

RFID By Barcoding

IT Overview & FAQ





Barcoding, Inc. is a supply chain **automation** and **innovation** company that enables organizations to be more <u>efficient</u>, <u>accurate</u> and <u>connected</u>.





Industry Leader Since 1998

- Trusted advisor to some of the world's largest companies
- Customer-focused, partner-centric
- Thought leader (Executive Forums & #SupplyChainGeek Network)
- Thousands of devices under management
- Continuous improvement and investment









 Develop a consistently profitable, growth-oriented and sustainable company that provides opportunity for personal success for all of its employees while positively impacting customers, business partners and social communities.













With RFID, Experience is Everything

- Over 200 Enterprise Deployments
- Over 40 Years RFID Experience
- Premier Partnerships
- Commitment to Innovation
- RFID Technology Integration Center in Chicago, IL



"We are recording our most accurate inventory levels to date."

William Codo, Owner, Accord Carton



RFID Software



RFID RealView™ & RLS ™

- Proprietary, proven software
- UHF-based Passive RFID Tags and Readers
- Real-time Asset Tracking
- Proprietary middleware RLS[™]
- Custom built
- Eliminates need for EFP or MRP Native Support
- Supports BLE/IoT Sensors





RFID Listener Service (RLS) & RealView (RV) Architecture Overview





Detail RFID Data Flow







RFID Listener Service (RLS) & RealView (RV) Architecture Overview – On Prem







Detail RFID Data Flow







RFID Listener Service (RLS)



Network Port	Application
80	HTTP
443	HTTP
1433	SQL
14150	TCP/IP Reader Connection
10402	RLS Viewer Port (Optional)
10401	RLS Tester Port (Optional)
9000	RealConnect Configuration Port (Optional)







Network Port	Application
80	HTTP
443	HTTP
1433	SQL



RealView IT Requirements



Operating System:	Microsoft™ Windows Server 2012	
Processor:	Quad Core-processor 2 GHz or higher	
Onboard Memory:	16 GB RAM or more	
Storage:	250 GB HD or better	
Internet Connectivity:	For diagnostics, if needed	
Network Ports:	1433 (SQL), 14150 (TCP/UDP), 80 (HTTP), 443 (HTTP) must be open and accessible	
Microsoft .NET Framework 3.5 or higher		
Microsoft IIS Enabled		
Microsoft SQL Server 2012 or higher installed OR an instance of MS SQL Server accessible		
Local Server Access Accounts for Services		
Connectivity to RealView SQL Server Database through Windows Authentication or SQL Authentication with Read, Write, and Execute privileges		
Access to all RFID readers through TCP ports and Web Page Interface		

Remote VPN connectivity for support OR customer initiated web access for support



RealView Services/Applications Installed on Server



Service	Description
RLS	RFID Listener Service
RES	RFID Export Service
RIS	RFID Import Service
RV WebAPI	REST API for Handheld and Other Transactions
RLS HTTP Post Web Page	If HTTP Post transactions used
FileZilla	FTP Server (If required for Import/Export)
Overseer* Service	Alerting Software
Overseer* Configurator	Alerts Configuration
Jaspersoft* Reporting Service	
Jaspersoft* Web Page	Report Configuration



RFID Readers



Zebra FX7500 RFID Readers



Model Number	FX7500
Supported RFID Tag Protocols	EPCglobal UHF Class 1 Gen2, ISO 18000-6C
LAN Protocols	IPv4 and IPv6 DHCP, HTTPS, FTPS, SFPT, SSH, HTTP, FTP, SNMP and NTP
Frequency	Global Reader: 902 MHz – 928 MHz (Maximum, supports countries that use a part of this band), 865 MHz – 868 MHz US (only) Reader: 902 MHz – 928 MHz
RF Power Capability	10 dBm to +31.5 dBm (POE+, 12V ~ 48V External DC, Universal 24V DC Power Supply); +10 dBm to +30.0 dBm (POE)
Power	POE, POE+ or +24V DC (UL Approved) 12V-48VDC operation can be supported
Communications	10/100 BaseT Ethernet (RJ45) w/ POE support; USB Client (USB Type B), USB Host Port (Type A)
Dimensions	7.7 in. L x 5.9 in. W x 1.7 in. D (19.56 cm L x 14.99 cm W x 4.32 cm D)
Weight	1.9 lbs ± 0.1 lbs (0.86 kg ± 0.05 kg)
Operational Temperature	-4° to +131° F/-20° to +55° C
Network Ports	HTTP (80) HTTPS (443) DHCP (UDP ports 67 and 68) FTPS (990, 21) SFTP (22) SSH (22) FTP (21) SNMP (UDP 161, 162) NTP (UDP 123)





