ALR-8800 ENTERPRISE RFID READER

FEATURES

- High Performance EPC Gen 2 Reader

- Enterprise scalable and remotely manageable

- Upgradeable, investment-protected architecture

- Dense reader management and interference mitigation

- Low initial cost of implementation and ongoing cost of ownership

- EN 302-208 compliant

EPC Gen 2, ETSI-Compliant RFID Reader

The Alien ALR-8800 Enterprise RFID Reader enables users to deploy manageable, robust, best-in-class RFID across the supply chain. The unit uses an XScale processor running Linux for system and network management and a powerful DSP processor for high-performance Gen 2 RFID protocol capability.

The XScale/Linux system hosts the Alien Reader Protocol and a suite of configuration and remote management functions, enabling fast, scalable implementation. A highly programmable signal processing architecture delivers exceptional execution of the EPC Gen 2 standard, while enabling implementation of future protocols for long-term investment protection.

Enterprise Scalable Architecture for Lower Cost of Implementation *and* Ongoing Management

The ALR-8800 enables enterprise-wide scale-up of RFID by reducing the cost of implementation and ongoing management.

Lower Implementation Costs

Installers can upload and download configurations allowing them to easily re-use a configuration for multiple read points. Standard configuration options provide simplicity for common situations.

The ALR-8800 reduces the cost of ancillary hardware used to integrate the reader with sensors, indicators and actuators. High capacity, optically isolated general-purpose input-output (GPIO) signals can drive many external devices directly, eliminating the need

Dense Reader Management

The ALR-8800 offers several methods for interference mitigation that jointly provide a powerful solution to the challenge of dense reader environments.

Dense Reader Mode

The reader is compliant with the low noise, spectral mask requirements of Dense Reader Mode as defined in the EPC Gen 2 specification. Employing "dense reader channelized signaling," the ALR-8800 makes more efficient use of the available spectrum, enabling more readers to operate in limited space. The flexible signal processing architecture of the ALR-8800 will enable it to support upcoming enhancements in the DRM protocol to optimize its use in the ETSI regulatory environment.
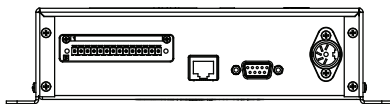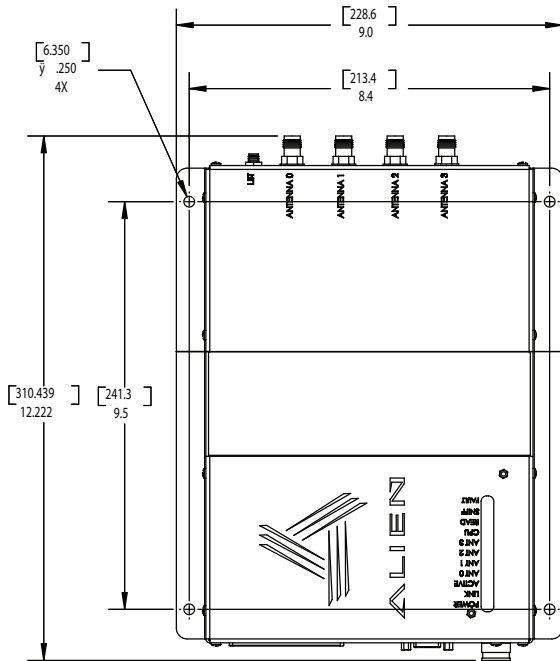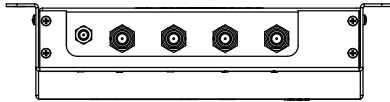
Listen-Before-Talk

The ALR-8800 employs ETSI-compliant Listen-Before-Talk (LBT) capability to avoid channel contention between readers and other equipment.

Event-triggered Operation and Autonomous Mode

The Autonomous Mode functionality of the Alien Reader Protocol enables the reader to collect tag data when triggered by external events detected by magic eyes and other sensors. In this mode, readers are activated only when needed, thereby reducing the on-time of each reader and lowering the number of readers operating at any given moment. This simple, but powerful tool is a critical part of co-locating large numbers of readers in a single facility.

for costly digital I/O equipment and relays. Optical isolation ensures accurate reception of triggering signals in noisy, industrial environments.

The ALR-8800 does not require separate and dedicated transmit and receive antennas to achieve top read rates. The multistatic antenna system achieves the performance of independent transmit and receive antennas with half as many antennas in most cases. Only four single-element antennas are required for four read points, unlike other readers that require 8 antennas.

Alien pioneered the network-ready RFID reader with the ALR-8780/9780 family and its widely-supported Alien Reader Protocol™. The ALR-8800 adds enhancements such as support for Simple Network Management Protocol (SNMP), which enables the network to monitor real-time health, revision and status information from the reader. The reader supports network firmware upgrades as well.

Enhanced Reliability and Ruggedness for Improved Uptime

The ALR-8800 features a rugged, steel enclosure. Heavy-duty, locking connectors ensure reliable connections even in environments with high levels of vibration. Extensive reliability testing including shock, vibration, temperature and humidity ensure field reliability.

Recovery from Power and LAN Interruption

Upon restoration of power after a power loss, the ALR-8800 resumes its previous configuration and operational mode. A tag list of up to 2500 tags is stored in non-volatile memory.

When operating in Autonomous Mode, the reader will continue to collect tag data even if the LAN connection is interrupted. Upon recovery of the LAN connection, middleware can download accumulated tag data from the reader.

Complete Developer's Kit for Java and .Net environments

The ALR-8800 Enterprise RFID Reader

MODEL NUMBER	ALR-8800, ALR-8800-DevC Developer's Kit
ARCHITECTURE	XScaleTM processor, Linux, 64 Mbytes RAM, 32 MBytes Flash, DSP and Field Programmable Analog Array (FPAA) signal processing
SUPPORTED RFID TAG PROTOCOLS	EPC Class 1 Gen 2, EPC Class 1 Gen1, ISO 18000-6c (when ratified)
READER COMMUNICATION PROTOCOL	Alien Reader Protocol™, Autonomous Mode, upgradeable architecture for future EPC reader protocols
NETWORK PROTOCOLS	DHCP, TCP/IP, SNTP, DNS, SNMPv.3
DENSE READER MANAGEMENT	Dense Reader Mode, Listen-before-talk, Auto triggering and event management
FREQUENCY	865.6 MHz – 867.6 MHz
CHANNELS	10
CHANNEL SPACING	200 KHz
RF POWER	2 watts ERP
POWER	AC/DC power converter; 45 Watts maximum 120 or 240 VAC, 50 or 60Hz
COMMUNICATIONS	RS-232 (DB-9 F), LAN TCPI/IP(RJ-45)
ANTENNAS	4 ports for 4 read points; multistatic topology; circular or linear polarization, 6 meter cables, reverse polarity TNC connectors
GENERAL PURPOSE INPUTS/OUTPUTS	4 inputs, 8 outputs, optically isolated, 0.5 watt current capacity
DIMENSIONS	(L) 28 cm x (W) 22.9 cm x (D) 5.6 cm
WEIGHT	2.0 kg
OPERATING TEMPERATURE	-20°C to +50°C
LED INDICATORS	Power, Link, Active, Ant 0-3, CPU, Read, Sniff, Fault (red)
SOFTWARE SUPPORT	Java and .NET APIs for Alien Reader Protocol, Alien Gateway demo and test software
COMPLIANCE: SAFETY	EN 60950, EN 50364
COMPLIANCE: EMISSIONS	EN 302-208, EN 301-489

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