

FCC Radio Test Report

FCC ID : R3UDSWD6
Equipment : Wireless Charger
Brand Name : EPOS
Model Name : DSWD6
Applicant : DSEA A/S
Kongebakken 9, DK-2765 Smørum, Denmark
Manufacturer : DSEA A/S
Kongebakken 9, DK-2765 Smørum, Denmark
Standard : 47 CFR FCC Part 15, Subpart C

The product was received on Feb. 14, 2023, and testing was started from Mar. 15, 2023 and completed on Mar. 20, 2023. We, SPORTON INTERNATIONAL INC. Hsinhua 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 test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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History of this test report

[illegible]



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.209	Transmitter Radiated Emissions	PASS	-
3.3	15.215(c)	Emission Bandwidth	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: Ben Tseng

Report Producer: Ann Hou

1 General Description

1.1 Information

1.1.1 General Information

Wireless Power Transfer General Information			
Frequency Range	Modulation	Operating Freq. (kHz)	Field Strength (dBuV/m)
112-148.5 kHz	ASK	143.52	48.76
Power Transfer Method	Output power from each primary coil	That may have multiple primary coils	Operating Method
Magnetic induction and only single primary coil	≤ 15W	No	Client directly contact
Note 1: Field strength performed peak level at 3m.			

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	INJONIC Technology	IP6808UA	Coil	N/A

1.1.3 EUT Information

Operational Condition	
EUT Power Type	From AC Adapter / Host system
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 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle	
☒	Operated normally mode for worst duty cycle
☐	Operated test mode for worst duty cycle
Test Signal Duty Cycle (x)	
☒	100%

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

The following reference test guidance is not within the scope of accreditation of TAF:

- ♦ KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01
- ♦ KDB 414788 D01 v01r01

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		FAX: 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Wayne Chiu	22.1~22.8°C / 52.6~54.5%	15/Mar/2023~16/Mar/2023
RF Conducted	TH07-HY	Xie Xun	23.5~24.6°C / 52~54%	16/Mar/2023
Radiated (9k-30M)	03CH03-HY	TaiKun Lee	22.2~23.1°C / 49~52%	17/Mar/2023~18/Mar/2023
Radiated (30M-1G)	03CH24-HY	Edward Wang	22.4~23.4°C / 49~52%	18/Mar/2023~20/Mar/2023
☐ Wen 33rd. St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787		FAX: 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				

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
AC Power-line Conducted Emissions	4.53 dB	Confidence levels of 95%
Transmitter Radiated Emissions	4.8 dB	Confidence levels of 95%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	2.30 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Test Software Version	N/A
------------------------------	-----

Note: The EUT transmits RF signal continuously by itself.

Mode	Power Setting
WPC	default

2.2 The Worst Case Configuration

Mode	Field Strength (dBuV/m at 3 m)	Charger Frequencies (kHz)
WPC	48.76	143.52

Note.1: Wireless charger were performed all charging conditions including variable loading and non-charging operation, the worst mode is full charging loading.

Note.2: Wireless charger frequencies are variable frequency range (112-148.5 kHz) and depend on charging loading.

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 Test Voltage: 120Vac / 60Hz
Operating Mode	CTX
	1. Adapter mode
	2. USB mode

The Worst Case Mode for Following Conformance Tests			
Tests Item	Transmitter Radiated Emissions, Emission Bandwidth		
Test Condition	Radiated measurement		
Operating Mode	CTX		
	1. Adapter mode		
	2. USB mode		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT		V	

2.4 Support Equipment

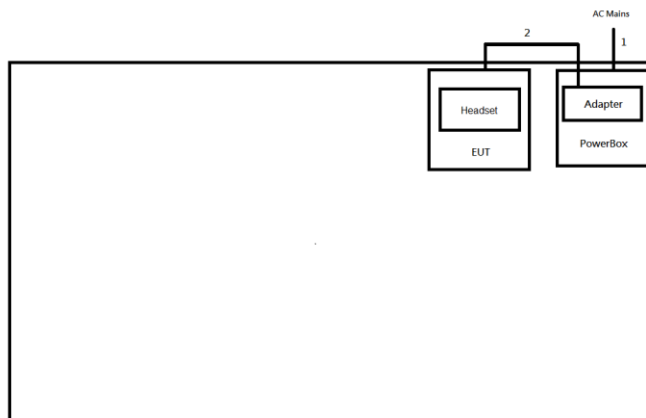
Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	AC Power Cable	PowerSync	TPCMRN0018	-	-
2	Notebook	HP	HSTNN-142C	-	-
3	Adapter for NB	HP	HSTNN-CA40	-	-
4	Adapter	Apple	A1718	-	-
5	Headset	EPOS	DSBT2	-	-

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Adapter	Apple	A1718	-	-
2	Headset	EPOS	DSBT2	-	-

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	AC Power Cable	PowerSync	TPCMRN0018	-	-
2	Notebook	HP	HSTNN-142C	-	-
3	Adapter for NB	HP	HSTNN-CA40	-	-
4	Adapter	Apple	A1718	-	-
5	Headset	EPOS	DSBT2	-	-

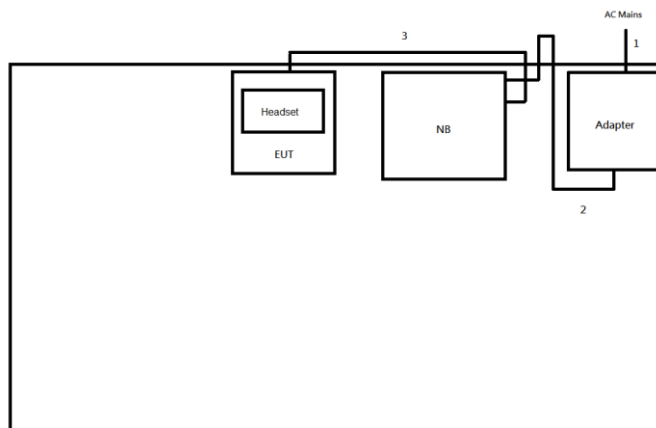
2.5 Test Setup Diagram

Test Setup Diagram - AC Line Conducted Emission Test (Adapter mode)

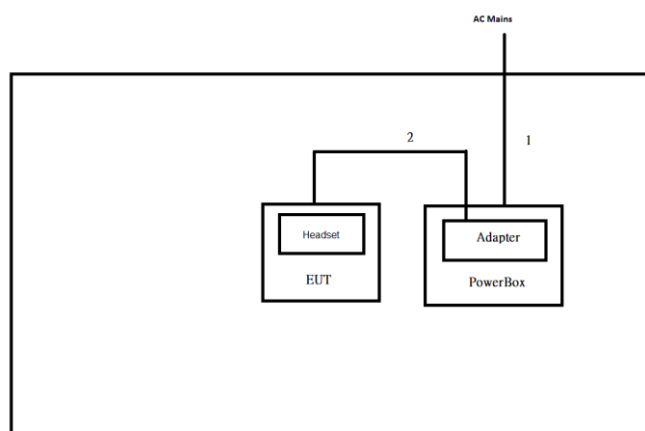


Item	Connection	Shielded	Length (m)
1	AC Power cable	No	1.8
2	USB cable	No	1.2

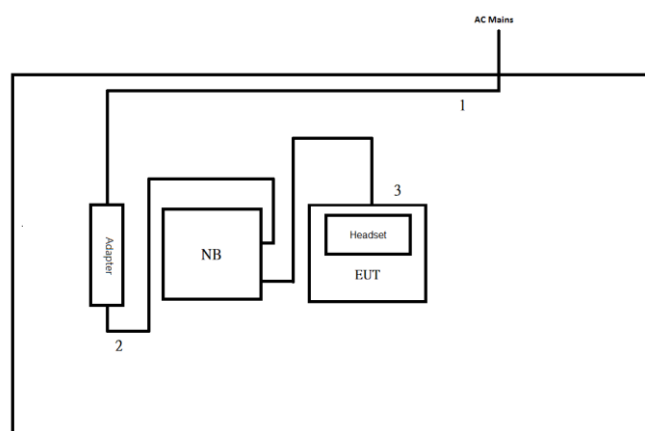
Test Setup Diagram - AC Line Conducted Emission Test (USB mode)



Item	Connection	Shielded	Length (m)
1	AC Power cable	No	1.5
2	DC Power cable	No	1.8
3	USB cable	No	1.2

Test Setup Diagram - Radiated Test (Adapter mode)


Item	Connection	Shielded	Length (m)
1	AC Power cable	No	1.8
2	USB cable	No	1.2

Test Setup Diagram - Radiated Test (USB mode)


Item	Connection	Shielded	Length (m)
1	AC Power cable	No	1.5
2	DC Power cable	No	1.8
3	USB cable	No	1.2

