Maximum Permissible Exposure

Equipment	**:**	**TITAN-High Power AC1900 Wi-Fi Router**
Brand Name	**:**	**Amped Wireless**
Model No.	**:**	**RTA1900**
FCC ID	**:**	**ZTT-RTA1900**
Standard	**:**	**ANSI/IEEE C95.1**
Applicant	**:**	**Amped Wireless** 13089 Peyton Dr. #C307 Chino Hills CA 91709
Manufacturer	**:**	**EDIMAX TECHNOLOGY CO., LTD.** No.3,Wu-Chuan 3rd Road,Wu-Ku Industrial Park, New Taipei City, Taiwan

The product sample received on May 26, 2015 and completely tested on Jul. 17, 2015. 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:

Vic Hsiao / Supervisor

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Revision History

Report No.	Version	Description	Issued Date
FA552736	Rev. 01	Initial issue of report	Aug. 17, 2015

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/ cm²)**	**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/ cm²)**	**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

E (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$

Power Density: Pd (W/m^2) = $\frac{E^2}{377}$

E = Electric field (V/m)
P = RF output power (W)
G = EUT Antenna numeric gain (numeric)
d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd = $\frac{30 \times P \times G}{377 \times d^2}$

1.1.3 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]	1	26.93
2400-2483.5	g	2412-2462	1-11 [11]	1	24.77
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	3	24.74
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	3	24.96
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 (dBm)**	**DG (dBi)**	**EIRP Power**	**PD (S) (mW/cm²)**
b	1	26.93	5.03	31.96	0.312572
Maximum Permissible Exposure Limit (mW/cm²)					1
Note 1: N_{TX} = Number of Transmit Chains					

1.1.4 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]	1	27.53
5150-5250	n (HT20)	5180-5240	36-48 [4]	3	24.42
5150-5250	n (HT40)	5190-5230	38-46 [2]	3	27.35
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	3	24.46
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	3	27.39
5150-5250	ac (VHT80)	5210	48 [1]	3	24.71
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 (dBm)**	**DG (dBi)**	**EIRP Power**	**PD (S) (mW/cm²)**
a	1	27.53	5.01	32.54	0.357232
Maximum Permissible Exposure Limit (mW/cm²)					1
Note 1: N_{TX} = Number of Transmit Chains					

1.1.5 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]	1	26.53
5725-5850	n (HT20)	5745-5825	149-165 [5]	3	28.91
5725-5850	n (HT40)	5755-5795	151-159 [2]	3	29.73
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	3	29.80
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	3	29.72
5725-5850	ac (VHT80)	5775	155 [1]	3	27.76
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**	**Chain-Port 2**	**Chain-Port 3**	**Sum Chain**	**DG (dBi)**	**EIRP Power**	**PD (S) (mW/cm²)**
ac (VHT20)	3	23.72	25.12	25.96	29.80	5.01	34.81	0.602491
Maximum Permissible Exposure Limit (mW/cm²)								1
Note 1: N_{TX} = Number of Transmit Chains								

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**	**Chain-Port 2**	**Chain-Port 3**	**Sum Chain**	**DG (dBi)**	**EIRP Power**	**PD (S) (mW/cm²)**
b	1	26.93	-	-	26.93	5.03	31.96	0.312572
ac (VHT20)	3	23.72	25.12	25.96	29.80	5.01	34.81	0.602491
Co-location Total								0.915063
Maximum Permissible Exposure Limit (mW/cm²)								1
Note 1: N_{TX} = Number of Transmit Chains								