



FCC EMI TEST REPORT

FCC ID : U4GSX53SD
Equipment : Wireless Power Transmission System
Brand Name : Datalogic
Model Name : SKORPIO X5 3 SLOT DOCK WIRELESS CHARGING,
SKORPIO X5 3 SLOT DOCK WLC LOCKING
Applicant : Datalogic S.r.l.
Via S. Vitalino 13, 40012 Lippo di Calderara di Reno (BO) - Italy
Manufacturer : Datalogic S.r.l.
Via S. Vitalino 13, 40012 Lippo di Calderara di Reno (BO) - Italy
Standard : 47 CFR FCC Rules and Regulations Part 18

The product was received on Sep. 01, 2020, and testing was started from Sep. 09, 2020 and completed on Sep. 11, 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 FCC MP-5 - 1986 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. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.


Approved by: William Li

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History of this test report

Report No.	Version	Description	Issued Date
FE040814-01	01	Initial issue of report	Jan. 22, 2021



Summary of Test Result

Report Clause	Methods of Measurement Clause	Test Items	Result (PASS/FAIL)	Remark
4	18.307(b)	Conducted Emissions of Powerline	PASS	Under limit 20.15 dB at 15.703 MHz
5.1	18.305(b)	Radiated Emissions below 30MHz	PASS	Under limit 11.32 dB at 141.681 kHz
		Radiated Emissions below 1GHz	PASS	Under limit 23.75 dB at 211.2 MHz
-	18.305(b)	Radiated Emissions above 1GHz	Not Applicable	Note 1
Note 1: The highest frequency of the internal sources of the EUT is less than 100MHz, so the measurement shall only be made up to 1GHz.				

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: Andrew Yang

Report Producer: Michelle Tsai

1. General Description of Equipment under Test

1.1. Basic Description of Equipment under Test

Equipment : Wireless Power Transmission System
 Model No. : SKORPIO X5 3 SLOT DOCK WIRELESS CHARGING,
 SKORPIO X5 3 SLOT DOCK WLC LOCKING
 Power Supply Type : From Power Adapter
 AC Power Cord : Non-Shielded, 1.8 m, 3 pin
 DC Power Cable : Shielded, 1.2 m
 The maximum operating frequency : 48 MHz

1.2. Feature of Equipment under Test

Accessories

AC Adapter	Brand Name	EDACPOWER ELEC.	Model Name	EA10681U-120
	Power Rating	I/P: 100 - 240Vac, 2A, O/P:12Vdc,6A		
	Power Cord	1.2 meter, shielded cable, with ferrite core		
Power Cable	Power Line	0.8 meter, non-shielded cable, without ferrite core		
Plastic key	Brand Name	N/A	Model Name	N/A

For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

1.3. Modification of EUT

Please refer to the applicant solution information and photographs of EUT.

1.4. Table for Multiple Listing

Sample No.	Variant	Number of slot	WLC	Ethernet	Locking	Spare battery	IrDA comm.	LED Signal	Daisy Chain
Sample 1	SKORPIO X5 3 SLOT DOCK WLC LOCKING	3	yes	-	yes	-	yes	yes	yes
Sample 2	SKORPIO X5 3 SLOT DOCK WIRELESS CHARGING	3	yes	-	-	-	yes	yes	yes

Note: The information from manufacturer.



2. Test Configuration of Equipment under Test

2.1. Details of EUT Test Modes

From the above models, Model: SKORPIO X5 3 SLOT DOCK WIRELESS CHARGING, SKORPIO X5 3 SLOT DOCK WLC LOCKING were selected as representative model for the test and its data was recorded in this report. The equipment under test were performed the following test modes:

Test Items	Description of test modes
Conducted Emission	Mode 1. Sample 2 (Skorpio X5+ Extended Battery) *3 charging + IrDA communication + Sample 1 (Skorpio X5+ Extended Battery) *3 charging + LOCK + adapter mode Mode 2. Sample 1 (Skorpio X5+ Extended Battery) *3 charging + IrDA communication + Sample 2 (Skorpio X5+ Extended Battery) *3 charging + IrDA communication + adapter mode
Radiated Emissions <below 1GHz>	Mode 1. Sample 2 (Skorpio X5+ Extended Battery) *3 charging + IrDA communication + Sample 1 (Skorpio X5+ Extended Battery) *3 charging + LOCK + adapter mode Mode 2. Sample 1 (Skorpio X5+ Extended Battery) *3 charging + IrDA communication + Sample 2 (Skorpio X5+ Extended Battery) *3 charging + IrDA communication + adapter mode
Radiated Emissions <below 1GHz>	Mode 1. Sample 2 (Skorpio X5+ Extended Battery) *3 charging + IrDA communication + Sample 1 (Skorpio X5+ Extended Battery) *3 charging + LOCK + adapter mode Mode 2. Sample 1 (Skorpio X5+ Extended Battery) *3 charging + IrDA communication + Sample 2 (Skorpio X5+ Extended Battery) *3 charging + IrDA communication + adapter mode

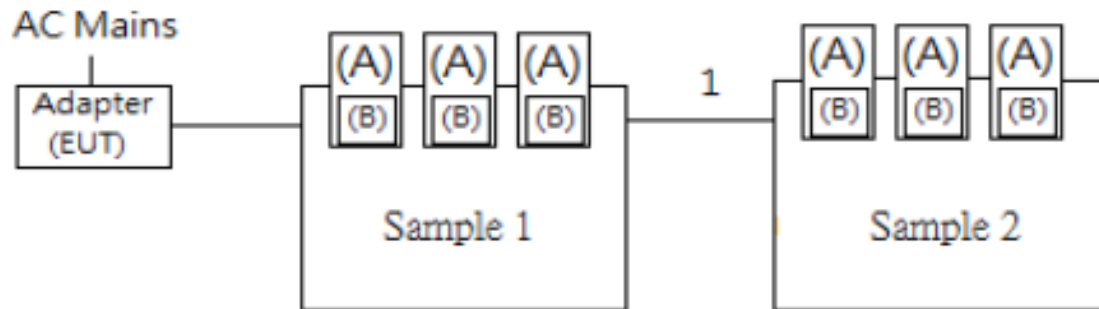
2.2. Description of Test System

Conducted emission and radiated emission below 1GHz

No.	Peripheral	Manufacturer	Model Number	FCC ID	Remarks
For Local					
A	Mobile Computer * 6	Datalogic	Skorpio X5	-	Client Provided
B	Battery * 6	Gushine	BY-08	-	Client Provided

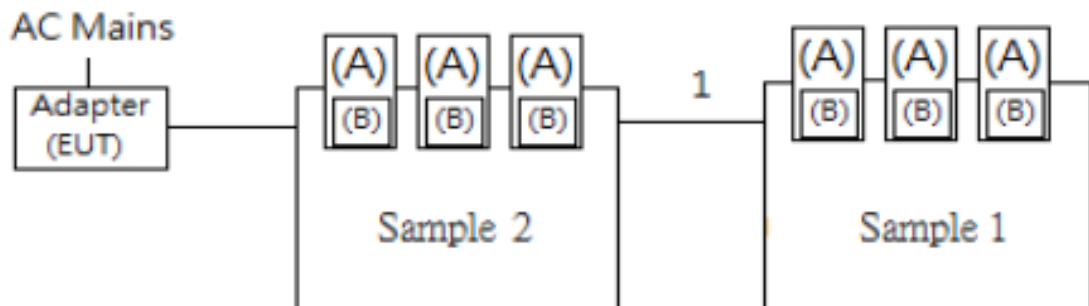
2.3. Connection Diagram of Test System

Test Setup Diagram - Conducted emission and radiated emission below 1GHz (Mode 1)



No.	Types of Cables	Shielding on Cable	Length (m)	Remarks
1	Power Cable	Non-Shielded	0.8	EUT

Test Setup Diagram - Conducted emission and radiated emission below 1GHz (Mode 2)



No.	Types of Cables	Shielding on Cable	Length (m)	Remarks
1	Power Cable	Non-Shielded	0.8	EUT

2.4. Test Manner

Mode 1

An executive program, under Android 10(Mobile Computer) was used as the test software. The program was executed as follows:

- The EUT charged Mobile Computer by WLC.
- The EUT charged Mobile Computer by WLC and Power Cable.
- The Local Mobile Computer open“Cradle test”execute Lock/unlock continuous test, and do continuous Lock/unlock action on EUT (Sample 1) by wireless (IrDA).
- The Local Mobile Computer open“Cradle test”execute IrDA communication test, and maintain the connection with EUT (Sample 2) via wireless (IrDA).

