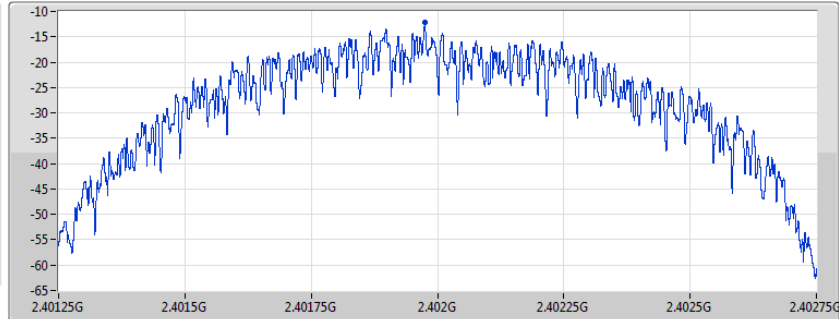
BT-LE(1Mbps)

PSD

2402MHz

20/03/2020

CF
2.402GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
632.18121us
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-12.15	-12.15	-12.15

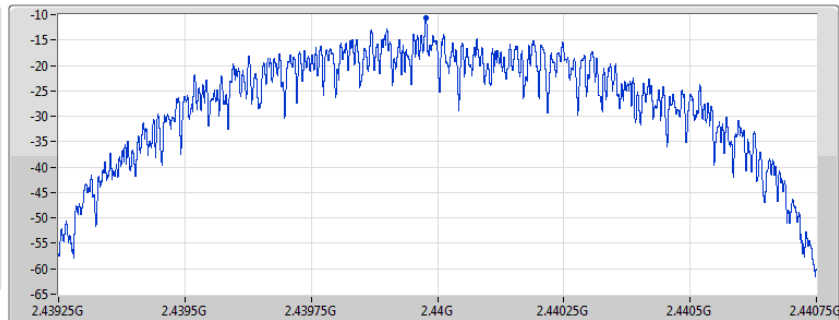
BT-LE(1Mbps)

PSD

2440MHz

20/03/2020

CF
2.44GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
632.18121us
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-10.64	-10.64	-10.64

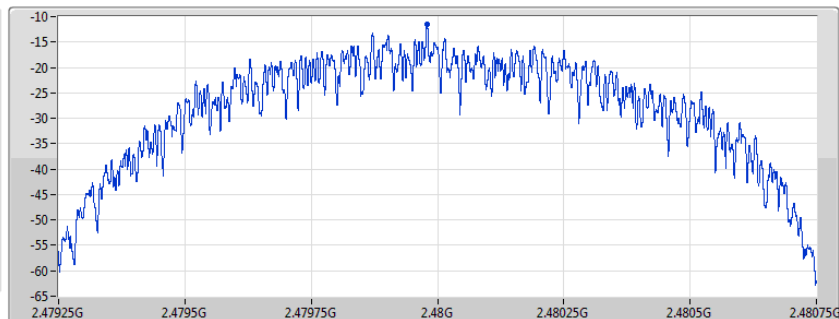
BT-LE(1Mbps)

PSD

2480MHz

20/03/2020

CF
2.48GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
632.18121us
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-11.60	-11.60	-11.60



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)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44G	2.98	-27.02	893.92M	-54.79	2.39854G	-53.20	2.4G	-54.16	2.49705G	-52.11	15.25902G	-41.73	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)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.44G	2.98	-27.02	893.92M	-54.79	2.39854G	-53.20	2.4G	-54.16	2.49705G	-52.11	15.25902G	-41.73	1
2440MHz	Pass	2.44G	2.98	-27.02	2.18877G	-54.88	2.3911G	-53.79	2.4835G	-55.79	2.50242G	-52.43	24.91845G	-41.74	1
2480MHz	Pass	2.44G	2.98	-27.02	2.17408G	-55.46	2.39729G	-54.00	2.4835G	-54.98	2.49639G	-52.96	24.06077G	-41.93	1

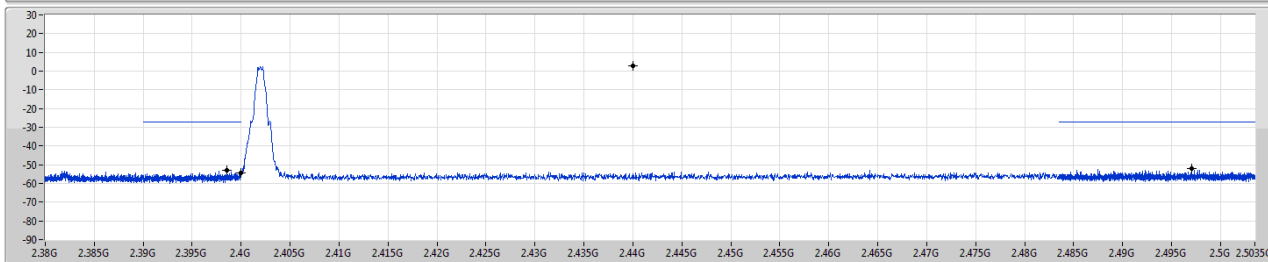
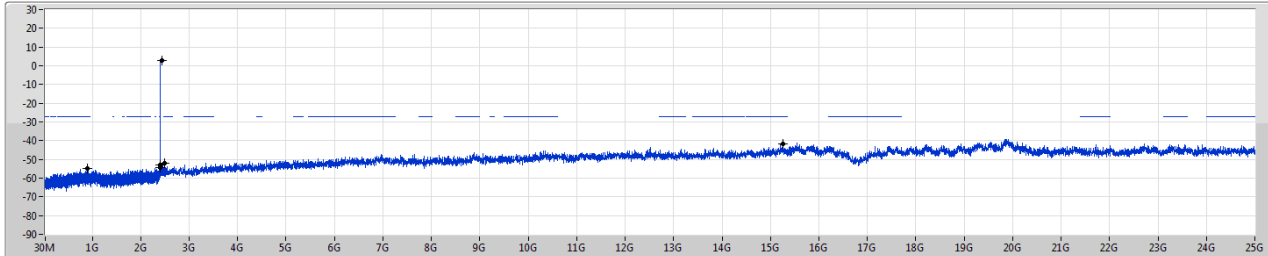
BT-LE(1Mbps)

2402MHz

CSE NdB

20/03/2020

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)	Freq(Hz)	Level(dBm)	Port
2.44G	2.98	-27.02	893.92M	-54.79	2.39854G	-53.20	2.4G	-54.16	2.49705G	-52.11	15.25902G	-41.73	1

