



ORBITER SPIRE75™ SPECIFICATION

ADVANCED MOBILE RFID BOLLARD READER FOR RACE TIMING.

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

The Spire75 captures data more quickly and accurately with advanced RF communications. Superior performance than Impinj, Motorola / Zebra and Alien.

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 phased detect antenna technology.

We modified the core RFID embedded radio software from the ground up to enhance speed, more accurate read rates and provide consistent performance in harsh RF environments. Our system is designed for constant up and down wireless communication. We are experts in wireless data communications as our engineers have worked together since the mid '90's for Civilian, Aerospace, and Military projects. True rocket scientists. Plus, we have many successful deployed RFID applications worldwide for Fortune companies, Governments, Agriculture, Events, Resorts, Automotive and Oil company applications. If you have read about a successfully deployed RFID application, chances our team has done similar.

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.

Your choice of LLRP and ORP communication with Dynamic IP or military Fixed IP. Instantly deploy multiple readers by dropping them and simply turn them "on". 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 Spire75 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

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|------------------------|--|
| 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

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|-----------------------------|--|
| 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

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|-------------------|--|
| 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

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|--------------------------------|---|
| 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 | 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. |