Mode 2

An executive program, under Android 10(Mobile Computer) was used as the test software. The program was executed as follows:

- The EUT charged Mobile Computer by WLC.
- The EUT charged Mobile Computer by WLC and Power Cable.
- The Local Mobile Computer open“Cradle test”execute IrDA communication test, and maintain the connection with EUT (Sample 1 & Sample 2) via wireless (IrDA).



3. General Information of Test

3.1. Test Facilities

Test Site : SPORTON INTERNATIONAL INC.	
☒ HUA YA	ADD: No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: 886-3-327-3456 FAX: 886-3-318-0055 FCC Designation Number: TW1093
☐ DONG HU	ADD: No. 3, Ln. 238, Kangle St., Neihsu Dist., Taipei City, Taiwan (R.O.C.) TEL: 886-2-2631-5551 FAX: 886-2-2631-9740 FCC Designation Number: TW1094
☐ LIN KOU	ADD: No. 30-2, Dingfu Vil., Linkou Dist., New Taipei City, Taiwan (R.O.C.) TEL: 886-2-2601-1640 FAX: 886-2-2601-1695 FCC Designation Number: TW1095

Test Items	Test Site No.	Test Engineer	Test Environment		Test Date	Remark
			temp °C	hum %		
Conducted Emissions of Powerline	CO04-HY	David Tu	22.1~22.6	60~61	11/Sep/2020	-
Radiated Emissions below 1GHz	10CH01-HY	Nigel Wang	26~26.5	59~60	09/Sep/2020	-

3.2. Test Standards

Test items	Test Standards and Test Procedures
Radiated and Conducted Emissions	FCC MP-5 - 1986 with FCC Method 47 CFR Part 18

3.3. Test Voltage/Frequencies

Power Supply Type	Voltage/Frequencies
AC Power Supply	120V / 60Hz

3.4. Test Distance and Frequency Range Investigated

Test Items	Frequency Range	Remark
Powerline Conducted Emissions	150 kHz to 30 MHz	-
Radiated Emissions (below 30MHz)	9kHz to 30 MHz	Measurement distance is 10 m.
Radiated Emissions (below 1GHz)	30MHz to 1GHz	Measurement distance is 10 m.

3.5. Operating Condition

- Customers require this specification for test plan.

4. Conducted Emissions Measurement

4.1. Limit

Limits for All other part 18 consumer devices			
Frequency range MHz	Coupling device	Detector type / bandwidth	limits dB(μV)
0,15 – 0,5	AMN	Quasi-peak / 9 kHz	66 - 56
0,5 – 5			56
5 – 30			60
0,15 – 0,5	AMN	Average / 9 kHz	56 - 46
0,5 – 5			46
5 – 30			50

Note 1: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

4.2. Test Procedures

- The EUT was warmed up for 15 minutes before testing started.
- The EUT was placed on a desk 0.8 meter height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meter from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connect to the other LISN.
- The LISN provides 50 ohm, coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- All emissions not reported here are more than 10 dB below the prescribed limit.

4.3. Measurement Results Calculation

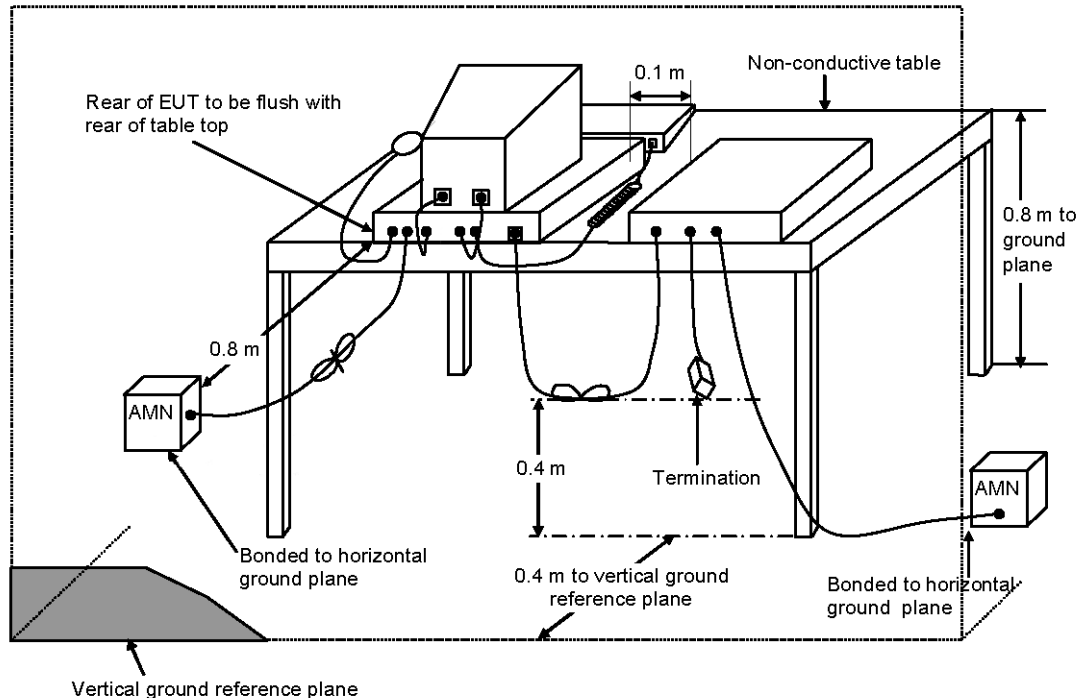
The measurand Level is calculated using:

Corrected Reading (dBμV) = Raw(Read Level)+(LISN Factor) + CL(Cable Loss) +AT(Attenuator)

For example at 0.3 MHz if the LISN Factor is 10.48 dB, the cable loss is 0.10 dB, the measured voltage is 36.39 dBμV, attenuation 10dB, the signal strength would be calculated:

Corrected Reading (dBμV) = 36.39 dBμV+10.48 dB + 0.10 dB + 10 dB = 56.97 dBμV

4.4. Typical Test Setup Layout



- AMN is 80 cm from the EUT and at least 80 cm from other units and other metal planes.
- EUT is connected to one artificial mains network (AMN).
- All other units of a system are powered from a second AMN. A multiple outlet strip can be used for multiple mains cords.
- Rear of EUT to be flushed with rear of table top.
- Peripherals shall be placed at a distance of 10 cm from each other and from the controller, except for the monitor which, if this is an acceptable installation practice, shall be placed directly on the top of the controller.
- If cables, which hang closer than 40 cm to the horizontal metal ground plane, cannot be shortened to appropriate length, the excess shall be folded back and forth forming a bundle 30 cm to 40 cm long.
- Mains cords and signal cables shall be positioned for their entire lengths, as far as possible, at 40 cm from the vertical reference plane.
- Cables of hand operated devices, such as keyboards, mice, etc. shall be placed as for normal usage.

4.5. Test Result

Refer as Appendix A

5. Radiated Emissions Measurement

5.1. Radiated Emission below 1GHz

5.1.1. Limit

Equipment	Operating frequency	Detector type / bandwidth	RF Power generated by equipment (watts)	Field strength limit (uV/m) (Distance at 300 m)	Field strength limit dB(μV/m) (Distance at 10 m)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	150 kHz~30 MHz Average /9 kHz 30~1000 MHz Average /100 kHz	Below 500	25	57.5
			500 or more	25 × SQRT (power/500)	57.5 × SQRT
Equipment	Operating frequency	Detector type / bandwidth	RF Power generated by equipment (watts)	Field strength limit (uV/m) (Distance at 300 m)	Field strength limit dB(μV/m) (Distance at 3 m)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	150 kHz~30 MHz Average /9 kHz 30~1000 MHz Average /100 kHz	Below 500	25	67.96
			500 or more	25 × SQRT (power/500)	67.96 × SQRT
Note 1: dB(μV/m) = 20log μV/m + 120 = 28 dB(μV/m)					
Note 2: It should be noted that the field strength is inversely proportional to distance, so the field strength at 300m is 1/30 the strength at 10m, i.e. L300m/Lx = X/300.					
Ex. L300m dB-Lx dB = 20log(300/x); L10m dB = 28 + 20log (300/10) = 57.5 dB(μV/m)					
Ex. L300m dB-Lx dB = 20log(300/x); L03m dB = 28 + 20log (300/03) = 67.96 dB(μV/m)					

5.1.2. Test Procedures

- a). The EUT was placed on a rotatable table top 0.8 meter above ground.
- b). The EUT was set 10 meters from the interference-receiving antenna (Loop) / (Bi-log) which was mounted on the top of a variable height antenna tower.
- c). The table was rotated 360 degrees to determine the position of the highest radiation.
- d). For a loop antenna. The antenna height shall be set at around 2 meters. Care should be taken to assure that readings are not taken in nulls.
- e). The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- f). For each suspected emission the EUT was arranged to its worst case and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- g). Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- h). If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the Average method and reported.

