ALR-F800-X with Emissary™

Enterprise RFID Reader & Edge Service Device

Alien is Reinventing RFID with the ALR-F800-X, a Revolutionary Solution That **Simplifies** RFID Infrastructure **Installation, Operations** and **Maintenance** by Combining an Enterprise RFID Reader and Edge Service to Provide **Multiple-Reader visualization and Management.**

VALUE PROPOSITION

- Simplifies multi-read-point installations to speed TTM, lower configuration and installation costs and provide a logical, easy to understand visualization of the implementation
- Let you focus on the business process needs and not managing the hardware
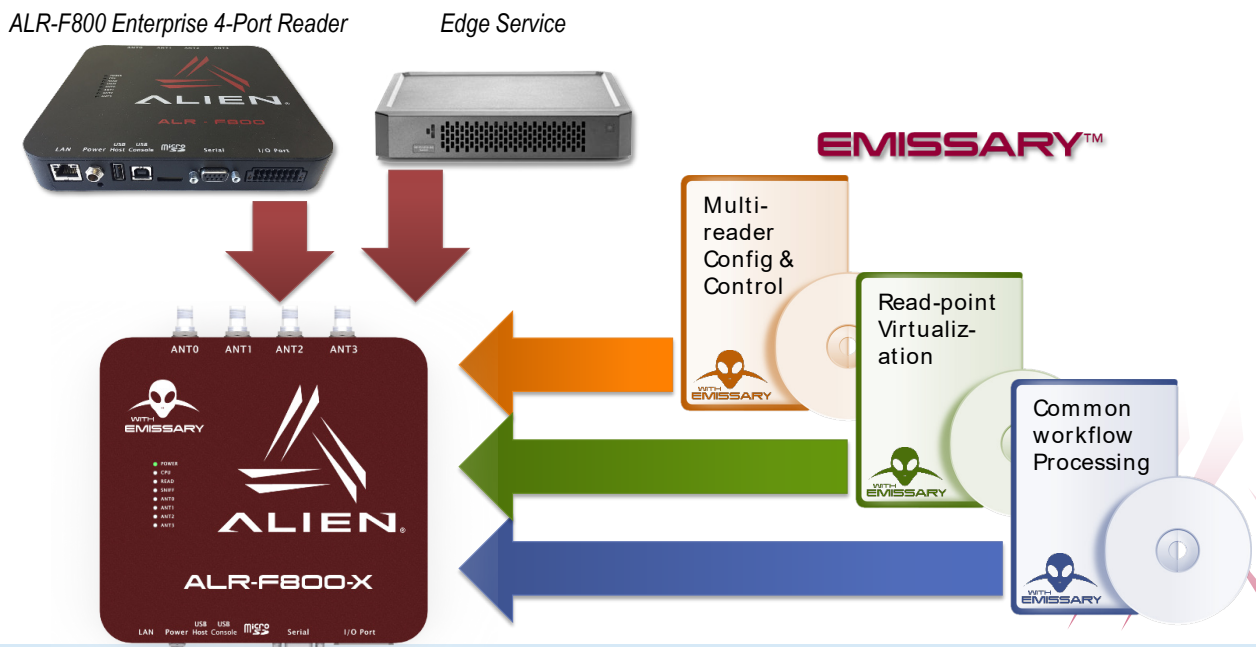
BENEFITS

- Simple RFID installation and configuration
- Simplifies the complex description of a read-point network and attached non-RFID devices
- Provides an infrastructure that Alien partners can leverage from
- Speeds time to system realization

READER FEATURES

- Reader + Multiple Reader Configuration and Management in one device
- Class leading Global EPC Gen 2 4-port RFID Reader
- Same footprint as Alien's ALR-F800 UHF Enterprise Reader
- Built in handling of common chores
- DSA (Dynamic Self-Adapting) real-time read optimization
- Power source agnostic and auto-switching
- Feature-rich Alien Reader Protocol
- Dynamic Authentication of Higgs™ ICs
- Exceptional sensitivity and performance
- Automode, with on-board state machine
- RoHS EU 2002/95/EC compliant
- Plenum Rated (EAHS) per UL 2043

What is the ALR-F800-X with Emissary?