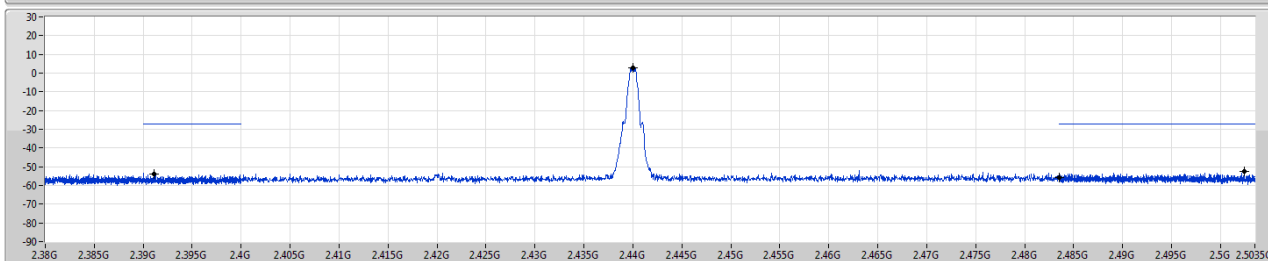
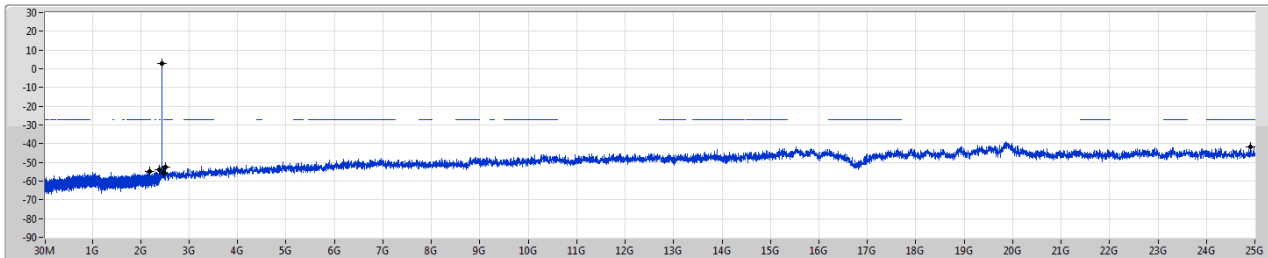
BT-LE(1Mbps)

2440MHz

CSE NdB

20/03/2020

Port1



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

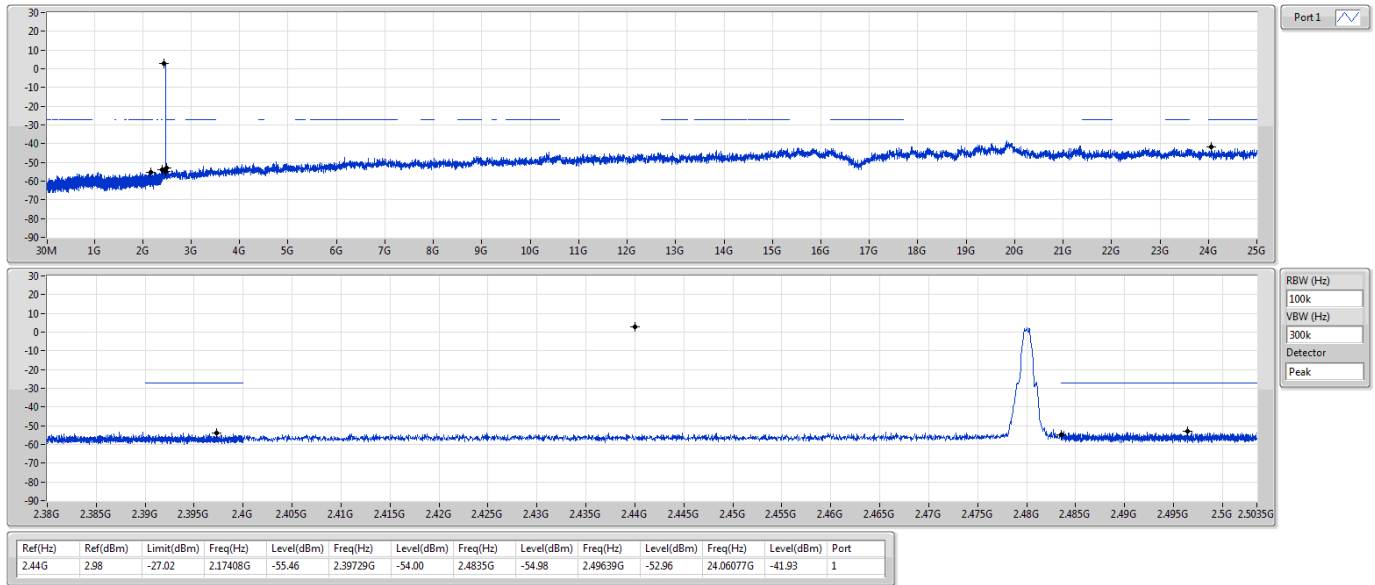
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	2.98	-27.02	2.18877G	-54.88	2.3911G	-53.79	2.4835G	-55.79	2.50242G	-52.43	24.91845G	-41.74	1

BT-LE(1Mbps)

2480MHz

CSE NdB

20/03/2020





Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	QP	297.72M	43.47	46.00	-2.53	3	Horizontal	255	1.00	-

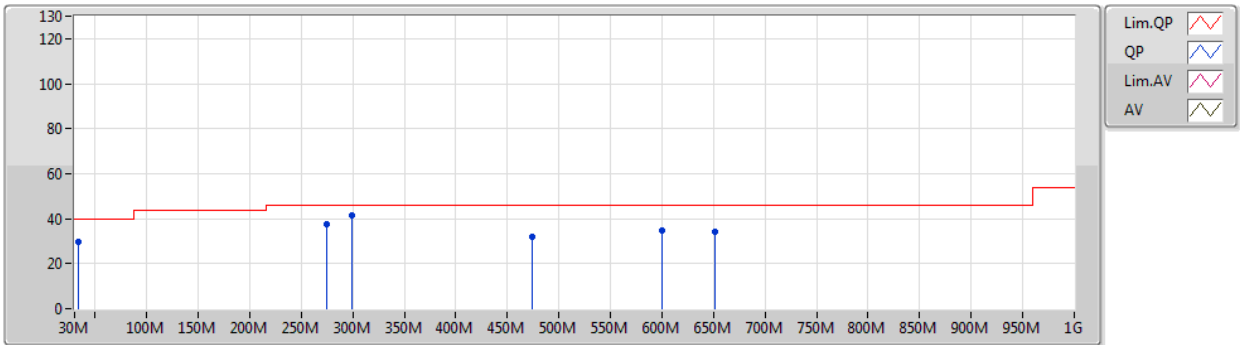
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	33.88M	29.73	40.00	-10.27	3	Vertical	0	1.00	-
2440MHz	Pass	PK	274.44M	37.66	46.00	-8.34	3	Vertical	0	1.00	-
2440MHz	Pass	PK	474.26M	31.70	46.00	-14.30	3	Vertical	0	1.00	-
2440MHz	Pass	PK	600.36M	34.90	46.00	-11.10	3	Vertical	0	1.00	-
2440MHz	Pass	PK	650.8M	34.21	46.00	-11.79	3	Vertical	0	1.00	-
2440MHz	Pass	QP	299.66M	41.38	46.00	-4.62	3	Vertical	278	1.78	-
2440MHz	Pass	PK	111.48M	31.58	43.50	-11.92	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	125.06M	29.26	43.50	-14.24	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	549.92M	32.59	46.00	-13.41	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	650.8M	34.32	46.00	-11.68	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	800.18M	33.39	46.00	-12.61	3	Horizontal	360	1.00	-
2440MHz	Pass	QP	297.72M	43.47	46.00	-2.53	3	Horizontal	255	1.00	-

