

# Train Recording Unit

## Features

- ▶ Records and reports “clean consist” train data
- ▶ S-918A compliant reports
- ▶ Support multiple tenant sessions for reporting to multiple railroads
- ▶ Provides maintenance reporting
- ▶ Supports single and multiple track operations
- ▶ Supports TransCore® Multiprotocol Rail Reader (MPRR) and Amtech®-brand AI1200 readers
- ▶ Remote access via dial-up and network IP connection
- ▶ Local access via console port
- ▶ Complies with AAR recommended Practice RP-9203
- ▶ Complies with AREMA 11.5.1 Class C specifications



The TransCore Train Recording Unit (TRU™) captures AEI (Automatic Equipment Identification) tag data and other data to report an accurate train consist to railroad management systems. It is the key component used to implement AEI reader systems at mainline rail locations in North America. The TRU records detailed information about trains, uses the information to create “clean consists,” and then transmits consist reports to one or more host computer systems. A train “clean consist” report is a train listing in standing order, where orientation of tagged equipment is provided, location of untagged equipment is provided, and car count is accurate. The TRU accommodates and accurately filters data from normal operating procedures such as changes in speed and direction. The TRU also incorporates intelligence to handle both single- and multi-track locations.

### AEI Hardware System Components

The AEI site hardware components typically include the TRU, radio frequency identification (RFID) reader(s), antennas, wheel detectors, presence loops, external device interfaces, communications interfaces, enclosures, standby power and other optional peripherals.

The TRU hardware is designed and tested for compliance with applicable AAR and AREMA standards.

### Maintenance User Interface

The TRU Maintenance User Interface (MUI) provides local and remote access to the TRU for authorized users. A user can manage configurations, perform diagnostics and maintenance, and view/transfer reports.

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## HARDWARE

### Placement

- ▶ Makes use of existing AEI infrastructure (huts, antennas, etc.)
- ▶ Existing peripheral equipment may be connected to the TRU using existing wiring and connectors.
- ▶ A direct swap out replacement of legacy hardware

### Supported Reader Options

TransCore's MPRR

Amtech-brand AI1200 Reader/AR2200 RF  
Module-based AEI systems

### SOFTWARE FEATURES

- ▶ Solid state drive for data storage, no magnetic storage media
- ▶ Operating system, applications, and configuration settings stored in nonvolatile memory (compact flash)
- ▶ Parameters set locally using a serial port and a terminal; or remotely by authorized personnel using a modem, terminal, and supervisory-level password access
- ▶ Report customization and transmission to up to 10 host systems
- ▶ MUI for configuration, diagnostics, maintenance, and report viewing
- ▶ **Extensive remote recovery and diagnostic capabilities**

### Communications Interface

RS-232 and 10/100 Ethernet\*

\*The 10/100 Ethernet port can be used for communicating with other TRU systems (in multi-track installations) or transmitting consist and maintenance reports using standard FTP to user-configurable host addresses.

### POWER REQUIREMENTS

#### Power Source

12V to 36V DC nominal

The TRU will not be damaged if the input supply voltage is applied with reverse polarity.

The TRU will automatically restart after power failure and intelligently restart after power failure when battery voltage reaches the lower limit of operational voltage. For external battery charger equipment this setting is 22.5V DC.

## PHYSICAL

### Dimensions

**Size (W x H x L):** 1.5.5 x 12.5 x 10 in.  
(39.4 x 31.8 x 25.4 cm)

**Weight:** 26.3 lb (12 kg)

### Mounting

The TRU is designed to be wall-mounted inside standard railroad huts.

### TRU Enclosure

The TRU uses a hinged-cover NEMA-4 enclosure with quarter-turn fast latches for easy access into the enclosure.

## ENVIRONMENTAL

### Operating Temperature

-40°F to +160°F (-40°C to +70°C)

### Storage Temperature

-67°F to +185°F (-55°C to +85°C)

### Humidity

95% noncondensing

### Vibration

The TRU complies with vibration tolerance limits specified in AREMA C&S Manual, Part 11.5.1, Class C

### Shock

The TRU complies with shock tolerance limits specified in AREMA C&S Manual, Part 11.5.1, Class C

### Compliance

#### RF Interference

Units have been tested and are verified to Part 15 of the FCC rules for a Class A digital device

## STANDARDS

*AAR Manual of Standards and Recommended Practices, Railway Electronics, Standard for Automatic Equipment Identification, S-918*

*AAR Manual of Standards and Recommended Practices, Railway Electronics, AEI Site-To-Host Consist Report Format, S-918A*

*American Railway Engineering and Maintenance-of-Way Association (AREMA) 11.5.1 Class C C&S Manual*

*AEI Reader Equipment Requirements, Recommended Practice, RP-9203*

## EXTERNAL DEVICE INTERFACE

- ▶ Up to two readers or RF modules via the two 16-pin multi-conductor circular connectors on the bottom the unit
- ▶ One standard RJ45 port through which the TRU can connect to a local area network or to an adjacent TRU in a multi-track installation. The TRU Ethernet controller supports 10/100 Mbps.
- ▶ Four external serial ports:
  - ▶ One local laptop port
  - ▶ Reader 1 and 2 monitoring/data archival ports
  - ▶ One auxiliary serial port for data communications between the TRU and an external device
- ▶ One RJ11 port using an integrated 56-kbps modem module
- ▶ Sufficient digital ports to support wheel detector inputs (SI±, SII±), train presence detection, and train route detection for up to two tracks, as well as system-level AC line voltage monitor (24V AC), and battery charger condition monitor

## DOCUMENTATION

*TRU Quick Reference Guide*  
*Maintenance User Interface (MUI) Guide*

For more information:

Call **800.923.4824** (Sales Support) **505.856.8007** (Technical Support)

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