ALR-F800 Enterprise 4-Port Reader

Edge Service

EMISSARY™

Multi-reader Config & Control

Read-point Virtualization

Common workflow Processing

ANT0 ANT1 ANT2 ANT3

ALR-F800-X

The ALR-F800-X is a truly transformational product created by the merging two core capabilities present in any solution. It is an ALR-F800 based 4-port Enterprise Class UHF Passive Reader and it is an Edge Service controller or manager that supports other readers in the network providing a complete Industry 4.0 solution.
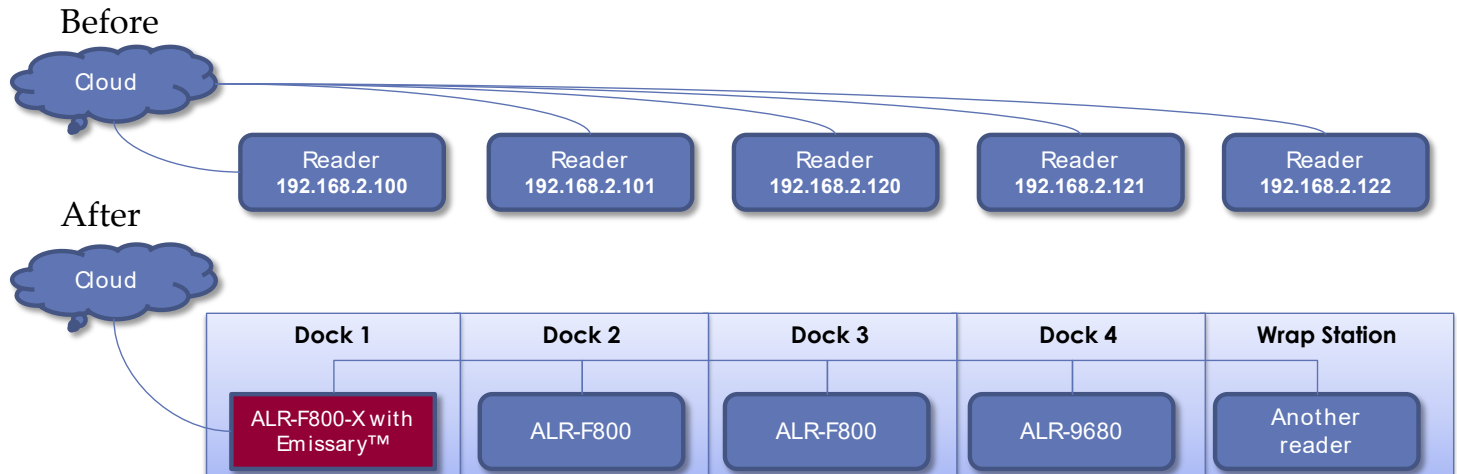
• By transforming the reader into both a middleware host AND an application host, multiple layers of complexity and cost are thereby eliminated.

• By processing data elements at the source, the VALUE of the data is exponentially increased, because individual read points throughout a vast enterprise can be examined and evaluated in real time. This adds immeasurably to the richness and quality of the Big Data analytic scenarios now emerging in every area of business life.
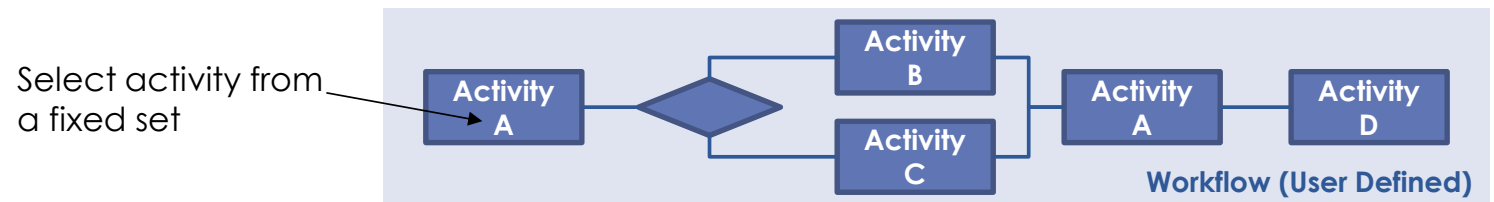
What is Emissary?

Emissary comes embedded inside the ALR-F800-X at no additional cost and is ready to use "out of the box" without the complexities associated with downloading special licenses. Each ALR-F800-X supports four additional readers (for five readers in total), and no additional Edge Server is required (the ALR-F800-X performs this function). The ALR-F800-X with Emissary is designed to be low fuss and simple to use.

