

### **RF Exposure / MPE Calculation**

No. : 13753617H  
Applicant : T&D Corporation  
Type of Equipment : Data Logger  
Model No. : TR71A  
FCC ID : SRD50110

T&D Corporation declares that Model: TR71A complies with FCC radiation exposure requirement specified in the FCC Rule 2.1091 (for mobile).

#### **RF Exposure Calculations:**

The following information provides the minimum separation distance for the highest gain antenna provided with the “TR71A” as calculated from (B) Limits for General Population / Uncontrolled Exposure of TABLE 1- LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE) of §1.1310 Radiofrequency radiation exposure limits.

#### **[Bluetooth Low Energy part]**

This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1mW/cm<sup>2</sup> uncontrolled exposure limit. The Friis formula used was:

$$S = \frac{P \times G}{4 \times \pi \times r^2}$$

Where

$P =$  0.82 mW (Maximum average output power)

☐ Time average was used for the above value in consideration of 6-minutes time-averaging

☒ Burst power average was used for the above value in consideration of worst condition.

$G =$  1.445 Numerical Antenna gain; equal to 1.6dBi

$r =$  20 cm (Separation distance)

**Power Density Result  $S = 0.00024 \text{ mW/cm}^2$**

---

#### **UL Japan, Inc.**

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

**Reference:****[WLAN Part (Built-in module)]**

This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1mW/cm<sup>2</sup> uncontrolled exposure limit. The Friis formula used was:

$$S = \frac{P \times G}{4 \times \pi \times r^2}$$

Where

$P =$  100.00 mW (Maximum tune-up peak conducted output power)

The value of Conducted power evaluation by the approved module (FCC ID:YOPGS2200M) is used.

$G =$  2.163 Numerical Antenna gain; equal to 3.35dBi

$r =$  20 cm (Separation distance)

$$\text{Power Density Result } S = 0.04303 \text{ mW/cm}^2$$

Therefore, if Bluetooth and WLAN 2.4GHz transmit simultaneously,

$$\begin{aligned} S &= 0.00024 \text{ mW/cm}^2 + 0.04303 \text{ mW/cm}^2 \\ &= 0.04327 \text{ mW/cm}^2 \end{aligned}$$

Even taking into account the tolerance, this device can be satisfied with the limits.

---

**UL Japan, Inc.**

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124