

Maximum Permissible Exposure

Equipment : Wireless Mini PCI
Brand Name : 
Model No. : XW325EH
FCC ID : HDC414RG24X
Standard : ANSI/IEEE C95.1
Applicant : Adtran
901 Explorer Blvd., Huntsville, AL 35806, US
Manufacturer : XAVi Technologies Corporation
9F, No.129, Hsing Te Rd., Sanchung Dist., New Taipei City 241,
Taiwan, R.O.C.

The product sample received on Mar. 16, 2016 and completely tested on Mar. 18, 2016. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI/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:



Kevin Liang / Assistant Manager



Table of Contents

1	HUMAN EXPOSURE ASSESSMENT	4
1.1	Maximum Permissible Exposure	4
1.1.1	Limit of Maximum Permissible Exposure.....	4
1.1.2	MPE Calculation Method	4
1.1.3	Result of Maximum Permissible Exposure	5

1 Human Exposure Assessment

1.1 Maximum Permissible Exposure

1.1.1 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				

1.1.2 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)



1.1.3 Result of Maximum Permissible Exposure

RF General Information 2400 MHz – 2483.5 MHz					
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N _{TX})	RF Output Power (dBm)
2400-2483.5	b	2412-2462	1-11 [11]	1	23.69
2400-2483.5	g	2412-2462	1-11 [11]	1	19.70
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	2	19.79
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	2	19.57

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)		20				
Condition		RF Output Power (dBm)				
Modulation Mode	N _{TX}	Chain Port 1	Sum Chain	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
11b	1	23.69	23.69	2.00	25.69	0.07374
Maximum Permissible Exposure Limit (mW/cm²)						1

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