5.1.3. Measurement Results Calculation

The measurand Level is calculated using:

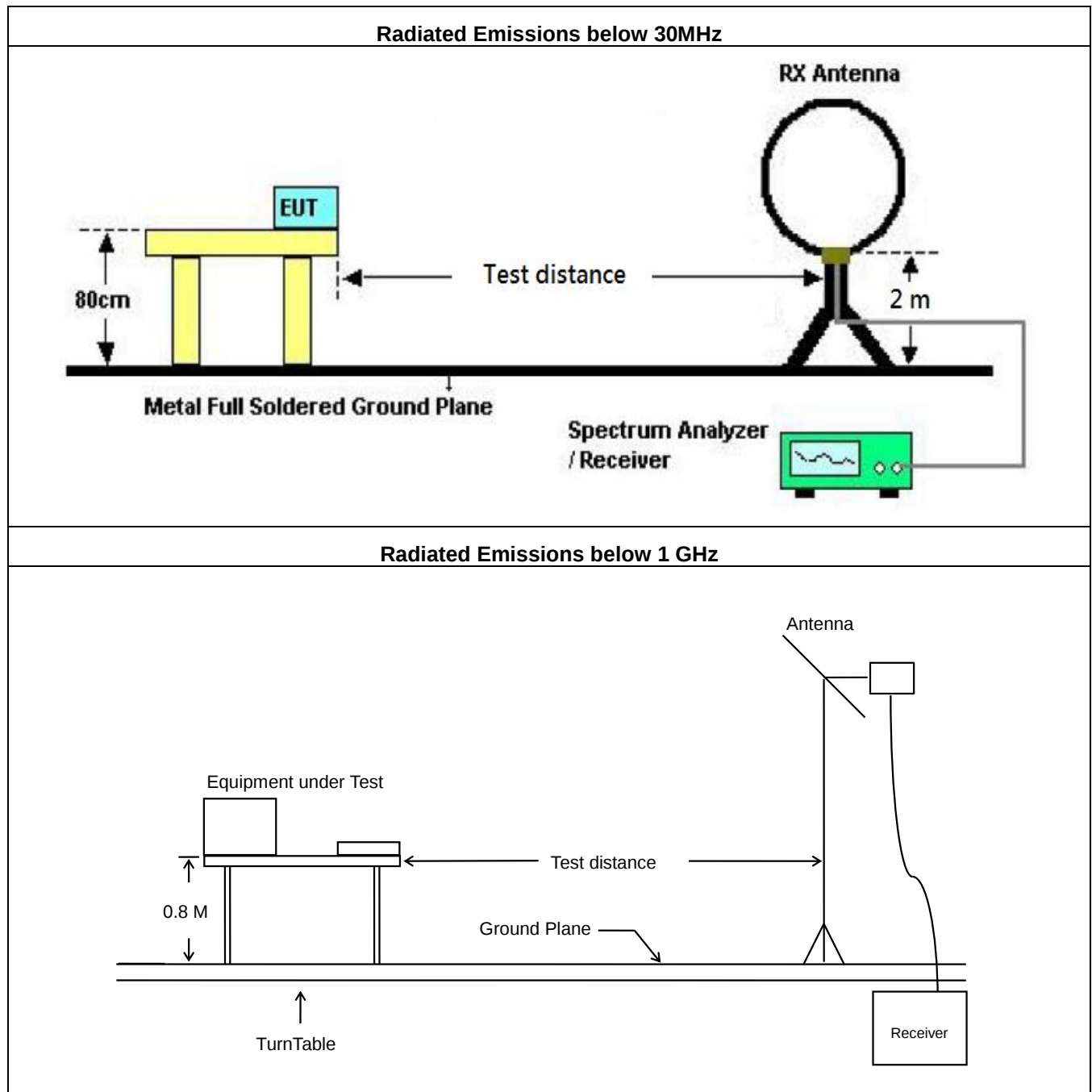
Corrected Reading (dB μ V/m) = Raw(Read Level)+AF(Antenna Factor)+CL(Cable Loss)–PA(Preamp Factor)

For example at 125 MHz if the Antenna Factor is 17.24 dB/m, the cable loss is 1.20 dB, the measured voltage is 35.80 dB μ V and the Preamp Factor is 27.18 dB, the signal strength would be calculated:

Corrected Reading (dB μ V/m) = 35.80 dB μ V + 17.24 dB/m + 1.20 dB - 27.18 dB = 27.06 dB μ V/m

Note: If a hybrid antenna is used, the antenna factor shall be the sum of the Antenna Factor + Attenuator Factor.

5.1.4. Typical Test Setup Layout



5.1.5. Test Result

Refer as Appendix B.1~B.2

6. Uncertainty of Test Site

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 ($k=2$)).

6.1. Emission Test Measurement Uncertainty

Test Items	Test Site No.	U_{LAB}
Conducted Emissions	CO04-HY	1.95 dB
Radiated Emissions below 30MHz	10CH01-HY	4.72 dB
Radiated Emissions below 1GHz	10CH01-HY	4.72 dB



7. List of Measuring Equipment Used

Conducted Emission - Test Date: 11/Sep/2020

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Test Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	29/May/2020	28/May/2021	Conduction (CO04-HY)
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	05/Nov/2019	04/Nov/2020	Conduction (CO04-HY)
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	31/Aug/2020	30/Aug/2021	Conduction (CO04-HY)
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	24/Sep/2019	23/Sep/2020	Conduction (CO04-HY)
Software	Sporton	SENSE-EMI	V5.10.7	-	NCR	NCR	Conduction (CO04-HY)

NCR: No Calibration Required.

Radiated Emission below 1GHz - Test Date: 09/Sep/2020

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
N.S.A. Measurement	SIDT FRANKONIA	SAC-10M	10CH01-HY	30MHz ~ 1GHz	19/Apr/2020	18/Apr/2021	Radiation (10CH01-HY)
Spectrum Analyzer	R&S	FSP7	838858/013	9kHz ~ 7GHz	01/Apr/2020	31/Mar/2021	Radiation (10CH01-HY)
Amplifier	EM Electronics	EM101	60708	10MHz ~ 1GHz	26/Dec/2019	25/Dec/2020	Radiation (10CH01-HY)
Amplifier	Agilent	8447D	2944A10826	100kHz ~ 1.3GHz	30/Mar/2020	29/Mar/2021	Radiation (10CH01-HY)
Receiver	KEYSIGHT	N9038A	MY54130031	20Hz ~ 8.4GHz	08/Nov/2019	07/Nov/2020	Radiation (10CH01-HY)
Biconical Antenna	Schwarz beck	VHBB 9124	286	30MHz ~ 200MHz	13/May/2020	12/May/2021	Radiation (10CH01-HY)
Log Antenna	Schwarz beck	VUSLP 9111	206	200MHz ~ 1GHz	13/May/2020	12/May/2021	Radiation (10CH01-HY)
Turn Table	HD	DT 60 RPS	1513/004/00	0 ~ 360 degree	NCR	NCR	Radiation (10CH01-HY)
Antenna Mast	HD	MA240	240/100/686	1 ~ 4 m	NCR	NCR	Radiation (10CH01-HY)
Antenna Mast	Chaintek	EM-1000	60811	1 ~ 4 m	NCR	NCR	Radiation (10CH01-HY)
RF Cable	Suhner Switzerland + Rosenberger	RG8/U	CB023-INSIDE	30MHz ~ 1GHz	05/Nov/2019	04/Nov/2020	Radiation (10CH01-HY)
RF Cable	Suhner Switzerland + Rosenberger	RG223/U + UAA220A-0	CB022-DOOR	30MHz ~ 1GHz	05/Nov/2019	04/Nov/2020	Radiation (10CH01-HY)
RF Cable	Suhner Switzerland + Rosenberger	RG223/U+UAA220A-0+RG142BU/2	CB024-CAR	9KHz ~ 1GHz	05/Nov/2019	04/Nov/2020	Radiation (10CH01-HY)
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	16/Mar/2020	15/Mar/2021	Radiation (10CH01-HY)
Software	Sporton	SENSE-EMI	V5.10.7	-	NCR	NCR	Radiation (10CH01-HY)

NCR: No Calibration Required.

