

RF Exposure Evaluation Declaration

Product Name : ASUS SRT-AC1900 Wireless Smart Router
Model No. : SRT-AC1900
FCC ID. : MSQ-SRTAC1900

Applicant : ASUSTeK COMPUTER INC.

Address : 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan

Date of Receipt : 2015/05/04

Date of Declaration : 2015/05/20

Report No. : 1550110R-RF-US-Exp-A

Report Version : V1.0



The declaration results relate only to the samples calculated.

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1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	ASUS SRT-AC1900 Wireless Smart Router
Test Mode	Transmit
Test Condition	RF Exposure Evaluation

Antenna Gain

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 3.61dBi or 2.3 in linear scale.

Output Power into Antenna & RF Exposure Evaluation Distance:

GFSK			
Bluetooth Function			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
00	2402	11.6413	0.00533
39	2441	14.8252	0.00678
78	2480	16.3456	0.00748

$\pi/4$ DQPSK			
Bluetooth Function			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
00	2402	10.5536	0.00483
39	2441	13.2923	0.00608
78	2480	14.5479	0.00666

The power density Pd (4th column) at a distance of 20 cm calculated from the Friis transmission formula is far below the limit of 1 mW/cm².

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Antenna Gain

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 3.61dBi or 2.3 in linear scale.

Output Power into Antenna & RF Exposure Evaluation Distance:

8DQPSK			
Bluetooth Function			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
00	2402	6.6865	0.00306
39	2441	8.7237	0.00399
78	2480	9.5345	0.00436

The power density Pd (4th column) at a distance of 20 cm calculated from the Friis transmission formula is far below the limit of 1 mW/cm².