RF Exposure Evaluation declaration

Product Name	:	CBS 3.65GHz
Model No.	:	BSMax-365
FCC ID.	:	W93-BSMAX365

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

Date of Receipt	:	2011/12/14
Date of Declaration	:	2012/02/21
Report No.	:	11C274R-RF-US-Exp
Report Version	:	V1.0

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: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm^2

Pout = 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

Pd id the limit of MPE, 1 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℃ and 78％ RH.

1.3. Test Result of RF Exposure Evaluation

Product	CBS 3.65GHz
Test Mode	Mode 1: Transmit
Test Condition	RF Exposure Evaluation

Antenna Gain

The maximum Gain measured in fully anechoic chamber is 16dBi or 39.81 in linear scale.

Output Power into Antenna & RF Exposure Evaluation Distance:

3.5MHz Bandwidth			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 100 cm (mW/cm^2)
Low	3651.75	55.34	0.02
Middle	3662.50	49.77	0.02
High	3673.25	61.24	0.02

5MHz Bandwidth			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 100 cm (mW/cm^2)
Low	3652.5	95.06	0.03
Middle	3662.5	90.16	0.03
High	3672.5	100.46	0.03

The power density Pd (4th column) at a distance of 100 cm calculated from the Friis transmission formula is far below the limit of 1 mW/cm^2.

Product	CBS 3.65GHz
Test Mode	Mode 1: Transmit
Test Condition	RF Exposure Evaluation

Antenna Gain

The maximum Gain measured in fully anechoic chamber is 16dBi or 39.81 in linear scale.

Output Power into Antenna & RF Exposure Evaluation Distance:

7MHz Bandwidth			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 100 cm (mW/cm^2)
Low	3653.5	110.15	0.03
Middle	3662.5	98.17	0.03
High	3671.5	115.88	0.04

10MHz Bandwidth			
Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 100 cm (mW/cm^2)
Low	3655.0	188.36	0.06
Middle	3662.5	157.04	0.05
High	3670.0	180.30	0.06

The power density Pd (4th column) at a distance of 100 cm calculated from the Friis transmission formula is far below the limit of 1 mW/cm^2.