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

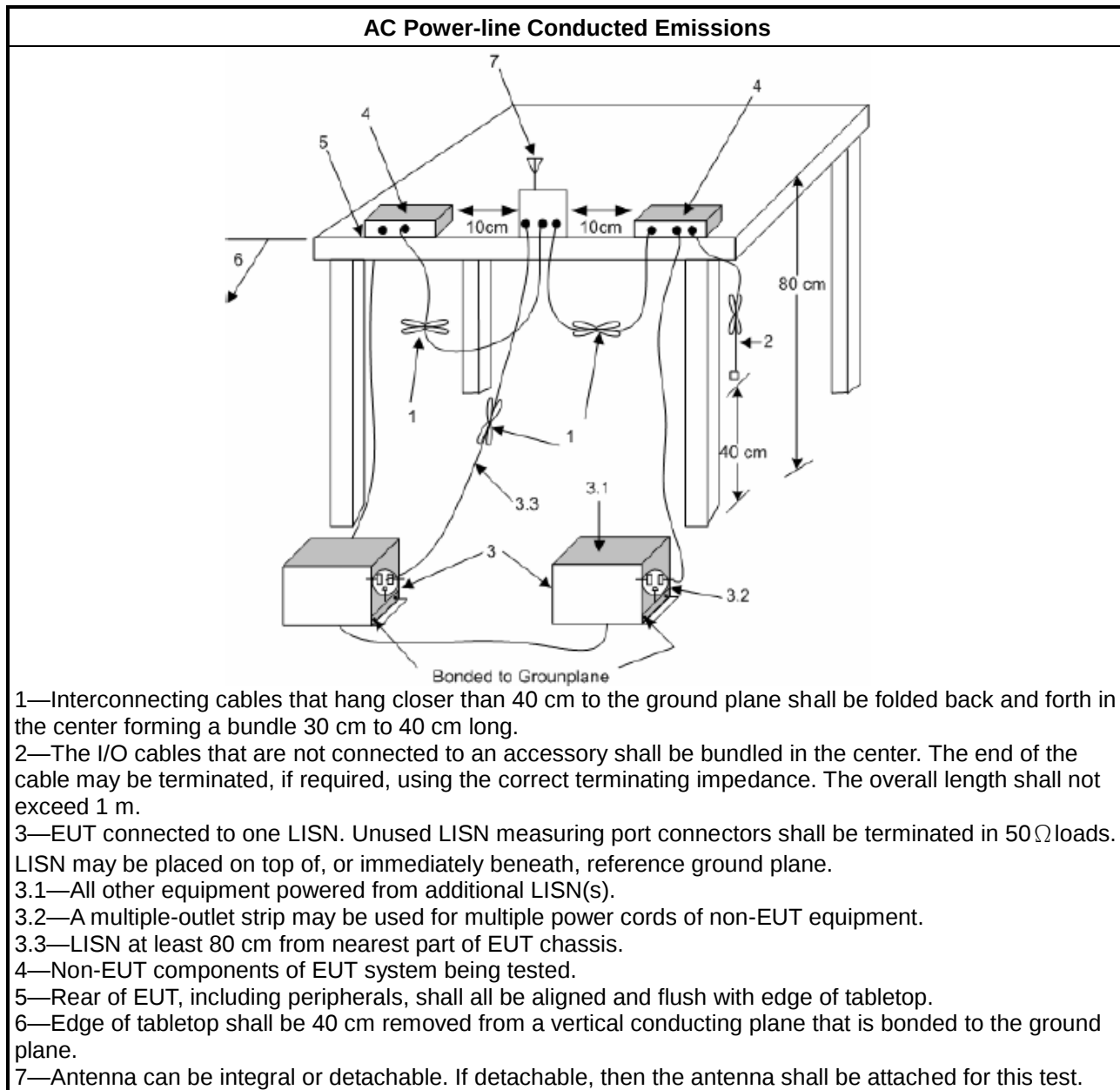
Test Method	
☒	Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.
☒	If AC conducted emissions fall in operating band, then following below test method confirm final result.
☐	Accept measurements done with a suitable dummy load replacing the antenna under the following conditions: (1) Perform the AC line conducted tests with the antenna connected to determine compliance with FCC 15.207 limits outside the transmitter's fundamental emission band; (2) Retest with a dummy load to determine compliance with FCC 15.207 limits within the transmitter's fundamental emission band.
☒	For a device with a permanent antenna operating at or below 30 MHz, accept measurements done with a suitable dummy load, in lieu of the permanent antenna under the following conditions: (1) Perform the AC line conducted tests with the permanent antenna to determine compliance with the FCC 15.207 limits outside the transmitter's fundamental emission band; (2) Retest with a dummy load in lieu of the permanent antenna to determine compliance with the FCC 15.207 limits within the transmitter's fundamental emission band.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Transmitter Radiated Emissions

3.2.1 Transmitter Radiated Emissions Limit

Transmitter Radiated 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: the frequency bands 9-90 kHz, 110-490 kHz measurements employing an average detector and other below 1GHz measurements employing a CISPR quasi-peak detector.

3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

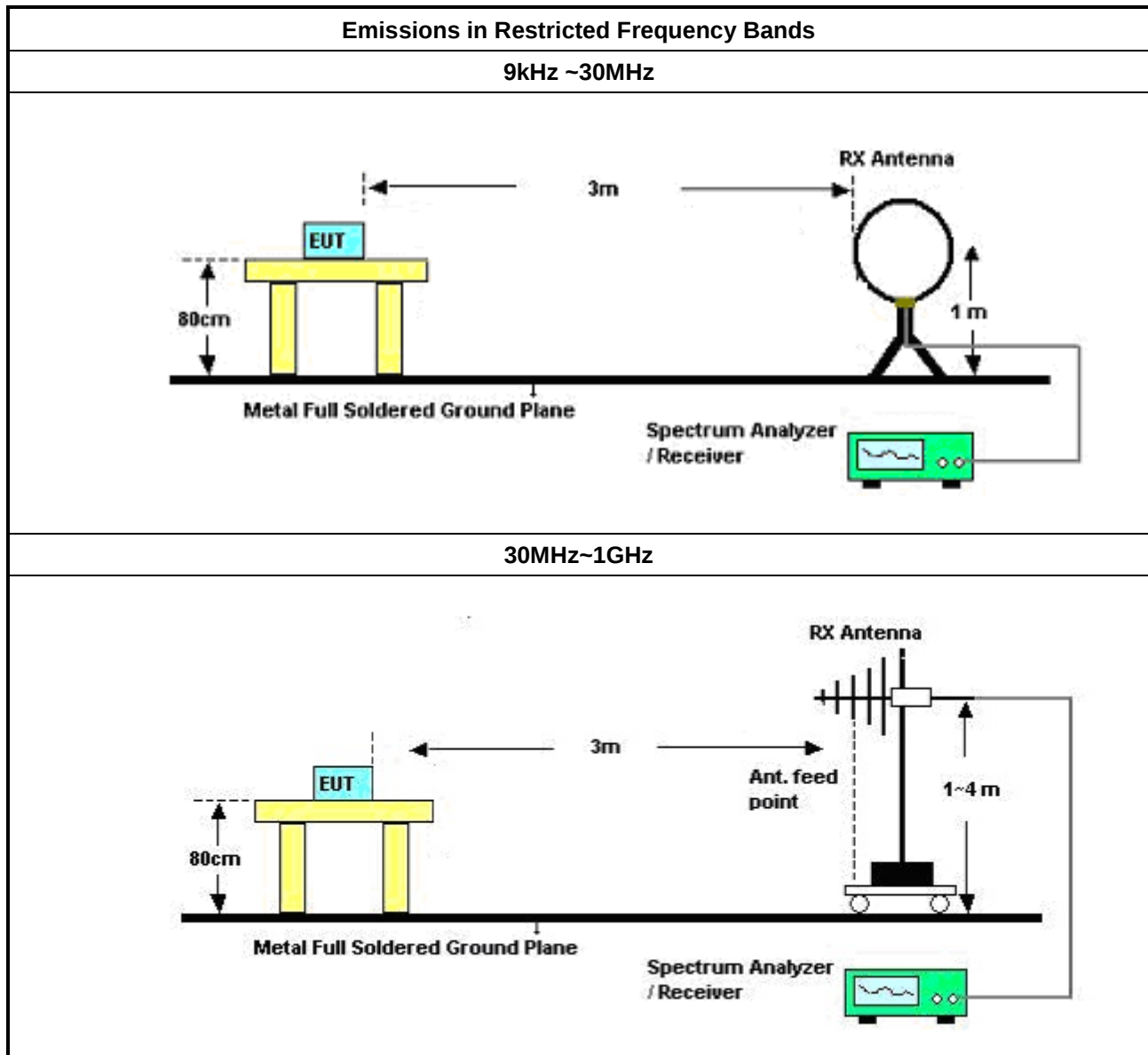
Test Method	
☒	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1 GHz and test distance is 3m.
☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz the frequency bands 9-90 kHz, 110-490 kHz measurements employing an average detector and other below 30MHz measurements employing a CISPR quasi-peak detector. Test distance is 3 m.
☒	At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the requirements; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be following below methods.
☐	The results shall be extrapolated to the specified distance by making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.
☒	The results shall be by using the square of an inverse linear distance extrapolation factor (40 dB/decade).
☒	For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.
☒	The any unwanted emissions level shall not exceed the fundamental emission level.
☒	All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.
☒	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.

