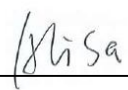

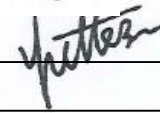


## RF Exposure Evaluation Report

<b>Report Reference No.</b> ..... :	<b>MTEB23110007-H</b>	
<b>FCC ID</b> ..... :	<b>2ABD3-MA860</b>	
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..... :	Nov. 01,2023	
<b>Representative Laboratory Name.</b> :	<b>Shenzhen Most Technology Service Co., Ltd.</b>	
Address..... :	No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.	
<b>Applicant's name</b> ..... :	<b>Ocean Digital Technology Ltd.</b>	
Address..... :	Flat 12B, Yeung Yiu Chung (No.8) Ind. Bldg.,20 Wang Hoi Road, Kowloon Bay,Hong Kong	
<b>Test specification/ Standard</b> ..... :	<b>47 CFR Part 1.1307;47 CFR Part 1.1310</b> <b>KDB447498D01 General RF Exposure Guidance v06</b>	
TRF Originator..... :	Shenzhen Most Technology Service Co., Ltd.	
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This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Most Technology Service Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Most Technology Service Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.		
<b>Test item description</b> ..... :	Stereo Internet radio	
Trade Mark..... :	N/A	
Model/Type reference..... :	MA-860	
Listed Models .....	WR-860,MA-860NP,WR-860NP, MA-860N,WR-860N	
Modulation Type..... :	b: DSSS ,CCK ; g/n: BPSK,QPSK,QAM GFSK/ GFSK, π/4DQPSK, 8DPSK	
Operation Frequency..... :	From 2412MHz~2462MHz 2402MHz to 2480MHz	
Hardware Version.....	MP	
Software Version.....	/	
Rating..... :	DC 9V by Adapter	
Result..... :	<b>PASS</b>	

**TEST REPORT**

Equipment under Test : Stereo Internet radio

Model /Type : MA-860

Listed Models : WR-860,MA-860NP,WR-860NP, MA-860N,WR-860N

Remark : Only the model name and appearance are different

Applicant : Ocean Digital Technant Ltd.

Address : Flat 12B, Yeung Yiu Chung (No.8) Ind. Bldg.,20 Wang Hoi Road,  
Kowloon Bay,Hong Kong

Manufacturer : Ocean Digital Technology Ltd.

Address : Flat 12B, Yeung Yiu Chung (No.8) Ind. Bldg.,20 Wang Hoi Road,  
Kowloon Bay,Hong Kong

<b>Test Result:</b>	<b>PASS</b>
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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	2023.11.01	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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	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:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$  Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. 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**

WIFI and BT do not support simultaneous transmission.

Antenna Gain: 3.3dBi

## BLE

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402)	-1.582	-1.582 ± 1	-0.582
Middle(2440MHz)	-0.728	-0.728 ± 1	0.272
Highest(2480MHz)	-0.821	-0.821 ± 1	0.179

## BLE

Worst case: GFSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
Middle(2440MHz)	0.272	1.06	3.3	0.00045	1.0	Pass

Note: 1) Refer to report MTEB23110007-R for EUT test Max Conducted average Output Power value.

Note: 2)  $P_d = (P_{out} * G) / (4 * \pi * R^2) = (1.06 * 2.14) / (4 * 3.1416 * 20^2) = 0.00045$ 

## WIFI 2.4G

802.11b			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	13.35	13.35 ± 1	14.35
Middle(2437MHz)	13.41	13.41 ± 1	14.41
Highest(2462MHz)	13.08	13.08 ± 1	14.08

802.11g			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	11.40	11.40 ± 1	12.4
Middle(2437MHz)	11.62	11.62 ± 1	12.62
Highest(2462MHz)	11.35	11.35 ± 1	12.35

802.11n(H20)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	12.05	12.05 ± 1	13.05
Middle(2437MHz)	11.88	11.88 ± 1	12.88
Highest(2462MHz)	10.68	10.68 ± 1	11.68

802.11n(H40)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2422MHz)	11.81	11.81 ± 1	12.81
Middle(2437MHz)	11.84	11.84 ± 1	12.84
Highest(2452MHz)	11.77	11.77 ± 1	12.77

## WIFI 2.4G

Worst case: 802.11b						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
Middle(2437MHz)	14.41	26.61	3.3	0.0118	1.0	Pass

Note: 1) Refer to report MTEB23110007-R2 for EUT test Max Conducted average Output Power value.

Note: 2)  $P_d = (P_{out} * G) / (4 * \pi * R^2) = (26.61 * 2.14) / (4 * 3.1416 * 20^2) = 0.0118$

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	-1.407	-1.407 ± 1	-0.407
Middle(2441MHz)	-0.330	-0.330 ± 1	0.67
Highest(2480MHz)	-0.495	-0.495 ± 1	0.505

π /4DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	0.349	0.349 ± 1	1.349
Middle(2441MHz)	1.475	1.475 ± 1	2.475
Highest(2480MHz)	1.263	1.263 ± 1	2.263

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	0.458	0.458 ± 1	1.458
Middle(2441MHz)	1.575	1.575 ± 1	2.575
Highest(2480MHz)	1.313	1.313 ± 1	2.313

Worst case: 8DPSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
Middle(2441MHz)	2.575	1.81	3.3	0.00077	1.0	Pass

Note: 1) Refer to report MTEB23110007-R1 for EUT test Max Conducted average Output Power value.

Note: 2)  $P_d = (P_{out} * G) / (4 * \pi * R^2) = (1.81 * 2.14) / (4 * 3.1416 * 20^2) = 0.00077$

Note: 3) EUT's Bluetooth module is more than 20cm away from the human body.

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