Zebra FX9600 RFID Readers



Model Number	FX9600
Supported RFID Tag Protocols	ISO 18000-63 (EPC Class 1 Gen 2 V2)
LAN Protocols	IPv4 and IPv6
Frequency	Global Reader: 902 MHz - 928 MHz (Also supports countries that use a part of this band), 865 MHZ - 868 MHz US (only) Reader: 902 - 928 MHz
RF Power Capability	0 dBm to +33 dBm (POE+ 802.3at, Universal 24V DC Power Supply) 0 dBm to +31.5 dBm (POE 802.3af)
Power	POE (802.3af) POE+ (802.3at) +24V DC (UL Approved)
Communications	10/100 BaseT Ethernet (RJ45); USB Host & Client (Type A & B); Serial (DB9)
Antennas	FX9600-4: 4 monostatic ports; (Reverse Polarity TNC) FX9600-8: 8 monostatic ports; (Reverse Polarity TNC)
Dimensions	10.75 in. L x 7.25 in. W x 2.0 in. D 27.3 cm L x 18.4 cm W x 5 cm D
Weight	Approx. 4.4 lbs/2.13 kg
Operational Temperature	-4° to +131° F/-20° to +55° C
Environmental Rating	IP53
Network Ports	HTTP (80) HTTPS (443) DHCP (UDP ports 67 and 68) FTPS (990, 21) SFTP (22) SSH (22) FTP (21) SNMP (UDP 161, 162) NTP (UDP 123)





Impinj	R420	RFID	Readers
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Model Number	Speedway R420
Supported RFID Tag Protocols	GS1/EPCglobal UHF Gen2 (ISO 18000-63) or RAIN RFID
LAN Protocols	TCP/IP
Frequency	902 MHz – 928 MHz
RF Power Capability	FCC: 32.5 dBm AC/ 31.5 dBm PoE
Power	802.3af PoE or AC-DC power supply rated for 24Vdc/2.1A
Communications	10/100BASE-T Ethernet
Antennas	4 (32 with Antenna Hubs)
Dimensions (H x W x D)	7.5 x 6.9 x 1.2 in (19 x 17.5 x 3 cm)
Weight	1.5 lb (.7 kg)
Operational Temperature	-4°F to 122°F (-20°C to 50°C)
Environmental Rating	IEC IP52
Network Ports	80 (HTTP) 443 (HTTPS)





Impinj R220 RFID Readers



Model Number	Speedway R220
Supported RFID Tag Protocols	GS1/EPCglobal UHF Gen2 (ISO 18000-63) or RAIN RFID
LAN Protocols	TCP/IP
Frequency	902 MHz – 928 MHz
RF Power Capability	FCC: 32.5 dBm AC/ 31.5 dBm PoE
Power	802.3af PoE or AC-DC power supply rated for 24Vdc/2.1A
Communications	10/100BASE-T Ethernet
Antennas	2
Dimensions (H x W x D)	7.5 x 6.9 x 1.2 in (19 x 17.5 x 3 cm)
Weight	1.5 lb (.7 kg)
Operational Temperature	-4°F to 122°F (-20°C to 50°C)
Environmental Rating	IEC IP52
Network Ports	80 (HTTP) 443 (HTTPS)





Alien 9900+ RFID Readers



Model Number	9900+
Architecture	XScale processor, Linux, 64 MBytes RAM, 64 MBytes Flash
Supported RFID Tag Protocols	EPC Gen 2; ISO 18000-6c
LAN Protocols	TCP/IP, NTP, DNS, DHCP, SNMP
Frequency	902 MHz – 928 MHz
Transmit Channels	50
Channel Spacing	500 KHz
RF Power Capability	31.6dBm (Radiated power limited by local regulations &/or site licences; typical: 4 watts EIRP)
Power	Robust universal AC-DC power converter; 100-240 VAC, 50/60Hz
Communications	LAN TCPI/IP (RJ-45), RS-232 (DB-9 F)
Antennas	4 reverse polarity TNC monostatic ports; circular or linear polarization; near and far field compatible
Dimensions	(L) 20.3 cm x (W) 17.8 cm x (D) 4.1 cm (8" x 8.3" x 1.8")
Weight	1.5 kg (4.4 lb)
Operational Temperature	-20°C to +55°C (-4°F to +131°F)
Environmental Rating	IP53
Network Ports	80 (HTTP) 443 (HTTPS)





Alien F800 RFID Readers

Model Number	F800
Architecture	ARM9 677MHz processor, Linux, 512 MBytes DDR3 RAM, 2 GBytes Flash
Supported RFID Tag Protocols	EPC Gen 2; ISO 18000-6c
LAN Protocols	TCP/IP, NTP, DNS, DHCP, SNMP
Frequency	902 MHz – 928 MHz
Transmit Channels	50
Channel Spacing	500 KHz
RF Power Capability	≥31.5 dBm (4 watts EIRP)
Power	Power over Ethernet or robust universal AC-DC power converter; 100-240 VAC, 50/60Hz
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
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 and Plenum rated UL-2043
Network Ports	80 (HTTP) 443 (HTTPS)