3.2.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

3.2.5 Test Setup



3.2.6 Transmitter Radiated Emissions (Below 30MHz)

Refer as Appendix B

3.2.7 Transmitter Radiated Emissions (Above 30MHz)

Refer as Appendix B

3.3 Emission Bandwidth

3.3.1 Emission Bandwidth Limit

Emission Bandwidth Limit
N/A

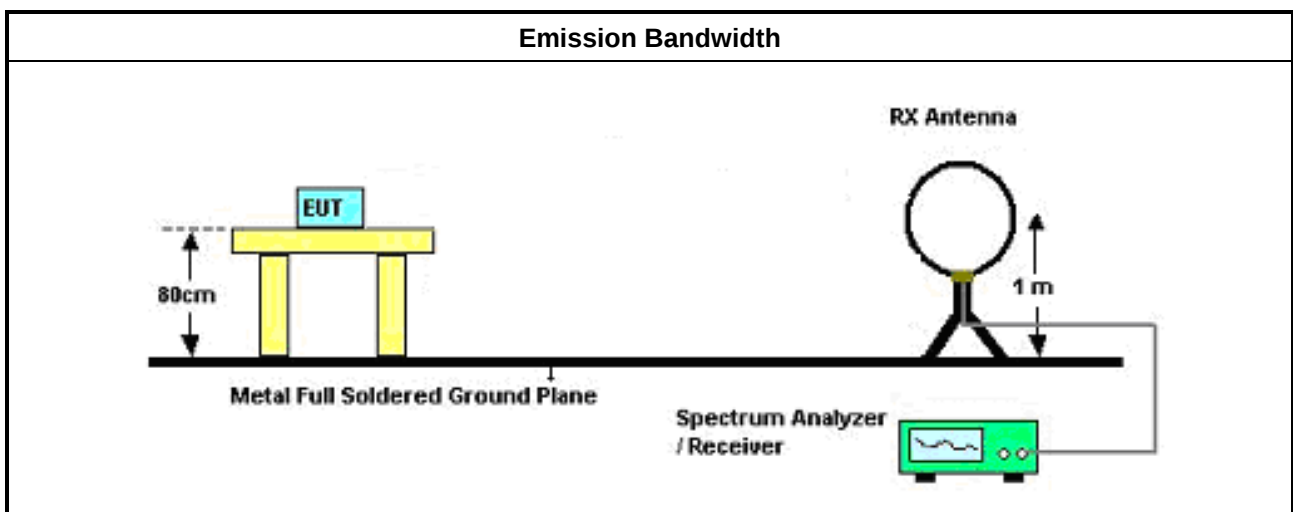
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method
☒ Because the measured signal is CW or CW-like adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.
☒ For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.

3.3.4 Test Setup



3.3.5 Test Result of Emission Bandwidth

Refer as Appendix C

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer / Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR	102051	9kHz ~ 3.6GHz	13/May/2022	12/May/2023
Two-Line V-Network	R&S	ENV 216	100003	9kHz ~ 30MHz	16/Feb/2023	15/Feb/2024
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9kHz ~ 200MHz	28/Feb/2023	27/Feb/2024
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	25/Oct/2022	24/Oct/2023
Software	Sporton	SENSE-EMI	V5.10.8.7	-	NCR	NCR

NCR: No Calibration Required

Instrument for Conducted Test

Instrument	Manufacturer / Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	10Hz~40GHz	14/Feb/2023	13/Feb/2024
SENSE-NFC	Sporton	V5.11.0	N/A	N/A	N/A	N/A

Instrument for Radiated Test (03CH03-HY)

Instrument	Manufacturer / Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	01/Aug/2022	31/Jul/2023
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	02/Aug/2022	01/Aug/2023
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	26/Oct/2022	25/Oct/2023
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz~30MHz	13/Jun/2022	12/Jun/2023
Loop Antenna	R&S	HFH2-Z2	100330	9kHz~30MHz	01/Nov/2022	31/Oct/2023
EMI Test Receiver	R&S	ESR3	102052	9kHz~3.6GHz	30/May/2022	29/May/2023
SENSE-303417	Sporton	V5.10.4	N/A	N/A	N/A	N/A

Instrument for Radiated Test (03CH24-HY)

Instrument	Manufacturer / Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
FSV3044 SIGNAL ANALYZER 44GHZ	ROHDE&SCHWARZ	FSV3044	101345	10Hz~44GHz	17/Aug/2022	16/Aug/2023
Pre-Amplifier	Agilent	8447D	2944A06292	30MHz~1GHz	27/Apr/2022	26/Apr/2023
Bilog Antenna & 6dB Attenuator	TESEQ / Woken	CBL 6112D / 00800N1D	35376 / 02	30MHz~1GHz	23/Apr/2022	22/Apr/2023
N.S.A. Measurement	TDK	3m SAC	03CH24-HY	30MHz ~1GHz 3M	24/Aug/2022	23/Aug/2023
RF Cable 2.5m	HUBER+SUHNER	SUOFLEX 104	03CH24-cabl e-01	9kHz~18GHz	25/Jul/2022	24/Jul/2023
RF Cable 7.0m	HUBER+SUHNER	SUOFLEX 104	03CH24-cabl e-02	9kHz~18GHz	25/Jul/2022	24/Jul/2023
SENSE-303417	Sporton	V5.10.4	N/A	N/A	N/A	N/A



Conducted Emissions at Powerline

Appendix A

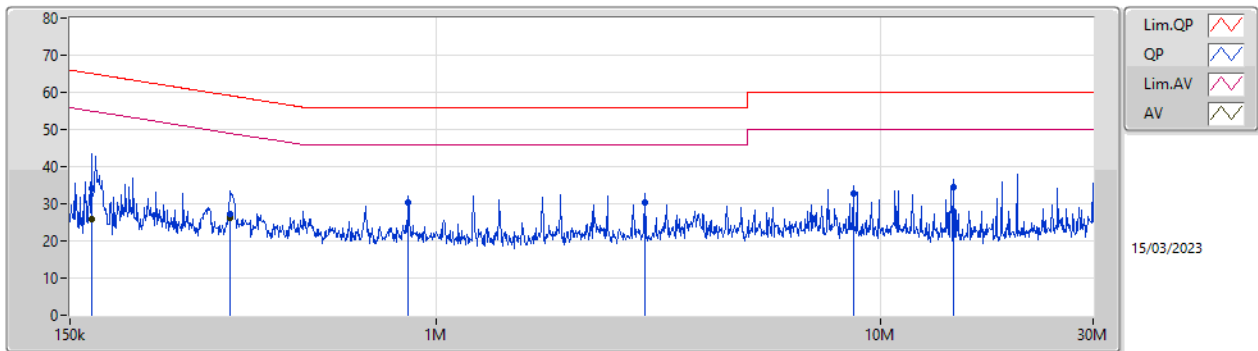
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	14.552M	34.49	50.00	-15.51	Line
Mode 2	Pass	QP	158.622k	58.17	65.54	-7.37	Line

