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Report No.: 2105RSZ007-U3 Report Version: Issue Date: 08-04-2021

RF Exposure Evaluation Declaration

FCC ID: 2AF5PMH7601

Applicant: MTRLC LLC

Application Type: Certification

Product: AX1800 Dual-band Mesh WiFi

Model No.: MH7601

Brand Name: Motorola

Serial Model No.: MH760XY (Where X can be 0, 1, 2, 3, or 4, and Y can

be A, B, C, D, or blank)

FCC Classification: Digital Transmission System (DTS)

Unlicensed National Information Infrastructure (NII)

Test Procedure(s): FCC part 2.1091

Vincent Yu **Reviewed By:**

Approved By:

Robin Wu





The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
2105RSZ007-U3	Rev. 01	Initial Report	08-04-2021	Valid



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1. General Information

1.1. Applicant

MTRLC LLC

275 Turnpike Street Suite 101 Canton, MA 02021

1.2. Manufacturer

MTRLC LLC

275 Turnpike Street Suite 101 Canton, MA 02021

1.3. Testing Facility

	Test Site – MRT Suzhou Laboratory				
	Laboratory Location (Suzhou - Wuzhong)				
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China				
	Laboratory Location (Suzhou - SIP)				
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Accreditations				
	A2LA: 3628.01 CNAS: L10551				
	FCC: CN1166	ISED: CN0001			
	VCCI: R-20025, G-20034, C-20020, T-200	020			
\boxtimes	Test Site – MRT Shenzhen Laboratory				
	Laboratory Location (Shenzhen)				
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen,				
	China				
	Laboratory Accreditations				
	A2LA: 3628.02	CNAS: L10551			
	FCC: CN1284	ISED: CN0105			
	Test Site – MRT Taiwan Laboratory				
	Laboratory Location (Taiwan)				
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
	TAF: L3261-190725				
	FCC: 291082, TW3261	ISED: TW3261			



1.4. Product Information

Product Name	AX1800 Dual-band Mesh WiFi	
Model No.	MH7601	
Carial Madal Na	MH760XY (Where X can be 0, 1, 2, 3, or 4, and Y can be A, B, C, D, or	
Serial Model No.	blank)	
Wi-Fi Specification	802.11a/b/g/n/ac	
Operating Temp.	0 ~ 40°C	
Power Supply	AC/DC adapter	
Accessories		
Adapter	Model No: S15B22-050A300-PK	
	Input: 100 ~ 240V ~ 50/60Hz, max 0.7A	
	Output: 5V-3A	
Remark: The different models are only for marketing different clients, others are the same.		

1.5. Description of Available Antennas

Antenna Type	Frequency Band	Antenna Gain (dBi)		Directional Gain (dBi)	
	(GHz)	Ant 1	Ant 2	For Power	For PSD
	2.412~2.462	3.00	3.00	3.00	6.01
PIFA Antenna	5.15 ~ 5.25	2.00	3.00	3.00	6.01
	5.725 ~ 5.85	3.00			

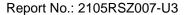
Note 1: The EUT supports Cyclic Delay Diversity (CDD) technology for 802.11a/b/g/n/ac mode.

Note 2: The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated. If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices,
 Array Gain = 10 log (N_{ANT}/ N_{SS}) dB;
- For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB for $N_{ANT} \le 4$;

If antenna gains are not equal, Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain. Note 3: The antenna gain is declared by manufacture.





2. RF Exposure Evaluation

2.1. Limits

According to FCC 1.1310: 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 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range	Electric Field	Magnetic Field	Power Density	Average Time		
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm ²)	(Minutes)		
(A) Limits for Occupational/ Control Exposures						
300-1500			f/300	6		
1500-100,000			5	6		
(B) Limits for General Population/ Uncontrolled Exposures						
300-1500			f/1500	6		
1500-100,000			1	30		

f= Frequency in MHz

Calculation 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 is the limit of MPE, 1mW/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.





2.2. Test Result

Product	AX1800 Dual-band Mesh WiFi
Test Item	RF Exposure Evaluation

Test	Frequency	Maximum Power (dBm)		Power Density at R = 20 cm	Limit	
Mode	Band (MHz)	Average	EIRP	(mW/cm ²)	(mW/cm ²)	
802.11b/g/n/ax	2412 ~ 2462	29.88	32.88	0.3861	1	
000 44 0/2/20/24	5180 ~ 5240	00.74	20.74	22.74	0.2742	4
802.11a/n/ac/ax	5745 ~ 5825	29.71	32.71	0.3713		

Note 1: The Maximum average power refer to DTS and NII report.

Note 2: Maximum EIRP (dBm) = Maximum Average Power (dBm) + Antenna Gain (dBi).

CONCLUSION:

Therefore, the Max Power Density at R (20 cm) = $0.3861 \text{ mW/cm}^2 + 0.3713 \text{ mW/cm}^2 = 0.7574 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$.

So the safety distance is 20cm for this device installed without any other radio equipment.

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Appendix - EUT Photograph

Refer to "2105RSZ007-UE" file.