SAR Exemption

FCC ID.: Z64CHRONOSWM9
Applicant: Texas Instruments, Inc.
Model: eZ430-Chronos-915
Type of Device: Watch with low power radio

Analysis:

The product is a watch 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 can be worn on the wrist 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 201495 TRF RAD rev1, issued by Nemko Oy, the maximum measured rf output power is 88.8 dBuV/m which relates to 0.228 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