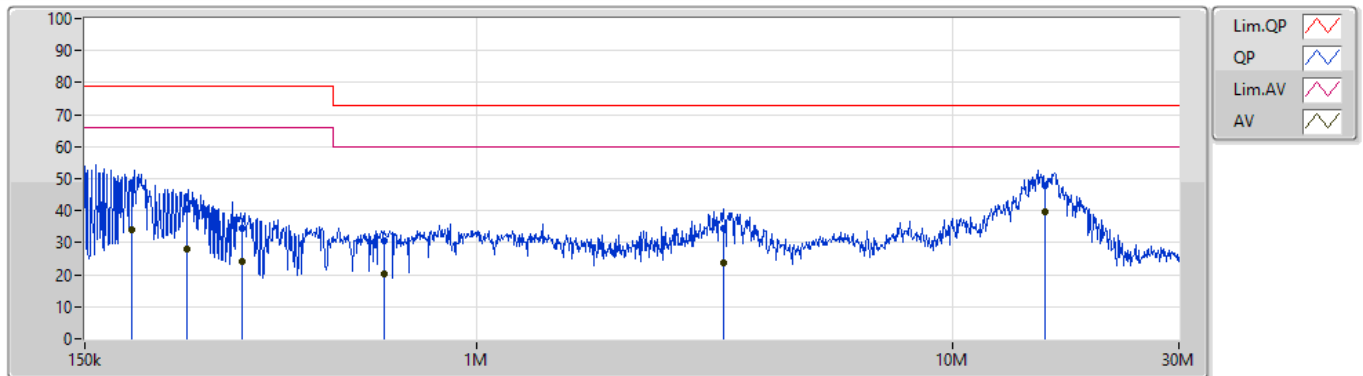


Summary

Mode	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition
Mode 1	AV	15.703M	39.85	60.00	-20.15	19.80	Line
Mode 2	AV	18.958M	39.61	60.00	-20.39	19.89	Neutral

Mode 1

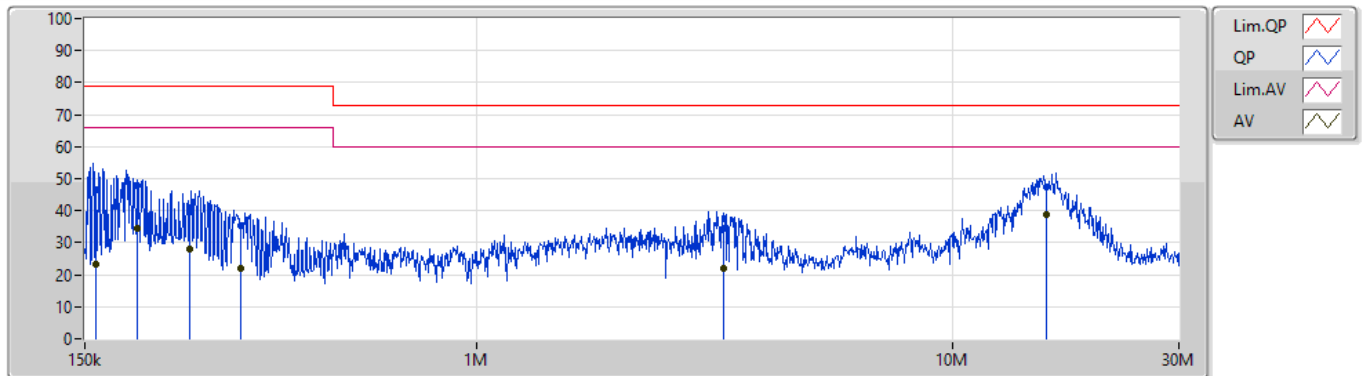
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Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	188.588k	47.77	79.00	-31.23	19.53	Line	-	28.24	9.65	0.01	9.87			
AV	188.588k	34.02	66.00	-31.98	19.53	Line	-	14.49	9.65	0.01	9.87			
QP	245.346k	40.65	79.00	-38.35	19.53	Line	-	21.12	9.65	0.01	9.87			
AV	245.346k	28.04	66.00	-37.96	19.53	Line	-	8.51	9.65	0.01	9.87			
QP	320.594k	34.54	79.00	-44.46	19.53	Line	-	15.01	9.64	0.02	9.87			
AV	320.594k	23.97	66.00	-42.03	19.53	Line	-	4.44	9.64	0.02	9.87			
QP	641.44k	30.61	73.00	-42.39	19.55	Line	-	11.06	9.64	0.04	9.87			
AV	641.44k	20.25	60.00	-39.75	19.55	Line	-	0.70	9.64	0.04	9.87			
QP	3.309M	34.28	73.00	-38.72	19.65	Line	-	14.63	9.66	0.11	9.88			
AV	3.309M	23.92	60.00	-36.08	19.65	Line	-	4.27	9.66	0.11	9.88			
QP	15.703M	47.72	73.00	-25.28	19.80	Line	-	27.92	9.66	0.26	9.88			
AV	15.703M	39.85	60.00	-20.15	19.80	Line	"Worst"	20.05	9.66	0.26	9.88			

Mode 1

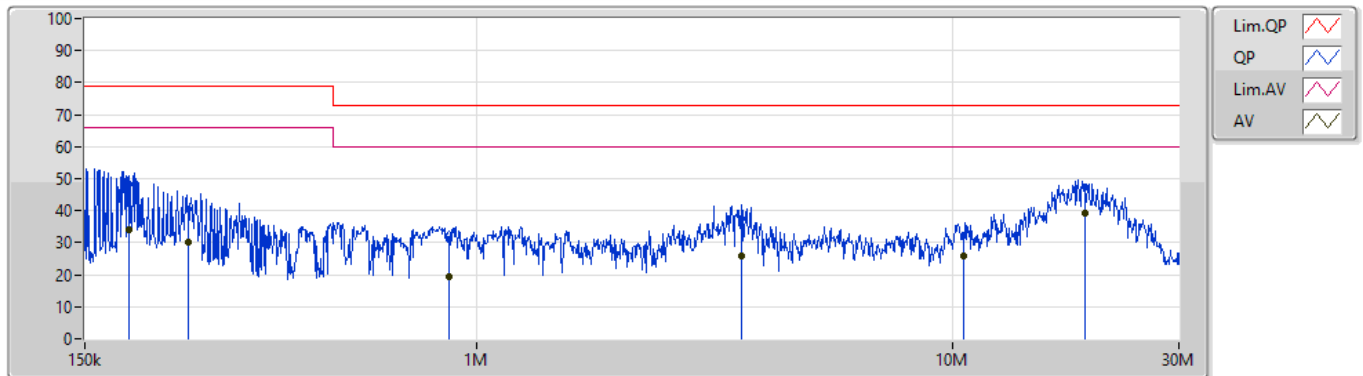
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Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	158.03k	46.36	79.00	-32.64	19.53	Neutral	-	26.83	9.65	0.01	9.87			
AV	158.03k	23.34	66.00	-42.66	19.53	Neutral	-	3.81	9.65	0.01	9.87			
QP	192.988k	48.00	79.00	-31.00	19.52	Neutral	-	28.48	9.64	0.01	9.87			
AV	192.988k	34.54	66.00	-31.46	19.52	Neutral	-	15.02	9.64	0.01	9.87			
QP	249.937k	41.16	79.00	-37.84	19.52	Neutral	-	21.64	9.64	0.01	9.87			
AV	249.937k	27.98	66.00	-38.02	19.52	Neutral	-	8.46	9.64	0.01	9.87			
QP	319.194k	35.21	79.00	-43.79	19.52	Neutral	-	15.69	9.63	0.02	9.87			
AV	319.194k	22.13	66.00	-43.87	19.52	Neutral	-	2.61	9.63	0.02	9.87			
QP	3.305M	34.65	73.00	-38.35	19.65	Neutral	-	15.00	9.66	0.11	9.88			
AV	3.305M	21.88	60.00	-38.12	19.65	Neutral	-	2.23	9.66	0.11	9.88			
QP	15.828M	47.28	73.00	-25.72	19.85	Neutral	-	27.43	9.71	0.26	9.88			
AV	15.828M	38.58	60.00	-21.42	19.85	Neutral	"Worst"	18.73	9.71	0.26	9.88			

