

## Analysis Report

The Equipment Under Test (EUT) is a VERSASTACK™ RADIO + CHARGER. It can accept analog input source (3.5mm phone jack aux-in), tuner and wireless Bluetooth device. The audio signal is amplified and fed to the built-in passive loudspeakers. The EUT is powered by an AC/DC adaptor (24VDC 2A) and/or 20VDC rechargeable battery. The EUT has an USB port (for charging purpose only). The adaptor can accept 120VAC only.

### **2.4GHz Bluetooth Module:**

**Modulation Type: GFSK**

**Antenna Type: Integral, Internal**

**Antenna gain: 2.6dBi**

### **Bluetooth 4.0 BLE**

**Nominal EIRP power range: 0dBm to +6.6dBm**

### **Bluetooth 3.0**

**Nominal EIRP power range: 0dBm to +6.6dBm**

According to the KDB 447498:

$$\begin{aligned}\text{Conducted power} &= \text{Radiated Power (EIRP)} - \text{Antenna Gain} \\ &= 6.6 \text{ dBm} - 2.6 \text{ dBi}\end{aligned}$$

So;

$$\text{Conducted Power} = 4 \text{ dBm (2.51mW)}$$

The SAR Exclusion Threshold Level:

$$\begin{aligned}&= 3.0 * (\text{min. test separation distance, mm}) / \text{sqrt}(\text{freq. in GHz}) \\ &= 3.0 * 5 / \text{sqrt}(2.480) \text{ mW} \\ &= 9.53 \text{ mW}\end{aligned}$$

Since the above conducted output power is well below the SAR Exclusion threshold level, so the EUT is considered to comply with SAR requirement without testing.