



## IDentity Title 21 Reader Controller Card

Automatic Vehicle Identification (AVI)  
Electronic Toll Collection/Traffic Management Systems

### FEATURES

- Extensive built-in diagnostics  
The T21 RCC performs an end-to-end check of the AVI subsystem
- Low maintenance  
Robust design provides for +230,000 hours of reliable operation
- Reduced install time and hardware requirements  
RCC plugs into existing enclosures or standard ISA-type bus

### Overview

The IDentity Title 21 (T21) Reader Controller Card (RCC) is a PC ISA-type mount single circuit board design, engineered for bi-directional communication with Sirit's T21 Transponder. This subsystem is one component of Sirit's AVI Solution which is capable of handling multi-lane toll plaza or remote on/off operations and supporting applications such as Electronic Toll Collection and advanced Traffic Management Systems. Utilizing proven backscatter technology and a comprehensive error detection, the system has an accuracy rate in excess of 99.6% at highway speeds even under the most adverse environmental conditions.

### How It Works

The IDentity T21 RCC has a built in radio frequency (RF) logic control unit, non-volatile memory, RS-422 communications port, RS-422 reader synchronization port and power supply connection. The RCC generates RF polling signals through a control interface to the T21 transponder. The transponder replies by encoding the signal and reflecting it back to the RCC using modulated backscatter technology. Upon receiving the signal, the RCC decodes the information, confirms the message integrity and transmits the information to the lane computer. The computer system then searches its database for the transponder's identity and, subsequently, performs the operation required by the application software.

The IDentity T21 RCC can be packaged within an existing lane controller or in its own stand-alone enclosure. Communications are achieved via a buffered interrupt-driven 16-bit parallel interface, RS-422 communications port or auxiliary control computer.

# Identity T21 Reader Controller Card



## Performance Characteristics

Data Rate	Up to 1,000 kbps (300 kbps default)
Memory:	Capable of buffering 3,000 transactions (standard memory) or 10,000 transactions (optional extended memory)
Host Interface:	RS-422 or ISA bus
Reliability	MTBF = 230,000 hours (using MIL217 standards)
Standards Compliance:	Caltrans Title 21
Installation:	The card is installed in a PC ISA-type slot. While the reader is dependent on the PC for power, it can also be installed in a separate enclosure with its own power supply and serial interface.

## Physical Characteristics

Dimensions (LxWxD):	342.9 x 101.6 x 20.3 mm (13.50 x 4.00 x 0.80 in.)
Weight:	624.7 g (22 oz.)

## Environment

Operating Temperature:	0°C to +70°C (32°F to 158°F)
Storage Temperature:	-25°C to +85°C (-13°F to 185°F)
Relative Humidity:	60% non-condensing @ 70°C (158°F)
Vibration:	1 g @ 15 to 500 Hz
Power:	5.0 V, 3.0 Amps

## Ordering Information

Part Number:	Description:
RCC-001	Reader Controller Card with Standard Memory
RCC-002	Reader Controller Card with Optional Extended Memory



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## About Sirit Inc.

Sirit Inc. (TSX: SI) is a leading provider of Radio Frequency Identification (RFID) reader technology to OEMs and solution providers worldwide. Harnessing the power of Sirit's enabling-RFID technology, customers are able to more rapidly bring high quality RFID solutions to the market with reduced initial engineering costs. Sirit's products are built on more than 13 years of RF domain expertise addressing multiple frequencies (LF/HF/UHF), multiple protocols and are compliant with global standards. Sirit's broad portfolio of products and capabilities are easily customized to address new and traditional RFID market applications including Supply Chain & Logistics, Cashless Payment, Access Control, Automatic Vehicle Identification, Inventory Control & Management, Asset Tracking and Product Authentication. For more information, visit [www.sirit.com](http://www.sirit.com).



The "RFID by Sirit" symbol signifies that Sirit Inc.'s high quality RFID reader technology resides within this product.

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