RF Exposure Information

Source Based Time Average (SBTA) output power analysis for SAR exclusion:

Operation Condition*:*
In a typical operation condition, the radio is in sleep mode until an alarm situation arises or 60 minutes elapses. The operator pressing the alarm button triggers the alarm condition. An alarm causes the radio to wake up and report the alarm to the central station. Product firmware determines the transmission duty cycle in the alarm condition. Each alarm message consists of 21 transmission packets with a fixed duration of 21 msec. Due to the limitations on battery life, the product sends a maximum of one alarm message every 10 seconds if the operator continually presses the alarm button; this is the worst-case transmission duration.

SAR Exclusion Threshold Calculation:
The product could be attached to the wrist or placed in a pocket; the following analysis shows the SBTA SAR power threshold.

Max. Average Power[1]:
  = 16.6 dBm = 45.7 mW

Threshold Exclusion Power[2]:
  = (5 mm/20 mm) x (60/f(GHz)) mW = 16.1 mW
     (where f= 0.928 GHz)

Product SBTA Power Calculation
Max time on = 21 x 0.02164 sec = 0.454 sec.
Period = 10 seconds.
Worst case duration, apply 6 min exposure time = 360 sec
SBTA factor = [(360 sec / 10 sec) x 0.454 sec] / [6 x 60 sec] = 4.5%

SBTA Power (w +10% tuneup) = 0.045 x 45.7 mW x 1.1 = 2.3 mW

  2.3 mW < 16.1 mW ➔ Exempt from SAR testing

Conclusion:
SAR evaluation not required.

[1]EIRP measurement taken from NCEE Labs test report R20180115-21
[2]447498 D01 General RF Exposure Guidance v06, footnote 30