

Equipment: High Power Plug-In AC2600 Wi-Fi Range Extender

Brand Name : AMPED WIRELESS

Model No. : REC44M

FCC ID : ZTT-REC44M

Standard : ANSI/IEEE C95.1

Applicant : AMPED WIRELESS

13089 Peyton Dr. #C307, Chino Hills, CA 91709

Report No.: FA632202

Manufacturer : EDIMAX TECHNOLOGY CO., LTD.

1F., No.3, Wu-Ghuan 3rd Rd., Wu-Gu,

New Taipei City, Taiwan 24891

The product sample received on Mar. 22, 2016 and completely tested on May 19, 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

SPORTON INTERNATIONAL INC. Page No. : 1 of 10
TEL: 886-3-327-3456 Report Version : Rev. 01



# **Table of Contents**

**Report No. : FA632202** 

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 (2.4GHz)	. 5
1.1.4	Result of Maximum Permissible Exposure (5.2GHz)_(non-beamforming)	. 6
1.1.5	Result of Maximum Permissible Exposure (5.8GHz)_(non-beamforming)	. 7
1.1.6	Result of Maximum Permissible Exposure (5.2GHz)_(beamforming)	. 8
1.1.7		
1.1.8	Result of Maximum Permissible Exposure (Co-Location)	10

SPORTON INTERNATIONAL INC. Page No. : 2 of 10 TEL: 886-3-327-3456 Report Version : Rev. 01



# **Revision History**

Report No.	Version	Description	Issued Date
FA632202	Rev. 01	Initial issue of report	Jun. 01, 2016

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No.

: 3 of 10

Report Version

: Rev. 01

**Report No. : FA632202** 



# 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 <sup>2</sup> )*	6							
30-300	61.4	0.163	1.0	6							
300-1500	-	-	F/300	6							
1500-100,000	-	-	5	6							
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**Report No.: FA632202** 

#### **Limits for General Population / Uncontrolled Exposure**

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)		
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	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/cm<sup>2</sup>)

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)

SPORTON INTERNATIONAL INC. Page No. : 4 of 10
TEL: 886-3-327-3456 Report Version : Rev. 01

### 1.1.3 Result of Maximum Permissible Exposure (2.4GHz)

	RF General Information											
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N <sub>TX</sub> )	RF Output Power (dBm)							
2400-2483.5	b	2412-2462	1-11 [11]	2	24.66							
2400-2483.5	g	2412-2462	1-11 [11]	2	24.45							
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	4	26.68							
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	4	20.73							

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	Modulation Mode N <sub>TX</sub>		Chain- Port 2	Chain- Port 3	Chain- Port 4	Sum Chain	DG (dBi)	EIRP Power	PD (S) (mW/cm²)
n (HT20)	4	20.68	20.67	20.67	20.61	26.68	2.69	29.37	0.17216
Мах	Maximum Permissible Exposure Limit (mW/cm²) 1								
Note 1: N <sub>TX</sub> = Number of	Trans	mit Chain	S						

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : 5 of 10

Report Version

: Rev. 01

Report No.: FA632202

### 1.1.4 Result of Maximum Permissible Exposure (5.2GHz)\_(non-beamforming)

Report No.: FA632202

	RF General Information											
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N <sub>TX</sub> )	RF Output Power (dBm)							
5150-5250	а	5180-5240	36-48 [4]	4	23.44							
5150-5250	n (HT20)	5180-5240	36-48 [4]	4	23.45							
5150-5250	n (HT40)	5190-5230	38-46 [2]	4	25.60							
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	4	23.42							
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	4	25.42							
5150-5250	ac (VHT80)	5210	42 [1]	4	14.62							
Note 4. DE autour		hat Maximum Can	duated (Augus as)	Output Dower	•							

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

Worst Maximum RF Output Power Result									
Exposure Environme	nt	General	General Population / Uncontrolled Exposure						
Separation Distance (c	m)	20							
Condition			RF Output Power (dBm)						
Modulation Mode	Modulation Mode N <sub>TX</sub>		Chain- Port 2	Chain- Port 3	Chain- Port 4	Sum Chain	DG (dBi)	EIRP Power	PD (S) (mW/cm²)
n (HT40)	4	19.95	18.99	19.11	20.13	25.60	3.91	29.51	0.17759
Maximum Permissible Exposure Limit (mW/cm²)								1	
Note 1: N <sub>TX</sub> = Number of 7	lote 1: N <sub>TX</sub> = Number of Transmit Chains								

SPORTON INTERNATIONAL INC. : 6 of 10 TEL: 886-3-327-3456 Report Version : Rev. 01

