

RFID

RACE TIMING SYSTEMS



The ultimate
UHF race timing
system is here



RFID
ULTRA™



RFID Race Timing

RFID Race Timing is the Australian manufacturer who has been in the business of producing timing systems of the highest quality for nearly a decade.

Our business has been built on honesty and integrity with customer satisfaction our ultimate goal. This theme is consistent in all areas of our business, from dealings with our suppliers who provide us with the best components from around the planet right through to after sales customer service and support. Our understanding of the competitor, timer and race director's requirements enable us to provide practical advice to get the best out of your timing equipment.

RFID Race Timing's commitment to product never ceases. Throughout our history we have constantly embraced new technology to offer systems that cater for a wide range of sports both large and small.

From humble beginnings.....

RFID Race Timing started out in the garage of founder Andrew Peterson, back in his triathlon competition days. Born out of necessity, he developed the first timing system for his local triathlon club with what were then the latest RFID readers from Texas Instruments. The product evolved from the Dual Antenna System to the highly successful High Density Digital System (HDD), and later Ultra encompassing new UHF technology. All these systems have been represented in world class multi-sport, cycling and running events around the globe.

Headquartered in Perth, Western Australia, our state-of-the-art R&D and production facilities deliver products that have been developed from the ground up. We are one of the few companies that manufactures their own antennas specifically for race timing. Through rigorous use in realtime events, Ultra has become the one of the most reliable and stable platforms for race timing available. This level of quality can only be achieved after many years of refinement into the product we see today.



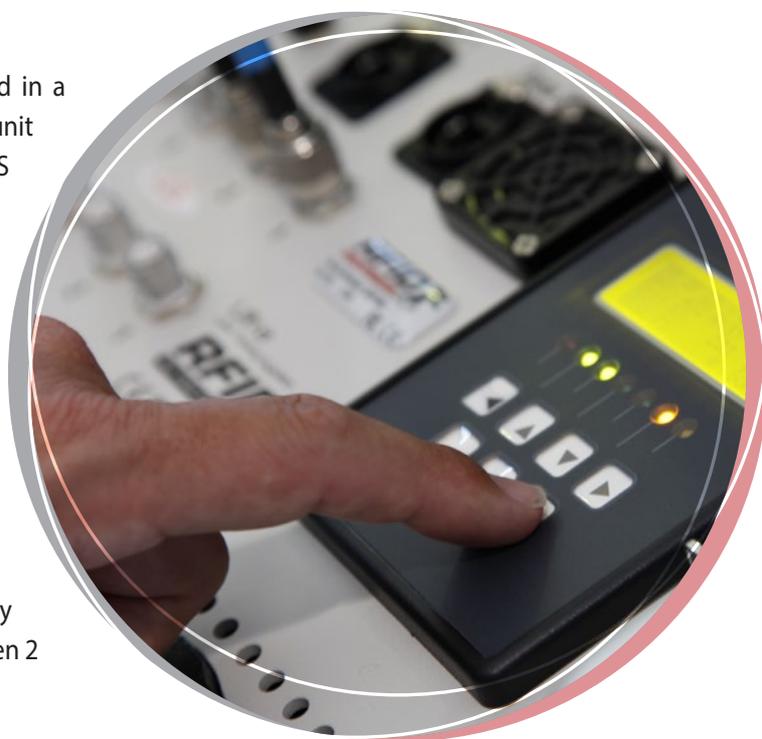
Ultra™ - The ultimate UHF race timing system

With the arrival of the ULTRA, timers are now free to source UHF tags from wherever they please. Gone are the days of having to purchase disposable tags from your overpriced hardware supplier. The ULTRA will read any Gen2 RFID tags on the market. With dozens of tag manufacturers around the world producing a vast array of products, ULTRA gives you the power to choose tags to suit your specification and budget.

ULTRA Reader

The ULTRA reader is a high performance timing system housed in a rugged all weather case ready for any race environment. The unit comprises the RFID reader/s, networking hardware and GPS module all driven by an embedded microprocessor. The Ultra is available with either 4 or 8 antenna ports allowing a single box to time up to 8m wide. The technology used in the readers is world best and recognised as the most sensitive on the market today.

