

Analysis Report

Report No.: 17040366HKG-001

The Equipment Under Test (EUT) is a Alarm Clock Radio with USB Charging and Bluetooth Speaker (features: SmartSet Clock Radio With Auto-Time Setting System, Jumbo Display, Dual Alarms, Sure Alarm, PLL FM Radio, USB Charging). The Bluetooth transceiver operates at frequency range of 2402MHz to 2480MHz. There are total 79 channels with 1MHz channel spacing. The EUT can accept FM tuner, analog audio (AUX-in) and wireless audio when paired with a Bluetooth devices. The audio signal is amplified and driving internal loudspeaker. The EUT is power by an AC/ DC adaptor (Model: TAA0120500150HU; Input: 100-240VAC 350mA, Output: 5V 1.5A). A CR2032 3V battery is for clock memory back-up. The applicant declared that Bluetooth 4.0 BLE is not used.

2.4GHz Bluetooth Module:
Modulation Type: GFSK
Antenna Type: Integral, Internal

Frequency Range: 2402MHz - 2480MHz, 1MHz channel spacing, 79 channels
Nominal field strength is 94.6 dB μ V/m @ 3m
Production Tolerance of field strength is +/- 3dB
Antenna gain is 0dBi

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 97.6 dB μ V/m at 3m in frequency 2.4GHz, thus;

The EIRP = $[(FS * D)^2 * 1000 / 30] = 1.726 \text{ mW}$

Conducted power = Radiated Power (EIRP) – Antenna Gain
So;

Conducted Power = 1.726 mW.

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 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.

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