SAR Exemption

FCC ID.: Z64CHRONOSAP9
Applicant: Texas Instruments, Inc.
Model: BM-USB04
Type of Device: USB dongle with low power radio

Analysis:

The product is a USB dongle with low power radio that is used for development of rf transmitter circuits and software. The device is part of an Evaluation Module (EVM) kit and is intended only for use by developers.

Since the device is a USB dongle and a specific minimum separation distance cannot be determined, the minimum separation of 5 mm is used per 447498 10 D01 General RF Exposure Guidance v05.

The SAR exclusion is calculated using the formula from page 10 of 447498 10 D01.

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] · [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,[16] where

   - $f_{(GHz)}$ is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation[17]
   - The result is rounded to one decimal place for comparison

   The test exclusions are applicable only when the minimum *test separation distance* is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

From test report 201496 TRF RAD rev1, issued by Nemko Oy, the maximum measured rf output power is 93.8 dBuV/m which relates to 0.72 mW e.i.r.p.

Rounding to the nearest mW per 447498:

$$\left[\frac{1mW}{5mm}\right] - \sqrt{0.902} = -0.8$$

This is below the threshold of 3.0 for 1-g SAR and 7.5 for 10-g SAR