Mode 2

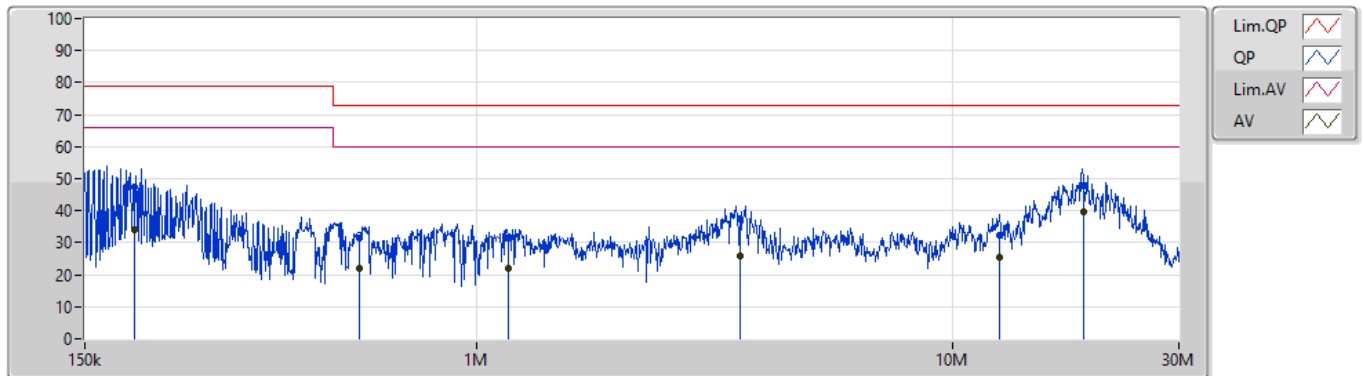
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Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	186.308k	48.09	79.00	-30.91	19.53	Line	-	28.56	9.65	0.01	9.87			
AV	186.308k	34.04	66.00	-31.96	19.53	Line	-	14.51	9.65	0.01	9.87			
QP	248.326k	40.67	79.00	-38.33	19.53	Line	-	21.14	9.65	0.01	9.87			
AV	248.326k	30.09	66.00	-35.91	19.53	Line	-	10.56	9.65	0.01	9.87			
QP	874.072k	30.90	73.00	-42.10	19.56	Line	-	11.34	9.64	0.05	9.87			
AV	874.072k	19.61	60.00	-40.39	19.56	Line	-	0.05	9.64	0.05	9.87			
QP	3.598M	37.30	73.00	-35.70	19.65	Line	-	17.65	9.66	0.11	9.88			
AV	3.598M	25.72	60.00	-34.28	19.65	Line	-	6.07	9.66	0.11	9.88			
QP	10.606M	32.18	73.00	-40.82	19.79	Line	-	12.39	9.69	0.22	9.88			
AV	10.606M	25.71	60.00	-34.29	19.79	Line	-	5.92	9.69	0.22	9.88			
QP	19.011M	47.24	73.00	-25.76	19.81	Line	-	27.43	9.64	0.28	9.89			
AV	19.011M	39.36	60.00	-20.64	19.81	Line	"Worst"	19.55	9.64	0.28	9.89			

Mode 2

11/09/2020



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	190.891k	47.33	79.00	-31.67	19.52	Neutral	-	27.81	9.64	0.01	9.87			
AV	190.891k	33.90	66.00	-32.10	19.52	Neutral	-	14.38	9.64	0.01	9.87			
QP	566.664k	31.39	73.00	-41.61	19.53	Neutral	-	11.86	9.63	0.03	9.87			
AV	566.664k	21.94	60.00	-38.06	19.53	Neutral	-	2.41	9.63	0.03	9.87			
QP	1.163M	31.48	73.00	-41.52	19.57	Neutral	-	11.91	9.63	0.06	9.88			
AV	1.163M	22.16	60.00	-37.84	19.57	Neutral	-	2.59	9.63	0.06	9.88			
QP	3.575M	37.41	73.00	-35.59	19.65	Neutral	-	17.76	9.66	0.11	9.88			
AV	3.575M	26.04	60.00	-33.96	19.65	Neutral	-	6.39	9.66	0.11	9.88			
QP	12.6M	32.40	73.00	-40.60	19.83	Neutral	-	12.57	9.71	0.24	9.88			
AV	12.6M	25.42	60.00	-34.58	19.83	Neutral	-	5.59	9.71	0.24	9.88			
QP	18.958M	47.67	73.00	-25.33	19.89	Neutral	-	27.78	9.72	0.28	9.89			
AV	18.958M	39.61	60.00	-20.39	19.89	Neutral	"Worst"	19.72	9.72	0.28	9.89			



Radiated Emissions below 1GHz (9kHz~30MHz)

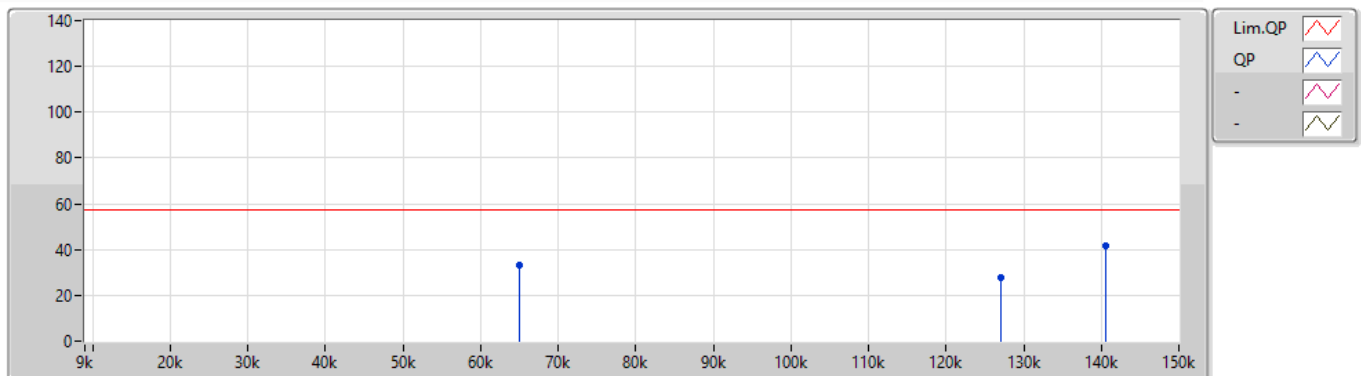
Appendix B.1

Summary

Mode	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Condition	Azimuth (°)	Height (m)
Mode 1	PK	140.553k	46.13	57.50	-11.37	20.20	Horizontal	135	2.00
Mode 2	PK	141.681k	46.18	57.50	-11.32	20.21	Horizontal	139	2.00

