

Analysis Report

The Equipment Under Test (EUT) is a TSTAK CONNECT 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 10.8VDC 2Ah/18VDC 9Ah 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: 2dBi

Bluetooth 4.0 BLE

Nominal EIRP power range: +0dBm to +5dBm

Bluetooth 3.0

Nominal EIRP power range: -3dBm to +3dBm

According to the KDB 447498:

$$\begin{aligned}\text{Conducted power} &= \text{Radiated Power (EIRP)} - \text{Antenna Gain} \\ &= 5 \text{ dBm} - 2 \text{ dBi}\end{aligned}$$

So;

$$\text{Conducted Power} = 3 \text{ dBm (2mW)}$$

The SAR Exclusion Threshold Level:

$$= 3.0 * (\text{min. test separation distance, mm}) / \text{sqrt}(\text{freq. in GHz})$$

$$= 3.0 * 5 / \text{sqrt} (2.480) \text{ mW}$$

$$= 9.53 \text{ mW}$$

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.