1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 General Information

Client Information

Applicant:	Modern Marketing Concepts, Inc.
Address of applicant:	1220 E Oak, St. Louisville, KY 40204 United States
Manufacturer:	Timsen Development Limited
Address of manufacturer:	5F, 447# Tianhebei Road, Guangzhou, China

General Description of EUT:

Product Name:	JOURNEY
Trade Name	CROSLEY
Model No.:	CR8019X-XXXX, ("X-XXXX "can be replaced by letter from "A" to "Z", number from "0"to "9" or blank)
Rated Voltage:	DC 5V
FCC ID:	AUSCR8019A
Adapter Model #1:	MODEL NO: RSS1001-050050-W2 INPUT: AC100-240V~ 50/60Hz, 0.4A; OUTPUT: DC5.0V, 1.0A
Adapter Model #2:	MODEL NO: ZWSP-050100US0202 INPUT:AC100-240V~ 50/60Hz , 0.5A OUTPUT: DC 5.0V, 1000mA
Software Version:	V1.0
Hardware Version:	V1.0

Technical Characteristics of EUT:

Bluetooth Version:	V4.2 (BR/EDR mode)
Frequency Range:	2402-2480MHz
RF Output Power:	-2.350dBm (Conducted)
Data Rate:	1Mbps, 2Mbps
Modulation:	GFSK, Pi/4 DQPSK
Quantity of Channels:	79
Channel Separation:	1MHz
Type of Antenna:	PCB Antenna
Antenna Gain:	-0.58dBi

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: -2 (dBm)

Maximum peak output power at antenna input terminal: 0.63(mW)

Prediction distance: >20(cm)

Prediction frequency: 2480 (MHz)

Antenna gain: -0.58 (dBi)

Directional gain (numeric gain): 0.87

The worst case is power density at prediction frequency at 20cm: 0.0001 (mw/cm^2)

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

Result: Pass