Encompass® 5 Multiprotocol Reader

Features

► Compatible with multiple industry standard protocols
► Fully integrated reader and radio frequency module
► 915 MHz RF band operation
► Software-controlled RF power
► Ethernet and RS-232 communications
► Mounting up to 85 feet (26 meters) from antenna
► Ability to synchronize with other Encompass® 5 Multiprotocol Readers for multiple lane/multiple reader environments using either wired or GPS-based wireless synchronization
► Capable of buffering up to 100,000 tag transactions in flash memory

TransCore’s Encompass® 5 Multiprotocol Reader is an integrated non-toll, multi-protocol 915 MHz radio frequency identification (RFID) reader system that includes an RF transceiver board and processor in a single assembly. The Multiprotocol Reader is ideal for non-toll, multi-lane installations with a requirement to read two tag protocols or to provide a migration path from an existing tag protocol.

The Encompass 5 Multiprotocol Reader is capable of reading any of the following protocols in a given installation:

► American Trucking Associations (ATA), full-frame and half-frame
► California Title 21
► eGo® — fully compliant with ANSI NCITS 256:2001 and ISO 18000-6B standards
► Interagency Group (IAG)
► Super eGo (SeGo) — a superset of the eGo protocol
► TransCore IT2200

Where multiple tag protocols are used in the same installation, the Multiprotocol Reader is capable of reading any two of the above protocols.

The Encompass 5 Multiprotocol Reader is also suitable for a variety of automatic vehicle identification transportation applications, including airport ground transportation management systems, electronic vehicle registration, parking, secure access, and rail applications.

The Encompass 5 Multiprotocol Reader can be integrated into an onsite lane controller or a NEMA enclosure. The Multiprotocol Reader transmits and receives signals through a single antenna.
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COMMUNICATIONS

**Frequency Range**
- Downlink: 911.75 to 919.75 MHz adjustable in 0.25 MHz steps
- Uplink: 902.25 to 903.75 MHz and 910.00 to 921.50 MHz, adjustable in 0.25 MHz steps

Actual downlink frequency range is protocol-dependent.

The above frequencies are in the location and monitoring service (LMS) band.

**RF Control**
Programmable with host command

**Communications Interface**
Ethernet, RS–232

**Antenna Interface**
50-ohm SMA connector

**Read Range**
Read performance varies depending on operating protocol, tag and reader configuration, and environment.

POWER REQUIREMENTS

**Input Supply Voltages**
- DC: 19–30V DC
- AC: 19–27V RMS @ 47–63 Hz

**Input Power**
DC or AC: 40 watts maximum

**In-rush Current**
8 amps max., duration £25 ms

PHYSICAL

**Dimensions**
- Multiprotocol Reader Size (reader only): 14.5 x 8.6 x 3.0 in. (36.8 x 21.8 x 7.6 cm)
- Multiprotocol Reader Weight (reader only): 6.5 lb (2.9 kg)
- NEMA Enclosure Size: 18.6 x 18.0 x 10.6 in. (47.2 x 45.7 x 25.4 cm)

NEMA Enclosure Mounting Plate Size: 22.0 x 16.7 x 0.10 in. (55.8 x 42.4 x 0.25 cm)

**Encompass 5 Weight (reader, NEMA Enclosure, and mounting plate): 32.0 lb (14.5 kg)**

**Mounting Location**
In lane controller or NEMA enclosure

ENVIRONMENTAL

**Operating Temperature**
- Encompass 5: -40°F to +158°F (-40°C to +70°C), integrated unit
- Encompass 5 (in NEMA enclosure): -40°F to +131°F (-40°C to +55°C)

**Storage Temperature**
- Encompass 5: -40°F to +185°F (-40°C to +85°C)

**Humidity**
95% non-condensing

**Vibration (no NEMA enclosure)**
- Sinusoidal: 5 to 20 Hz, 0.1-inch peak-to-peak
- 20-200 Hz, 2 G peak

**Vibration (no NEMA enclosure)**
- Random: 10 to 500 Hz, 2 G<sub>rms</sub>

**Vibration (in NEMA enclosure)**
- Random: 10 to 500 Hz, 1 G<sub>rms</sub>

**Shock (no NEMA enclosure)**
10 G sawtooth pulse at 11 ms duration

**Shock (in NEMA enclosure)**
5 G sawtooth pulse at 10 ms duration

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 for more information.

FCC ID: FIHMPI6000A
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 Encompass 5 Multiprotocol Reader complies with the requirements of Standard for Information Technology and Telecommunications Equipment (UL60950 Third Edition).

The Encompass 5 Multiprotocol Reader meets the limits established by RSS-137, Location and Monitoring Service (902-928 MHz), of the Industry Canada Standards.

OPTIONS

**Enclosure**
NEMA 4X enclosure

**Wireless Reader Synchronization**
GPS device assembly

**Multiple Lane Operation**
Antenna multiplexing

**External Device Control**
Digital input/output assembly

TRAINING

Installation, operation, and maintenance training for TransCore authorized dealers is available through TransCore. For details, contact TransCore.

DOCUMENTATION

**Encompass® 5 Multiprotocol Reader System Guide**

**Encompass® 5 Multiprotocol Reader Quick Reference Card**

For more information:
Call 800.923.4824 (Sales Support) or 505.856.8007 (Technical Support)

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