Shenzhen Most Technology Service Co., Ltd.
East A, 1/F.,New Aolin Factory Buiding, Langshan Erlu, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China.

RF Exposure Evaluation Report

Report Reference No..... :	**MTEB24060134-H**
FCC ID..... :	**2ABD3-MA18FD**
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.....:	June 13,2024
Representative Laboratory Name. :	**Shenzhen Most Technology Service Co., Ltd.**
Address..... :	East A, 1/F.,New Aolin Factory Buiding, Langshan Erlu, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China.
Applicant's name.....:	**Ocean Digital Technology Ltd.**
Address..... :	Flat B, 12/F., Yeung Yiu Chung (No.8) Ind. Bldg., 20 Wang Hoi Road, Kowloon Bay, Hong Kong
Test specification/ Standard.....**:**	**47 CFR Part 1.1307** **47 CFR Part 2.1093**
TRF Originator.....:	Shenzhen Most Technology Service Co., Ltd.

Test item description.....:	Internet Radio
Trade Mark.....:	N/A
Model/Type reference..... :	MA-18F
Listed Models ..... :	MA-18，MA-18N, MA-18D, WR-18, WR-18D, WR-18F
Modulation Type..... :	GFSK, π/4DQPSK, 8DPSK b: DSSS g/n: OFDM
Operation Frequency..... :	From 2402MHz to 2480MHz 802.11b/802.11g/802.11n(H20): 2412MHz~2462MHz
Hardware Version.....	MA-18F PCB Rev 1.0
Software Version.....	N/A
Rating.....:	DC 5V by USB Port DC 3.7V by Battery
Result.....:	PASS

T E S T R E P O R T

Equipment under Test	:	Internet Radio
Model /Type	:	MA-18F
Listed Models	:	MA-18，MA-18N, MA-18D, WR-18, WR-18D, WR-18F
Remark		Only the model name and appearance are different.
Applicant	:	Ocean Digital Technology Ltd.
Address	:	Flat B, 12/F., Yeung Yiu Chung (No.8) Ind. Bldg., 20 Wang Hoi Road, Kowloon Bay, Hong Kong
Manufacturer	:	Ocean Digital Technology Ltd.
Address	:	Flat B, 12/F., Yeung Yiu Chung (No.8) Ind. Bldg., 20 Wang Hoi Road, Kowloon Bay, Hong Kong

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	2024.06.13	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

WIFI 2.4G

802.11b			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	10.85	10.85±1	11.85
Middle(2437MHz)	10.59	10.59±1	11.59
Highest(2462MHz)	10.57	10.57±1	11.57

802.11g			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	12.76	12.76±1	13.76
Middle(2437MHz)	12.65	12.65±1	13.65
Highest(2462MHz)	12.69	12.69±1	13.69

802.11n(H20)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	12.36	12.36±1	13.36
Middle(2437MHz)	12.07	12.07±1	13.07
Highest(2462MHz)	12.20	12.20±1	13.20

WIFI 2.4G

Worst case: 802.11g						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest(2412MHz)	13.76	23.77	-0.395	0.0043	1.0	Pass

Note: 1) Refer to report MTEB24040034-R2 for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(23.77*0.91)/(4*3.1416*202)=0.0043

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	2.092	2.092±1	3.092
Middle(2441MHz)	2.480	2.480±1	3.480
Highest(2480MHz)	2.446	2.446±1	3.446

π /4DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	2.944	2.944±1	3.944
Middle(2441MHz)	3.338	3.338±1	4.338
Highest(2480MHz)	3.276	3.276±1	4.276

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	0.167	0.167±1	1.167
Middle(2441MHz)	0.669	0.669±1	1.669
Highest(2480MHz)	0.537	0.537±1	1.537

Worst case: π /4DQPSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest (2441MHz)	4.338	2.72	-0.395	0.00049	1.0	Pass

Note: 1) Refer to report MTEB24040034-R1 for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(2.72*0.91)/(4*3.1416*202)=0.00049
Note: 3)EUT's Bluetooth module is more than 20cm away from the human body.

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