

# Model 501 SAW RFID Reader System

## INTRODUCTION

RFSAW's Model 501 SAW RFID reader system incorporates patented radio frequency identification technology to provide a compact, low power, RFID solution utilizing Surface Acoustic Wave (SAW) technology to achieve superior performance in passive-tag RFID.

The RFSAW RFID 501 system supports global 2.45 GHz operation, and offers superior long-range reading capability with high-speed and accuracy over a wide temperature range. The system provides a wide range of antenna configurations and data capacities in the tag devices to match the specific needs of an RFID application.

## PRODUCT HIGHLIGHTS

- *Worldwide 2.45 GHz tags*
- *96- and 64-bit EPC compatible*
- *Compact, low power reader*
- *Superior read range*
- *Solution for difficult reading environments*
- *High-speed reading*
- *Robust anti-collision*
- *Resistant to interference*

## TECHNOLOGY

The Global SAW Tag is a breakthrough application of the proven SAW technology that is widely used in cell phones and other mass market products.

RFSAW's Surface Acoustic Wave (SAW) tags are truly passive devices in which the piezoelectric effect allows direct RF interrogation of an encoded, sub-micron reflector pattern without external power. SAW tags avoid the inherent performance limitations of IC chip-based products that must obtain DC power from large continuous RF reader signals. Thus, SAW RFID tags read robustly even if reader signal strength is low or is temporarily interrupted (as often happens in the real world). This translates into superior read range and signal penetration.

In addition, SAW tags use interference-resistant broadband signals. A SAW tag reader is inherently capable of determining the tag's range, speed, direction of travel and temperature.

## SUMMARY

RFSAW's family of SAW tags, readers, and antennas allow flexible systems to be customized for a wide range of military, industrial and commercial applications. The inherent advantages of GST technology offers users the preferred RFID solution.

## FEATURES

**High performance GST tags**

**Safe, low power reader**

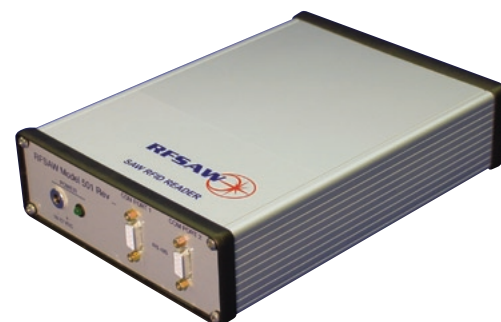
**Superior read range**

**Robust anti-collision**

**High-speed, accurate reading**

**Read tags on liquid & metal products**

**Interference resistant**



# TECHNICAL SPECIFICATIONS

PARAMETER	DESCRIPTION
<b>SYSTEM</b>	
Tag Element	Surface Acoustic Wave (SAW) piezoelectric crystal device
Reader	2.4 GHz ISM band reader
Reader Antennas	Conventional flat panels (linear and circular polarization)
Read Range	Up to 10 meters (depends on system components)
Anti-collision	Spatial, and code division implementation
EM Compatibility	Adaptive interference filtering
<b>TAGS</b>	
EPC Compatible	64- and 96-bit capacities using EPC alternative technology candidate standard
Commerical	24-, 32-, 48-, 64-, and 96-bit capacities
Error Detection Coding	Depends on system requirements (16-bit typical)
Tag Temperature Range	-100° to >+200° C
<b>READER</b>	
Frequency Range	2.4 - 2.483 GHz
RF Power Output	10 mW ERP Max with antenna (0.6 mW at RF output port)
RF Port	RF – single Tx/Rx
Data Ports	RS-485, DB9 connector
Tag Read Speed	1000 per second - data collection
Dimensions	9.1" x 6.6" x 2.1" (23.1 cm x 16.8 cm x 5.3 cm)
Weight	2.5 lbs.
Power Requirements	18-72 volts DC; 6 watts maximum
Temperature	Operating -20° to +50° C

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