Result

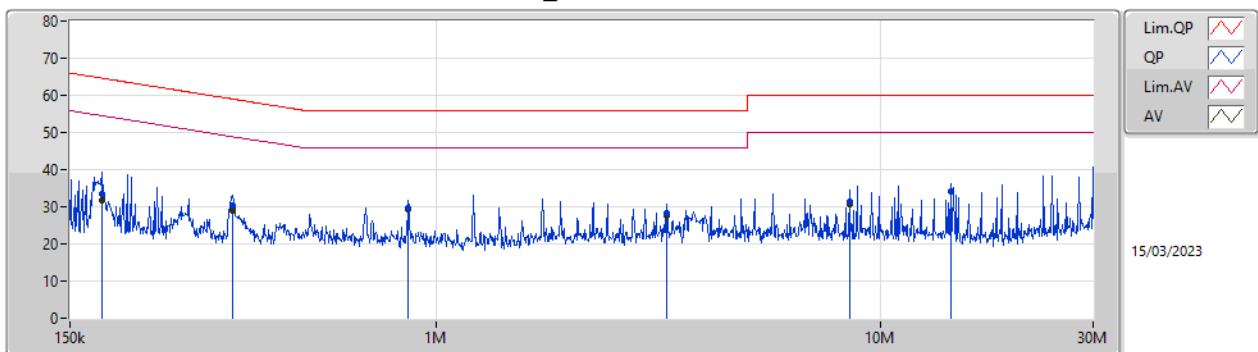
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	167.739k	34.29	65.06	-30.77	Line	-
Mode 1	Pass	AV	167.739k	25.89	55.06	-29.17	Line	-
Mode 1	Pass	QP	342.744k	27.17	59.14	-31.97	Line	-
Mode 1	Pass	AV	342.744k	26.23	49.14	-22.91	Line	-
Mode 1	Pass	QP	865.349k	30.45	56.00	-25.55	Line	-
Mode 1	Pass	AV	865.349k	30.19	46.00	-15.81	Line	-
Mode 1	Pass	QP	2.947M	30.44	56.00	-25.56	Line	-
Mode 1	Pass	AV	2.947M	30.36	46.00	-15.64	Line	-
Mode 1	Pass	QP	8.661M	32.85	60.00	-27.15	Line	-
Mode 1	Pass	AV	8.661M	32.73	50.00	-17.27	Line	-
Mode 1	Pass	QP	14.552M	34.57	60.00	-25.43	Line	-
Mode 1	Pass	AV	14.552M	34.49	50.00	-15.51	Line	-
Mode 1	Pass	QP	176.674k	33.39	64.64	-31.25	Neutral	-
Mode 1	Pass	AV	176.674k	31.66	54.64	-22.98	Neutral	-
Mode 1	Pass	QP	348.261k	30.28	59.00	-28.72	Neutral	-
Mode 1	Pass	AV	348.261k	28.94	49.00	-20.06	Neutral	-
Mode 1	Pass	QP	865.349k	29.66	56.00	-26.34	Neutral	-
Mode 1	Pass	AV	865.349k	29.43	46.00	-16.57	Neutral	-
Mode 1	Pass	QP	3.296M	28.18	56.00	-27.82	Neutral	-
Mode 1	Pass	AV	3.296M	27.48	46.00	-18.52	Neutral	-
Mode 1	Pass	QP	8.489M	31.29	60.00	-28.71	Neutral	-
Mode 1	Pass	AV	8.489M	30.71	50.00	-19.29	Neutral	-
Mode 1	Pass	QP	14.379M	34.29	60.00	-25.71	Neutral	-
Mode 1	Pass	AV	14.379M	34.06	50.00	-15.94	Neutral	-
Mode 2	Pass	QP	158.622k	58.17	65.54	-7.37	Line	-
Mode 2	Pass	AV	158.622k	40.00	55.54	-15.54	Line	-
Mode 2	Pass	QP	181.681k	53.05	64.41	-11.36	Line	-
Mode 2	Pass	AV	181.681k	31.69	54.41	-22.72	Line	-
Mode 2	Pass	QP	229.932k	44.30	62.44	-18.14	Line	-
Mode 2	Pass	AV	229.932k	26.24	52.44	-26.20	Line	-
Mode 2	Pass	QP	872.285k	23.81	56.00	-32.19	Line	-
Mode 2	Pass	AV	872.285k	17.29	46.00	-28.71	Line	-
Mode 2	Pass	QP	3.542M	30.07	56.00	-25.93	Line	-
Mode 2	Pass	AV	3.542M	25.07	46.00	-20.93	Line	-
Mode 2	Pass	QP	16.273M	32.24	60.00	-27.76	Line	-
Mode 2	Pass	AV	16.273M	24.52	50.00	-25.48	Line	-
Mode 2	Pass	QP	161.82k	56.91	65.37	-8.46	Neutral	-
Mode 2	Pass	AV	161.82k	41.06	55.37	-14.31	Neutral	-
Mode 2	Pass	QP	213.137k	47.35	63.07	-15.72	Neutral	-
Mode 2	Pass	AV	213.137k	30.11	53.07	-22.96	Neutral	-
Mode 2	Pass	QP	281.85k	36.90	60.76	-23.86	Neutral	-
Mode 2	Pass	AV	281.85k	21.92	50.76	-28.84	Neutral	-
Mode 2	Pass	QP	818.313k	26.51	56.00	-29.49	Neutral	-
Mode 2	Pass	AV	818.313k	20.15	46.00	-25.85	Neutral	-
Mode 2	Pass	QP	2.604M	23.64	56.00	-32.36	Neutral	-
Mode 2	Pass	AV	2.604M	18.49	46.00	-27.51	Neutral	-
Mode 2	Pass	QP	16.338M	27.99	60.00	-32.01	Neutral	-
Mode 2	Pass	AV	16.338M	20.58	50.00	-29.42	Neutral	-

Conducted Emissions at Powerline_Mode 1



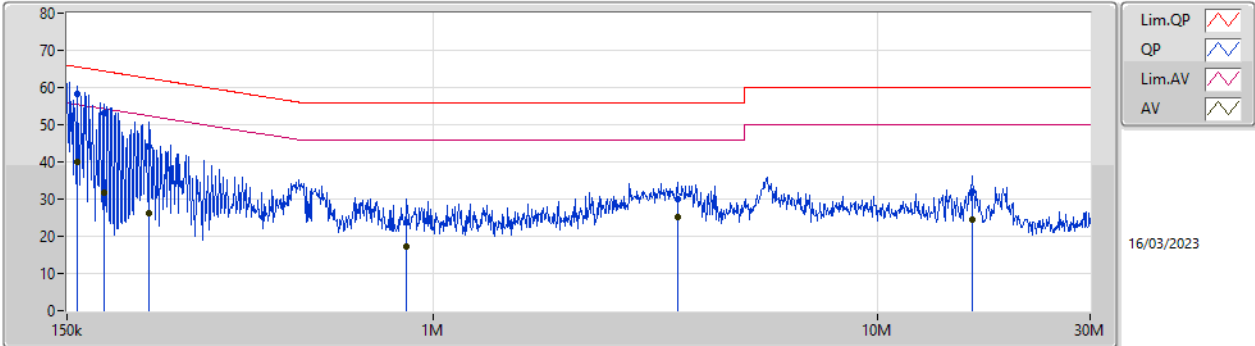
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	167.739k	34.29	65.06	-30.77	19.61	Line	-	14.68	9.65	0.03	9.93			
AV	167.739k	25.89	55.06	-29.17	19.61	Line	-	6.28	9.65	0.03	9.93			
QP	342.744k	27.17	59.14	-31.97	19.63	Line	-	7.54	9.64	0.04	9.95			
AV	342.744k	26.23	49.14	-22.91	19.63	Line	-	6.60	9.64	0.04	9.95			
QP	865.349k	30.45	56.00	-25.55	19.64	Line	-	10.81	9.65	0.05	9.94			
AV	865.349k	30.19	46.00	-15.81	19.64	Line	-	10.55	9.65	0.05	9.94			
QP	2.947M	30.44	56.00	-25.56	19.73	Line	-	10.71	9.69	0.11	9.93			
AV	2.947M	30.36	46.00	-15.64	19.73	Line	-	10.63	9.69	0.11	9.93			
QP	8.661M	32.85	60.00	-27.15	19.91	Line	-	12.94	9.78	0.17	9.96			
AV	8.661M	32.73	50.00	-17.27	19.91	Line	-	12.82	9.78	0.17	9.96			
QP	14.552M	34.57	60.00	-25.43	20.00	Line	-	14.57	9.79	0.24	9.97			
AV	14.552M	34.49	50.00	-15.51	20.00	Line	-	14.49	9.79	0.24	9.97			