Mode 1

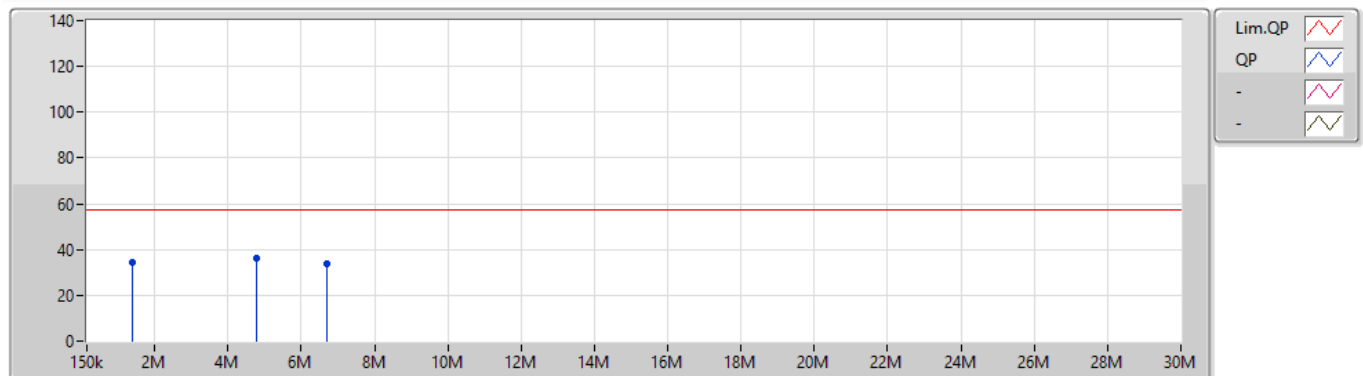
09/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	64.977k	33.46	57.50	-24.04	20.90	10	Vertical	-	-	-	12.56	20.72	0.18	-
PK	127.017k	27.59	57.50	-29.91	20.17	10	Vertical	-	-	-	7.42	20.01	0.16	-
PK	140.553k	41.48	57.50	-16.02	20.20	10	Vertical	129	2.00	"Worst"	21.28	20.05	0.15	-

Mode 1

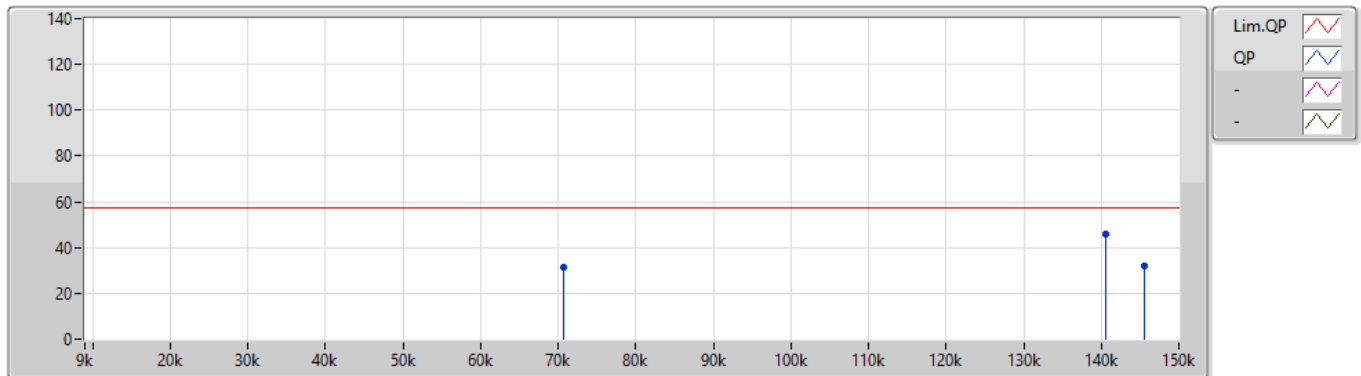
09/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	1.404M	34.68	57.50	-22.82	20.47	10	Vertical	-	-	-	14.21	20.22	0.25	-
PK	4.777M	36.50	57.50	-21.00	21.18	10	Vertical	172	2.00	"Worst"	15.32	20.62	0.56	-
PK	6.717M	33.93	57.50	-23.57	21.93	10	Vertical	-	-	-	12.00	21.26	0.67	-

Mode 1

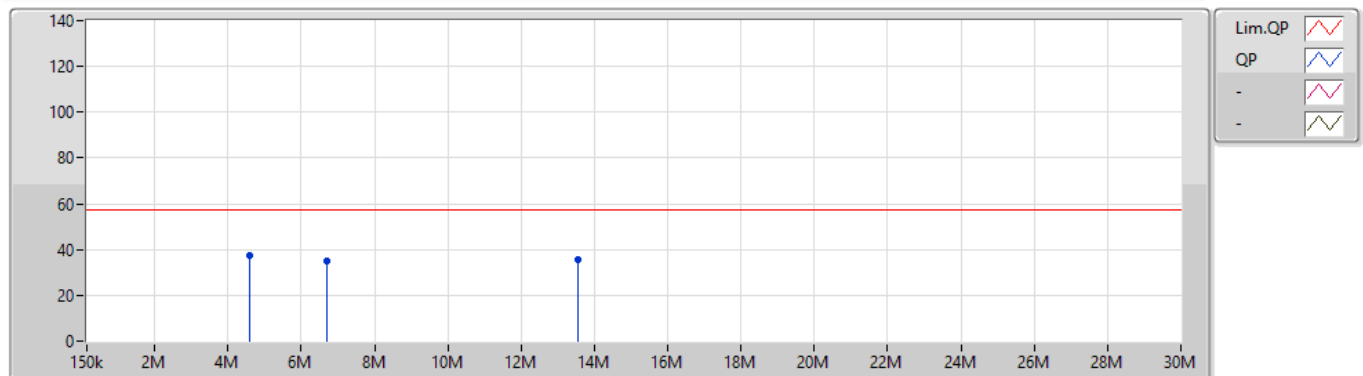
09/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	70.758k	31.65	57.50	-25.85	20.73	10	Horizontal	-	-	-	10.92	20.55	0.18	-
PK	140.553k	46.13	57.50	-11.37	20.20	10	Horizontal	135	2.00	"Worst"	25.93	20.05	0.15	-
PK	145.629k	31.74	57.50	-25.76	20.21	10	Horizontal	-	-	-	11.53	20.07	0.14	-

Mode 1

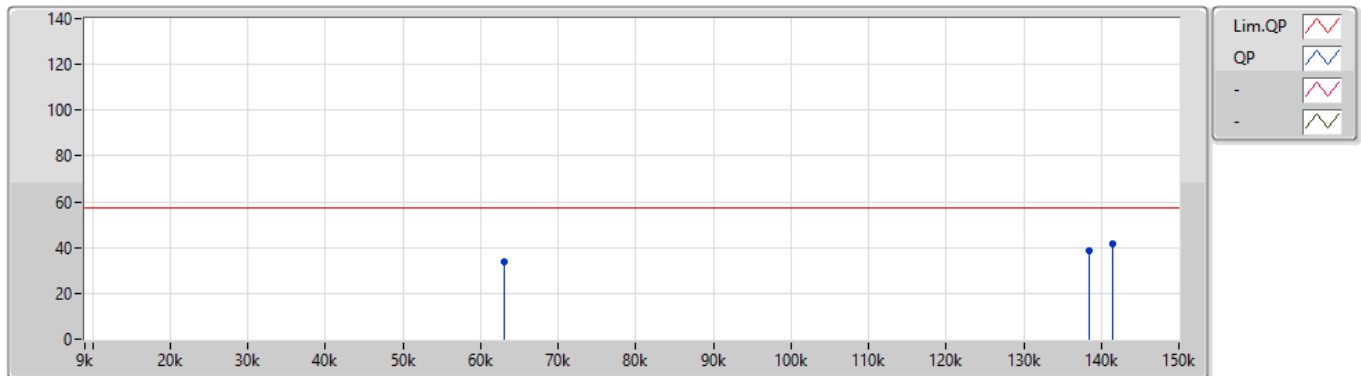
09/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	4.598M	37.69	57.50	-19.81	21.10	10	Horizontal	155	2.00	"Worst"	16.59	20.55	0.55	-
PK	6.717M	34.83	57.50	-22.67	21.93	10	Horizontal	-	-	-	12.90	21.26	0.67	-
PK	13.553M	35.61	57.50	-21.89	23.30	10	Horizontal	-	-	-	12.31	22.35	0.95	-

