User manual – Installation Instructions

IDT T1000 TR 1000 Rail Reader

Thinkify

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Product name: IDT T1000

Model Number: TR 1000

Professional Installation:
The IDT T1000 is a Part 90 LMS device. It is not available to the general public. This product requires Professional Installation. Only professional installers are allowed to set this unit up for its' intended use. The IDT T1000 is only available to these professional installers. It is the responsibility of these installers to obtain a site license from the FCC for Part 90 operation and install the interrogator in a safe and secure manner consistent with the intent of the regulations.

Sole User:
IDT is the sole user authorized for use of this device for any and all rail applications. Anyone using this device for rail applications must operate this device under authorization and with agreement from IDT. IDT is trained in the operation of installing part 90 devices and this device in particular. They are professional contractors.
IDT has the responsibility of obtaining a site license for use to operate this reader as a part 90 device.

FCC Compliance:
This equipment complies with Part 90 of the FCC Rules and Regulations. A site license is required for each installation. It is the responsibility of the system integrator/installer or user to obtain
the site license.

FCC Compliance (Digital Devices):
This equipment had been tested and found to comply with the limits of Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense.

Caution:
The IDT 1000D radiates energy. The RF emissions must be evaluated in accordance with FCC OET Bulletin 56 “Hazards of radio frequency and electromagnetic fields” and Bulletin 65 “Human exposure to radio frequency electromagnetic fields” and appropriate precautions implemented.
All individuals working on or near the antenna should not be closer than
2 feet to the antenna when the RFID reader is operating into a 12 dBi antenna. This is the minimum distance for human exposure recommended by FCC OET Bulletin 56.

Installation Instructions:

The unit should be removed from the box and mounted on a metal plate for heat dissipation. The power supply should be also mounted on a metal plate for heat dissipation. Coax connectors should be attached and ran to an antenna of 12 dBi gain or less. Connection to the network can take place in a serial or parallel manner. All pertinent I/O can also now be connected. The unit should now be connected to power and power can be monitored using the status lights on the reader.

The unit should not be allowed to be at full power and continuously “on” for over 30 minutes at a time. Continuous operation in the “on” condition at full power can decrease the useful life of the unit.

The unit has been type accepted at temperatures between -20 and plus 50 degrees C. Operation at temperatures above 35 degrees C without air circulation and a heat sink is not recommended.

Specifications Table

Architecture XScale processor, Linux, 64 Mbytes RAM, 64 Mbytes Flash
Supported RFID Tag Protocols EPC Gen 2; ISO 18000-6c, North American Rail
Reader Protocols Alien Reader Protocol, SNMP, firmware upgradeable
LAN Protocols DHCP, TCP/IP, NTP
Frequency 902.75 MHz – 927.25 MHz Channels 50 Channel Spacing 500 KHz
RF Power Max at output port 32 dBm
Power Tri-voltage AC/DC power converter; 45 Watts maximum 120 or 240 VAC
Communications RS-232 (DB-9 F), LAN TCPI/IP (RJ-45)
I/O 4 inputs, 8 outputs, optically isolated, 0.5 amp, external power source of less than 24 volts
Dimensions (L) 8.0” x (W) 8.3” x (D) 1.8”
Weight 1.5 kg (4.4 lb)
Operating Temperature -20°C to +50°C (-4°F to +122°F)
Dust and Moisture IP53
LED Indicators Power, Link, Active, Ant 0-3, CPU, Read, Sniff, Fault
RF Connectors reverse T&C
Approved power supply: Rong Hong or XP or DSC equivalent

Pinouts

RS-232 Port Pinouts

Pin 1 DCD	Connected to Pin 6
Pin 2 TR1	Transmit Data (Output)
Pin 3 RC1	Receive Data (Input)
Pin 4 DTR	Connected to Pin 6
Pin 5	Ground
Pin 6 DSR	Connected to Pin 4
Pin 7 RTS	Connected to Pin 8
Pin 8 CTS	Connected to Pin 7
Pin 9	Not Connected

IO Port Terminal Interface

Pin 1	V+
Pin 2	Not connected
Pin 3	Not connected
Pin 4	Not connected
Pin 5	Not connected
Pin 6	Not connected
Pin 7	Not connected
Pin 8	Not connected
Pin 9	Not connected
Pin 10	Input 0
Pin 11	Input 1
Pin 12	Input 2
Pin 13	Input 3
Pin 14	V-

Diagnostic LEDs

The ALR-9890 - RR includes diagnostic LEDs on the face of the reader to provide easy and convenient external indication for various operating conditions:

POWER (green) - indicates power is applied to the reader
LINK (green) – indicates that the reader is connected to the network
ACTIVE (green) – indicates reader is transmitting on the network
ANT 0 – ANT 3 (green) – indicates that the reader is transmitting power on the specified antenna port
CPU (green) – indicates that the CPU has booted successfully and is running normally.
READ (green) – indicates that the reader is receiving data from a tag
SNIFF (green) – indicates a tag signal has been detected, though it may not be strong enough yet to complete a transaction.
FAULT (red) – indicates a fault condition with the reader.