Conducted Emissions at Powerline_Mode 1



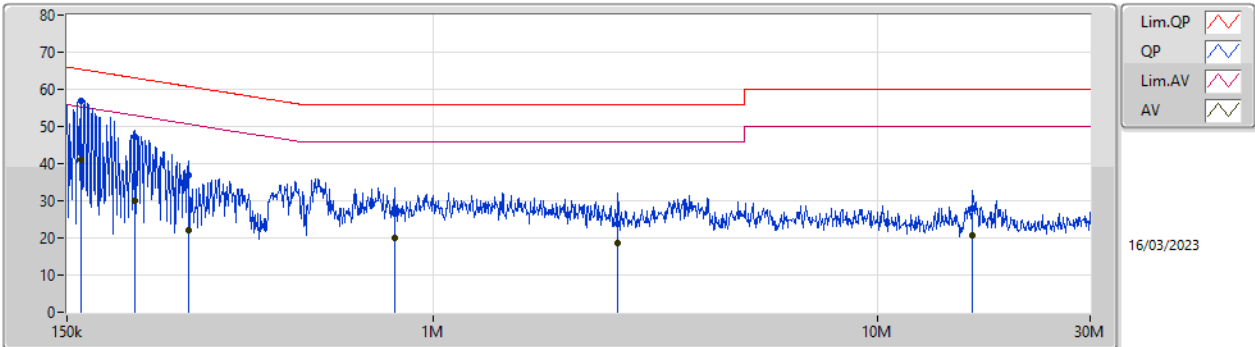
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	176.674k	33.39	64.64	-31.25	19.58	Neutral	-	13.81	9.62	0.03	9.93			
AV	176.674k	31.66	54.64	-22.98	19.58	Neutral	-	12.08	9.62	0.03	9.93			
QP	348.261k	30.28	59.00	-28.72	19.62	Neutral	-	10.66	9.63	0.04	9.95			
AV	348.261k	28.94	49.00	-20.06	19.62	Neutral	-	9.32	9.63	0.04	9.95			
QP	865.349k	29.66	56.00	-26.34	19.64	Neutral	-	10.02	9.65	0.05	9.94			
AV	865.349k	29.43	46.00	-16.57	19.64	Neutral	-	9.79	9.65	0.05	9.94			
QP	3.296M	28.18	56.00	-27.82	19.72	Neutral	-	8.46	9.67	0.12	9.93			
AV	3.296M	27.48	46.00	-18.52	19.72	Neutral	-	7.76	9.67	0.12	9.93			
QP	8.489M	31.29	60.00	-28.71	19.91	Neutral	-	11.38	9.79	0.17	9.95			
AV	8.489M	30.71	50.00	-19.29	19.91	Neutral	-	10.80	9.79	0.17	9.95			
QP	14.379M	34.29	60.00	-25.71	20.08	Neutral	-	14.21	9.88	0.23	9.97			
AV	14.379M	34.06	50.00	-15.94	20.08	Neutral	-	13.98	9.88	0.23	9.97			

Conducted Emissions at Powerline_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	158.622k	58.17	65.54	-7.37	19.61	Line	-	38.56	9.65	0.03	9.93			
AV	158.622k	40.00	55.54	-15.54	19.61	Line	-	20.39	9.65	0.03	9.93			
QP	181.681k	53.05	64.41	-11.36	19.61	Line	-	33.44	9.65	0.03	9.93			
AV	181.681k	31.69	54.41	-22.72	19.61	Line	-	12.08	9.65	0.03	9.93			
QP	229.932k	44.30	62.44	-18.14	19.62	Line	-	24.68	9.65	0.03	9.94			
AV	229.932k	26.24	52.44	-26.20	19.62	Line	-	6.62	9.65	0.03	9.94			
QP	872.285k	23.81	56.00	-32.19	19.64	Line	-	4.17	9.65	0.05	9.94			
AV	872.285k	17.29	46.00	-28.71	19.64	Line	-	-2.35	9.65	0.05	9.94			
QP	3.542M	30.07	56.00	-25.93	19.75	Line	-	10.32	9.70	0.12	9.93			
AV	3.542M	25.07	46.00	-20.93	19.75	Line	-	5.32	9.70	0.12	9.93			
QP	16.273M	32.24	60.00	-27.76	20.01	Line	-	12.23	9.79	0.25	9.97			
AV	16.273M	24.52	50.00	-25.48	20.01	Line	-	4.51	9.79	0.25	9.97			

Conducted Emissions at Powerline_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	161.82k	56.91	65.37	-8.46	19.59	Neutral	-	37.32	9.63	0.03	9.93			
AV	161.82k	41.06	55.37	-14.31	19.59	Neutral	-	21.47	9.63	0.03	9.93			
QP	213.137k	47.35	63.07	-15.72	19.58	Neutral	-	27.77	9.62	0.03	9.93			
AV	213.137k	30.11	53.07	-22.96	19.58	Neutral	-	10.53	9.62	0.03	9.93			
QP	281.85k	36.90	60.76	-23.86	19.59	Neutral	-	17.31	9.62	0.03	9.94			
AV	281.85k	21.92	50.76	-28.84	19.59	Neutral	-	2.33	9.62	0.03	9.94			
QP	818.313k	26.51	56.00	-29.49	19.64	Neutral	-	6.87	9.65	0.05	9.94			
AV	818.313k	20.15	46.00	-25.85	19.64	Neutral	-	0.51	9.65	0.05	9.94			
QP	2.604M	23.64	56.00	-32.36	19.71	Neutral	-	3.93	9.67	0.10	9.94			
AV	2.604M	18.49	46.00	-27.51	19.71	Neutral	-	-1.22	9.67	0.10	9.94			
QP	16.338M	27.99	60.00	-32.01	20.13	Neutral	-	7.86	9.91	0.25	9.97			
AV	16.338M	20.58	50.00	-29.42	20.13	Neutral	-	0.45	9.91	0.25	9.97			

**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
WPT	-	-	-	-	-	-	-	-	-	-	-
100-300kHz	Pass	PK	1.583M	42.38	63.66	-21.28	19.51	3	Horizontal	360	1.00

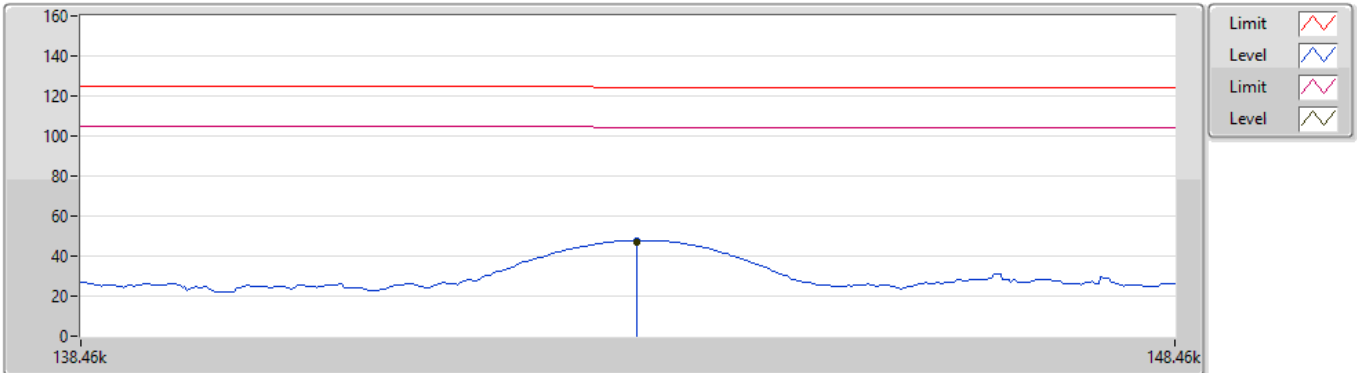
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
100-300kHz	-	-	-	-	-	-	-	-	-	-	-
0.14360MHz_Adapter	Pass	AV	143.46k	46.95	104.46	-57.51	19.01	3	Horizontal	360	1.00
0.14360MHz_Adapter	Pass	PK	143.46k	47.83	124.46	-76.63	19.01	3	Horizontal	360	1.00
0.14360MHz_Adapter	Pass	PK	12.384k	35.98	145.74	-109.76	18.33	3	Horizontal	0	1.00
0.14360MHz_Adapter	Pass	PK	30.432k	33.63	137.94	-104.31	20.03	3	Horizontal	0	1.00
0.14360MHz_Adapter	Pass	PK	131.952k	27.29	125.20	-97.91	18.97	3	Horizontal	0	1.00
0.14360MHz_Adapter	Pass	PK	687.3k	34.95	70.87	-35.92	19.45	3	Horizontal	360	1.00
0.14360MHz_Adapter	Pass	PK	1.583M	42.38	63.66	-21.28	19.51	3	Horizontal	360	1.00
0.14360MHz_Adapter	Pass	PK	2.777M	35.66	69.50	-33.84	19.50	3	Horizontal	360	1.00
0.14360MHz_USB	Pass	AV	143.52k	47.82	104.46	-56.64	19.01	3	Horizontal	360	1.00
0.14360MHz_USB	Pass	PK	143.52k	48.76	124.46	-75.70	19.01	3	Horizontal	360	1.00
0.14360MHz_USB	Pass	PK	41.777k	30.58	135.18	-104.60	19.98	3	Horizontal	0	1.00
0.14360MHz_USB	Pass	PK	79.65k	29.24	129.58	-100.34	19.20	3	Horizontal	0	1.00
0.14360MHz_USB	Pass	PK	127.54k	27.83	125.48	-97.65	18.95	3	Horizontal	0	1.00
0.14360MHz_USB	Pass	PK	1.235M	33.58	65.79	-32.21	19.51	3	Horizontal	360	1.00
0.14360MHz_USB	Pass	PK	11.293M	34.62	69.50	-34.88	21.55	3	Horizontal	360	1.00
0.14360MHz_USB	Pass	PK	21.385M	35.85	69.50	-33.65	22.28	3	Horizontal	360	1.00

