



ORBITER SPIRE SPECIFICATION

ADVANCED MOBILE RFID BOLLARD READER FOR SCHOOL LAP COUNTING & RACE TIMING.

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. This is needed as school RFID lap counting is challenging with hundreds of students passing the reader. Orbiter can read 250 tags per second.

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 firm wear, and added phased detect antenna technology. This super charges the RFID reader and produces 40% more power than other systems.

We modified the core RFID embedded standard supply chain radio, and created software from the ground up to enhance speed, more accurate read rates and provide consistent performance in harsh RF environments. Our system uses standard wireless Wi-Fi (50 feet) to communicate with a host computer, the option of Ethernet cable, long range Wi-Fi (300 feet), or data Cellular communication.

The RF communication is designed for constant up and down wireless communication and works in real time mode and logging mode.

Optional, HDMI Windows Wireless Device allows for a low cost LED display to be positioned near the reader so students can see their laps counts in real time as they pass.

No other mobile device has the increased voltage the Orbiter Spire has for robust tag detections in a crowded environment. No other mobile device has the extended RFID tag to communication range. No other Mobile device has the ability to toggle between far field and near field communication in one device. This allows for tag detection precision never before seen. For Race Timing, the USAF has measured Orbiter high speed tag detections at 1/100th of a second accurate. The fastest independent tested speed in the world.

Instantly deploy multiple readers by dropping them and simply turn them "on". Display chain readers and pass data between them for free long distance communications. No IP configuration as the reader's auto connect.

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 adaptors 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 solution.

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.

ORBITER RFID READER SPIRE75™ PRODUCT DATA SHEET

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 MarinePlug.
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	5-95% non-condensing
Shock and Vibration:	MIL-STD-810G

REGULATORY COMPLIANCE

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 FIPS140
Air Protocols	EPCglobal UHF Class 1 Gen2 ISO 18000 BC
Frequency Band	Global Reader 902 MHz – 928 MHz (Maximum, supports countries that use a part of this band) 865 MHz – 869 MHz., 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.

