RF Exposure / MPE Calculation

No.	14987322H
Customer	TandD Corporation
Description of EUT	Data Logger
Model Number of EUT	TR71A
FCC ID	SRD50110

TandD 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.

[WLAN part]

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

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

Where

$P =$ 54.20 mW (Maximum average output power)
The value of Conducted power evaluation by the approved module (FCC ID: RI7WE310F5) is used.

$G =$ 1.698 Numerical Antenna gain; equal to 2.3dBi

$r =$ 20 cm (Separation distance)

Power Density Result $S =$ 0.01831 mW/cm^2

[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^2 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 mW/cm^2**

Therefore, if WLAN and Bluetooth (Low Energy) transmit simultaneously,

S= 0.01831 mW/cm^2 + 0.00024 mW/cm^2

= 0.01855 mW/cm^2