

## RF EXPOSURE EVALUATION

### 1. PRODUCT INFORMATION

|                     |                     |
|---------------------|---------------------|
| Product Description | Z-Wave water sensor |
| Model Name          | NAS-WS02Z1U         |
| FCC ID              | Z52NAS-WS02Z1U      |

### 2. EVALUATION METHOD

According to 447498 D01 General RF Exposure Guidance v05

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

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR.

Where  $f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

### 3. CALCULATION

According to the follow transmitter output power ( $P_t$ ) formula:

$$P_t = (E \times d)^2 / (30 \times g_t)$$

$P_t$ =transmitter output power in watts

$g_t$ =numeric gain of the transmitting antenna (unitless)

$E$ =electric field strength in V/m

$d$ =measurement distance in meters (m)

**915MHz:**

$$P_t = 0.0074 \text{ mW}$$

The result for RF exposure evaluation

$$\text{SAR} = (0.0074 \text{ mW} / 5 \text{ mm}) \cdot [\sqrt{0.9084(\text{GHz})}] = 0.0014 < 3.0 \text{ for 1-g SAR}$$

### 4. CONCLUSION

The SAR evaluation is not required.