BT-LE(1Mbps)

2440MHz_Adapter

24/03/2020

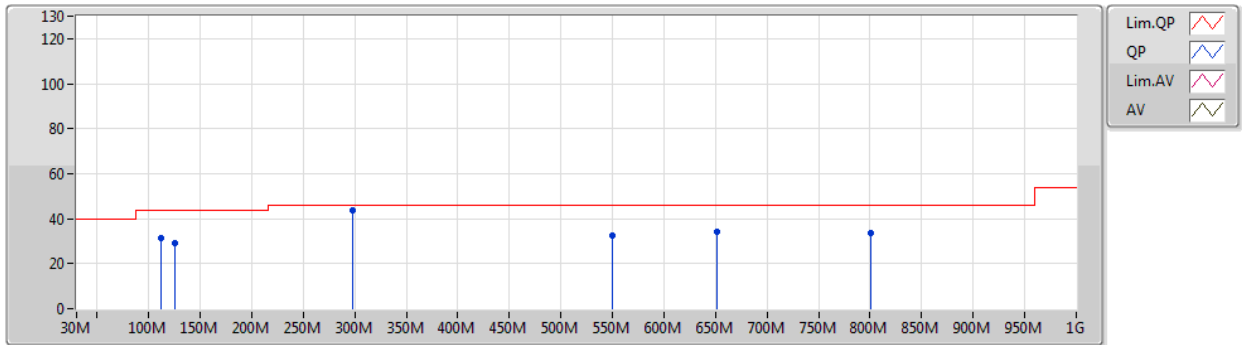


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	29.73	40.00	-10.27	-5.33	3	Vertical	0	1.00	-	35.06	21.37	0.86	27.56
PK	274.44M	37.66	46.00	-8.34	-6.09	3	Vertical	0	1.00	-	43.75	18.02	2.61	26.72
PK	474.26M	31.70	46.00	-14.30	-1.58	3	Vertical	0	1.00	-	33.28	22.68	3.50	27.76
PK	600.36M	34.90	46.00	-11.10	-0.20	3	Vertical	0	1.00	-	35.10	23.77	4.08	28.05
PK	650.8M	34.21	46.00	-11.79	0.19	3	Vertical	0	1.00	-	34.02	24.13	4.18	28.12
QP	299.66M	41.38	46.00	-4.62	-5.54	3	Vertical	278	1.78	-	46.92	18.41	2.75	26.70

BT-LE(1Mbps)

2440MHz_Adapter

24/03/2020



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	111.48M	31.58	43.50	-11.92	-8.70	3	Horizontal	360	1.00	-	40.28	17.03	1.61	27.34
PK	125.06M	29.26	43.50	-14.24	-8.37	3	Horizontal	360	1.00	-	37.63	17.20	1.72	27.29
PK	549.92M	32.59	46.00	-13.41	-0.25	3	Horizontal	360	1.00	-	32.84	24.03	3.77	28.05
PK	650.8M	34.32	46.00	-11.68	0.19	3	Horizontal	360	1.00	-	34.13	24.13	4.18	28.12
PK	800.18M	33.39	46.00	-12.61	1.77	3	Horizontal	360	1.00	-	31.62	24.88	4.75	27.86
QP	297.72M	43.47	46.00	-2.53	-5.61	3	Horizontal	255	1.00	-	49.08	18.35	2.74	26.70

**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	QP	297.72M	43.47	46.00	-2.53	3	Horizontal	255	1.00	-

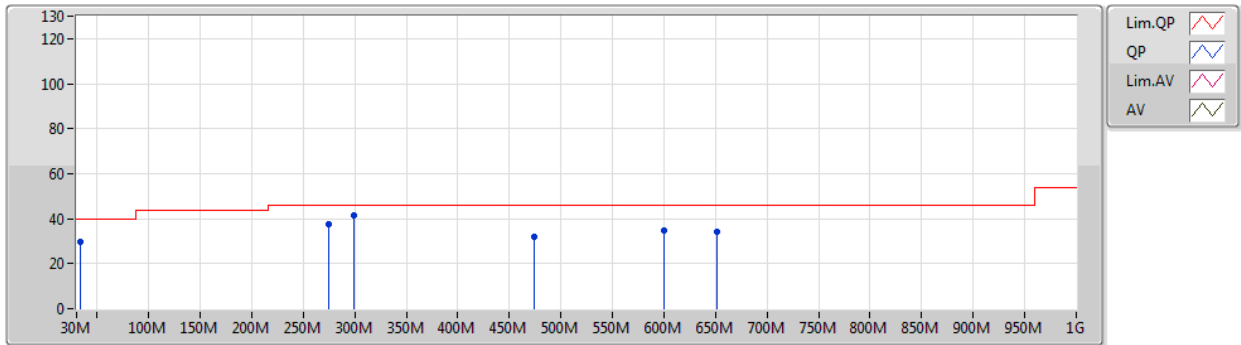
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz_PoE	Pass	PK	33.88M	29.73	40.00	-10.27	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	274.44M	37.66	46.00	-8.34	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	474.26M	31.70	46.00	-14.30	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	600.36M	34.90	46.00	-11.10	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	650.8M	34.21	46.00	-11.79	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	QP	299.66M	41.38	46.00	-4.62	3	Vertical	278	1.78	-
2440MHz_PoE	Pass	PK	111.48M	31.58	43.50	-11.92	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	PK	125.06M	29.26	43.50	-14.24	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	PK	549.92M	32.59	46.00	-13.41	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	PK	650.8M	34.32	46.00	-11.68	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	PK	800.18M	33.39	46.00	-12.61	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	QP	297.72M	43.47	46.00	-2.53	3	Horizontal	255	1.00	-
2440MHz_PoE	Pass	PK	33.88M	33.26	40.00	-6.74	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	113.42M	29.24	43.50	-14.26	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	282.2M	38.11	46.00	-7.89	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	303.54M	40.14	46.00	-5.86	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	474.26M	33.52	46.00	-12.48	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	575.14M	34.20	46.00	-11.80	3	Vertical	0	1.00	-
2440MHz_PoE	Pass	PK	224M	34.23	46.00	-11.77	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	PK	274.44M	37.16	46.00	-8.84	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	PK	295.78M	42.44	46.00	-3.56	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	PK	425.76M	31.32	46.00	-14.68	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	PK	474.26M	32.18	46.00	-13.82	3	Horizontal	360	1.00	-
2440MHz_PoE	Pass	PK	524.7M	35.58	46.00	-10.42	3	Horizontal	360	1.00	-

BT-LE(1Mbps)

