Molex RFID Solutions

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Molex has partnered with Alien Technology to offer best-in-class RFID readers to use with Molex passive RFID tags for an easy-to-use robust, high-performing tracking and control management solution

Features and Advantages
Passive RFID Tags

Read-range options
Various read ranges allow for scalable performance per application

Rugged and weather-resistant
High/low temperature, vibration and impact, and wet environment resistance allow RFID technology to exist in previously challenging applications

Low-profile options
Simplifies implementation by minimizing footprint space

Multi-surface use
Delivers flexibility to use with different packaging or container materials

Alien ALR-F800-X Enterprise RFID Readers with Emissary

Combines an enterprise RFID reader and edge service to provide multiple-reader visualization and management
Simplifies RFID infrastructure installation, operations and maintenance

Emissary comes imbedded inside the ALR0F800-X Reader

- Enables the ALR F800-X Reader to support up to five readers without requiring additional Edge Servers
- Visualizes readers, antenna and other I/O devices in a customer-centric logical view
- Creates a complete multi-reader/device workflow

2-in-1 enterprise reader and edge service device; multiple reader controller with no additional hardware or boxes; simplified multi-reader installation, configuration and maintenance

- Minimizes time-to-system live date and cost-of-system realization
- Decreases chance of malfunction and need for replacement through implementation of less hardware

Alien ALR-F800 Enterprise RFID Readers

Alien Gatescape-enhanced built-in configuration tool (via web interface); Alien Reader protocol or LLRP; smart reader/autonomous mode

- Easy to set up and deploy
- No additional controllers needed
- Requires less maintenance and overhead

Dynamic "smart throttling" in adverse RF environments; intelligent real-time phase cancellation; maximizes the sensitivity and interference rejection in all environments

- Maintains optimal sensitivity even in very noisy RF environments
- More likely than competitors to read tags in high-interference environments (other readers and RF sources)

Uses PoE power with 31.5dBm output, significantly more than other readers; dynamically switches between sources when power fails (when 12V DC is also connected)

- Uses standard PoE switch/power injector
- Flexibility to choose power source
- Simplified installation

Ability to add new features via OS or conventional firmware update; MicroSD and USB slots available

- Field upgradeable/updatable
- Increase memory via microSD or USB
- Add external peripherals via USB

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Features and Advantages

Alien ALR-9650 Smart Antenna Readers

Ease of use

- Easy to set up and deploy
- No additional costly controllers
- Less maintenance and overhead
- Minimizes network infrastructure
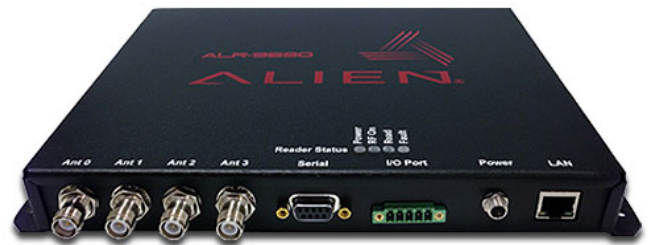- Can be set up in areas with no power
- Small footprint

Deployable in commercial environments

- Compact
- Few cables required
- Blends into deployment location
- No additional housing required

Alien ALR-9680 Commercial 4-Port RFID Reader

Easy to set-up and use

- 4 antenna ports
- Communicates via Alien Reader Protocol – no additional controllers necessary
- Less maintenance and overhead
- Minimizes network infrastructure
- Power-over-Ethernet (PoE) capability to work in areas with no power
- Remote firmware management

Robust, slim design

- Robust metal chassis
- 1.25" enables fit in narrow vertical locations
- All cables located on one side

Alien ALR-H460 Android Portable Ruggedized Computer for Data Collection

Ease of use

- Large 5.2" 1920x1080 resolution display
- High-capacity Lithium-polymer battery
- Open source Android software for custom applications

High Performance

- High-performance antenna for superior read range
- Fast data collection and processing
- Android 6.0 Operating System for speed and agility

