

Description

The ActiveWave RFID Small Reader is a small version of the Standard Reader. The Small Reader serves as an interface between the Host and all other devices of the ActiveWave system.

The Small Reader reads all incoming ActiveWave tag data and sends this information in real-time to the Host. Depending on the application, the Host uses this tag information to control access to restricted areas and/or track assets, inventory, or merchandise throughout a facility.

Small Readers have three basic modes of operation - program, monitor, and call – to suit all your application needs. The Reader is designed for easy setup and configuration. All communications from and to the Reader use cyclic redundancy checks to ensure all data remains accurate. Several different Reader models are available to support different tag frequencies (916.5 MHz or 868 MHz) and different Host communications (RS232 or Ethernet).

Current Practice

Access Control and Asset Tracking

Access control systems often use proximity or magnetic stripe readers that require badges be placed very close to the reader to be recognized. Carried items may have to be shifted or put down to handle the badge.

Asset control depends on guards and surveillance cameras to watch exits, and authorization passes when assets leave the building. This requires constant vigilance and is time-consuming. Items placed in pockets, handbags, or briefcases are often missed.

Inventory Control

Many companies are using enterprise resource planning, inventory management, and Electronic Data Interchange (EDI) systems. In spite of these systems improvements, the movement and tracking of goods remains a complex procedure that is difficult to manage.

Modern material tracking systems use barcodes, requiring items to be placed close to the barcode reader and in its "line of sight". This requires manual scanning or a conveyor-like process to align the barcode to the scanner. Barcodes can get wet or scratched by harsh environments or mishandling, causing incorrect reads.

Updating inventory counts by periodic scanning takes time, and manual data collection is often prone to errors and oversights. These approaches rarely keep the inventory accurate or up-to-date. Inventory losses are usually not discovered until the next inventory cycle which makes investigation difficult.



The ActiveWave Solution

Our hands-free RFID solution offers many advantages over contact, swipe, proximity, and barcode reader systems. Our extended range enables employee access and item tracking, without special actions to accommodate the system.

By attaching an RFID tag on or inside items, all item movement past portals throughout a facility can be tracked. The ActiveWave Tracker software can restrict asset movement to a specific owner, and produce an alarm if the asset is not with its assigned owner.

ActiveWave RFID tags can be programmed to wake up and report their presence on a periodic basis, allowing inventory counts to be updated many times a day. An alert can occur as soon as an item misses its scheduled reporting time, so the loss can be immediately investigated. All of this can be completely automated with no product movement, scanning, or human involvement.

Other Applications

ActiveWave RFID technology can be used for applications such as tracking assets in an automobile dealership, used car lot, or car rental facility. It also can control employee access at airports or vehicle access to parking lots. For further details, visit our web site at www.activewaveinc.com.

Product Summary

Type:	RFID Small Reader
Applications:	Access Control, Tracking, Inventory Control
Part Numbers:	See Reader Selection Guide

Specifications

Memory (bits)	10 Megabits
Multi Tag Read Capability	Yes
Operating Frequency from Tag	916.5 MHz or 868.6 MHz, depending on Reader model
Wake-up Frequency to Tag	433 MHz
Host Communications	RS232 or Ethernet
Tag Read Range	1 to 85 meters (~3.3 to 279 feet), depending on Reader sensitivity setting
Operating Modes	Program – Configures tags and Field Generators. Monitor – Monitors all tag activity and input ports. Reports all activity in real-time to Host. Tracker Reader mode – Reports data from all tags. Inventory Reader mode – Only reports data from tags that wake-up at pre-defined intervals (does not report data from tags that are awakened by Field Generators). Call – Calls specific tag, specific group of tags, or all tags.
Tag Signal Penetration	Tag signal can be read through virtually all non-metallic materials
EMC (Electro-Magnetic Compatibility)	Reading of Tag data and configuration setup is not affected by normal electromagnetic interface of x-rays
Power Requirements	12 volts DC power supply connects to 120/230 volts AC source
Operating Temperature	-35°C to +70°C (-31°F to 158°F)
Storage Temperature	-40°C to +85°C (-40°F to 185°F)
Dimensions	10.8cm x 6.5cm x 2.8 cm (~4.3 in x 2.6 in x 1.1 in)
Weight	125 grams (4.4 oz)
Case Material	ABS (Acrylonitrile Butadiene Styrene)

Indicators, Switches and Connectors

Front Panel: LEDs and Connectors	Power LED	12 volts DC power is connected and Reader is switched on
	RF LED	Tag signal detected at the assigned frequency (868 or 916.5 MHz)
	Host LED	Good data received by Reader – send to Host
	Access LED	Host-to-reader operator– application dependent meaning
	RS232	RS232 (DB9 Female port) to Host
Rear Panel: Connectors	Ethernet	Ethernet (RJ-45 Female port) to Host
	Power	12 volts DC input – non-polarized, 20 watts maximum
	Motion Detector Input	Input from Motion Detector for optional motion-activated operations (RJ-11 Female port)

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NOTE: The information in this datasheet is subject to change without notice.
 Visit our web site at www.activewaveinc.com for more information on ActiveWave products.