2440MHz_Adapter

24/03/2020

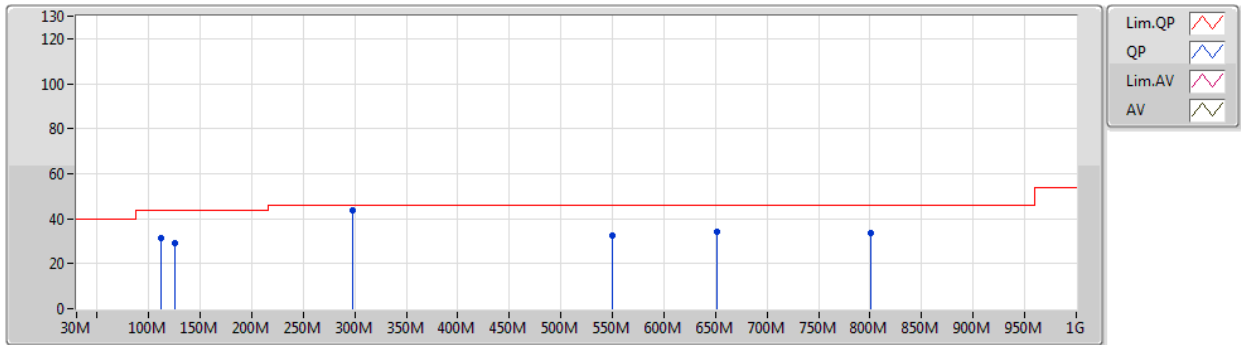


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	29.73	40.00	-10.27	-5.33	3	Vertical	0	1.00	-	35.06	21.37	0.86	27.56
PK	274.44M	37.66	46.00	-8.34	-6.09	3	Vertical	0	1.00	-	43.75	18.02	2.61	26.72
PK	474.26M	31.70	46.00	-14.30	-1.58	3	Vertical	0	1.00	-	33.28	22.68	3.50	27.76
PK	600.36M	34.90	46.00	-11.10	-0.20	3	Vertical	0	1.00	-	35.10	23.77	4.08	28.05
PK	650.8M	34.21	46.00	-11.79	0.19	3	Vertical	0	1.00	-	34.02	24.13	4.18	28.12
QP	299.66M	41.38	46.00	-4.62	-5.54	3	Vertical	278	1.78	-	46.92	18.41	2.75	26.70

BT-LE(1Mbps)

2440MHz_Adapter

24/03/2020

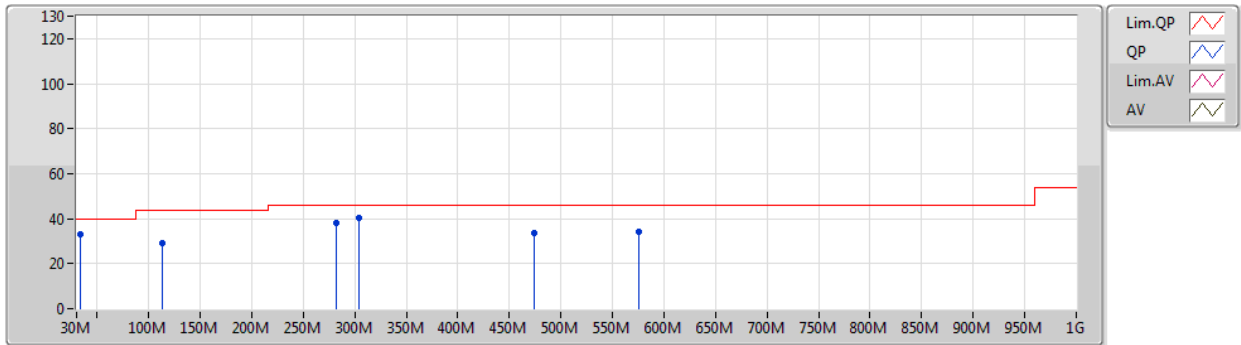


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	111.48M	31.58	43.50	-11.92	-8.70	3	Horizontal	360	1.00	-	40.28	17.03	1.61	27.34
PK	125.06M	29.26	43.50	-14.24	-8.37	3	Horizontal	360	1.00	-	37.63	17.20	1.72	27.29
PK	549.92M	32.59	46.00	-13.41	-0.25	3	Horizontal	360	1.00	-	32.84	24.03	3.77	28.05
PK	650.8M	34.32	46.00	-11.68	0.19	3	Horizontal	360	1.00	-	34.13	24.13	4.18	28.12
PK	800.18M	33.39	46.00	-12.61	1.77	3	Horizontal	360	1.00	-	31.62	24.88	4.75	27.86
QP	297.72M	43.47	46.00	-2.53	-5.61	3	Horizontal	255	1.00	-	49.08	18.35	2.74	26.70

BT-LE(1Mbps)

2440MHz_PoE

16/04/2020

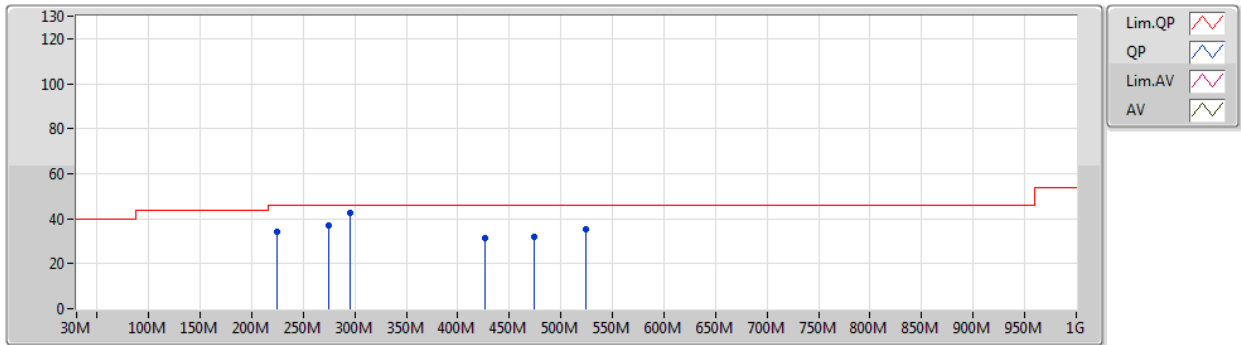


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	33.26	40.00	-6.74	-5.33	3	Vertical	0	1.00	-	38.59	21.37	0.86	27.56
PK	113.42M	29.24	43.50	-14.26	-8.56	3	Vertical	0	1.00	-	37.80	17.14	1.63	27.33
PK	282.2M	38.11	46.00	-7.89	-5.94	3	Vertical	0	1.00	-	44.05	18.13	2.65	26.72
PK	303.54M	40.14	46.00	-5.86	-5.45	3	Vertical	0	1.00	-	45.59	18.51	2.76	26.72
PK	474.26M	33.52	46.00	-12.48	-1.58	3	Vertical	0	1.00	-	35.10	22.68	3.50	27.76
PK	575.14M	34.20	46.00	-11.80	-0.02	3	Vertical	0	1.00	-	34.22	24.10	3.93	28.05

BT-LE(1Mbps)

2440MHz_PoE

16/04/2020



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	224M	34.23	46.00	-11.77	-9.82	3	Horizontal	360	1.00	-	44.05	14.68	2.34	26.84
PK	274.44M	37.16	46.00	-8.84	-6.09	3	Horizontal	360	1.00	-	43.25	18.02	2.61	26.72
PK	295.78M	42.44	46.00	-3.56	-5.69	3	Horizontal	360	1.00	-	48.13	18.28	2.73	26.70
PK	425.76M	31.32	46.00	-14.68	-2.41	3	Horizontal	360	1.00	-	33.73	21.80	3.29	27.50
PK	474.26M	32.18	46.00	-13.82	-1.58	3	Horizontal	360	1.00	-	33.76	22.68	3.50	27.76
PK	524.7M	35.58	46.00	-10.42	-1.45	3	Horizontal	360	1.00	-	37.03	22.79	3.69	27.93