It visualizes readers, antenna and other IO devices into a more logical view that is more customer centric. A complete multi-reader/device workflow can be described from built in Activities resulting in simplified installation, operation and maintenance. Emissary consists of:

• A simple hierarchical virtualization of your read-point and device infrastructure

• Extrapolates device naming into your terminology: "Portal 3", or "Wrap Station"…

• Defines logical, user friendly named locations and how the hardware is applied to these locations

Before

| Cloud | Reader 192.168.2.100 | Reader 192.168.2.101 | Reader 192.168.2.120 | Reader 192.168.2.121 | Reader 192.168.2.122 |

After

	Dock 1	Dock 2	Dock 3	Dock 4	Wrap Station
Cloud	ALR-F800-X with Emissary™	ALR-F800	ALR-F800	ALR-9680	Another reader

• Provides a set of common Activities (e.g. Read tag, turn on light, send data...)

• Provides a Microsoft Windows based tool for the creation and handling of Workflows built from

Select activity from a fixed set

Activity A → Activity B / Activity C → Activity A → Activity D

Workflow (User Defined)

these Activities

- Simple set-up, control and maintenance of multiple local readers
- Automatic interpretation of the correct Tag Data Standard when tags are read
- Aggregation of tag read data (reports) into the ALR-F800-X where consolidated reports can then be transferred to the cloud or server (reducing data flowing between them).
- All built-in to the ALR-F800-X. No downloads, installation or setup to install Emissary.

What does the ALR-F800-X and Emissary Solve?

- Readers and tags are now largely consistent, reliable and affordable.
- RFID is now solving many real-world problems in many verticals.
  - Proven ROI
  - Enables the automation of previously error-prone, expensive and/or inefficient processes or workflows
- Now the problem isn't the RFID tags or readers…it's integration, cooperation and configuration
  - 6 out of 10 projects experience IT and integration related delays.
  - Deployments involve more integrated sensory technologies
  - Inter-system communications shouldn't detract from defining the implementation
- Today RFID readers are "data pumps"
  - Route raw data to a localized edgeware server or PC for processing
  - Processed data is then sent to the main host to achieve enterprise-wide visibility
  - Complex edgeware/PC devices add cost and failure points

Alien has seen large implementations fail due to lack of system elegance and efficiency, requiring project managers to continuously keep these disparate hardware and software elements in sync. The task, then, is to eliminate layers of complexity and cost, minimizing junctions of potential failure and greatly increasing system efficiency and utility.

Key Points

- No license fees, no hassle
- Supports up to 4 other readers
- That's 5 readers including the ALR-F800-X
- That's 20 read points controlled in one device
- Additional ALR-F800-X's can be used to support more than 5 readers
- Designed to enhance Aliens' large Value Added Partners time-to-market

Unique Capabilities

Need	Feature	Benefit
Simplify multi-reader installation	• Two in one Enterprise Reader and Edge Service Device • Multi-reader controller with no additional hardware or boxes • Full ALR-F800 enterprise class reader integrated • Logical/user-friendly device naming • Logical/user-friendly location naming	**Minimize time to system live date and cost of system realization** **Less hardware to go wrong/ replace**
Simplify multi-reader configuration		
Simplify multi-reader maintenance		
Simplify multi-reader workflow creation	• Built in common Activities • Simple tool to build Activities into a Workflow (across readers) • Built in recognition of RFID data allow interpretation by the correct Tag Data Standard (TDS 1.8) • Aggregates multiple-reader data reports • Send Consolidated data reports to the cloud (minimizing data transferred)	**Lowers cost and TTM of job description** **Flexibility to change the workflow**

Integrated Enterprise-class 4-Port Reader

The ALR-F800-X introduces a paradigm shift in RFID reader practicality and builds on the already proven and successful ALR-F800 Enterprise Class UHF Passive Reader. 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.

Alien GATESCAPE built-in configuration tool simplifies reader set-up and configuration via a simple and modern web interface.

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-X is different. Aliens **DSA** (Dynamic Self-Adapting) 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-X 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-X from obsolesce.

