

## RF Exposure Evaluation declaration

Product Name : CPE 3.65GHz Outdoor  
Model No. : CPEMax-OD365  
FCC ID. : W93-CPEMAXOD365

Applicant : FRC INTERNET PRODUCTS, LCC  
Address : 4421 SW 85th Way, Gainesville, Florida 32608, USA

Date of Receipt : 2011/12/14  
Date of Declaration : 2012/03/22  
Report No. : 11C275R-RF-US-Exp  
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 <sup>2</sup> )	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  $\text{mW/cm}^2$

$P_{out}$  = 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  $\text{mW/cm}^2$ . 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	CPE 3.65GHz Outdoor
Test Mode	Mode 1: Transmit
Test Condition	RF Exposure Evaluation

#### Antenna Gain

The maximum Gain measured in fully anechoic chamber is 14dBi or 25.12 in linear scale.

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

5MHz Bandwidth			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )
Low	3652.5	153.11	0.77
Middle	3662.5	139.00	0.69
High	3672.5	140.60	0.70

7MHz Bandwidth			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )
Low	3653.5	130.62	0.65
Middle	3662.5	121.62	0.61
High	3671.5	155.60	0.78

10MHz Bandwidth			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )
Low	3655.0	135.83	0.68
Middle	3662.5	116.95	0.58
High	3670.0	118.03	0.59

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>.