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	7.3308G	52.06	54.00	-1.94	3	Vertical	223	2.39	-

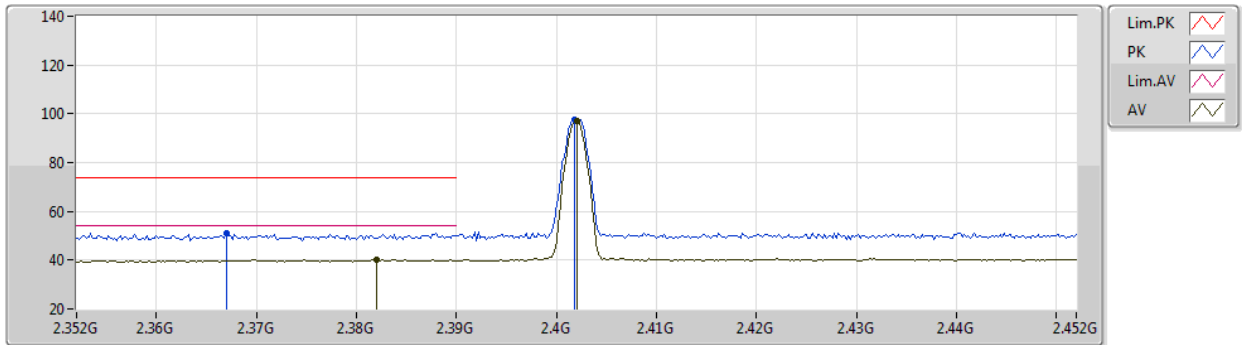
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.382G	40.21	54.00	-13.79	3	Vertical	360	1.75	-
2402MHz	Pass	AV	2.402G	96.82	Inf	-Inf	3	Vertical	360	1.75	-
2402MHz	Pass	PK	2.367G	51.16	74.00	-22.84	3	Vertical	360	1.75	-
2402MHz	Pass	PK	2.4018G	97.73	Inf	-Inf	3	Vertical	360	1.75	-
2402MHz	Pass	AV	2.3846G	40.02	54.00	-13.98	3	Horizontal	162	2.44	-
2402MHz	Pass	AV	2.402G	93.14	Inf	-Inf	3	Horizontal	162	2.44	-
2402MHz	Pass	PK	2.3872G	51.16	74.00	-22.84	3	Horizontal	162	2.44	-
2402MHz	Pass	PK	2.4022G	94.06	Inf	-Inf	3	Horizontal	162	2.44	-
2402MHz	Pass	AV	4.79242G	35.97	54.00	-18.03	3	Vertical	89	1.50	-
2402MHz	Pass	PK	4.7992G	47.01	74.00	-26.99	3	Vertical	89	1.50	-
2402MHz	Pass	AV	4.81336G	36.05	54.00	-17.95	3	Horizontal	131	1.94	-
2402MHz	Pass	PK	4.8016G	47.03	74.00	-26.97	3	Horizontal	131	1.94	-
2440MHz	Pass	AV	2.3688G	40.01	54.00	-13.99	3	Vertical	353	1.98	-
2440MHz	Pass	AV	2.44G	98.20	Inf	-Inf	3	Vertical	353	1.98	-
2440MHz	Pass	AV	2.498G	40.72	54.00	-13.28	3	Vertical	353	1.98	-
2440MHz	Pass	PK	2.3492G	50.70	74.00	-23.30	3	Vertical	353	1.98	-
2440MHz	Pass	PK	2.4396G	99.46	Inf	-Inf	3	Vertical	353	1.98	-
2440MHz	Pass	PK	2.5G	51.43	74.00	-22.57	3	Vertical	353	1.98	-
2440MHz	Pass	AV	2.3884G	40.04	54.00	-13.96	3	Horizontal	217	1.01	-
2440MHz	Pass	AV	2.44G	95.18	Inf	-Inf	3	Horizontal	217	1.01	-
2440MHz	Pass	AV	2.4968G	40.55	54.00	-13.45	3	Horizontal	217	1.01	-
2440MHz	Pass	PK	2.3804G	50.67	74.00	-23.33	3	Horizontal	217	1.01	-
2440MHz	Pass	PK	2.4396G	96.30	Inf	-Inf	3	Horizontal	217	1.01	-
2440MHz	Pass	PK	2.4988G	51.27	74.00	-22.73	3	Horizontal	217	1.01	-
2440MHz	Pass	AV	7.3308G	52.06	54.00	-1.94	3	Vertical	223	2.39	-
2440MHz	Pass	PK	7.31364G	63.22	74.00	-10.78	3	Vertical	223	2.39	-
2440MHz	Pass	AV	4.89122G	36.27	54.00	-17.73	3	Horizontal	355	2.14	-
2440MHz	Pass	PK	4.89266G	48.16	74.00	-25.84	3	Horizontal	355	2.14	-
2480MHz	Pass	AV	2.48G	97.86	Inf	-Inf	3	Vertical	350	1.95	-
2480MHz	Pass	AV	2.4996G	40.66	54.00	-13.34	3	Vertical	350	1.95	-
2480MHz	Pass	PK	2.4798G	98.80	Inf	-Inf	3	Vertical	350	1.95	-
2480MHz	Pass	PK	2.4868G	51.73	74.00	-22.27	3	Vertical	350	1.95	-
2480MHz	Pass	AV	2.48G	94.80	Inf	-Inf	3	Horizontal	217	1.50	-
2480MHz	Pass	AV	2.4924G	40.67	54.00	-13.33	3	Horizontal	217	1.50	-
2480MHz	Pass	PK	2.4798G	95.75	Inf	-Inf	3	Horizontal	217	1.50	-
2480MHz	Pass	PK	2.4948G	51.19	74.00	-22.81	3	Horizontal	217	1.50	-
2480MHz	Pass	AV	4.96456G	36.90	54.00	-17.10	3	Vertical	247	2.22	-
2480MHz	Pass	PK	4.97272G	48.63	74.00	-25.37	3	Vertical	247	2.22	-
2480MHz	Pass	AV	7.44162G	41.36	54.00	-12.64	3	Horizontal	117	1.24	-
2480MHz	Pass	PK	7.4523G	52.18	74.00	-21.82	3	Horizontal	117	1.24	-

BT-LE(1Mbps)

