**sirit**
*vision beyond sight*™

# ID*entity* FleX Traffic Probe

## Traffic Management Systems (TMS)

### Traffic Probe Basics

Travel time between highway segments is an important measure to highway engineers, system operators, and public safety personnel. Accidents, weather, and congestion play a role in daily commute times and route decisions for travelers. A number of techniques such as magnetic sensors, video imaging or radar detection platforms are available for determining traffic speed, volume, and other metrics essential for planning, safety, access control, or for reporting traffic conditions between exits. These systems ultimately have limitations in cost and function and do not always produce the detail or accuracy required to make them effective. Sirit's ID*entity* FleX Traffic Probe technology provides highly accurate traffic flow projections making it a key component of an overall intelligent transportation system (ITS) application.
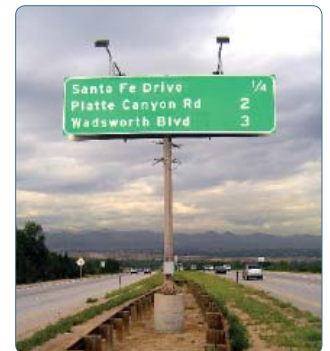
In areas where Title 21 compliant toll transponders are used by even a small percentage of the traffic population, Sirit's Traffic Management solution has proven to be an easily implemented and cost effective answer to monitoring commute time or traffic patterns. By deploying Sirit readers at multiple points along designated intervals of a toll highway or freeway, and by connecting those points by wire or wireless to a central host, travel time and traffic flow can be closely monitored in real time accumulating valuable data for traffic management or safety engineering.

### Product Overview

Sirit's ID*entity* FleX RFID reader is designed specifically for road segment monitoring across single or multiple lanes under all weather and traffic conditions. Using the latest generation radio frequency identification (RFID) technology and an embedded base of Caltrans Title 21 compatible toll transponders, accurate vehicle identification is reported to the host system using Sirit's traffic probe protocol. This robust protocol was uniquely developed by Sirit to rapidly and accurately convey the tag identification, location of read point, time of read, and channel to the host controller. The protocol also includes an impressive array of diagnostic and monitoring features for testing or upgrading.

## FEATURES

- High speed performance up to 80 mph
  No need to slow down vehicles to collect data

- Single or multiple read points from a single reader
  Selectable for up to 4 separate read areas

- Long range read capability
  Enhanced transponder communication yields reads of 25 feet or more

- Simple RS-232/RS-422 (optional) data interface
  Standard formatted data stream for easy integration

- Versatile configuration menu
  Easy custom menu setup accessible via laptop or PC

- High MTBF for unattended operation
  Less down time for your data collection system

- Rich diagnostics and automatic fault detection
  Remote status checking and front panel LED's provide quick determination of any fault

# ID*entity* FleX Traffic Probe

## System Specifications

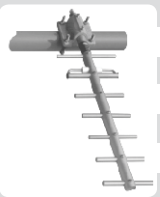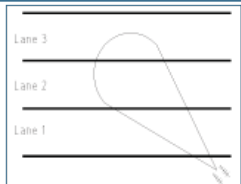| | |
|---|---|
| Transponder Recognition: | Caltrans Title 21, 32 bit |
| Output Power: | Adjustable 0 - 2 W effective radiated power w/Yagi antenna below |
| Re-Read Timeout: | 0 - 600 seconds, 0 = continuously reporting |
| Reader Synchronization: | Multiple readers may be used as a single location |
| On-Board Clock/Calendar: | Maintains date/time +/- 5 seconds per day, may be remotely set |
| Assignable Reader Number: | 1 - 255 used to identify a reader uniquely within a system |
| Data Connection: | RS-232 (standard) or RS-422 (optional) serial compatible |
| Silent Operation: | Not tag acknowledgement (chirp) |
| Time Domain Multiplexing: | Time slots per channel (0, 1, 2, 3) assignable to 4 independent antenna ports |
| Communications Protocol: | Asynchronous RS-232 compatible data port - 19200, N, 8,1 with packets framed by ASCII 'STX' and 'LF' codes |

## ID*entity* Flex Reader Specifications

| | |
|---|---|
| Dimensions (WxHxD): | 24.1 x 22.9 x 3.6 cm (9.50 x 9.00 x 1.40 in.) |
| Weight: | 1.1 kg (2.5 lbs.) |
| Enclosure Rating: | NEMA 4X |
| Enclosure Dimensions: | 40.6 x 35.6 x 22.9 cm (16.00 x 14.00 x 9.00 in.) (WxHxD) |
| Enclosure Weight: | 3.5 kg (7.8 lbs.) |
| Antenna Port Impedance: | 50 ohms |
| RF Output Power: | 2 Watts (33 dBm) |
| Transmitter Frequency: | 916.25 MHz |
| AC Power Supply: | 85 to 220 VAC, 50-60 Hz   Optional: 12 VDC |
| DC In Power Requirements: | +12 VDC +/-.5@3.5 Amps, -12 VDC+/-.5@100 mA, +5 VDC+.5/-0@500 mA |
| Regulatory: | FCC Approved, Part 15, Part 90 FCC ID JNB9796254 |

## Environmental Specifications

| | |
|---|---|
| Operating Temperature: | -25°C to +60°C (-13° F to +140°F) |
| Storage Temperature: | -40°C to +60°C (-40°F to +140°F) |
| Humidity: | 85% non-condensing at +60°C (+140°F) |
| Vibration: | 1 g at 15 Hz to 500 Hz |
| Shock: | 5 g at 10 ms |
| MTBF: | 65,000 hours |

## Antenna Specifications

| | |
|---|---|
| Frequency Range: | 890 - 960 MHz |
| Gain: | 10 dBd |
| Impedance: | 50 ohms |
| VSWR: | <1.5:1 maximum, 1.35:1 typical |
| Polarization: | Horizontal |
| Front to Back Ratio: | >20 dB |
| Max Input Power: | 100 W @ 50°C |
| Weight: | 1.4 kg (3 lbs.) |
| Dimensions (LxW): | 58.4 x 17.8 cm (23.00 x 7.00 in.) |

Yagi Antenna

Sample Shoulder Configuration    ID*entity* FleX Reader (TMS)    Sample Gantry Configuration
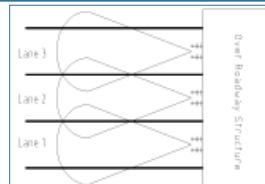
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## About Sirit Inc.

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.