With the latest UHF technology within, the ULTRA is a highly flexible timing system, offering simplicity to clubs and schools, who desire userfriendly operation, through to the pro timers who have a range of advanced settings available to them. There is no need to synchronise Ultra boxes together and there is no worry about metal or high voltage power cables in the road. The UHF Gen 2 technology takes all this in its stride.



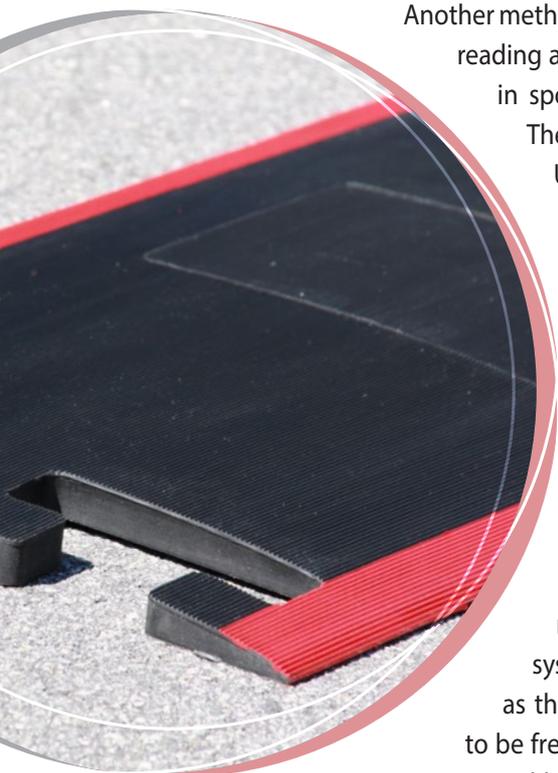
ULTRAMATS and Side Antennas

The companion to the ULTRA reader is the specially designed ULTRAMAT. RFID Race Timing has developed an antenna mat system, which is modular, easy to setup and specifically designed to meet the requirements of sporting events. The ULTRAMAT antennas are sealed within low profile mats developing maximum sensitivity within the "read zone". Each mat is 1m wide and interlocks to create finish lines of up to 16m wide.

ULTRAMATS are popular amongst the timing community due to their manageable size and weight. Measuring in at 1m long x 0.55m wide x 20mm thick, they weigh 11kg each. The mat will conform to the road or grass with minimal movement under heavy foot traffic and they are tough enough to handle trucks driving over them. The special non-slip surface ensures a safe environment in the wettest of conditions.



Another method to read transponders in a race environment is with our side reading antenna system. This style of antenna compliments the ULTRAMAT in sports such as canoeing and snow skiing where mats are not practical. They have also become an invaluable redundancy system when coupled with ULTRAMATS. The side antenna is light and very portable and setup on stands both sides of the timing point. The side antennas are also essential in triathlon and other multisports where the tag must be worn on the ankle.



Tag choices

The transponder or tag normally stays with the athlete and communicates with the readers to determine identification and time of passing of the athlete. The ULTRA breaks the restrictive demands of all the other UHF systems on the market. It will allow you as the timer, race director, or business owner to be free to decide on what style of tag you wish to use and how much you want to spend. An Ultra unit can read any Gen 2 UHF tag costing as little as 7 cents from a



large number of worldwide vendors. Why spend \$1 for the same tag with another timing system manufacturer? Thousands of tags used in a dozen races per year equates to big savings when your tag costs are so low. By taking advantage of the competitive tag market, Ultra can save literally thousands of dollars or euros over a timing season. This will result in you being more competitive in your tenders to win new business or just increase your profit margins over your timing competitors not using ULTRA. It also means more money can flow back to the charities and non-profit institutions associated with most events. Check out our online cost calculator http://rfdtiming.com/tag_calculator/

For reuseable tags we recommend the HuTag™ because of the superior read performance using either mats and side antennas. Worn on a Velcro band attached to the athlete's ankle this style of tag is a popular choice for swimming events, triathlons and extreme adventure racing. There is also the disposable Tadbik™ ankle tag that is becoming popular with triathlon.