Alien F800x RFID Readers

Model Number	F800x
Architecture	ARM9 677MHz processor, Linux, 1GByte DDR3 RAM, 2 GBytes Flash
Supported RFID Tag Protocols	EPC Gen 2; ISO 18000-6c
LAN Protocols	TCP/IP, NTP, DNS, DHCP, SNMP
Frequency	902 MHz – 928 MHz
Transmit Channels	50
Channel Spacing	500 KHz
RF Power Capability	≥31.5 dBm (4 watts EIRP)
Power	Power over Ethernet or robust universal AC-DC power converter; 100-240 VAC, 50/60Hz
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
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
Network Ports	80 (HTTP) 443 (HTTPS)





LinkLabs - Bluethooth Low Energy (BLE)





LinkLabs - AirFinder Architecture





LinkLabs RFID Readers



Model Number	Symphony Link AirFinder Access Point (LL-AF2-915-SYM-I-AP)
Supported RFID Tag Protocols	Symphony Link and Bluetooth Low Energy
Frequency	902-928 MHz ISM (US); 2.4GHz MHz (BLE)
RF Power Capability	19.9 dBi (dipole antenna) 900 MHz
Power	2A @ 5V via Mini USB Connector Power-Over-Ethernet for Outdoor Enclosure
Dimensions	12 cm x 7 cm (indoor) 22 cm x 18 cm x 15 cm (outdoor)
Operational Temperature	-20° to +70°C
Environmental Rating	IP67 (Outdoor Rated Enclosure)





RFID Handhelds



Zebra RFID Handhelds



- Preferred Handheld Models:
 - TC20 / RFD2000
 - TC55 / RFD8500i
 - MC3300R
- Preferred OS/Communication:
 - Android
 - Wifi
 - Communication via RealView Web Service (HTTP Port 80)



Zebra TC20/RFD2000 RFID Handhelds

Model Number	TC20 / RFD2000
Supported RFID Tag Protocols	EPC Class 1 Gen 2; EPC Gen2 V2
LAN Protocols	WiFi
Frequency/RF Output	US: 902-928MHz; 0 - 30 dBm (EIRP) EU: 865-868MHz; 0 - 30 dBm (EIRP) Japan: 916-921Mhz (w LBT), 0 - 30 dBm (EIRP)
Nominal Read Range	~19.7+ ft./~6+ m
Read Rate	Up to 700 tag/sec
Power	PowerPrecision+ Li-Ion 3160 mAh battery
Drop Specification	Multiple 4 ft./1.2 m drops to concrete at room temperature
Tumble Specification	500 cycles (1000 drops, 1.6 ft./0.5 m) at room temperature
Dimensions	5.9 in. H x 3.1 in. W x in. 5.2 in. L 14.9 cm H x 7.9 cm W x 13.3 cm L
Weight	~10.9 oz./~310 grams (sled with battery)
Operational Temperature	-10°C to 50°C / 14°F to 122°F
Environmental Rating	IP52
Network Ports	80 (HTTP) 443 (HTTPS) Used for RealView WebAPI







Zebra TC55/RFD8500i RFID Handhelds









Zebra MC3330R RFID Handhelds









Frequently Asked Questions



Frequently Asked Questions



• What types of transactions does RealView support?

- I. Customer can either Pull restful end point or
- 2. Expose an external facing API for Barcoding to push data to
 - This is the preferred method
- Is there an additional charge for use of API?
 - If RFID RealView SaaS model is pushing data to a customer system, the RFID Export Service (RES) is used. There is an additional monthly charge of \$100/month when using this method
 - If the customer requests to use the API to pull data from RFID RealView's database, there is no additional cost
 - If the customer purchased the on-Prem edition of RFID RealView, there is an additional charge of \$9995 for the interface.
 - Another option would be to use Barcoding's RLS middleware layer to insert valid read events into a database table or send a webservice message for customer system to handle
 - When using RLS, the data output does not include any business logic. Transactions show read zone, TAG ID, and timestamp
- What type of security does RealView support?
 - RealView uses its own user/password method and does not support usage of LDAP or other authentication methods
- How often will Export Service push events?
 - Export service will push events on a time basis (i.e. I every x time)
- How can a customer get RFID data from hardware? (Does this mean customer direct connects to reader?)
 - Data can be sent to a customer via flat file or TCP/IP connection, web service, or direct sql call
- Where can RLS reside?
 - RLS is installed on a Windows server. The server can be in the cloud or on-premise, depending on the customer's needs



Frequently Asked Questions



• Does the RealView software require its own server?

- Yes, it needs its own Windows Server
- A windows server is required for RLS/RV service applications only. The RFID databases could sit on an existing SQL Server instance. There is not on a need for a new SQL Server instance installed, unless desired by the customer.

• What SQL versions are supported by RealView?

- Microsoft SQL Server 2012 or higher installed OR an instance of MS SQL Server accessible
- Although we have not yet installed on SQL 2018, we don't anticipate any issues since we have not had a problem with new SQL versions in the last several years. It's always best to consult with your Barcoding, Inc's point of contact to make sure specific details

