

RF Exposure Evaluation Declaration

FCC ID: PJZMESH1200
Applicant: DASAN Zhone Solutions, Inc.
Application Type: Certification
Product: MESH AP Product
Model No.: MESH-1200
Serial Model No.: MESH-1200-XXX (XX= A-Z and 0-9 characters)
FCC Classification: Digital Transmission System (DTS)
Unlicensed National Information Infrastructure (NII)
Test Procedure(s): FCC part 2.1091
Test Date: November 01~02, 2020

Reviewed By:

Oscar Shi

Oscar Shi

Approved By:

Robin Wu

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
2010RSZ077-U4	Rev. 01	Initial Report	04-12-2021	Valid

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	MESH AP Product
Model No.	MESH-1200
Serial Model No.	MESH-1200-XXX (XX= A-Z and 0-9 characters)
Wi-Fi Specification	802.11a/b/g/n/ac
Serial Number	313238233/313238214
Accessories	
Adapter	Model No: S12A12-120A100-PT Input: 100 ~ 240V ~ 50/60Hz, 0.4A Output: 12.0V=1.0A, 12.0W

2.2. Description of Available Antennas

Antenna Type	Frequency Band (GHz)	Antenna Gain (dBi)		Directional Gain (dBi)	
		Ant 0	Ant 1	For Power	For PSD
PCB Antenna	2.4~2.5	3.60	3.20	3.60	6.61
	5.15 ~ 5.25	4.20	3.90	4.20	7.21
	5.725~5.85				

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 = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices,
 Array Gain = $10 \log (N_{ANT} / N_{SS})$ dB = 3.01;
- For power measurements on IEEE 802.11 devices,
 Array Gain = 0 dB for $N_{ANT} \leq 4$;

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.

3. RF Exposure Evaluation

3.1. 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 (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (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: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

r = distance between observation point and center of the radiator in cm

P_d 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.

3.2. Test Result of RF Exposure Evaluation

Product	MESH AP Product
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
Wi-Fi	2412 ~ 2462	29.37	0.1721	1
	5180 ~ 5240	27.28	0.1063	1
	5745 ~ 5825			

CONCLUSION:

Therefore, the Max Power Density at R (20 cm) = $0.1721 \text{ mW/cm}^2 + 0.1063 \text{ mW/cm}^2 = 0.2784 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$.

So the safety distance is 20cm for MESH AP Product installed without any other radio equipment.

_____ The End _____

Appendix A - EUT Photograph

Refer to "2010RSZ077-UE" file.