Reader Kits

Kit Name	Target User	Kit Model Number XXX = Country Code	Contents	Notes
Reader	Large installations that have an existing PoE power supply infrastructure.	ALR-F800-X-XXX-RDR-ONLY	Reader only (country/region specific)	No power supply (DC or Power-over-Ethernet Injector) provided. If you need one, order the "Kit" below.
			I/O mating connector	
Reader Kit	Someone planning to evaluate or develop with the reader and required a power source to power the reader. Good for working on a lab bench.	ALR-F800-X-XXX-RDR-KIT	ALR-F800 Reader (country/region specific	Reader with a power supply in the form of a Power-over-Ethernet Injector (which supplies both power and data to the reader). Comes complete with power cord for the injector and 2 Ethernet cables, one for data and one for both data and power).
			PoE Injector	
			Power Cable for PoE injector/reader	
			Two Ethernet cables	
			USB Cable (Type B to A)	
			I/O mating connector	

Model Number	ALR-F800-X (All Models and Country Variants)
Architecture	ARM9 677MHz processor, Linux, 1GByte DDR3 RAM, 2 GBytes Flash
Supported RFID Tag Protocols	EPC Gen 2; ISO 18000-6c
Reader Protocols	Alien Reader Protocol, LLRP
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 (lower as required by law in specific regions - see tables below)
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

Models by Country

Model Number	Countries	Frequency	Transmit Channels	Channel Spacing	RF Power	Compliance Certification
ALR-F800-X-RDR-KIT	USA, Bolivia, Canada, Colombia, Mexico, Panama, Puerto Rico, Venezuela	902 - 928 MHz	50	500 KHz	4W EIRP	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, UL 2043 ATT, CRC, IFETEL, ASEP, CONATEL
ALR-F800-ARG-X-RDR-KIT	**Argentina***	902 - 928 MHz	50	500 KHz	4W EIRP	Enacom
ALR-F800-BRA-X-RDR-KIT	Brazil	902 - 907.5 MHz & 915 - 928 MHz	35	500 KHz	4W EIRP	Emissions: Agência Nacional de Telecomunicações - ANATEL Safety: UL Brazil
ALR-F800-CHN-X-RDR-KIT	China, Singapore	920 - 925 MHz	16	250 KHz	2W EIRP	Emissions: CMII Safety: IEC 60950-1:2005 2nd edition & CCC
ALR-F800-EMA-X-RDR-KIT	Europe, UAE, New Zealand, South Africa	865.7 - 867.5 MHz	4	600 KHz	2W EIRP	Emissions: ETSI EN 302-208-2 (4 channel plan), EN 301-489. Safety: EN 60950, EN 50364
ALR-F800-EMA-X-RDR-KIT-IND	India	865.7-866.9 MHz	3	600 KHz	2W EIRP	Emissions: ETSI EN 302-208-2 (4 channel plan), EN 301-489. Safety: EN 60950, EN 50364
ALR-F800-ID-X-RDR-KIT	Indonesia	923 - 925 MHz	5	500 KHz	2W ERP	Ministry of Communications and Information Technology
ALR-F800-JP3-X-RDR-KIT	**Japan***	915.8 - 921.4 MHz	4	1200KHz	4W EIRP	ARIB STD-T106
ALR-F800-KR2-X-RDR-KIT	**South Korea***	916.7 - 920.9 MHz	6	600KHz	4W EIRP	KC
ALR-F800-RSA-X-RDR-KIT	South Africa	915.4 - 919 MHz	17	200KHz	4W EIRP	Emissions: ICASA Safety: NRCS
ALR-F800-TAI-X-RDR-KIT	Taiwan	922 - 928 MHz	19	250KHz	1W ERP	NCC
ALR-F800-URY-X-RDR-KIT	Uruguay, Peru	916 - 928 MHz	23	500 KHz	4W EIRP	Unidad Reguladora de Servicios de Comunicaciones (URSEC), Ministerio de Transportes y Comunicaciones
ALR-F800-VN1-X-RDR-KIT	Vietnam	918 - 923 MHz	9	500 KHz	500 mW ERP	QCVN 47:2015/BTTTTT, QCVN 18:2014/BTTTT
ALR-F800-WR1-X-RDR-KIT	Australia, Hong Kong, Thailand	920 - 925 MHz	8	500 KHz	4W EIRP	ACMA, OFTA

* Due to country specific regulations, power supplies must be obtained locally for Argentina, Japan and South Korea

Powered by ENVOY

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