Mode 2

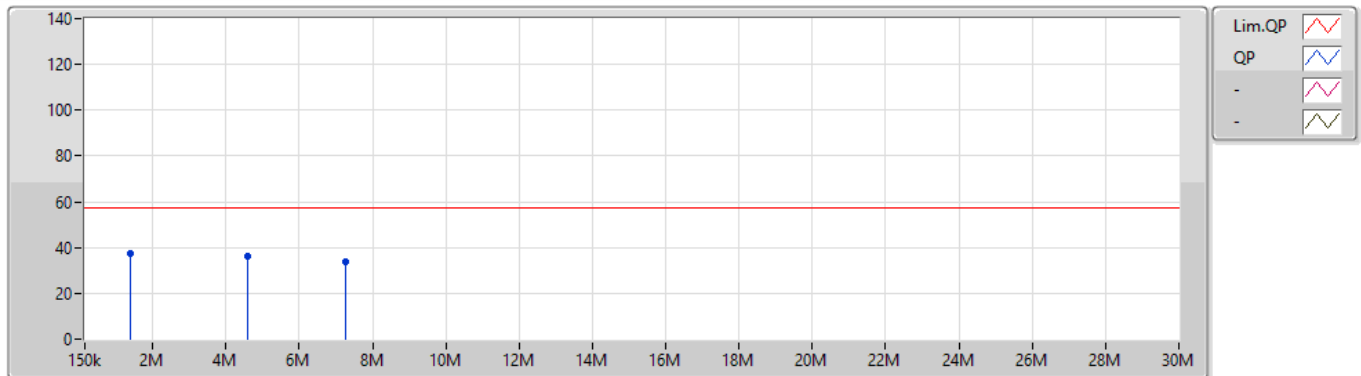
10/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	63.003k	33.95	57.50	-23.55	20.95	10	Vertical	-	-	-	13.00	20.77	0.18	-
PK	138.438k	38.46	57.50	-19.04	20.20	10	Vertical	-	-	-	18.26	20.05	0.15	-
PK	141.399k	41.64	57.50	-15.86	20.20	10	Vertical	137	2.00	"Worst"	21.44	20.05	0.15	-

Mode 2

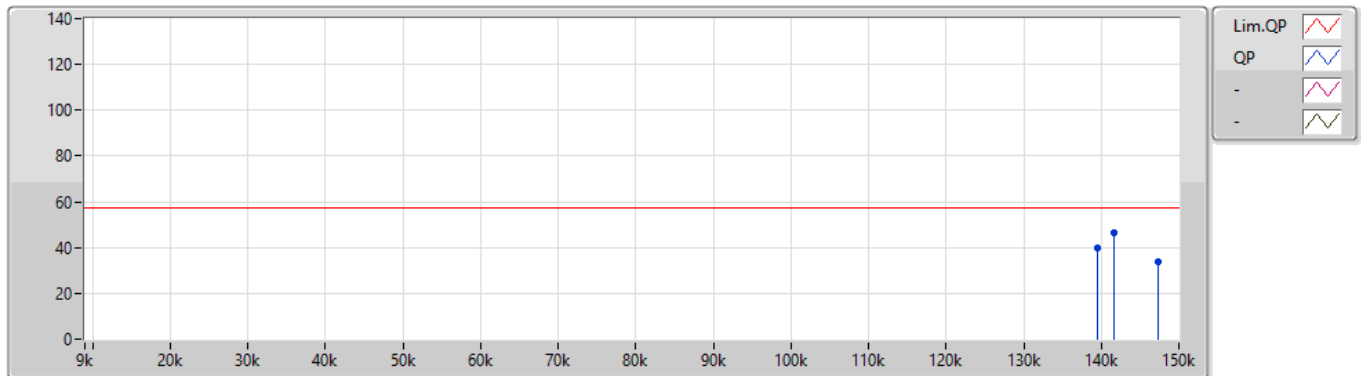
10/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	1.404M	37.64	57.50	-19.86	20.47	10	Vertical	170	2.00	"Worst"	17.17	20.22	0.25	-
PK	4.598M	36.25	57.50	-21.25	21.10	10	Vertical	-	-	-	15.15	20.55	0.55	-
PK	7.254M	34.02	57.50	-23.48	22.10	10	Vertical	-	-	-	11.92	21.40	0.70	-

Mode 2

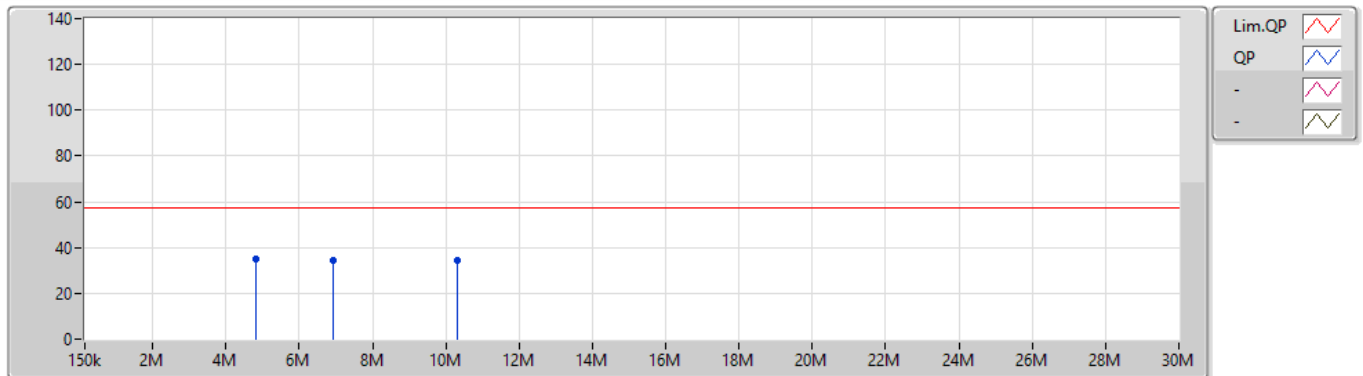
10/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	139.566k	40.06	57.50	-17.44	20.20	10	Horizontal	-	-	-	19.86	20.05	0.15	-
PK	141.681k	46.18	57.50	-11.32	20.21	10	Horizontal	139	2.00	"Worst"	25.97	20.06	0.15	-
PK	147.321k	33.83	57.50	-23.67	20.21	10	Horizontal	-	-	-	13.62	20.07	0.14	-

Mode 2

10/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	4.807M	34.87	57.50	-22.63	21.19	10	Horizontal	176	2.00	"Worst"	13.68	20.63	0.56	-
PK	6.926M	34.16	57.50	-23.34	21.99	10	Horizontal	-	-	-	12.17	21.31	0.68	-
PK	10.299M	34.17	57.50	-23.33	22.84	10	Horizontal	-	-	-	11.33	22.03	0.81	-

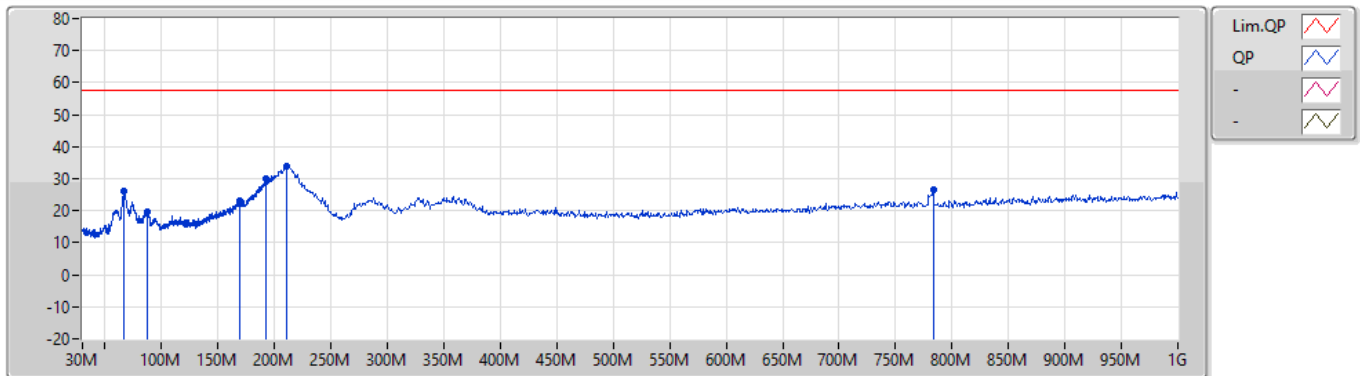


Summary

Mode	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Condition	Azimuth (°)	Height (m)
Mode 1	PK	211.2M	33.75	57.50	-23.75	-22.28	Vertical	285	1.00
Mode 2	PK	214.4M	32.45	57.50	-25.05	-22.54	Horizontal	307	4.00