2402MHz_TX

24/03/2020

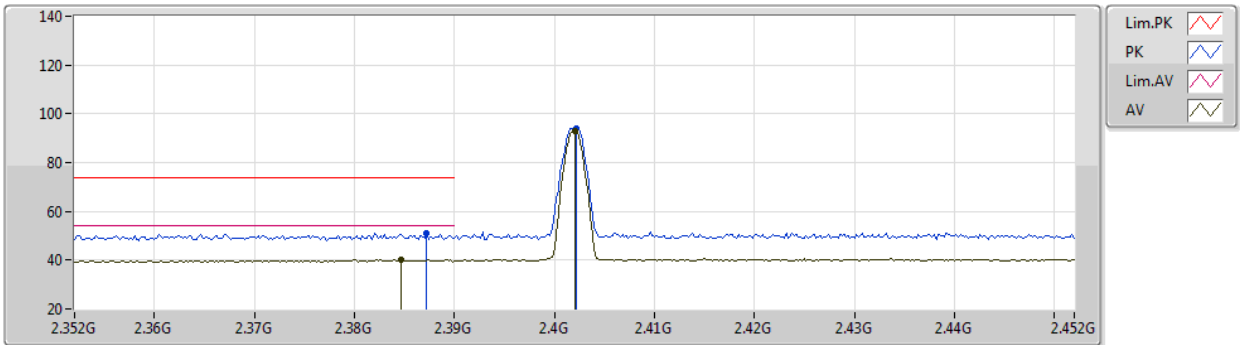


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.382G	40.21	54.00	-13.79	3.28	3	Vertical	360	1.75	-	36.93	29.52	3.99	30.23
AV	2.402G	96.82	Inf	-Inf	3.49	3	Vertical	360	1.75	-	93.33	29.70	4.01	30.22
PK	2.367G	51.16	74.00	-22.84	3.10	3	Vertical	360	1.75	-	48.06	29.37	3.97	30.24
PK	2.4018G	97.73	Inf	-Inf	3.49	3	Vertical	360	1.75	-	94.24	29.70	4.01	30.22

BT-LE(1Mbps)

2402MHz_TX

24/03/2020

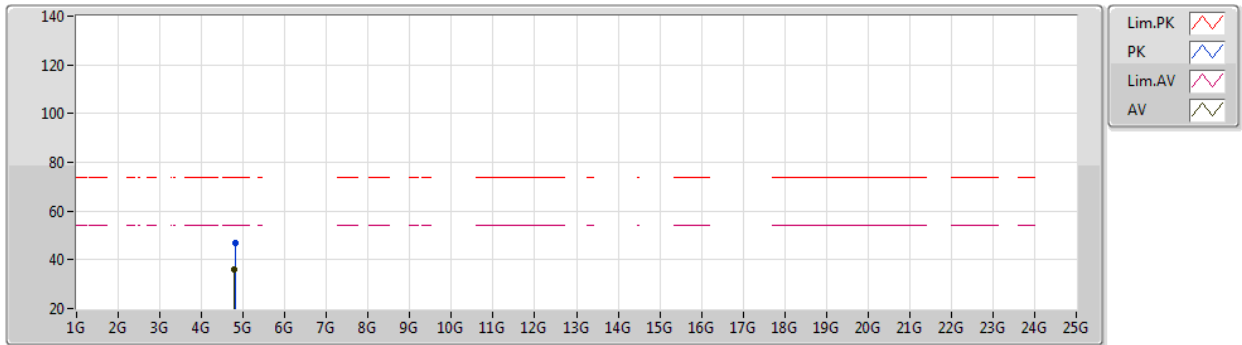


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3846G	40.02	54.00	-13.98	3.31	3	Horizontal	162	2.44	-	36.71	29.55	3.99	30.23
AV	2.402G	93.14	Inf	-Inf	3.49	3	Horizontal	162	2.44	-	89.65	29.70	4.01	30.22
PK	2.3872G	51.16	74.00	-22.84	3.33	3	Horizontal	162	2.44	-	47.83	29.57	3.99	30.23
PK	2.4022G	94.06	Inf	-Inf	3.49	3	Horizontal	162	2.44	-	90.57	29.70	4.01	30.22

BT-LE(1Mbps)

2402MHz_TX

24/03/2020

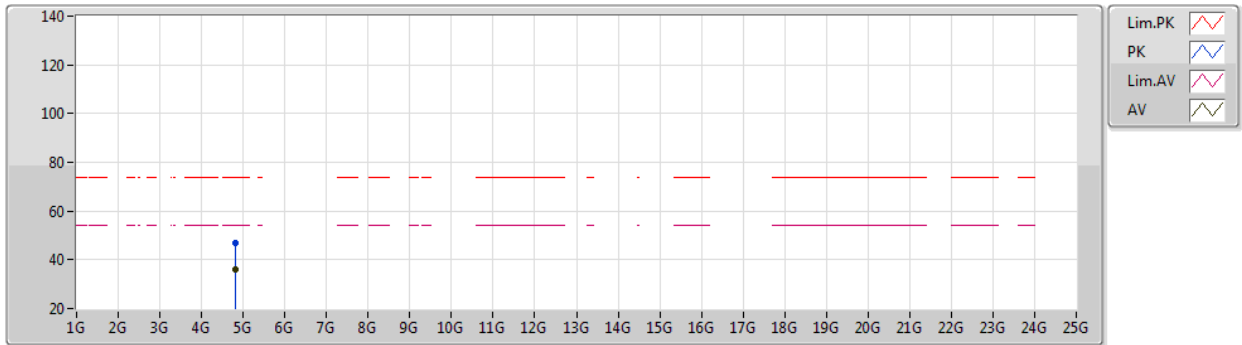


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.79242G	35.97	54.00	-18.03	9.92	3	Vertical	89	1.50	-	26.05	33.57	5.77	29.42
PK	4.7992G	47.01	74.00	-26.99	9.97	3	Vertical	89	1.50	-	37.04	33.60	5.78	29.41

BT-LE(1Mbps)

24/03/2020

2402MHz_TX

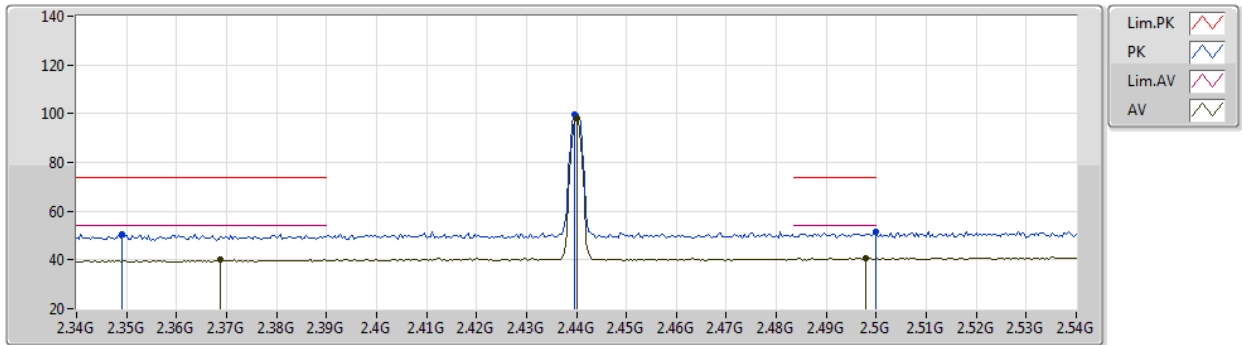


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.81336G	36.05	54.00	-17.95	10.01	3	Horizontal	131	1.94	-	26.04	33.63	5.79	29.41
PK	4.8016G	47.03	74.00	-26.97	9.97	3	Horizontal	131	1.94	-	37.06	33.60	5.78	29.41

BT-LE(1Mbps)

