RFID

RACE TIMING SYSTEMS

(((EchoActive)))

- Powerful
- Latest Technology
- Affordable

Background

Development of a new active transponder system started in 2020 at the same time that COVID-19 hit the world. The subsequent years have been tough for the event industry. With cost of living pressures at an all time high, the impetus was on developing a high quality timing system at a reasonable price.

Building on what had been learnt from 20 years in RFID sports timing, the EchoActive system was created to compliment our existing systems that use passive UHF transponders.

Active transponder systems are nothing new in the sports timing business. However until now, the cost to buy active transponders has been very high and the battery life of these can be less than 5 years.

Why Active?

Active transponders derive their power from an internal coin cell battery. The benefits are the ability to power the circuitry at all times and deliver a powerful radio transmission ensuring 100% read performance. The EchoActive transponder incorporates the latest in energy efficient SOC (System on Chip) microprocessors to perform advanced programmable functions. The EchoActive transponder spends most of its life in a extreme low power state which prolongs the life of the internal battery.

Active systems require simple antennas which reduces their size and weight. The active reader only requires a relatively small battery to operate because of the low RF transmitting power. Active systems are small yet very powerful RFID devices well suited to sports timing.

- High read performance
- Low power use
- Small form factor
- Easy to deploy
- Lower cost readers

The EchoActive Transponder

At the heart of the EchoActive Transponder is Bluetooth Low Energy (BLE) technology that is used to transmit information to the EchoActive Base. Almost the entire life of an EchoActive transponder is spent in an extreme low power mode drawing a tiny 1.7 micro amps of power. That equates to a longer life for the transponder.

Bluetooth compatible devices are able to listen to the transponder when put into Bluetooth Mode by a Base. Mobile apps can be developed to utilize this functionality. This opens the world to many new applications not yet seen with sports timing.

EchoActive Transponders can store up to 40 timings in flash memory for later playback to an EchoActive Base. For the first time, firmware upgrades can be made to the transponder wirelessly.

Timing precision of 0.05 milliseconds and maximum read speed of 150km/hr also cover most requirements for an active tag in sports.

The EchoActive Base

The other key device to a timing system is the RFID reader. The EchoActive Base is our latest colour touchscreen reader that triggers and listens to EchoActive transponders. A simple wire loop taped to the ground or embedded in a mat is used to wake the transponder and start locating the exact moment it is within the middle of the loop.

Up to 100 transponders can be read simultaneously with all data stored in flash memory and/or sent over a network. The EchoActive Base can be fitted with an optional internal 4G modem for instant transmission of timing data to a server on the cloud. All this in a small impact resistant case weighing just over 1kg.

The EchoActive Nano

The Nano compliments the EchoActive System by reading transponders when they are put into Bluetooth mode by a Base. The Nano can be placed at timing checkpoints to relay live timings with an accuracy of 1 second. The Nano has an internal 4G modem with GPS receiver and enough battery to last for over 1 day sending status and data every 7 seconds to our Outreach server.

The Nano stores data internally and this can be downloaded via a USB-C cable using our PC app. The Nano can be placed almost anywhere on the race course or on a lead vehicle that follows the race.

Scoring Software

Like all our systems there are many 3rd party software programs that will interface with the EchoActive System. The API (Application Programming Interface) is freely available to developers who can create full featured applications that connect to the EchoActive System. We also offer a complimentary remote timing service called Outreach for those wanting to send timing data over the internet. Contact RFID Race Timing Systems on what scoring software best suits your needs.

RFID Race Timing Systems

Unit 1, 97 Garling St

O'Connor

Western Australia 6163

Phone: 08 9331 6562

Email: info@rfidtiming.com

Web: www.rfidtimimg.com