

# RF Exposure Evaluation declaration

Product Name	Soundbar plus 5.8G wireless subwoofer
Model No.	TVee Model 30
FCC ID	R48TVEEM30TX

Applicant	MEILOON INDUSTRIAL CO., LTD.
Address	No. 77, LANE 1775, CHUEN-RYH ROAD, TAOYUAN CITY, TAIWAN

Date of Receipt	Dec. 22, 2010
Date of Declaration	March 22, 2011
Report No.	10C357R-RFUSP43V01

The declaration results relate only to the samples calculated.

The declaration shall not be reproduced except in full without the written approval of QuieTek Corporation.  
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

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

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:  $18^\circ\text{C}$  and 78% RH.

### 1.3. Test Result of RF Exposure Evaluation

Product : Soundbar plus 5.8G wireless subwoofer  
Test Item : RF Exposure Evaluation  
Test Site : No.3 OATS

#### Antenna Gain

Antenna Gain: The maximum Gain measured in fully anechoic chamber is  $-3.52$  dBi in logarithm scale.

#### 1Mbps (GFSK) Output Power Into Antenna & RF Exposure Evaluation Distance (-3.52dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )
00	2402.00	1.6866	0.000149
39	2441.00	1.7824	0.000158
78	2480.00	1.5631	0.000138

#### 3Mbps (8DPSK) Output Power Into Antenna & RF Exposure Evaluation Distance (-3.52 dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )
00	2402.00	1.1376	0.000101
39	2441.00	1.0399	0.000092
78	2480.00	0.7870	0.000070