

Maximum Permissible Exposure

Equipment : Greenpacket Wi-Fi 11ac/b/g/n Router
Brand Name : Greenpacket
Model No. : WA-1200
FCC ID : W9V-WA1200-GP
Standard : IEEE C95.1
Applicant : Green Packet Berhad, Taiwan
6F, No.21, Lane 583, Rueiguang Rd. Neihu District,
Taipei City 11492, Taiwan
Manufacturer : Green Packet Berhad, Taiwan
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The product sample received on Sep. 06, 2016 and completely tested on Nov. 18, 2016. 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:


Kevin Liang / Assistant Manager





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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 (2.4G)

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)
2400-2483.5	b	2412-2462	1-11 [11]	2	21.59
2400-2483.5	g	2412-2462	1-11 [11]	2	20.78
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	2	20.79
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	2	16.01

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}	RF Output Power	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
b	2	21.59	8.01	29.60	0.18144
Maximum Permissible Exposure Limit (mW/cm²)					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	24.31
5150-5250	n (HT20)	5180-5240	36-48 [4]	2	24.21
5150-5250	n (HT40)	5190-5230	38-46 [2]	2	22.29
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	2	24.23
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	2	22.31
5150-5250	ac (VHT80)	5210	42 [1]	2	19.93

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}	RF Output Power	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
a	2	24.31	7.12	31.43	0.27652
Maximum Permissible Exposure Limit (mW/cm²)					1

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



1.2.5 Result of Maximum Permissible Exposure (Co-location)

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}	RF Output Power (dBm)	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)	Limit (mW/cm ²)	Ratio
b (2.4GHz)	2	21.59	8.01	29.60	0.18144	1	0.18144
a (5.2GHz)	2	24.31	7.12	31.43	0.27652	1	0.27652
Co-location Total							0.45796
Maximum Permissible Exposure Limit							1
<p>Note 1: NTX = Number of Transmit Chains.</p> <p>Note.2: Both of the WLAN 2.4GHz and WLAN 5GHz can transmit simultaneously, the formula of calculated the MPE is:</p> <p style="padding-left: 40px;">$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$</p> <p style="padding-left: 40px;">CPD = Calculation power density</p> <p style="padding-left: 40px;">LPD = Limit of power density</p> <p>Note 3: Refer to KDB 865664 D02 RF Exposure Reporting v01r02 for MPE Calculation Colocation.</p>							