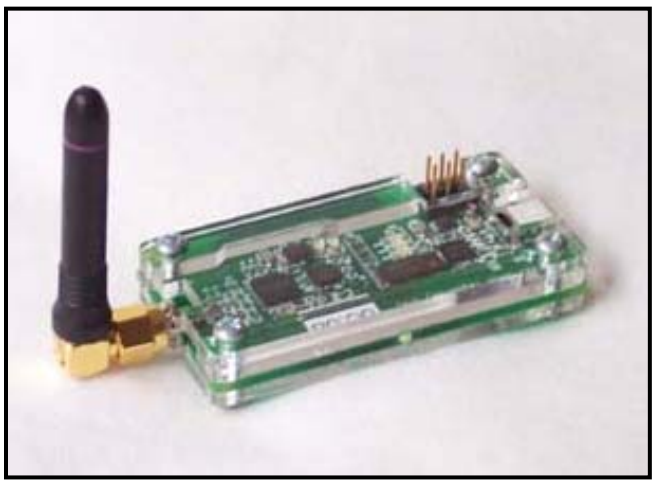
ZR-USB Active Tag Reader v2.0



Applications:

- Asset tracking and monitoring
- Remote sensing and monitoring
- Sensor data logging
- Tagging of pallets, vehicles, animals, and shipping containers

The ZR-USB is an active tag reader that communicates via the industry standard protocol IEEE 802.15.4.

This reader supports USB to interface with PCs/PDAs/laptops.

The operating frequency of 2.45 GHz enabled this reader to have a small size antenna and long range (>60 meters with small whip antenna shown in photo).

The 802.15.4 protocol is the most advanced protocol used today and includes bi-directional communication between the tag and the reader. This enables faster and more efficient communications when multiple tags and readers are present in a dense operating environment.

The ZR-USB is bundled with standard TCP/IP connectivity software to transport tag data to enterprise applications.

Features:

- Industry standard IEEE 802.15.4
- >60 meters range (open air)
- Smaller than a credit card
- Does not interfere with wireless computer networks (IEEE802.11b/g)
- Bi-directional reader-tag communication – can send user commands and data to tags
- A single reader can support up to 50 tags at a time
- Supports dense reader mode using CSMA protocol
- USB interface
- Doesn't require any additional power supply

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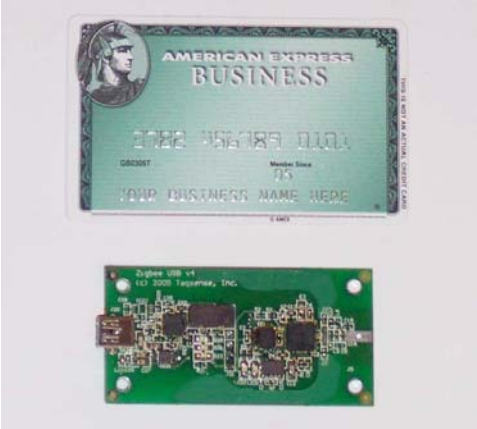
ZR-USB Active Tag Reader



OPERATING SPECIFICATIONS

- Frequency:
  2.452-2.459 GHz MHz
- Operating Voltage: 5 V (provided by USB)
- Current consumption:
  - <3uA when idle
  - 1mA when transmitting

Communications Overview:

The ZR-USB Reader is designed to communicate with the TagSense ZT-10 and ZT-100 active RFID Tags. The information exchanged with the tags supports multiple data fields, including sensor data (e.g. temperature, motion), tag transmission interval, LED control, and battery level. A separate firmware version of the ZR-USB is available for use with the ZT-Link data radio for wireless networks and other Zigbee peripherals.

The ZR-USB reader communicates with the active tags using a variable packet length protocol which is designed to conserve power on the tag. This protocol is available to TagSense customers wishing to develop custom software using the active tags and reader.

The communication between the ZR-USB reader and host computer also uses a serial RS-232 packet protocol and API designed by TagSense. The serial communications have the following COM port settings: 38400 baud, 8 data bits, 1 stop bit, and no parity.

The host API is provided with the ZR-USB reader as well as demonstration software for PC Windows. The Visual Basic source code for the Windows demonstration program is also provided for free with the ZR-USB reader.

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