100-300kHz

17/03/2023

0.14360MHz_Adapter

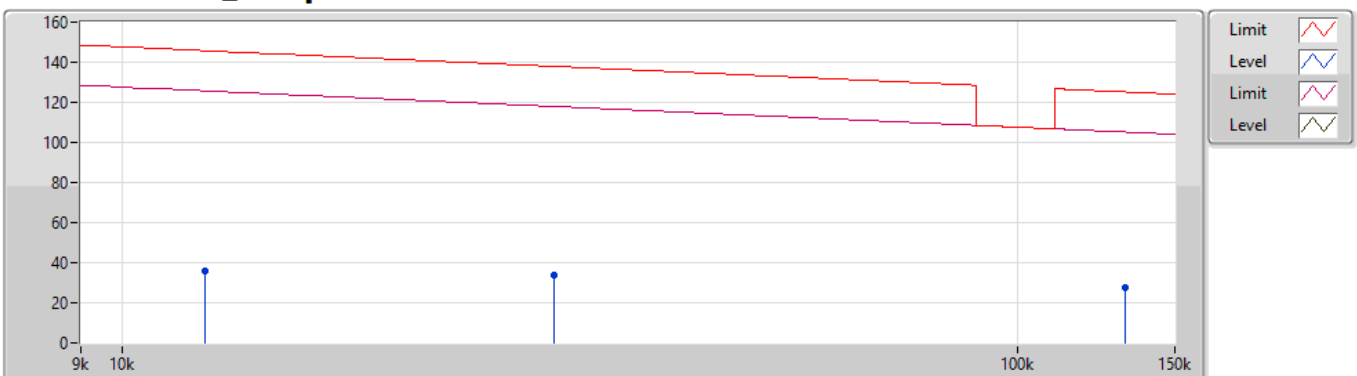


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	143.46k	46.95	104.46	-57.51	19.01	3	Horizontal	360	1.00	27.94	18.96	0.05	-
PK	143.46k	47.83	124.46	-76.63	19.01	3	Horizontal	360	1.00	28.82	18.96	0.05	-

100-300kHz

17/03/2023

0.14360MHz_Adapter

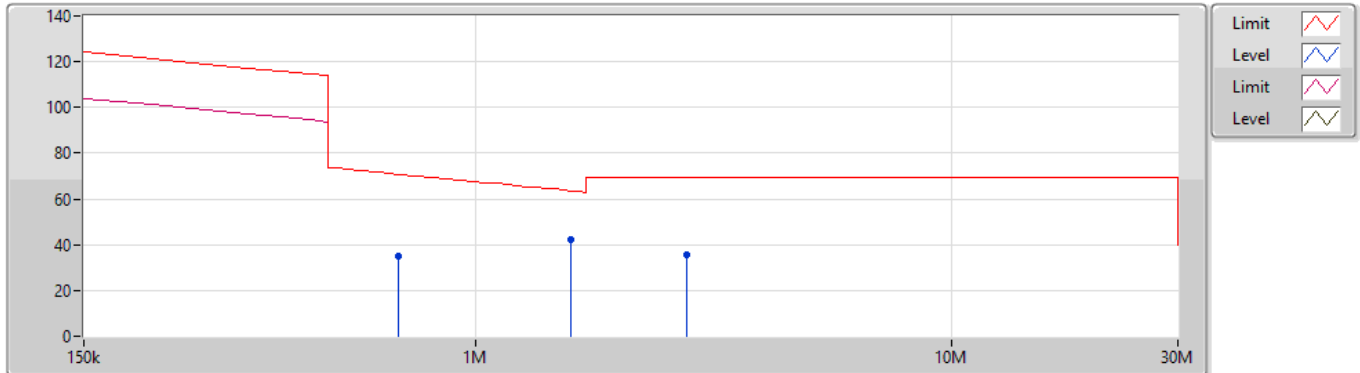


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	12.384k	35.98	145.74	-109.76	18.33	3	Horizontal	0	1.00	17.65	18.31	0.02	-
PK	30.432k	33.63	137.94	-104.31	20.03	3	Horizontal	0	1.00	13.60	20.00	0.03	-
PK	131.952k	27.29	125.20	-97.91	18.97	3	Horizontal	0	1.00	8.32	18.93	0.04	-

100-300kHz

0.14360MHz_Adapter

17/03/2023

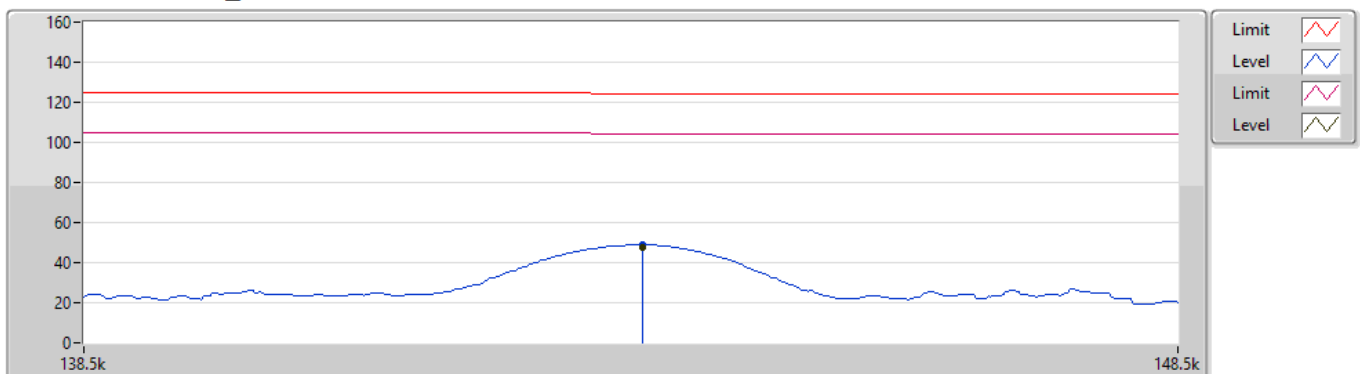


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)	
PK	687.3k	34.95	70.87	-35.92	19.45	3	Horizontal	360	1.00	15.50	19.35	0.10	-	
PK	1.583M	42.38	63.66	-21.28	19.51	3	Horizontal	360	1.00	22.87	19.36	0.15	-	
PK	2.777M	35.66	69.50	-33.84	19.50	3	Horizontal	360	1.00	16.16	19.31	0.19	-	

100-300kHz

0.14360MHz_USB

17/03/2023

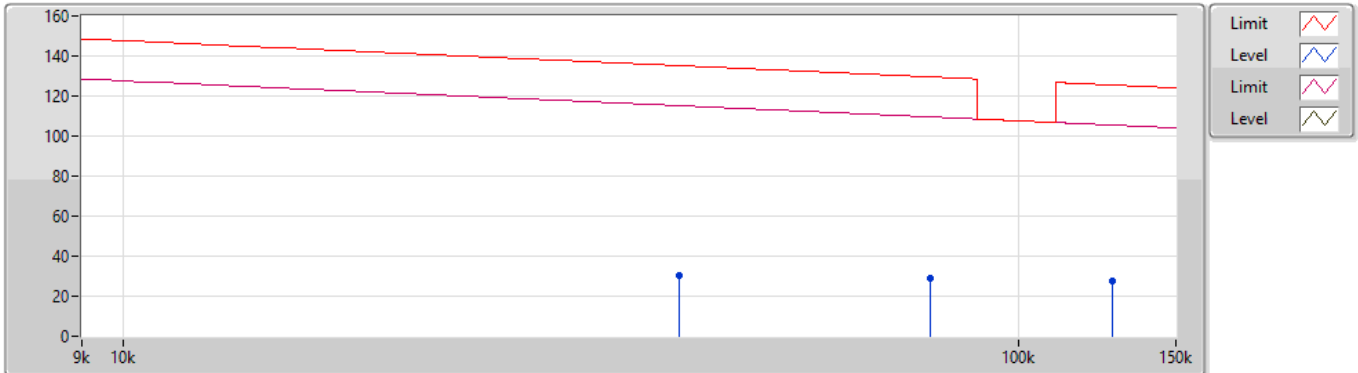


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)	
AV	143.52k	47.82	104.46	-56.64	19.01	3	Horizontal	360	1.00	28.81	18.96	0.05	-	
PK	143.52k	48.76	124.46	-75.70	19.01	3	Horizontal	360	1.00	29.75	18.96	0.05	-	