Mode 1

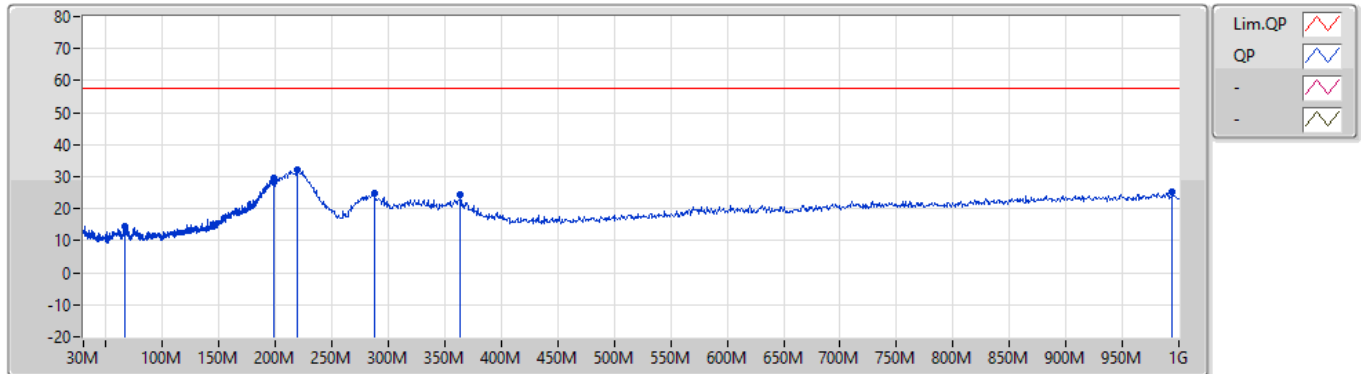
09/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	66.72M	26.02	57.50	-31.48	-16.93	10	Vertical	-	-	-	42.95	9.29	2.13	28.35
PK	87.8M	19.73	57.50	-37.77	-16.69	10	Vertical	-	-	-	36.42	9.13	2.46	28.28
PK	169.57M	23.28	57.50	-34.22	-11.97	10	Vertical	-	-	-	35.25	12.69	3.30	27.96
PK	192.35M	30.17	57.50	-27.33	-10.13	10	Vertical	-	-	-	40.30	14.17	3.52	27.82
PK	211.2M	33.75	57.50	-23.75	-22.28	10	Vertical	285	1.00	"Worst"	56.03	14.72	3.48	40.48
PK	783.2M	26.76	57.50	-30.74	-12.60	10	Vertical	-	-	-	39.36	20.43	6.93	39.96

Mode 1

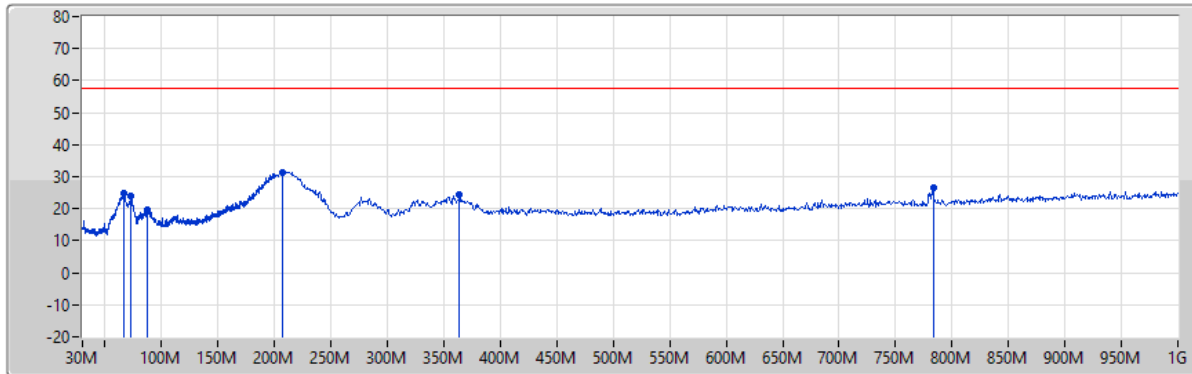
09/09/2020



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB/m)	(dB)	(dB)
PK	66.72M	14.65	57.50	-42.85	-16.93	10	Horizontal	-	-	-	31.58	9.29	2.13	28.35
PK	198.81M	29.63	57.50	-27.87	-9.74	10	Horizontal	-	-	-	39.37	14.45	3.59	27.78
PK	219.2M	32.21	57.50	-25.29	-22.88	10	Horizontal	305	4.00	"Worst"	55.09	14.05	3.53	40.46
PK	287.2M	24.69	57.50	-32.81	-23.58	10	Horizontal	-	-	-	48.27	12.86	4.01	40.45
PK	364M	24.29	57.50	-33.21	-20.41	10	Horizontal	-	-	-	44.70	15.31	4.58	40.30
PK	994.4M	25.18	57.50	-32.32	-9.36	10	Horizontal	-	-	-	34.54	22.38	7.88	39.62

Mode 2

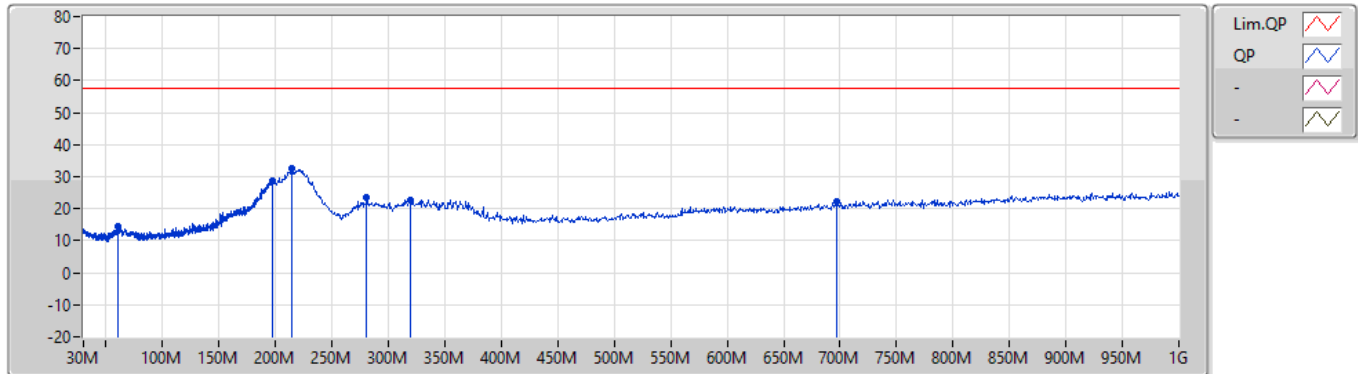
09/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	66.55M	24.91	57.50	-32.59	-16.92	10	Vertical	-	-	-	41.83	9.30	2.13	28.35
PK	72.84M	23.77	57.50	-33.73	-16.94	10	Vertical	-	-	-	40.71	9.08	2.31	28.33
PK	87.29M	19.60	57.50	-37.90	-16.77	10	Vertical	-	-	-	36.37	9.07	2.45	28.29
PK	207.2M	31.40	57.50	-26.10	-21.88	10	Vertical	272	1.00	"Worst"	53.28	15.16	3.45	40.49
PK	364M	24.19	57.50	-33.31	-20.41	10	Vertical	-	-	-	44.60	15.31	4.58	40.30
PK	783.2M	26.53	57.50	-30.97	-12.60	10	Vertical	-	-	-	39.13	20.43	6.93	39.96

Mode 2

09/09/2020



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)
PK	60.6M	14.57	57.50	-42.93	-16.89	10	Horizontal	-	-	-	31.46	9.46	2.01	28.36
PK	197.96M	28.92	57.50	-28.58	-9.69	10	Horizontal	-	-	-	38.61	14.51	3.58	27.78
PK	214.4M	32.45	57.50	-25.05	-22.54	10	Horizontal	307	4.00	"Worst"	54.99	14.43	3.50	40.47
PK	280.8M	23.62	57.50	-33.88	-23.55	10	Horizontal	-	-	-	47.17	12.93	3.96	40.44
PK	320M	22.75	57.50	-34.75	-22.12	10	Horizontal	-	-	-	44.87	14.02	4.27	40.41
PK	697.6M	22.45	57.50	-35.05	-13.46	10	Horizontal	-	-	-	35.91	20.05	6.59	40.10