

Maximum Permissible Exposure

Equipment : POWERFUL WIRELESS BACKHAULING
Brand Name : Fluidmesh Networks
Model No. : FM3500, FM4500, FM4500F
FCC ID : R5S-FMX500
Standard : IEEE C95.1
Applicant : Fluidmesh Networks LLC
81 Prospect St., Brooklyn, New York 11201
United States
Manufacturer : EDIMAX TECHNOLOGY CO., LTD.
No.3, Wu-Chuan 3rd Road, Wu-Ku
Industrial Park, New Taipei City, Taiwan

The product sample received on Nov. 04, 2016 and completely tested on Jan. 24, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in IEEE C95.1 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:


Jordan Hsiao / Assistant Manager





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Revision History

[illegible]

1 Human Exposure Assessment

1.1 Product Details

The difference between the report no. : N/A	
The Difference	N/A

Evaluated Test Items	N/A
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1.2 Maximum Permissible Exposure

1.2.1 Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
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
Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
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
Note 1: f = frequency in MHz ; *Plane-wave equivalent power density				
Note 2: For the applicable limit, see FCC 1.1310				

1.2.2 MPE Calculation Method

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

1.2.3 Result of Maximum Permissible Exposure (4.9G)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N _{TX})	RF Output Power (dBm)
4940-4990	j	4960-4980	192-196 [2]	2	28.15
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power.					

Worst Maximum RF Output Power Result					
Exposure Environment		General Population / Uncontrolled Exposure			
Separation Distance (cm)		21			
Condition		RF Output Power (dBm)			
Modulation Mode	N _{TX}	RF Output Power	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
11j-20M	2	28.15	9.00	37.15	0.93615
Maximum Permissible Exposure Limit (mW/cm ²)					1
Note 1: N _{TX} = Number of Transmit Chains					

1.2.4 Result of Maximum Permissible Exposure (5.2G)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N _{TX})	RF Output Power (dBm)
5150-5250	a	5180-5240	36-48 [4]	2	15.69
5150-5250	n (HT20)	5180-5240	36-48 [4]	2	16.10
5150-5250	n (HT40)	5190-5230	38-46 [2]	2	18.53
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	2	16.15
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	2	18.59
5150-5250	ac (VHT80)	5210	42 [1]	2	7.43

Note 1: RF output power specifies that Maximum Conducted (Average) Output Power.

Worst Maximum RF Output Power Result					
Exposure Environment		General Population / Uncontrolled Exposure			
Separation Distance (cm)		21			
Condition		RF Output Power (dBm)			
Modulation Mode	N _{TX}	RF Output Power	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
VHT40	2	18.59	16.00	34.59	0.51922
Maximum Permissible Exposure Limit (mW/cm ²)					1

Note 1: N_{TX} = Number of Transmit Chains

1.2.5 Result of Maximum Permissible Exposure (5.8G)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N _{TX})	RF Output Power (dBm) Co-location
5725-5850	a	5745-5825	149-165 [5]	2	19.91
5725-5850	n (HT20)	5745-5825	149-165 [5]	2	19.87
5725-5850	n (HT40)	5755-5795	151-159 [2]	2	19.87
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	2	19.91
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	2	19.91
5725-5850	ac (VHT80)	5775	155 [1]	2	19.80
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power.					

Worst Maximum RF Output Power Result					
Exposure Environment		General Population / Uncontrolled Exposure			
Separation Distance (cm)		21			
Condition		RF Output Power (dBm)			
Modulation Mode	N _{TX}	RF Output Power	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
VHT20	2	19.91	16.00	35.91	0.70364
Maximum Permissible Exposure Limit (mW/cm ²)					1
Note 1: N _{TX} = Number of Transmit Chains					