2440MHz_TX

24/03/2020

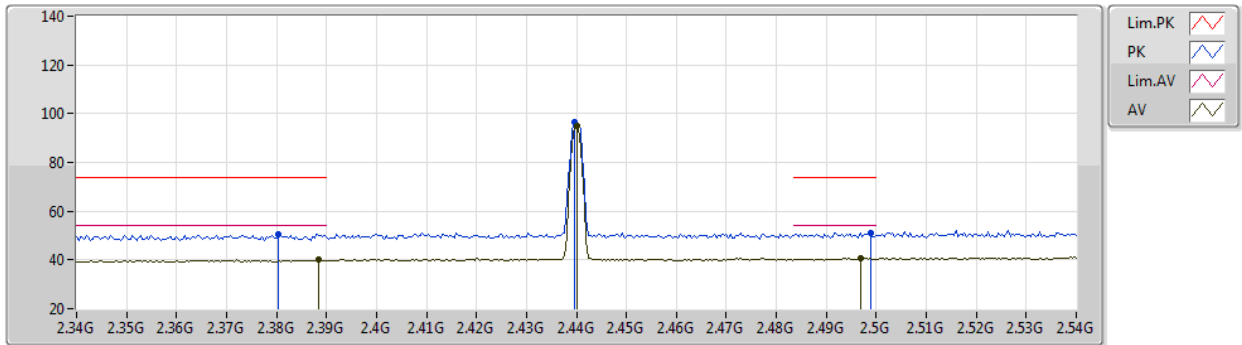


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3688G	40.01	54.00	-13.99	3.13	3	Vertical	353	1.98	-	36.88	29.39	3.98	30.24
AV	2.44G	98.20	Inf	-Inf	3.62	3	Vertical	353	1.98	-	94.58	29.78	4.04	30.20
AV	2.498G	40.72	54.00	-13.28	4.11	3	Vertical	353	1.98	-	36.61	30.18	4.10	30.17
PK	2.3492G	50.70	74.00	-23.30	2.91	3	Vertical	353	1.98	-	47.79	29.20	3.96	30.25
PK	2.4396G	99.46	Inf	-Inf	3.62	3	Vertical	353	1.98	-	95.84	29.78	4.04	30.20
PK	2.5G	51.43	74.00	-22.57	4.13	3	Vertical	353	1.98	-	47.30	30.20	4.10	30.17

BT-LE(1Mbps)

2440MHz_TX

24/03/2020

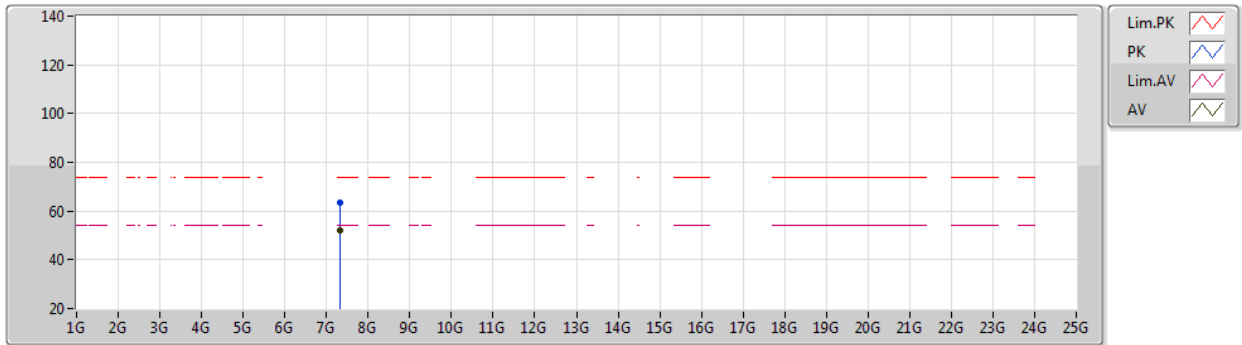


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3884G	40.04	54.00	-13.96	3.35	3	Horizontal	217	1.01	-	36.69	29.58	4.00	30.23
AV	2.44G	95.18	Inf	-Inf	3.62	3	Horizontal	217	1.01	-	91.56	29.78	4.04	30.20
AV	2.4968G	40.55	54.00	-13.45	4.10	3	Horizontal	217	1.01	-	36.45	30.17	4.10	30.17
PK	2.3804G	50.67	74.00	-23.33	3.26	3	Horizontal	217	1.01	-	47.41	29.50	3.99	30.23
PK	2.4396G	96.30	Inf	-Inf	3.62	3	Horizontal	217	1.01	-	92.68	29.78	4.04	30.20
PK	2.4988G	51.27	74.00	-22.73	4.12	3	Horizontal	217	1.01	-	47.15	30.19	4.10	30.17

BT-LE(1Mbps)

2440MHz_TX

24/03/2020

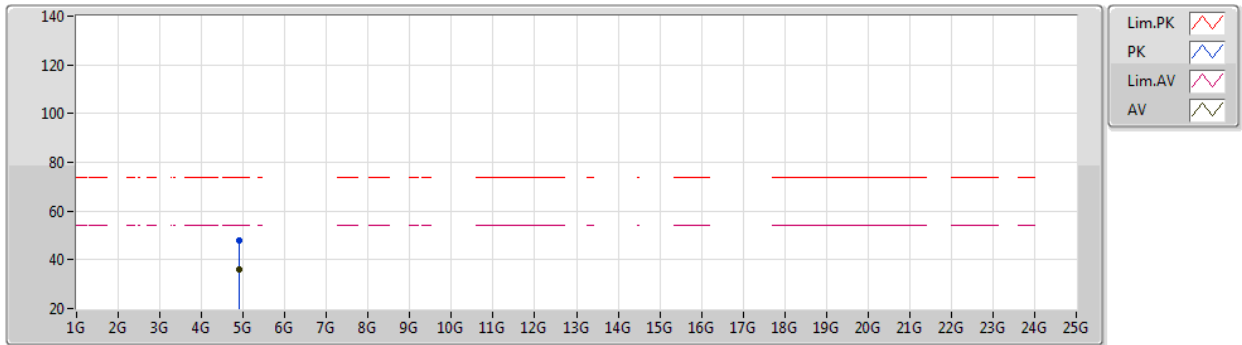


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	7.3308G	52.06	54.00	-1.94	16.03	3	Vertical	223	2.39	-	36.03	38.96	7.44	30.37
PK	7.31364G	63.22	74.00	-10.78	16.04	3	Vertical	223	2.39	-	47.18	38.93	7.47	30.36

BT-LE(1Mbps)

2440MHz_TX

24/03/2020

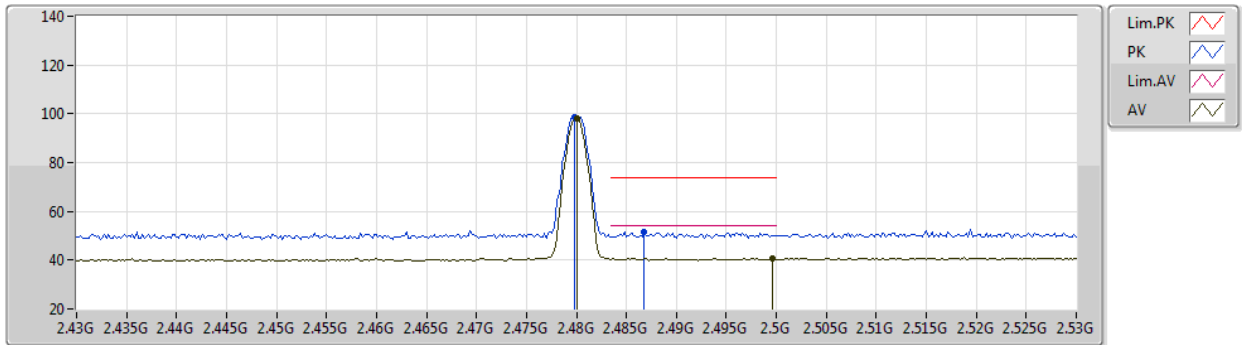


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.89122G	36.27	54.00	-17.73	10.25	3	Horizontal	355	2.14	-	26.02	33.78	5.84	29.37
PK	4.89266G	48.16	74.00	-25.84	10.26	3	Horizontal	355	2.14	-	37.90	33.79	5.84	29.37

