

# RF Exposure Evaluation declaration

Product Name : 54M Wireless PCI Adapter  
Model No. : TL-WN353G, TL-WN353GD  
FCC ID : TE7WN353G

Applicant : TP-LINK Technologies Co., Ltd  
Address : Building 7, Section 2, Honghualing Industrial Park,  
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Report No. : 077S019-RF-US

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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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 <sup>2</sup> )	Average Time (Minutes)
<b>(A) Limits for Occupational/ Control Exposures</b>				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
<b>(B) Limits for General Population/ Uncontrolled Exposures</b>				
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/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. 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	:	54M Wireless PCI Adapter
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmit by 802.11b

### Antenna Gain:

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.8 dBi or 1.51 in linear scale.

### Output Power Into Antenna & RF Exposure Evaluation Distance:

Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )
1	2412.00	138.0384	0.041565
6	2437.00	131.5225	0.039603
11	2462.00	108.1434	0.032563

### Note:

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/cm<sup>2</sup>.

Product	:	54M Wireless PCI Adapter
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-3
Test Mode	:	Mode 2: Transmit by 802.11g

**Antenna Gain:**

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.8 dBi or 1.51 in linear scale.

**Output Power Into Antenna & RF Exposure Evaluation Distance:**

Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )
1	2412.00	142.2329	0.042828
6	2437.00	132.4342	0.039878
11	2462.00	132.1296	0.039786

**Note:**

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/cm<sup>2</sup>.