

RF Exposure Evaluation declaration

Product Name : SpectraGuard® Access Point / Sensor

Model No. : SS-300AT-C-60

FCC ID : TOR-SS300ATC60

Applicant : AirTight Networks, Inc.

Address : 339 N. Bernardo Avenue, Suite #200, Mountain View, California, USA

Date of Receipt : Jul. 03, 2013

Date of Declaration : Nov. 12, 2013

Report No. : 137146R-RFUSP05V00

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: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

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 : SpectraGuard® Access Point / Sensor
 Test Item : RF Exposure Evaluation
 Test Site : No.3 OATS

3TX (Dipole Antenna)

Operation Frequency	5250-5350MHz, 5470-5725MHz
Maximum Conducted output power	19.95dBm
Antenna gain	5dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
98.8553	0.062191

Power density in column 4 is much lower than the limit (1 mW/cm²).

3TX (PIFA Antenna)

Operation Frequency	5250-5350MHz, 5470-5725MHz
Maximum Conducted output power	22.49dBm
Antenna gain	4.76dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
177.4189	0.105616

Power density in column 4 is much lower than the limit (1 mW/cm²).