100-300kHz

0.14360MHz_USB

17/03/2023

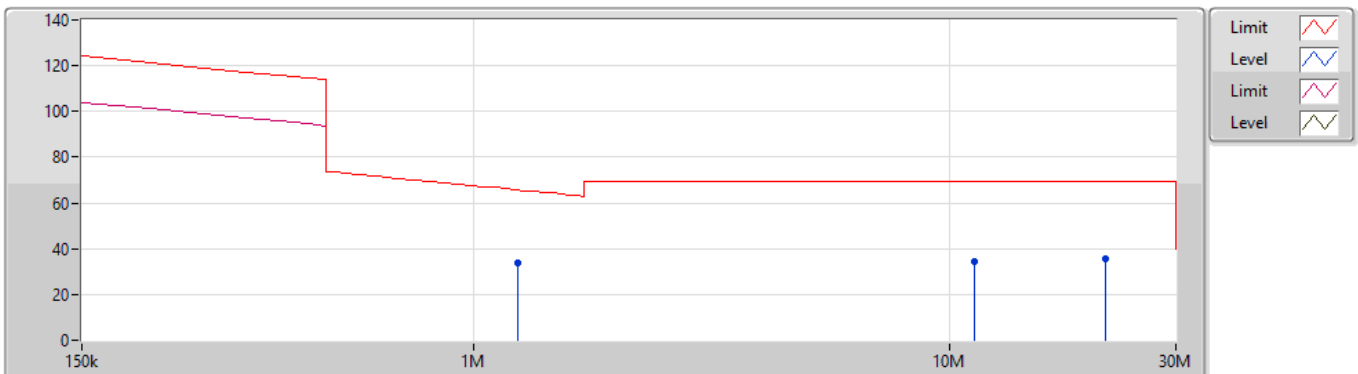


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	41.777k	30.58	135.18	-104.60	19.98	3	Horizontal	0	1.00	10.60	19.94	0.04	-
PK	79.65k	29.24	129.58	-100.34	19.20	3	Horizontal	0	1.00	10.04	19.16	0.04	-
PK	127.54k	27.83	125.48	-97.65	18.95	3	Horizontal	0	1.00	8.88	18.91	0.04	-

100-300kHz

0.14360MHz_USB

17/03/2023



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	1.235M	33.58	65.79	-32.21	19.51	3	Horizontal	360	1.00	14.07	19.38	0.13	-
PK	11.293M	34.62	69.50	-34.88	21.55	3	Horizontal	360	1.00	13.07	21.11	0.44	-
PK	21.385M	35.85	69.50	-33.65	22.28	3	Horizontal	360	1.00	13.57	21.67	0.61	-

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
WPT	-	-	-	-	-	-	-	-	-	-	-
100-300kHz	Pass	PK	49.4M	37.13	40.00	-2.87	-13.15	3	Vertical	360	1.00

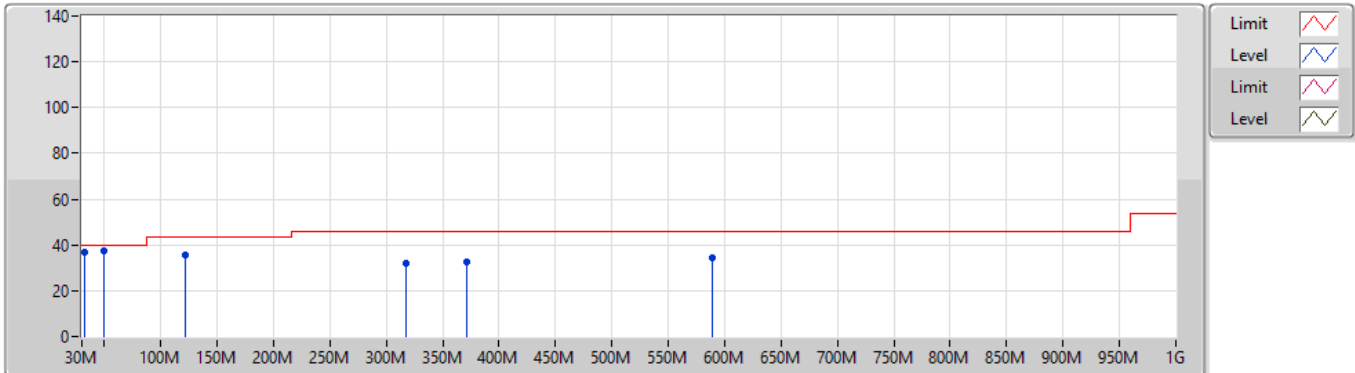
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
100-300kHz	-	-	-	-	-	-	-	-	-	-	-
0.14360MHz_Adapter	Pass	PK	49.4M	37.13	40.00	-2.87	-13.15	3	Vertical	360	1.00
0.14360MHz_Adapter	Pass	PK	121.18M	35.38	43.50	-8.12	-9.20	3	Vertical	360	1.00
0.14360MHz_Adapter	Pass	PK	317.12M	32.15	46.00	-13.85	-6.81	3	Vertical	360	1.00
0.14360MHz_Adapter	Pass	PK	371.44M	32.83	46.00	-13.17	-5.87	3	Vertical	360	1.00
0.14360MHz_Adapter	Pass	PK	588.72M	34.29	46.00	-11.71	-2.83	3	Vertical	360	1.00
0.14360MHz_Adapter	Pass	QP	32.59M	36.88	40.00	-3.12	-4.74	3	Vertical	192	1.00
0.14360MHz_Adapter	Pass	PK	138.64M	40.11	43.50	-3.39	-9.93	3	Horizontal	0	1.00
0.14360MHz_Adapter	Pass	PK	175.5M	37.16	43.50	-6.34	-11.39	3	Horizontal	0	1.00
0.14360MHz_Adapter	Pass	PK	251.16M	36.84	46.00	-9.16	-7.82	3	Horizontal	0	1.00
0.14360MHz_Adapter	Pass	PK	350.1M	38.26	46.00	-7.74	-6.07	3	Horizontal	0	1.00
0.14360MHz_Adapter	Pass	PK	474.26M	30.80	46.00	-15.20	-3.95	3	Horizontal	0	1.00
0.14360MHz_Adapter	Pass	PK	613.94M	33.09	46.00	-12.91	-2.52	3	Horizontal	0	1.00
0.14360MHz_USB	Pass	PK	57.16M	30.12	40.00	-9.88	-15.07	3	Vertical	360	1.00
0.14360MHz_USB	Pass	PK	127M	32.14	43.50	-11.36	-9.30	3	Vertical	360	1.00
0.14360MHz_USB	Pass	PK	175.5M	32.98	43.50	-10.52	-11.39	3	Vertical	360	1.00
0.14360MHz_USB	Pass	PK	288.02M	29.52	46.00	-16.48	-7.33	3	Vertical	360	1.00
0.14360MHz_USB	Pass	PK	375.32M	33.08	46.00	-12.92	-5.82	3	Vertical	360	1.00
0.14360MHz_USB	Pass	PK	536.34M	34.03	46.00	-11.97	-3.28	3	Vertical	360	1.00
0.14360MHz_USB	Pass	PK	59.1M	32.35	40.00	-7.65	-15.23	3	Horizontal	0	1.00
0.14360MHz_USB	Pass	PK	134.76M	40.42	43.50	-3.08	-9.69	3	Horizontal	0	1.00
0.14360MHz_USB	Pass	PK	208.48M	40.11	43.50	-3.39	-11.36	3	Horizontal	0	1.00
0.14360MHz_USB	Pass	PK	272.5M	34.60	46.00	-11.40	-7.41	3	Horizontal	0	1.00
0.14360MHz_USB	Pass	PK	369.5M	34.92	46.00	-11.08	-5.88	3	Horizontal	0	1.00
0.14360MHz_USB	Pass	PK	536.34M	32.60	46.00	-13.40	-3.28	3	Horizontal	0	1.00

