ADVANCED MOBILE RFID BOLLARD READER

Better Software Performance, Easier Wireless Setup, Quick Deployment, Patented Design all without cables.

The Spire captures data more quickly and accurately with advanced RF communications utilizing the Orbiter Reader Protocol (ORP).

SPIRE readers are the Shelby SuperCar of RFID. Like the Shelby vehicle, we took a production RFID reader, and super charged it with custom embedded code, new firmware, and phased detect antenna technology.

We modified the core RFID embedded radio software from the ground up to enhance connectivity reliability. Consistent reliable performance in harsh and dirty RF environments that are constantly up and down.   We are experts in wireless data communications as our engineers have worked together since the mid '90's for Civilian, Aerospace, and Military projects.

No other mobile device has the increased 24 volt power as the Orbiter Spire has for robust tag detections in a crowded environment. For Race Timing, the USAF has measured Orbiter high speed tag detections at $1/100^{th}$ of a second accurate.   The fastest independent tested speed in the world.

Instantly deploy multiple readers by rolling them in position and simply flipping the "on" switch. Daisy chain readers and pass data between them for free long distance communications. No IP configuration as the reader's auto connect. Choose built in communication method of Ethernet, WI-FI, and Data-Cellular. Select either standard WI-FI or Military Spec WI-FI (2 mile range), or industrial data-cellular for maximum economy.

For large scale global deployments, the Spire conforms out-of-the box with major worldwide RFID standards and interfaces, including FCC, Japan's MIC, ETSI EN 302 208, IPv6, FIPS and TLS compliance help ensure network security. A built in USB host port with select third party adapters provide easy connectivity with Video, Sound,

Connect GPS, IR, and other sensors making the SPIRE a go-to mobile smart device. The ideal smart tower sensor platform.

Bollard Reader

Auto connect with distributed database operating on a FIFO bases. Every tag read is EPOCH Time stamped at detection and held in non-volatile memory.

Custom built in uninterruptible power supply with battery indicator.

Mil. Spec. shock, dust, extreme weather. US Capitol Police reports routinely drops the reader hard on concrete over 5 years and amazingly keeps on working.

MADE IN THE USA

PHYSICAL CHARACTERISTICS

Dimensions:	47" (H) x 17 " (L) x 10" (W).
	119.38 cm (L) x 43.18 cm (L) x 25.4 (W)
Weight:	29 lbs +- 1 lbs (13.15 kg + - .45 kg) including batteries.
Housing Material:	High impact roto-molded traffic bollard, carbon fiber, steel, aluminum, antenna plastics.
Visual Status Indicators:	Multi Color LED's for power condition and application status.
Mounting:	Mobile placement with high quality in-line skate wheels with bearings for smooth roll on surface.

CONNECTIVITY

Communications:	Proprietary RF communications to application layer. 10/100 BaseT Ethernet (RJ45) w POE support, USB Client (USB Type B), USB Hoist Port (Type A).
General Purpose	I/O 2 input, 32 outputs, optically isolated (Terminal Block).
Power Supply:	POE, POE+ or + 24V DC (UL Approved), 120 and 220 AC Marine Plug.
Antenna Ports:	Standard Multi Ports connected to Orbiter Phased Detect antenna. Optional 4 and 8 port models available for connecting customer selected antennas.

ENVIRONMENTAL

Operating Temp –	Min -23 degrees F (-30.5) Vancouver, BC, Canada, Nov 30, 2015.
	High 131 degrees F, 55 degrees C, Death Valley, CA, July 2015.
Humidity, Temp, Detects	5-95% non-condensing, neg 40 F - pos 165 F, 1150 per second.
Shock and Vibration:	MIL-STD-810G

REGULATORY COMPLAINCE

Safety	UL 60950-01, UL 2043, IEC 60950-1, EN 90950-1
RF/EMI/EMC	FCC Part 15, RSS 210, EN 302 208, ICES-003 Class B, EN 301 489-1/3, MIC school broadcast, regional pre-approval.
SAR/MPE	FCC 47CFR2: OET Bulletin 65; EN 50364
Other:	ROHS, WEEE

HARDWARE, OS AND FIRMWARE MANAGEMENT

Memory	Flash 512 MP, DRAM 256 MP
Operating System	Linux
Application Code:	Java
Firmware Upgrade	Web-based and remote firmware upgrade capabilities
Management Protocols	RM 1.0.1 (with XML over HTTP/HTTPS and SNMP and NTP
Network Stack	IPv4 and Ipv6
Security	Transport Layer Security Ver 1.2 FIPS 140
Air Protocols	EPCgobal UHF Class 1 Gen2 ISO 18000 BC
Frequency Band	Global International Accepted:
	GEN II and 2.4 GHz International Accepted WI-FI band, and Country specific accepted data cellular band.
Transmit Power Output	10 dBm to +31.5 dB, (POE+ 24 volt External DC) +10dBM to +30.0 dBm (POE).
Max Receive Sensitivity	-82 dBm
IP Addressing	Static and Dynamic
HOST Interface Protocol	ORP and LLRP
API Supported	Host Applications – Java EDK and Net C, Embedded Applications Java SDK
Warranty	1 year all parts and labor
RECOMMENDED SERVICES	Annual Service and Support includes all parts and labor warranty extension plus automatic software upgrades for 18% of sale price annually.
Advanced Services	RFID design and world wide deployment including IC tag & antenna design, reader build (LF, HF, NFC, UHF, Microwave, IR), application software for local and cloud scaled for super computers. Global reach with in country technicians to service your needs.

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