BT-LE(1Mbps)

2480MHz_TX

24/03/2020

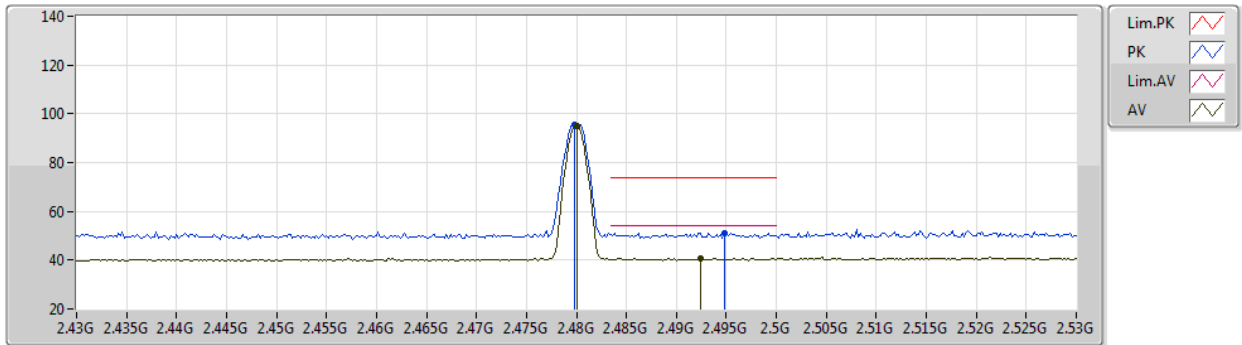


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	97.86	Inf	-Inf	3.94	3	Vertical	350	1.95	-	93.92	30.04	4.08	30.18
AV	2.4996G	40.66	54.00	-13.34	4.13	3	Vertical	350	1.95	-	36.53	30.20	4.10	30.17
PK	2.4798G	98.80	Inf	-Inf	3.94	3	Vertical	350	1.95	-	94.86	30.04	4.08	30.18
PK	2.4868G	51.73	74.00	-22.27	4.00	3	Vertical	350	1.95	-	47.73	30.09	4.09	30.18

BT-LE(1Mbps)

2480MHz_TX

24/03/2020

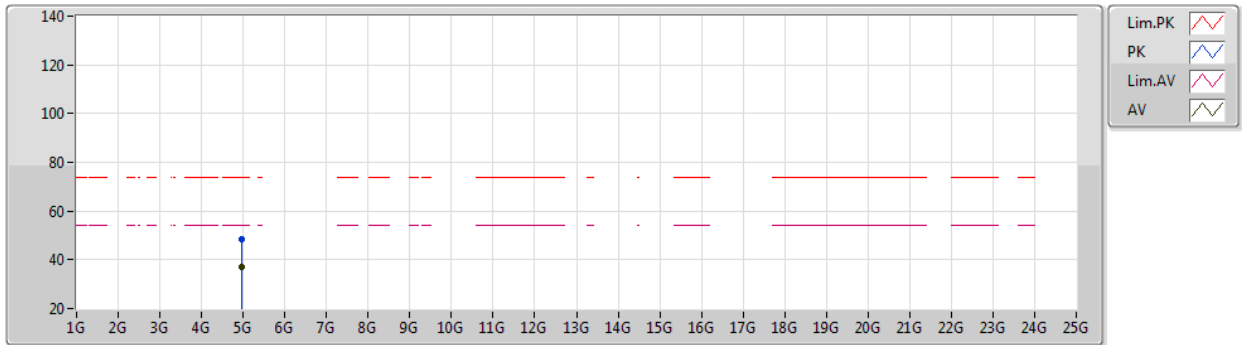


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	94.80	Inf	-Inf	3.94	3	Horizontal	217	1.50	-	90.86	30.04	4.08	30.18
AV	2.4924G	40.67	54.00	-13.33	4.06	3	Horizontal	217	1.50	-	36.61	30.14	4.09	30.17
PK	2.4798G	95.75	Inf	-Inf	3.94	3	Horizontal	217	1.50	-	91.81	30.04	4.08	30.18
PK	2.4948G	51.19	74.00	-22.81	4.09	3	Horizontal	217	1.50	-	47.10	30.16	4.10	30.17

BT-LE(1Mbps)

2480MHz_TX

24/03/2020

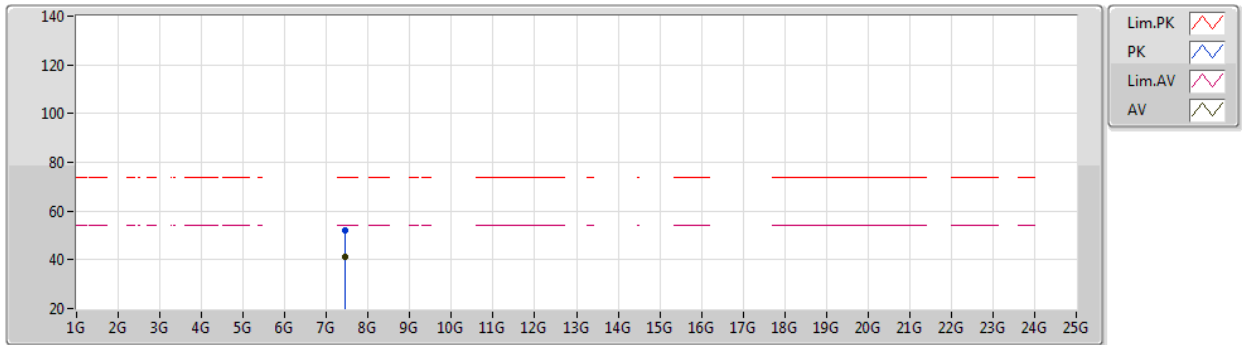


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96456G	36.90	54.00	-17.10	10.48	3	Vertical	247	2.22	-	26.42	33.93	5.89	29.34
PK	4.97272G	48.63	74.00	-25.37	10.52	3	Vertical	247	2.22	-	38.11	33.95	5.90	29.33

BT-LE(1Mbps)

2480MHz_TX

24/03/2020



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	7.44162G	41.36	54.00	-12.64	15.67	3	Horizontal	117	1.24	-	25.69	38.90	7.24	30.47
PK	7.4523G	52.18	74.00	-21.82	15.65	3	Horizontal	117	1.24	-	36.53	38.91	7.22	30.48