100-300kHz

0.14360MHz_Adapter

18/03/2023

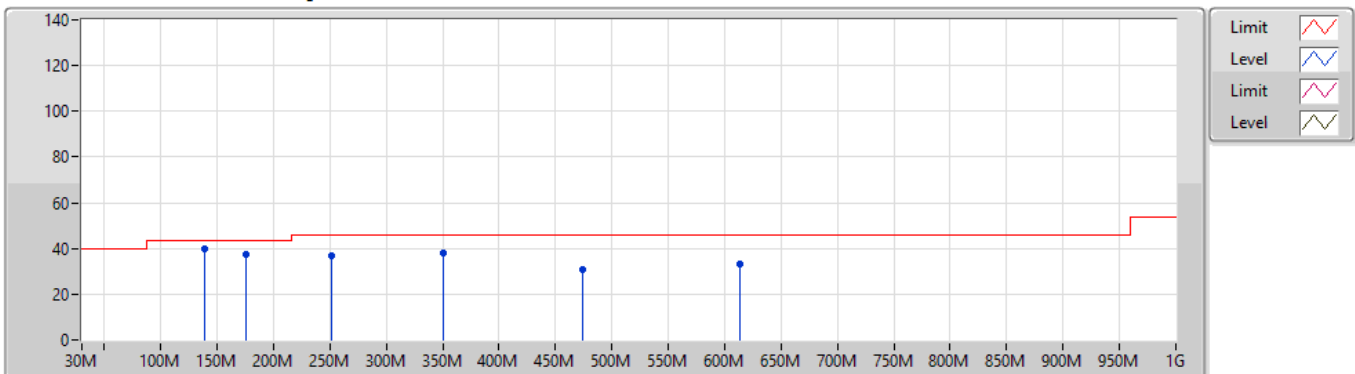


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	49.4M	37.13	40.00	-2.87	-13.15	3	Vertical	360	1.00	50.28	13.58	0.55	27.28
PK	121.18M	35.38	43.50	-8.12	-9.20	3	Vertical	360	1.00	44.58	17.10	0.81	27.11
PK	317.12M	32.15	46.00	-13.85	-6.81	3	Vertical	360	1.00	38.96	18.62	1.28	26.71
PK	371.44M	32.83	46.00	-13.17	-5.87	3	Vertical	360	1.00	38.70	19.86	1.38	27.11
PK	588.72M	34.29	46.00	-11.71	-2.83	3	Vertical	360	1.00	37.12	23.64	1.73	28.20
QP	32.59M	36.88	40.00	-3.12	-4.74	3	Vertical	192	1.00	41.62	22.13	0.45	27.32

100-300kHz

0.14360MHz_Adapter

18/03/2023

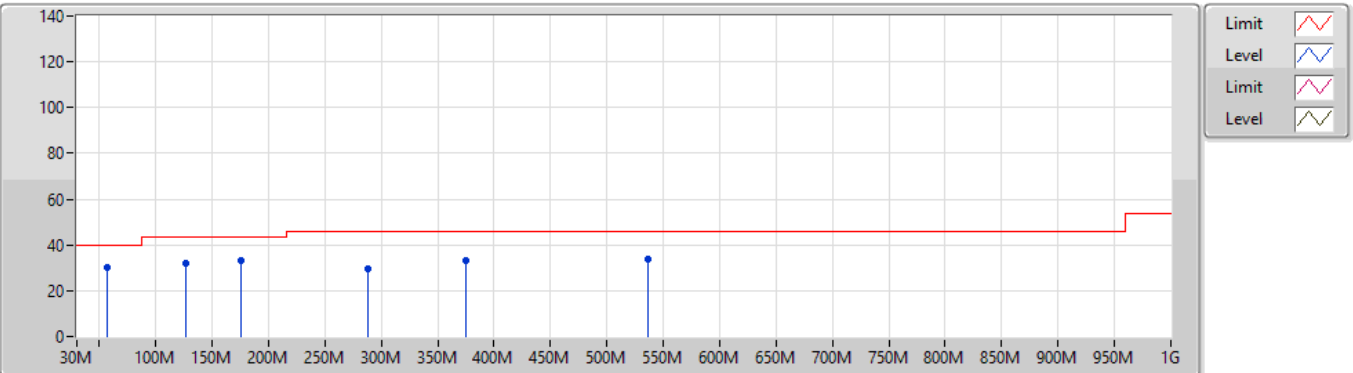


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	138.64M	40.11	43.50	-3.39	-9.93	3	Horizontal	0	1.00	50.04	16.23	0.88	27.04
PK	175.5M	37.16	43.50	-6.34	-11.39	3	Horizontal	0	1.00	48.55	14.53	0.97	26.89
PK	251.16M	36.84	46.00	-9.16	-7.82	3	Horizontal	0	1.00	44.66	17.59	1.14	26.55
PK	350.1M	38.26	46.00	-7.74	-6.07	3	Horizontal	0	1.00	44.33	19.53	1.35	26.95
PK	474.26M	30.80	46.00	-15.20	-3.95	3	Horizontal	0	1.00	34.75	22.36	1.56	27.87
PK	613.94M	33.09	46.00	-12.91	-2.52	3	Horizontal	0	1.00	35.61	23.91	1.77	28.20

100-300kHz

0.14360MHz_USB

20/03/2023

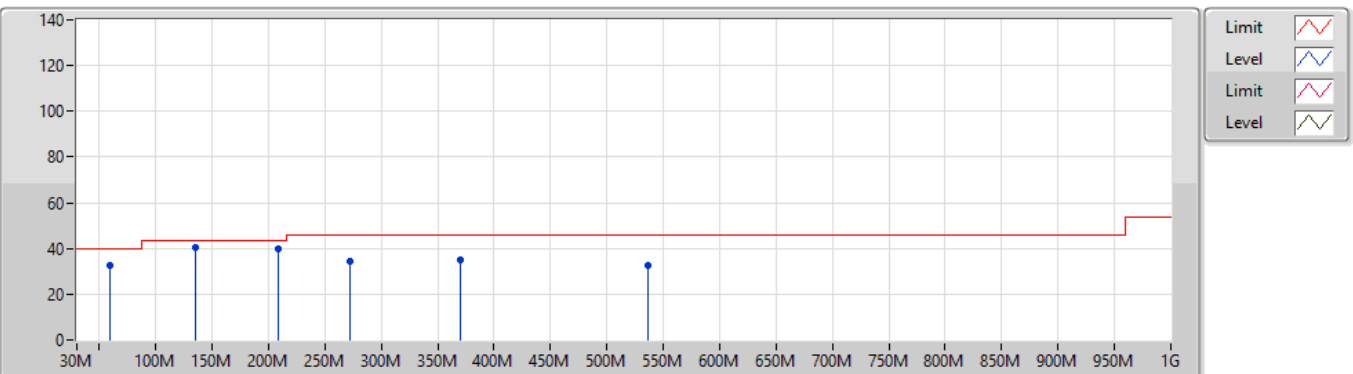


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	57.16M	30.12	40.00	-9.88	-15.07	3	Vertical	360	1.00	45.19	11.63	0.58	27.28
PK	127M	32.14	43.50	-11.36	-9.30	3	Vertical	360	1.00	41.44	16.96	0.83	27.09
PK	175.5M	32.98	43.50	-10.52	-11.39	3	Vertical	360	1.00	44.37	14.53	0.97	26.89
PK	288.02M	29.52	46.00	-16.48	-7.33	3	Vertical	360	1.00	36.85	18.02	1.22	26.57
PK	375.32M	33.08	46.00	-12.92	-5.82	3	Vertical	360	1.00	38.90	19.93	1.39	27.14
PK	536.34M	34.03	46.00	-11.97	-3.28	3	Vertical	360	1.00	37.31	23.22	1.66	28.16

100-300kHz

0.14360MHz_USB

20/03/2023



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	59.1M	32.35	40.00	-7.65	-15.23	3	Horizontal	0	1.00	47.58	11.45	0.59	27.27
PK	134.76M	40.42	43.50	-3.08	-9.69	3	Horizontal	0	1.00	50.11	16.50	0.87	27.06
PK	208.48M	40.11	43.50	-3.39	-11.36	3	Horizontal	0	1.00	51.47	14.32	1.04	26.72
PK	272.5M	34.60	46.00	-11.40	-7.41	3	Horizontal	0	1.00	42.01	17.96	1.19	26.56
PK	369.5M	34.92	46.00	-11.08	-5.88	3	Horizontal	0	1.00	40.80	19.83	1.38	27.09
PK	536.34M	32.60	46.00	-13.40	-3.28	3	Horizontal	0	1.00	35.88	23.22	1.66	28.16

Summary

Mode	20dB (Hz)	FI-20dB (Hz)	Fh-20dB (Hz)	OBW (Hz)	Limit (Range)
0.14MHz	-	-	-	-	-
WPC	2.616k	142.08750k	144.70375k	2.228k	-

Result

Mode	Result	20dB (Hz)	FI-20dB (Hz)	Fh-20dB (Hz)	OBW (Hz)	FI-OBW (Hz)	Fh-OBW (Hz)	Limit (Range)
WPC	-	-	-	-	-	-	-	-
0.14MHz_TnomVnom	PASS	2.616k	142.08750k	144.70375k	2.228k	142.28520k	144.51299k	-

WPC_Nss1_1TX

EBW

0.1434MHz_TnomVnom

16/03/2023