A Feature-rich Handheld

- Wi-Fi, limited 4G, Bluetooth, GPS for wireless simplicity and connectivity
- 13MP auto-focus camera with flash

Robust Design

- Dust and water ingress protection to IP64
- Drop-tested design to 1.0m/3.28'
- Shock-resistant rubber seals

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Markets and Applications

Industrial, Commercial, Oil and Gas

Logistics

Supply chain visibility

Food and beverage

Cold chain/temperature monitoring

Real-time location (RTL) systems

People tracking

Contractors

Staffing

Visitors

Safety for emergency responders

Automotive and Commercial Vehicle

Device and rental unit tracking

Vehicles with equipment

Data Center

Valuable asset tracking
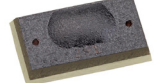
Security access control

Medical

Asset and inventory management

Uniform and laundry management

Patient tracking

Pallet Tracking

Equipment Tracking

Medical Equipment/Tools Tracking

Alien Technology Fixed RFID Reader Comparison

Molex Part Number	134210001	134220001	134290001	134230001	134250001
Alien Technology Model No.	ALR-F800-X-RDR-ONLY	ALR-F800-RDR-ONLY	ALR-9680	ALR-9650	ALR-H460
Type	Enterprise with multiple reader management	Enterprise	Commercial	Commercial	Handheld
Self Optimizing	Yes	Yes	No	No	No
PoE Transmit Power	Extremely high	Extremely high	Good	Good	N/a – battery powered
Protocol	ARP/LLRP	ARP/LLRP	ARP	ARP	N/a for handheld reader
Operating System	Linux	Linux	Linux	Linux	Android 6.0
Emissary*	Yes	No	No	No	No
Memory	1 GB RAM	512 MB RAM	64 MB RAM	64 MB RAM	2GB RAM
Memory	2 GB Flash	2 GB Flash	64 MB Flash	64 MB Flash	16GB Flash
Number of Antennas	Up to 4	Up to 4	Up to 4	1 internal smart-antenna + 1 optional external	1 dBiL / 4 dBiC (Circular)
GPIOS	4 in / 8 out (Isolated)	4 in / 8 out (Isolated)	2 in / 2 out (TTL)	2 in / 2 out (TTL)	N/a for handheld reader

