



**We make
highways
talk™**

- **MANAGEMENT**
- **SAFETY**
- **PRESERVATION**

International Road Dynamics Inc. develops and maintains traffic management products and systems technology that make highways talk. What are they saying? They are providing information that roadway administrators need to manage traffic, preserve infrastructure and provide safety warnings to drivers.

IRD's multi-discipline, innovative and customer-focused team is expert in advanced technologies, advanced traffic solutions and custom-designed systems.



JULY, 2005 REV. B
PRINTED IN CANADA

INTERNATIONAL ROAD DYNAMICS INC.
www.irdinc.com

iSINC SYSTEMS ELECTRONICS

The iSINC Electronics forms the core of IRD's traffic and truck Weigh-In-Motion (WIM) systems, controlling numerous functions and processes for multiple applications. The iSINC is designed to accommodate new and future applications.

Features

- **Advanced Design**
- **Modularity and Convenience**
- **Powerful Software**



- **Commercial Vehicle Operations (CVO)**
- **Virtual Weigh Stations**
- **Traffic Data Collection**
- **Safety Systems**
- **Border Crossing and other ITS Applications**

IRD products and components are protected by one or more worldwide patents and/or trademarks. IRD reserves the right to change, modify, or improve its products at any time without notice.

iSINC SYSTEMS ELECTRONICS

Specifications

GENERAL

The iSINC Weigh-In-Motion (WIM) System Electronics is an integrated vehicle information processing package that implements sensor input signal conditioning, system software to transform the inputs into the required outputs and a user interface. The System Electronics consist of a WIM Control Unit, Sensor and Output Modules to interface the various devices specific to a site's requirements, terminal panels with over-voltage protection and isolation for each input and output line, system controlled AC power outputs and an integral Power Supply, all housed within a weatherproof enclosure.

The system software is pre-loaded and automatically starts when the system is powered up. The electronics use a modular design based on the Controller Area Network (CAN) communication bus for easy of maintenance, troubleshooting and in-field servicing.

iSINC WIM CONTROL UNIT DETAILS

- Processor: 32-bit RISC
- Memory: 32 MB RAM, 32 MB Flash
- I/O: 10/100BASE-T Ethernet
Modem Port
Terminal Port

COMMUNICATION

- CAN Bus environment for very extensive sensor and control configuration
- On-board Ethernet interface
- One RS-232 serial interface dedicated to external system interface
- One RS-232 serial interface dedicated to remote administration facilities (modem dial-in)
- Local user interface for system configuration and fault diagnosis
- Remote administration via SSH, TTY log-in
- Remote file download via SFTP, Z-modem

PERIPHERALS

- Non-volatile storage for vehicle information to prevent data loss during power outages:
Compact Flash cards from a minimum of 32 MB up to 4 GB
- Sensor inputs from SLC, SSWIM, Bending Plate, Kistler, Piezo, Dynax, Serial and Digital devices
- Output control options for a wide variety of Serial, Digital and AC powered devices (CMS, VMS, OCS, LCS, DMS, printers, signal lights, toll gates, etc.)

SOFTWARE

- Processes up to eight lanes of traffic
- Records data logs on operational status, power supply condition, and safety system activity
- Weight Compliance and Classification with user-definable classification scheme
- Serial output compatible with HELP, I75 and others
- Compatibility with IRD's complete line of optional application specific software packages:
 - Automated Ramp Weigh Station
 - Automated Mainline Weigh Station
 - Data Analysis and Reporting

USER INTERFACE

- Local through a handheld keypad or laptop PC in terminal mode
- Remote through a dial-up modem to a PC in terminal mode
- SSH over the Ethernet interface

SENSOR AND CONTROL MODULE DETAILS

Each module includes built in signal conditioning. All sensor modules are field replaceable. Every module features self testing and built in fault diagnosis.

SCALE SENSOR MODULE

- Three lanes of SLC, SSWIM or PAT Bending Plate scales
- One lane of IRD Bending Plate scales

PIEZO/KISTLER SENSOR MODULE

- Four piezoelectric sensor inputs plus temperature sensor
- Class 1 or Class 2 sensors
- Four Kistler sensor inputs plus temperature sensor

DIGITAL I/O MODULE

- Eight isolated contact closure inputs or outputs
- Report on rising edge, falling edge or both
- Adjustable input debounce
- Control output state, single pulse, or square wave

SERIAL CONTROL MODULE

- RS232C compatible asynchronous serial port for communication with serial devices such as printers and VMS

SERIAL BRIDGE MODULE

- RS232C compatible asynchronous serial port for devices communicating directly with the CAN Bus

LOOP SENSING MODULE

- Four magnetic sensing loop inputs
- Adjustable for sensitivity and frequency

iSINC ENCLOSURE DETAILS

The iSINC electronics enclosure houses the following components:

- WIM control Unit
- One or two chassis for iSINC modules; each chassis accommodates up to 10 modules
- I/O Signal Panels with terminals and over-voltage protection for each channel
- iSINC controlled AC power outputs with 4 channels per panel
- Power supply
- All components mounted in a 19" rack
- Brushed aluminum panels
- Enclosure size required is dependant on the options selected for an installation. The available sizes are:
 - 117 cm high x 61 cm wide x 52 cm deep (46 in. x 24 in. x 20 in.)
 - 170 cm high x 61 cm wide x 76 cm deep (67 in. x 24 in. x 30 in.)
- Multiple enclosures may be connected together for expansion up to 160 modules

iSINC POWER SUPPLY DETAILS

POWER SUPPLY

- 30 Watts supply. Power consumption varies with the options selected, but typically is in the range of 10 Watts
- 90 to 264 VAC, 47 to 63 Hz operation
 - Surge protection
 - One GFI and three AC duplex outlets for peripheral equipment
 - Optional Solar power, 40 W to 85 W panels
 - Optional 12 VDC battery for backup or extended operation (up to 30 days). Integral charge controller for battery conditioning

SYSTEM EXPANDABILITY

The iSINC Electronics may be expanded with any combination of the above modules up to a maximum of 160 modules per installation. Each enclosure accommodates up to 20 modules; multiple enclosures may be connected together for larger installations. Using the built-in Ethernet or a Serial Bridge Module for expansion and connection of multiple WIM Control Units, expansion at a single location is virtually unlimited.

Corporate Office

702 - 43rd Street East
Saskatoon, Saskatchewan
Canada S7K 3T9
Tel: (306) 653-6600
Fax: (306) 242-5599
Toll Free: 1-877-444-4IRD (4473)
Email: info@irdinc.com

U.S. Office

2402 Spring Ridge Drive, Suite E
Spring Grove, IL
USA 60081
Tel: (815) 675-1430
Fax: (815) 675-1530



International
Road Dynamics Inc.



Publically Traded on the TSX (Symbol IRD)

Find out more about IRD on our website: www.irdinc.com

IRD products and components are protected by one or more worldwide patents and/or trademarks. IRD reserves the right to change, modify, or improve its products at any time without notice.

PRINTED IN CANADA