1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 General Information

Client Information

Applicant:	TIC Audio Inc
Address of applicant:	15224 Stafford Street, City of Industry, CA 91744
Manufacturer:	ZhangZhou Yile Electronics Technology Co., Ltd
Address of manufacturer:	Lantian Industrial District, Zhangzhou, Fujian, China

General Description of EUT:

Product Name:	Outdoor Wifi Multi-Room Patio Speakers
Trade Name:	TIC
Model No.:	WPS5-W, WPS5-B, WPS6-W, WPS6-B
FCC ID:	2AJNGWPS5-W
Rated Voltage:	Adapter:DC 19V

Technical Characteristics of EUT:

Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 802.11b/g/n(HT20)
	2422-2452MHz for 80.211n(HT40)
RF Output Power:	14.96dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	11/7
Channel Separation:	5MHz
Type of Antenna:	Integral
Antenna Gain:	0dBi

1.2 Standard Applicable

According to §1.1307(b)(1) and KDB 447498 D01 General RF Exposure Guidance v06, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

(a) Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100000	/	/	1	30

Note: f = frequency in MHz: * = Plane-wave equivalents power density

1.3 MPE Calculation Method

$S = (30*P*G) / (377*R^2)$

S = power density (in appropriate units, e.g., mw/cm^2)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

1.4 MPE Calculation Result

Maximum Tune-Up output power: <u>15.0 (dBm)</u>

Maximum peak output power at antenna input terminal: <u>31.62 (mW)</u>

Prediction distance: <u>>20(cm)</u>

Prediction frequency: <u>2437 (MHz)</u>

Antenna gain: <u>0 (dBi)</u>

Directional gain (numeric gain): <u>1</u>

The worst case is power density at prediction frequency at 20cm: <u>0.006(mw/cm^2)</u>

MPE limit for general population exposure at prediction frequency: <u>1 (mw/cm^2)</u>

Result: Pass

1.5 Test Setup Photos