

# AI1422 Half-Frame Reader

## Features

- ▶ Ideal for modular systems requiring components with high tolerance to harsh shock and vibration environments.
- ▶ Provides customer input/output interface for monitoring reader status such as lock signal, power, radio frequency power, and three intermediate frequency monitor lines. Trigger input can be used to control activation of RF power.
- ▶ Compatible with half-frame, read-only tags in the 915-MHz frequency band.
- ▶ Studs on front panel can be used to ground other equipment to train body



The AI1422 Half-Frame Reader is an integrated tag interrogator consisting of a radio frequency (RF) module, tag decoder, and power supply.

The AI1422 Half-Frame Reader is designed specifically for use in mobile environments where a reader is rack-mounted inside a train's electronics cabinet and tags are mounted at fixed positions on the railbed or guideway sleepers. In this type of application, the AI1422 Half-Frame Reader sends tag data, containing position and location information, to a host computer mounted on the train.

The AI1422 Half-Frame Reader generates an RF signal that a TransCore RF identification tag modulates and reflects. The AI1422 Half-Frame Reader then decodes and validates the tag data carried by the reflected signal. The AI1422 Half-Frame Reader transmits the data to a local host computer for processing.

The AI1422 Half-Frame Reader is compatible with TransCore's AA3233 Subway Antenna and AA3234 Light Rail Antenna and the following tags: AT5112, AT5114, AT5115, AT5117, and AT5119.

The AI1422 Half-Frame Reader provides two RS-232C interfaces. The main interface supports host communications in real-time mode for passing tag data to the host computer. The second port monitors communications functions.

The AI1422 Half-Frame Reader has two ground studs on the front panel that provide a path to the train body ground for test equipment or other rack modules.

# AI1422 Half-Frame Reader

## COMMUNICATIONS

### Available Frequency Range

902—928 MHz

### Approved Frequency Range<sup>1</sup>

902.25—903.75 and 910.00—921.50 MHz

1. Federal Communications Commission (FCC) and Industry Canada (IC)

### Transmitter Frequency Accuracy

± 25 ppm at ambient temperature

### Transmitter Frequency Stability

± 5.0 ppm over operating temperature range

## HARDWARE FEATURES

### Connector

N type socket

### Communications Ports

1 Main RS-232C  
1 Auxiliary RS-232C  
110 to 19,200 baud

## SOFTWARE FEATURES

### Communication Buffer Capacity

32 Kbytes

## INPUT POWER SUPPLY OPTIONS

### Input Voltage

8V-35V DC, 14V-70V DC, and 28V-140V DC power supplies are available

### Power Consumption

25 W (45 W maximum)

### RF Power

0.8W ±0.1W

## PHYSICAL

### Dimensions

**Size:** 19.0 x 5.25 x 9.0 in. (48.3 x 13.3 x 22.9 cm)

**Weight:** 12 lb (5.4 kg)

### Mounting Location

Rack-mounted inside a train's electronics cabinet rack or other suitable enclosure.

## ENVIRONMENTAL

### Operating Temperature

+32°F to +158°F (0°C to +70°C)

### Storage Temperature

-40°F to +158°F (-40°C to +70°C)

### Humidity

95% noncondensing

### Vibration Tolerance

The AI1422 reader complies with vibration tolerance limits specified in AREMA C&S Manual, Part 11.5.1, Class J.

### Shock Tolerance

The AI1422 reader complies with shock tolerance limits specified in AREMA C&S Manual, Part 11.5.1, Class J.

## LICENSING

### Equipment License

The user is required to obtain a Part 90 site license from the FCC to operate the unit in the United States. Access the FCC Web site at [www.wireless.fcc.gov/uls](http://www.wireless.fcc.gov/uls) for more information.

**FCC ID:** FIHAI142205618

Users in all countries should check with the appropriate local authorities for licensing requirements.

## COMPLIANCE

### RF Interference

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

## STANDARDS

The AI1422 Half-Frame Reader meets the limits established by RSS-210, Low Power Licence-Exempt Radio-communication Devices, of the IC standards.

## DOCUMENTATION

*AI1422 Half-Frame Reader User Guide*

For more information:

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

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