### 1.1.5 Result of Maximum Permissible Exposure (5.8GHz)\_(non-beamforming)

Report No.: FA632202

RF General Information											
IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N <sub>TX</sub> )	RF Output Power (dBm) Co-location							
а	5745-5825	149-165 [5]	4	24.73							
n (HT20)	5745-5825	149-165 [5]	4	25.56							
n (HT40)	5755-5795	151-159 [2]	4	28.00							
ac (VHT20)	5745-5825	149-165 [5]	4	25.29							
ac (VHT40)	5755-5795	151-159 [2]	4	27.72							
ac (VHT80)	5775	155 [1]	4	23.85							
	802.11 Protocol a n (HT20) n (HT40) ac (VHT20) ac (VHT40)	802.11 Ch. Frequency (MHz)  a 5745-5825  n (HT20) 5745-5825  n (HT40) 5755-5795  ac (VHT20) 5755-5795  ac (VHT40) 5755-5795	802.11 Protocol     Ch. Frequency (MHz)     Channel Number       a     5745-5825     149-165 [5]       n (HT20)     5745-5825     149-165 [5]       n (HT40)     5755-5795     151-159 [2]       ac (VHT20)     5755-5795     151-159 [2]       ac (VHT40)     5755-5795     151-159 [2]	802.11 Protocol         Ch. Frequency (MHz)         Channel Number         Transmit Chains (N <sub>TX</sub> )           a         5745-5825         149-165 [5]         4           n (HT20)         5745-5825         149-165 [5]         4           n (HT40)         5755-5795         151-159 [2]         4           ac (VHT20)         5745-5825         149-165 [5]         4           ac (VHT40)         5755-5795         151-159 [2]         4           ac (VHT80)         5775         155 [1]         4							

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

Worst Maximum RF Output Power Result									
Exposure Environme	nt	General	Population	on / Unco	ntrolled E	xposure			
Separation Distance (c	m)	20							
Condition		RF Output Power (dBm)							
Modulation Mode	N <sub>TX</sub>	Chain- Port 1	Chain- Port 2	Chain- Port 3	Chain- Port 4	Sum Chain	DG (dBi)	EIRP Power	PD (S) (mW/cm²)
n (HT40)	4	22.16	21.81	21.16	22.66	28.00	3.91	31.91	0.30916
Maximum Permissible Exposure Limit (mW/cm²)								1	
Note 1: N <sub>TX</sub> = Number of	Frans	mit Chain	S						

SPORTON INTERNATIONAL INC. Page No. : 7 of 10
TEL: 886-3-327-3456 Report Version : Rev. 01

### 1.1.6 Result of Maximum Permissible Exposure (5.2GHz)\_(beamforming)

	RF General Information											
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N <sub>Tx</sub> )	RF Output Power (dBm)							
5150-5250	n (HT20)	5180-5240	36-48 [4]	4	23.35							
5150-5250	n (HT40)	5190-5230	38-46 [2]	4	25.90							
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	4	22.91							
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	4	25.80							
5150-5250	ac (VHT80)	5210	42 [1]	4	16.31							
Note 1: RF outpu	t power specifies t	hat Maximum Con	ducted (Average)	Output Power.								

Report No.: FA632202

	Worst Maximum RF Output Power Result									
Exposure Environme	nt	General	Population	on / Unco	ntrolled E	xposure				
Separation Distance (	cm)	20								
Condition		RF Output Power (dBm)								
Modulation Mode N <sub>TX</sub>		Chain- Port 1	Chain- Port 2	Chain- Port 3	Chain- Port 4	Sum Chain	DG (dBi)	EIRP Power	PD (S) (mW/cm²)	
n (HT40) 4 20.00 19.66 19.44 20.38 25.9					25.90	9.93	35.83	0.76248		
Maximum Permissible Exposure Limit (mW/cm²)								1		

Note 1: N<sub>TX</sub> = Number of Transmit Chains

SPORTON INTERNATIONAL INC. : 8 of 10
TEL: 886-3-327-3456 : Report Version : Rev. 01

# 1.1.7 Result of Maximum Permissible Exposure (5.8GHz)\_(beamforming)

RF General Information								
Frequency IEEE Std. Range (MHz) 802.11 Protocol		Ch. Frequency (MHz)			RF Output Power (dBm) Co-location			
5725-5850	n (HT20)	5745-5825	149-165 [5]	4	23.67			
5725-5850	n (HT40)	5755-5795	151-159 [2]	4	25.20			
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	4	23.20			
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	4	25.08			
5725-5850	ac (VHT80)	5775	155 [1]	4	22.05			
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power.								

Report No.: FA632202

NOTE 1. IXI	output power specifies the	at Maximum Conducted	(Average) Output Fower	i =

Worst Maximum RF Output Power Result									
Exposure Environment		General Population / Uncontrolled Exposure							
Separation Distance (cm)		20							
Condition		RF Output Power (dBm)							
Modulation Mode	N <sub>TX</sub>	Chain- Port 1	Chain- Port 2	Chain- Port 3	Chain- Port 4	Sum Chain	DG (dBi)	EIRP Power	PD (S) (mW/cm²)
n (HT40)	4	19.30	19.15	18.48	19.69	25.20	9.93	35.10	0.64777
Maximum Permissible Exposure Limit (mW/cm²) 1								1	
Note 1: N <sub>TX</sub> = Number of Transmit Chains									

SPORTON INTERNATIONAL INC. : 9 of 10
TEL: 886-3-327-3456 : Report Version : Rev. 01



# 1.1.8 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 <sub>TX</sub>	RF Output Power (dBm)	DG (dBi)	EIRP Power	PD (S) (mW/cm²)		
n (HT20)	4	26.68	2.69	29.37	0.17216		
n (HT40) (5150 MHz – 5250 MHz) (beamforming)	4	25.90	9.93	35.83	0.76248		
	0.93464						
Maximum Permissible Exposure Limit (mW/cm²)					1		
Note 1: N <sub>TX</sub> = Number of Transmit Chains							

Report No.: FA632202

SPORTON INTERNATIONAL INC. Page No. : 10 of 10 TEL: 886-3-327-3456 Report Version : Rev. 01