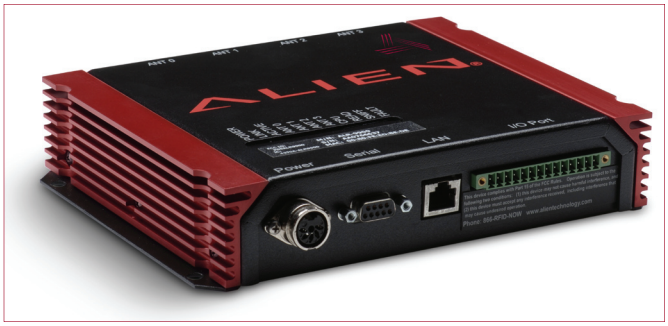
Product Overview

ALR-9900 Enterprise RFID Reader

High Performance, Easy to Deploy, Easy to Manage

The Alien® ALR-9900 Enterprise Reader enables users to deploy manageable, robust, best-in-class EPC Gen 2 RFID solutions for supply chain, manufacturing and asset management applications. Based on the popular ALR-9800, the ALR-9900 adds enhanced interference rejection, monostatic antenna connections and a much smaller footprint. The ALR-9900 delivers high read rates in demanding applications in an easy-to-integrate, easy-to-manage package.



- High read rates for demanding applications
- Enhanced noise rejection for reliable data capture in noisy environments
- Easy integration with RFID software
- EPC Gen 2 Interoperable
- Small footprint (8" x 8") and easy monostatic antenna layout
- Manageable and upgradeable

Interoperable and Broadly Supported

Alien pioneered the network-ready EPC RFID reader with the widely-supported Alien Reader Protocol. The ALR-9900 is supported by key RFID platforms including Microsoft BizTalk RFID, IBM WebSphere 6.0, Oat Systems, and Oracle. 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 ALR-9900 includes 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.

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

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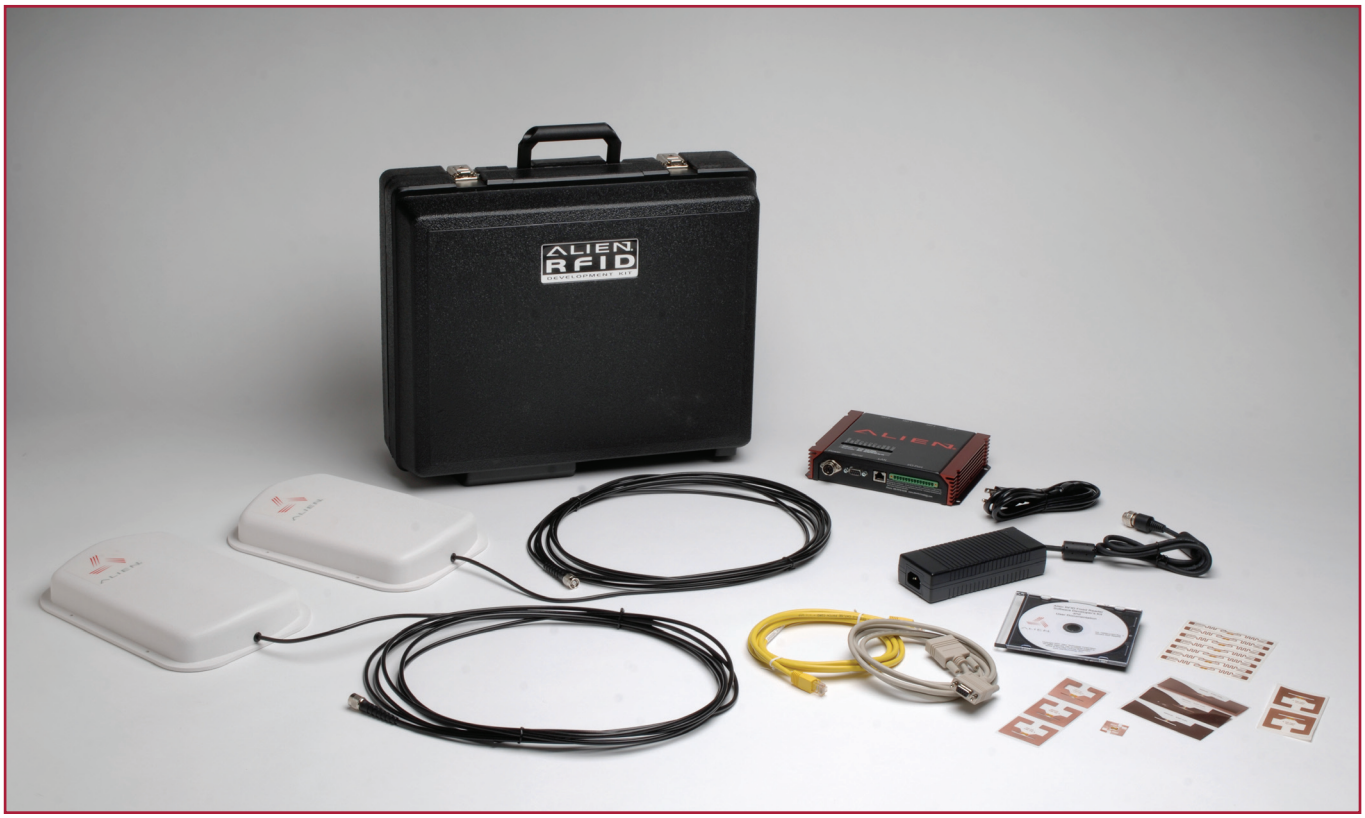

Developer Kit

General Purpose I/O (GPIO) signals can drive many external devices directly, eliminating the need for costly digital I/O equipment and relays. Optical isolation ensures 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.

The ALR-9900 is backwards compatible with Alien's popular ALR-9800, enabling users to easily operate a mixed population or to transition from one to the other.

Monostatic Simplicity

The ALR-9900 provides the added simplicity of a monostatic antenna topology, which provides a smaller footprint and easier integration for certain applications such as small item tagging. Only one antenna per read point is required, reducing system cost and complexity. A proprietary, active, noise cancellation mechanism ensures high read rates from the monostatic antenna system.

Power and LAN Failsafe Mechanisms Protect Data

The loss of power or LAN connectivity does not lead to the loss of critical tag data. The ALR-9900 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.

Interference Management

The ALR-9900 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-9900 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.

Noise Resistant: *Strong Filtering for Interference Rejection*

The powerful, dynamically adjustable signal processing architecture of the ALR-9900 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 noise level.

High Performance, Easy to Deploy, Easy to Manage

The Alien ALR-9900 Enterprise RFID Reader enables users to deploy manageable, robust, best-in-class RFID thanks to:

- A flexible API with broad software support
- A high performance radio
- Data protection
- Robust dense reader interference management

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Model Number	ALR-9900
Architecture	XScale processor, Linux, 64 Mbytes RAM, 64 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; monostatic topology; circular or linear polarization, reverse polarity TNC
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) 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 (red)
Software SDK	Java and .NET APIs
Compliance Certification	Emissions: FCC Part 15 Safety: UL 60950

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