

Maximum Permissible Exposure

FCC ID : MSQ-RTACRH00

Equipment : Wireless-AC1300 Dual Band Gigabit Router

Brand Name : ASUS

Model No. : RT-AC58U, RT-AC58MU, RT-ACRH00, RT-AC1300G+, RT-AC1300GPLUS, RT-AC1300G PLUS, RT-AC1300UHP, RT-AC1300HP, RT-AC58UHP, RT-AC58HP, RT-AC53HP, RT-ACRH13, RT-AC1300GPLUS_B1, RT-AC1200G+ B1

Applicant : ASUSTeK Computer Inc
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Manufacturer 1 : ASUSTeK Computer Inc
4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan

Manufacturer 2 : Kentec Inc.
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Standard : 47 CFR Part 2.1091 / IEEE C95.1

The product sample received on Jan. 28, 2016 and completely tested on Jul. 25, 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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



Approved by: Allen Lin

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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	Table for Permissive Change	5
1.1.4	Result of Maximum Permissible Exposure (2.4G)	5
1.1.5	Result of Maximum Permissible Exposure (5.2G)	6
1.1.6	Result of Maximum Permissible Exposure (5.8G)	7
1.1.7	Result of Maximum Permissible Exposure (Co-Location)	8

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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 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FA5D1107-13

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adapter 5 was added	N/A
2. Updated U-NII-3 standard in Section 15.407 of 47 CFR FCC.	Unwanted emissions limit for UNII-3 Beamforming mode was updated

1.1.4 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	25.66
2400-2483.5	g	2412-2462	1-11 [11]	2	24.30
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	2	23.99
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	2	20.03
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/cm ²)
2.4G - b	2	25.66	5.27	30.93	0.2465
Maximum Permissible Exposure Limit (mW/cm ²)					1
Note 1: N _{TX} = Number of Transmit Chains					

**1.1.5 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	25.76
5150-5250	n (HT20)	5180-5240	36-48 [4]	2	25.58
5150-5250	n (HT40)	5190-5230	38-46 [2]	2	24.71
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	2	25.77
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	2	24.84
5150-5250	ac (VHT80)	5210	48 [1]	2	15.49
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/cm ²)
5G - ac (VHT20)	2	25.77	5.41	31.18	0.2611
Maximum Permissible Exposure Limit (mW/cm ²)					1
Note 1: N _{TX} = Number of Transmit Chains					

**1.1.6 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)
5725-5850	a	5745-5825	149-165 [5]	2	26.35
5725-5850	n (HT20)	5745-5825	149-165 [5]	2	26.23
5725-5850	n (HT40)	5755-5795	151-159 [2]	2	26.81
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	2	26.65
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	2	27.10
5725-5850	ac (VHT80)	5775	155 [1]	2	22.75
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/cm ²)
5G - ac (VHT40)	2	27.1	5.41	32.51	0.3546
Maximum Permissible Exposure Limit (mW/cm ²)					1
Note 1: N _{TX} = Number of Transmit Chains					

**1.1.7 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)
2.4G - b	2	25.66	5.27	30.93	0.2465
5G - ac (VHT40)	2	27.1	5.41	32.51	0.3546
Co-location Total					0.6011
Maximum Permissible Exposure Limit (mW/cm ²)					1
Note 1: N _{TX} = Number of Transmit Chains					