7ˑ ouˑo-uˑyhˑˑ V) ˑuˑMˑ) \ ‡ V
ˑuˑゐ -o\ Vˑˑ ˑゐ/-
V\ ‡ ゐ-o ˑ#ˑ "Oˑo\ kˑo-h-kˑ u-ˑˑ\ Œoˑ

- less volunteers needed, lower shipping & operating cost

Easy Wi-Fi or Wireless Cellular Setup, Quick Deployment with No Cables. Anyone can deploy the system. Just set down and turn "on". Meet your permit deadline for the start and take down too. Gain more accurate times with our powerful active phased detect antennas. Use your existing RFID tags and software. The Spire captures bib or wrist chip detections more quickly and accurately. Plus, the ability to gain cell tower precedence similar to police and fire for uninterrupted data communication. All in one design without the need for a Pelican Box Time Detector, or an AC Generator as the SPIRE has long life batteries that last. AC may be used also.

Instantly deploy by just turning them on. They auto connect with the server laptop. Choose built in communication method of Ethernet, WI-FI, and Data-Cellular. Ideal for Races needing many detection points at 1/2 the cost of traditional mat way points. 60 foot range spans side avenues. Ability to place readers at key locations such as staging areas, and more. High 24 volt power is up to twice that of other systems. High voltage improves RFID tag performance. No lithium Ion as the batteries are AGM approved for airline travel. No lithium ion for safety.

Why Choose Orbiter:

1. Greater controllable distance and ability to time on a line with Orbiter Reader Protocol (ORP).
2. There are 23 different types of bike races. Orbiter times all of them. Some require controllable read distances. Some wide and other short. Similar with cross country skiing too.
3. Passive tags means lower cost. Active tags are expensive and many must be recharged every 48 hours. Many are warranted for only 2 years while Orbiter is 5 years.
4. Orbiter is proven in harsh environments. Sun Valley, Aspen, Grouse Mountain.
5. Mountain Bike races have many metal / carbon bikes and human bodies. Thus a powerful RFID system is needed to detect tags reliably. Both Short and Long range is needed.
6. Software is key. Orbiter is a simple robust software that allows advancement from simple to the most robust world class system. Orbiter software uses modern tools and was developed over 10 years with 60 revolutions. It is proven. Call us and we will give you a free download to simulate your events.
7. Orbiter is used by the military and NATO countries for training on obstacle courses and fitness tests.
8. Orbiter is used in Sweden and Finland.
9. Putting wires in the snow for athletes to cross is a formula for the timing system to hang on skies.
10. Fold-able mats fittings break if tugged on wrongly.
11. Separate time detector boxes are obsolete.

Bollard Reader

Battery Operated 24 volts 60 feet detection distance, 250 people per second.

Custom built in power supply with battery level indicator. DC & AC

Mil. Spec. shock, dust, extreme temperature and weather operability.

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	5-95% non-condensing
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 per-approval. FCC 47CFR2: OET Bulletin
SAR/MPE	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 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.
Advanced Services	Optional external antenna Ports available.

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.
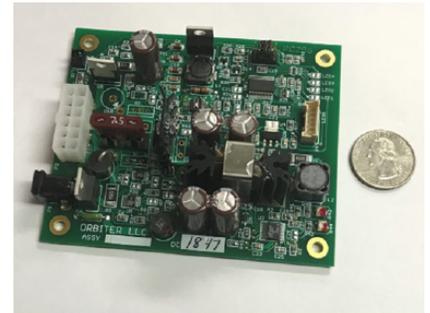
The exclusive green board shown is of Orbiters proprietary design. This doubles the DC power output of a standard RFID reader.

Most mat systems use polarized antennas that read tags in one direction. When laid on the ground the earth grounds the mat signal, and gaining even 5 feet range is difficult.

Orbiter uses circular polarized and active powered reader antennas with up to 60 feet of controllable range. Using two allows a "corkscrew" and tags on the back and side are read.

Most OEM timing device manufactures operate at 12 volts DC. Orbiter is operates at 24 volts.

Orbiter antennas are miniature cellular towers with the antenna up off mother earth. Just like real cell towers greater performance is gained than laying a mat on the ground. However, the system is compatible with mats so you can mix and match.