ALR-F800

Fifth Generation Enterprise RFID Reader

Alien® ALR-F800 is a best in class, **self-optimizing** Enterprise class reader that enables users to deploy best-in-class EPC Gen 2 RFID solutions for retail, supply chain, manufacturing, mobile asset tracking and asset management applications.

FEATURES

- Global EPC Gen 2 platform
- Automatic inventory optimization
- Feature-rich Alien Reader Protocol
- Dynamic Authentication of Higgs ICs
- Exceptional sensitivity and performance
- Automode, with on-board state machine
- High read rates for demanding applications
- Enhanced noise rejection for reliable data capture
- RSSI & speed filters
- Easy RFID software integration
- Easily configurable and upgradable
- Industrial, installation-friendly I/O connector
- Antenna reflection cancellation optimization
- Supports extended / custom Higgs™ IC features

- Auto "Seek" function for low duty cycle applications
- RoHS EU 2002/95/EC compliant

Feature	Enabled By	Benefit
Ease of Use	• Alien Reader Protocol or LLRP (coming) • Smart reader/autonomous mode • Alien Reader Control Architecture & Ruby • Power over Ethernet	• Easy to set up and deploy • No additional costly controllers • Less maintenance and overhead
Industry leading PoE transmit power & power source agnostic	• Under PoE power, outputs 31.5dBm – significantly more than other readers • Dynamically switches between power sources when power fails	• No power supply expense or bulk • Uses standard PoE • Best read sensitivity when plenum/ceiling mounted • Increased reliability
Dynamically self-optimizing for best possible real-world performance e.g. noisy or multi-reader environments	• Dynamic "Smart-throttling" in adverse RF environments • Intelligent real-time Phase Cancellation • Maximizes the sensitivity and interference rejection in all environments • Other confidential techniques	• Robust against significant tag collisions • Maintains optimal sensitivity even in highly reflective environments • More likely than competitors to read tags in high interference environments (other readers and RF sources)
Extensible and obsolescence proof	• Reconfigurable RF subsystem – Enables RF performance upgrades • MicroSD slot • USB Host	• Firmware modernization • Enables virtually any amount of memory to be added • Add external peripherals including cellular, WiFi or BT

Reader Practicality and Power

The ALR-F800 introduces a paradigm shift in RFID reader practicality. The reader providers the highest transmit power of any reader when operating from Power-over-Ethernet (PoE) power yet offers seamless switching between DC power and PoE power. This removes the need to decide about power source in order to obtain optimal reader performance. Just pick the most cost effective source for your application.

Usable Performance

Many readers lay claims to the "best performance" and can throw datasheet numbers to "prove" it. However, as soon as these solutions are implemented in real-life complex RF environment their performance drops-off dramatically. The ALR-F800 is different. The system monitors the RF environment in real-time and manipulates a number of parameters, filters and tuning metrics dynamically and provides "Smart Throttling" that gently changes the readers behavior to maximize the tags read. Non-Alien readers degrade their performance down to a minimum while the ALR-F800 throttles down using smart algorithms.

Industry Standard I/O and Firmware Personality

The reader is extensible via industry standard I/O including micro-SD cards (for adding memory) and USB (for accessing wireless I/O such as Wifi and cellular modems). Most readers are programmable but this reader also has the ability for the RF subsystem to be updated via firmware. These updates help protect the ALR-F800 from obsolesce.

Reader Kits

Kit Name	Kit Model Number xxx = Country Code	Contents
Reader	**ALR-F800-xxx**	Reader only (country/region specific)
		I/O mating connector
Reader Kit	**ALR-F800-xxx-KIT**	ALR-F800 Reader (country/region specific)
(Targeted at Developers)		PoE Injector
		Two Ethernet cables
		USB Cable (Type B to A)
		I/O mating connector
Reader Dev Kit	**ALR-F800-xxx-DEVC**	ALR-F800 Reader (country/region specific)
(Targeted at Developers)		PoE Injector
		Two Ethernet cables
		DC Power Supply Unit
		Serial cable
		USB Cable (Type B to A)
		One ALR-8697 Antenna
		20ft antenna cable
		Tag sample pack
		Micro-SD Card
		I/O mating connector
		VESA Mounting Bracket
		Black carry case with foam inserts

Model Number	ALR-F800 (All Models and Country Variants)
Architecture	ARM9 677MHz processor, Linux, 512 MBytes DDR3 RAM, 2 GBytes Flash
Supported RFID Tag Protocols	EPC Gen 2; ISO 18000-6c
Reader Protocols	Alien Reader Protocol (now), LLRP (coming) firmware upgradable
LAN Protocols	TCP/IP, NTP, DNS, DHCP, SNMP
Dense reader management	Dense Reader Mode, auto event triggering and event management
Power	Power over Ethernet or robust universal AC-DC power converter; 100-240 VAC, 50/60Hz
Reader Power (with PoE)	≥31.5 dBm
Communications	LAN TCPI/IP (RJ-45), RS-232 (DB-9 F), USB Host, USB Console
Antennas	4 reverse polarity TNC monostatic ports; circular or linear polarization; near and far field compatible
General Purpose I/O	Optically isolated. 0-24VDC rail. 4 inputs. 8 outputs (1500mA capacity).
Dimensions	(L) 20.2 cm x (W) 19.1 cm x (D) 2.8 cm (7.5" x 7.9" x 1.1")
Weight	0.85 kg (1.88 lb)
Operational Temperature	-20°C to +50°C (-4°F to +122°F)
Environmental Rating	IP53
LED Indicators	Power, CPU, Read, Sniff, Ant 0-3
Software SDK	Java, .NET, Ruby APIs
RoHS	EU 2002/95/EC compliant

Model Number	ALR-F800 (US FCC)	ALR-F800EMA (Europe, Middle East & Africa, New Zealand, South Africa)	ALR-F800-CHN (China, Singapore)
Frequency	902 MHz – 928 MHz	865.7 MHz – 867.5 MHz	920.625 MHz – 924.375 MHz
Transmit Channels	50	4	16
Channel Spacing	500 KHz	600 KHz	250 KHz
RF Power	4 watts EIRP	2 watts ERP	2 watts ERP
Compliance Certification	Emissions: FCC Part 15 Safety: cTUVus tested to: CAN/CSA–C22.2 No.60950-1-03, and UL 60950-1:2007 specifications IEC 60950-1 and EN60950-1	Emissions: ETSI EN 302-208-2 (4 channel plan), EN 301-489. Safety: EN 60950, EN 50364.	Emissions: CMII Safety: IEC 60950-1:2005 2nd edition & CCC

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Gateway RFID Solutions
154 State St.
North Haven, CT 06473
866.792.0031
www.gatewayrfidsolutions.com