Shenzhen Most Technology Service Co., Ltd.
No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.

RF Exposure Evaluation Report

Report Reference No.....:	**MTWC21120950-H**
FCC ID..... :	**2ASUD-HMR50**
Compiled by (position+printed name+signature)..:	File administrators Alisa Luo
Supervised by (position+printed name+signature)..:	Test Engineer Sunny Deng
Approved by (position+printed name+signature)..:	Manager Yvette Zhou
Date of issue.....:	**January 05, 2022**
Representative Laboratory Name .:	**Shenzhen Most Technology Service Co., Ltd.**
Address .....:	No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.
Applicant's name.....:	**Elettromedia s.r.l.**
Address .....:	**62018 Potenza Picena (MC) Italy**
Test specification/ Standard .....**:**	**47 CFR Part 1.1307** **47 CFR Part 1.1310** **KDB447498D01 General RF Exposure Guidance v06**
TRF Originator.....:	Shenzhen Most Technology Service Co., Ltd.

Test item description .....:	Marine Audio
Trade Mark .....:	Hertz
Manufacturer .....:	**Eastern Partner Limited**
Model/Type reference.....:	HMR 50
Listed Models .....:	N/A
Modulation Type .....:	GFSK, π/4DQPSK, 8DPSK
Operation Frequency.....:	From 2402MHz to 2480MHz
Hardware Version.....	HMR 50 KMB PCB 1120-H51031-MB02 VER:A
Software Version	MPEG VERSION: V4.30
Rating .....:	DC 12V
Result.....:	**PASS**

T E S T R E P O R T

Equipment under Test	:	Marine Audio
Model /Type	:	HMR 50
Listed Models	:	N/A
Remark		N/A
Applicant	:	Elettromedia s.r.l.
Address	:	62018 Potenza Picena (MC) Italy
Manufacturer	:	Eastern Partner Limited
Address	:	Room 1413, ICC Tower ,Fuhau San Road,Futian CBD,Shenzhen 518048,China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2022.01.05	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06
4.3.1. Standalone SAR test exclusion considerations
Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.1.2 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*($180/f^2$)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

F= Frequency in MHz
Friis Formula
Friis transmission formula: Pd = (Pout*G)/(4* Pi * R 2) Where
Pd = power density in mW/cm2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416

R = distance between observation point and center of the radiator in cm
Pd id the limit of MPE, 1 mW/cm2 . If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.1.3 EUT RF Exposure

Antenna Gain: 0.5 dBi
Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.4 in linear scale. Output Power Into Antenna & RF Exposure Evaluation Distance:

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	0.61	0.61±1	1.61
Middle(2441MHz)	1.59	1.59±1	2.59
Highest(2480MHz)	1.36	1.36±1	2.36

π/4DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	0.65	0.65±1	1.65
Middle(2441MHz)	1.56	1.56±1	2.56
Highest(2480MHz)	1.65	1.65±1	2.65

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	0.94	0.94±1	1.94
Middle(2441MHz)	1.32	1.32±1	2.32
Highest(2480MHz)	1.54	1.54±1	2.54

BT classic

Worst case: π /4DQPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest(2480MHz)	2.65	1.84	0.5	0.00041	1.0	Pass

Note: 1) Refer to report **MTWC21120930-R1** for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(1.84*1.12)/(4*3.1416*20^2)=0.00041

.....THE END OF REPORT.....