Standard Passive RFID Products Comparison

Molex Asset Tracking Solutions: Standard Passive RFID Products Comparison

PRODUCT	Product Name	13356-0571	13356-1151	13356-1351	13356-1401	13356-1431	13358-0681	13358-0821	13358-0861
ELECTRICAL	Air Interface Protocol	UHF, EPC Class 1 Gen 2, ISO 18000-6C	UHF, EPC Class 1 Gen 2, ISO 18000-6C	UHF, EPC Class 1 Gen 2, ISO 18000-6C	UHF, EPC Class 1 Gen 2, ISO 18000-6C	UHF, EPC Class 1 Gen 2, ISO 18000-6C	UHF, EPC Class 1 Gen 2, ISO 18000-6C	UHF, EPC Class 1 Gen 2, ISO 18000-6C	UHF, EPC Class 1 Gen 2, ISO 18000-6C
	Operating Frequency	902-928 MHz (North America)	902-928 MHz (North America)	902-928 MHz (North America)	902-928 MHz (North America)	902-928 MHz (North America)	902-928 MHz (North America)	902-928 MHz (North America)	865-928 MHz (Compatible with North America and EU standards)
	IC Type	Alien Technology Higgs3	Alien Technology Higgs3	Alien Technology Higgs3	Impinj Monza R6-P	Impinj Monza R6-P	Alien Technology Higgs3	Alien Technology Higgs3	Alien Technology Higgs3
	Memory	96-bit EPC, 512-bit user memory	96-bit EPC	96-bit EPC, 512-bit user memory	Up to 128-bit EPC, 96 bits serialized TID, Up to 64-bit user memory	Up to 128-bit of EPC, 96 bits serialized TID with 48-bit serial number, Up to 64 bits of user memory	96-bit EPC, 512-bit user memory	96-bit EPC, 512-bit user memory	96-bit EPC, 512-bit user memory
	Max. Read Distance	7.62m (25') at 36 dBm EIRP	4.57m (15')	2.4-2.7m (8-9') at 36 dBm ERP	1.8-2.1m (6-7') at 36 dBm ERP	0.9-1.2m (3-4 ') at 36 dBm ERP	25.9m (85') on metal, 19.8m (65') off metal	4.6m (15') at 36 dBm ERP	3.0-3.7m (10-12')
	Applicable Surface Materials	Metal surfaces	Metal surfaces	Metal surfaces	Metal surfaces	Metal surfaces	Metal or nonmetal surfaces	Indoor; plastic or metal surfaces	Nonmetal surfaces
MECHANICAL	Tag Form Factor	Hard tag (Polypropylene encasement)	Hard tag (One piece, no welding construction)	Hard tag	Hard tag	Hard tag	Hard tag (rigid polycarbonate and stainless steel backplate)	Hard tag	Flex tag
	Attachment Method	2 screws or rivets; VHB adhesive	2 screws or rivets; VHB adhesive	Acrylic adhesive	Site-applied adhesive	Site applied adhesive	2 screws or rivets; acrylic adhesive	Acrylic adhesive	Acrylic adhesive
	Dimensions	67.60 x 26.20 x 6.10mm (2.66 x 1.03 x 0.24")	61.47 x 17.02 x 7.62mm (2.42 x 0.67 x 0.30")	45.97 x 7.62 x 1.57mm (1.81 x 0.30 x 0.062")	10.80 x 5.80 x 3.00mm (0.42 x 0.22 x 0.12")	6.00mm diameter x 3.60mm tall (0.24 x 0.14")	145 x 37.50 x 6.80mm (5.70 x 1.48 x 0.27")	70.00 x 17.00 x 1.80mm (2.76 x 0.67 x 0.07")	50mm x 14mm x 0.4mm (1.97" x 0.55" x 0.016")
	Weight	12.5g	7.5g	1.5g	1g	0.5g	55g	2g	1g
ENVIRONMENT	Operating Temperature	-50℃ to +85℃ (-58℉ to +185℉)	-40℃ to +85℃ (-40℉ to +185℉)	-50℃ to +85℃ (-58℉ to +185℉)	-50℃ to +85℃ (-58℉ to +185℉)	-50℃ to +85℃ (-58℉ to +185℉)	-50℃ to +185℃ (-58℉ to +365℉)	-50℃ to +85℃ (-58℉ to +185℉)	-50℃ to +85℃ (-58℉ to +185℉)
	Classification	IP68	IP68	IP67	IP68	IP68	IP67	IP67	IP67
	Web Photo								
MARKETS	Industries	Oil & Gas, Manufacturing, Construction, Agriculture	Oil & Gas, Manufacturing, Construction, Mining, Agricultural Equipment	Manufacturing, Construction, Government/Military	Manufacturing, Oil Field Assets, Government/Military	Service & Maintenance, Government/Military, Manufacturing	Transportation, Aerospace, Automotive, Heavy Machinery, Military and Defense	Financial Services, Health Care, Academia	Academia, Automotive, Healthcare, Financial Services
	Applications	Yard management, Returnable transport items, Equipment rental	Yard management, Returnable transport items, Equipment rental	Metal tools, Work in process, Weapons management	Metal tools, Work in process, Weapons Management	Metal tools, Work in process & finished goods, Electrical & Mechanical parts & assemblies	Yard/fleet management, Cargo & container tracking, Pallet tracking, Intermodal transportation, Military asset tracking	IT assets, Laptops, Office assets	Personal ID devices, Plastic containers, Plastic sterilization trays, Composite aircraft/ automotive parts

www.molex.com/link/rfid.html