

Badge Tag V2

Product name: **Badge Tag V2 SA91004005**

Specifications:

Frequency:	905-917.14MHz ISM license free band
Number of Channels:	16
Modulation:	2-FSK
Channel bandwidth:	800 KHz
EIRP:	Up to 17dBm, digitally controlled
Communication protocol:	N3.
Transmission:	Event base and on demand
External interfaces:	3 user buttons, buzzer, GPS receiver.
Internal sensors:	Motion, temperature sensors.
Antenna Gain:	0 dBi

RF EXPOSURE

In compliance with FCC Section 1.1307 (b) (1) for FCC RF exposure:

1. Badge Tag V2 operates in worst case condition with 0.5% duty cycle @ 17dBm peak power, meaning $17\text{dBm} + 10 \cdot \log(0.5/100) = -6\text{dBm}$ average power, equivalent to 0.25mW ; this is the source based time averaged maximum conducted power of channel, including tune-up tolerance.
2. The highest operating frequency 917.14GHz and $\sqrt{f(\text{GHz})} = \underline{0.958}$
3. The distance between the EUT antenna and human body is 23.7mm, see measurement dY in picture below.
4. **SAR test exclusion** is based on the following calculation according to the KDB procedure:
$$[(\text{max. power of channel, including tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for } 1\text{-g} ,$$
$$[0.25 / 23.7] * \sqrt{917.14} = 0.011 \leq 3.0$$

