

AI1831

Location Interrogator

The AI1831 Location Interrogator is designed for installation on a train's undercarriage. It reads location transponders that are mounted to the track bed and qualifies the information before transmitting it to the train's host computer system via an EIA-422 interface.

The AI1831 Interrogator uses a nominal resonant frequency of 125kHz to apply power to the transponder. The link contains the transponder clock and encoded signature, which helps to prevent cross-track readings.

The AI1831 Interrogator circuitry is enclosed in a weatherproof ULTEM radome and aluminum sandcasting. Systems using the AI1831 interrogator and the AT5831 transponder operate through fire-sensitive and harsh weather environments commonly found in outdoor and rail environments.

The AI1831 Interrogator is capable of reading transponders at speeds from 0 to 300 km/h. System functionality is assured through a built-in check tag that allow the on-board host computer to perform system tests.



Features

- ▶ Receives DC power from train through an input power port
- ▶ EIA-422 interface
- ▶ Compatible with AT5831 Location Transponder
- ▶ Approved for use in underground environments
- ▶ Designed for harsh outdoor and rail environments

Applications

- ▶ Automatic train control
- ▶ Positive train control
- ▶ Moving block train control

A1831 Location Interrogator

COMMUNICATIONS

Frequency Range

Data Link to Transponder: 2450 MHz

Inductive Power to Transponder: 125 kHz

Read Range

Determined by reader and application

POWER

Power Source

High Voltage: +110V DC, non-polarized, 95W max

Lower Voltage: -52V DC nominal, non-polarized, 95W max

INTERFACES

Inputs

RS422, Test transponder enable

Outputs

RS-485, Data

RS-422, TLS

PHYSICAL CHARACTERISTICS

Dimensions

42 x 43.8 x 10.2 cm (16.5 x 17.2 x 4 in)

Weight

12.1 kg (26.9 lbs)

Case Material

Weatherproof ULTEM and aluminum sandcasting

Mounting Surface

Any flat, smooth metal surface on the underside of a train

When mounting surface is nonmetallic or irregular, a flat metal backplate must be used.

Mounting Method

Mounting bolts: M8 x 35mm (0.315in x 1.38in)

ENVIRONMENTAL

Operating Temperature

-20°C to +55°C (-4°F to +131°F)

Humidity

95% condensing

Vibration Tolerance

Designed for rail environment

Shock

15g pk 11ms, all axes

Train Velocity

Up to 500 km/hr (310.7 mph)

LICENSING

This equipment uses 2450-MHz frequency and thus does NOT comply with FCC frequency allocation requirements for the U.S.

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

Standards

Fully compliant with accepted European standards such as the EMC directive (CE Mark) and UK type approval.

Meets criteria for performance by the appropriate sections of British Railways Board/Railway Industry association specifications RIA12, RIA13, and RIA20.

OPTIONS

Customer-specific part numbers, date of manufacture, and other customer-specified information can be laser etched on the radome.

MODEL PART NUMBER

Order 10-1831-XXX

For more information:

Sales Support

800.923.4824

Technical Support

505.856.8007

transcore.com

