ALR-9800 Enterprise RFID Reader

High Performance Solution for 2 to 4 Antenna Applications

The Alien® ALR-9800 Enterprise Reader enables users to deploy manageable, robust, EPC Gen 2 RFID solutions for supply chain and asset management applications. The ALR-9800 is optimized for demanding applications involving large numbers of tags and requiring 2 or more antennas.

Interoperable and Broadly Supported

The ALR-9800 is supported by key RFID platforms including Microsoft BizTalk RFID, IBM WebSphere 6.0, Oat Systems, Oracle, GlobeRanger, BEA and many others. Proven support for SAP through 3rd-party middleware is also available. A well-documented SDK featuring .NET and Java libraries enables easy, custom interfaces to control the reader if desired.

The readers include support for remote firmware management and remote monitoring via the Simple Network Management Protocol (SNMP), which enables the network to monitor real-time health, revision and status information from the reader.

> ❯ Optimized for high read rates in 2 to 4 antenna choke point applications such as dock doors and conveyors

> ❯ Dense Reader Mode for multiple reader environments

> ❯ Easy integration with RFID software solutions

> ❯ EPC Gen 2 Interoperable

> ❯ Manageable and upgradeable

Powerful Interfaces for Effective Integration

The Alien Reader Protocol features Autonomous Mode, a programmable state machine that enables the reader to operate independently based on external triggers, timing or software inputs. This flexible system leads to best-in-class read rates by enabling users to precisely control the parameters for timing, protocols, antenna usage and other critical variables without network latency.

A flexible general-purpose input-output (GPIO) system enables tight integration with external sensors and actuators for effective integration with existing business processes. High capacity, optically isolated GPIO signals can drive many external devices directly, eliminating the need for costly digital I/O equipment and relays. Optical isolation helps ensure accurate reception of triggering signals in noisy, industrial environments. Middleware access to GPIO inputs and outputs enables direct control via software.

Configurable notification modes, data routing options and data formats provide flexibility and ease-of-integration.

Power and LAN Failsafe Mechanisms Protect Data

The loss of power or LAN connectivity does not lead to the loss if critical tag data. The ALR-9800 caches tag lists in non-volatile memory, preserving data even in the event of a power loss.

When operating in Autonomous Mode, the reader will continue to collect up to 2500 tag records even if the LAN connection is interrupted. Upon recovery of the LAN connection, middleware can download accumulated tag data from the reader.

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Interference Management

The ALR-9800 offers several methods for interference mitigation that provide a powerful solution to the challenge of noisy environments.

Good Citizen: EPC Gen 2 Dense Reader Mode

The ALR-9800 is compliant with the EPC Gen 2 Dense Interrogator specification, which reduces interference impact on other readers. The mode significantly reduces the out-of-channel noise introduced by the reader, thereby enabling larger numbers of readers to coexist without reducing read rates. The powerful, dynamically adjustable signal processing architecture of the ALR-9800 ensures strong interference rejection in the presence of other readers or devices.

Intelligent Operator: 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 photo eyes and other sensors. In this mode, readers are activated only when needed, thereby reducing the number of readers operating at any given moment, and the resulting ambient signal level.

High Performance, Easy to Deploy, Easy to Manage

The Alien ALR-9800 Enterprise RFID Reader helps enable users to deploy manageable, robust RFID solutions for applications requiring 2 or more antennas such as dock doors and choke points thanks to:

› A flexible API with broad software support

› A high performance radio

› Data protection

› Robust dense reader interference management

Model Number	ALR 9800
Architecture	XScale processor, Linux, 64 Mbytes RAM, 32 MBytes Flash
Supported RFID Tag Protocols	EPC Gen 2; ISO 18000-6c
Reader Protocols	Alien Reader Protocol, SNMP, firmware upgradeable
LAN Protocols	DHCP, TCP/IP, NTP
Dense reader management	Dense Reader Mode, Event triggering
Frequency	902.75 MHz – 927.25 MHz
Channels	50
Channel Spacing	500 KHz
RF Power	Max 4 watts EIRP with Alien Antenna
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)
Antennas	4 ports; multistatic topology; circular or linear polarization, reverse polarity TNC; requires minimum of 2 antennas or external circulator
General Purpose Inputs/Outputs	4 inputs, 8 outputs, optically isolated, 0.5 amp, requires external power source of no more than 24 volts
Dimensions	(L) 11″ x (W) 9.0″ x (D) 2.2″
Weight	2.0 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 (red)
Software SDK	Java and .NET APIs
Compliance Certification	Emissions: FCC Part 15 Safety: UL 60950