Software

ULTRA is perfectly partnered with our data management software RFIDServer and is included in each new package. This critical component of the timing system retrieves the raw data from the ULTRA and interfaces with





3rd party scoring software. RFIDServer receives data streamed in real time over the Ethernet for capture and allows control of the ULTRA unit via your laptop. The user friendly layout makes connecting and saving data a simple and safe process, with no chance of deleting or losing data as is the case with other systems RFIDServer also allows ULTRA to transfer real time data to 3rd party scoring packages, such as Racetec, RaceDirector, Lapio, RunScore, RaceTrak and Elfscore. These packages are able to calculate the results which are then available for web screening, cellular phone tracking or display on big screens.

Our special pricing on the Contract Timers Pack (purchase four Ultra8 systems) includes a free license of Racetec with Live-to-Web results. For events it becomes as simple as getting the unit and mats from the cupboard, setting them up on the race course and turning the ULTRA on. The results will then flow directly to the connected laptop.

Also free to ULTRA users is our OUTREACH remote timing software. This is the latest software tool for sending raw data from a control box to anywhere in the world. Connecting to the internet via an optional inbuilt GPRS/3G modem or external gateway, OUTREACH allows you to send data in real-time to your scoring software using our managed relay servers. Many functions on the control box can also be changed and monitored remotely from the comfort of your office - thousands of miles away!!



Application

Triathlon

ULTRA combined with our ULTRATAG now makes UHF technology a reality for timing triathlons. Previously water has been a problem for conventional tags; however our new multisport tag ULTRATAG has overcome this obstacle. Using the experience gained through our DA and HDD systems ULTRA is able to take timing of triathlons to a new level with greater numbers of participants able to be accurately timed.

Running

The characteristics of ULTRA make it the perfect choice for all sizes of running events. The powerful combination of the high read rate of 300 reads per second and timing points that span 8 meters (ULTRA 8) easily handles high participation events. Add to this the freedom of sourcing economical disposable tags well below the price of the competition and you have a system that is not only accurate and reliable but one that adds to your bottom line.

Smaller events are also easily timed using the ULTRA 4. A more economical unit with all the features of its big brother, it is perfect for clubs or schools that want to take timing their events to next level.

Cycle

ULTRA is a proven success in timing both mountain bike and road cycling events. The low profile mats are safely crossed even with large groups of fast-finners characteristic in these events. Side antennas are the best option for mass cycling finish lines. Transponder tags are either attached to the race number plate (MTB) or on a specially designed disposable tag attached to the seat post and are reliably captured by ULTRAMATS or side antenna systems. Tags for cycling can be either disposable or a reusable tag on the front fork depending on the size and nature of the event.

Swim

The ULTRA timing systems continue the legacy created by our HDD equipment in providing a seamless timing solution for ocean swimming events. Using A Hutag or Tadbik tag on the swimmers ankle, the swimmer is picked up with side antennas when leaving the water. Water poses no problems for this tag and enables timers to use UHF technology in water based events.

Canoe

ULTRA has successfully conquered the challenge timing water craft. With innovative solutions RFID Race Timing has overcome the challenges of water and carbon fibre to prove its ability. Transponders mounted on the helmet or boat hull are read by side antennas. No surprise that Ultra has timed one of the most prestigious white water paddling/power boat events (The Avon Descent) for the past 5 years now.

Ski

ULTRA timing systems have also found their way to the snow, timing cross country ski events. The ULTRA contained within its rugged timing box in conjunction with the external antennas either to the side or above, has proven to be a hit with timers and clubs alike. The tag can go on the ski boot, on the race bib or on the top strap of a cloth number bib.



ULTRA Advantage

Pro Timers

- ULTRA is the most profitable timing system. Its advantage is that it can read any generic Gen2 RFID tags. This means that you are not locked into one supplier of tags with their monopolistic prices. Depending on your requirements disposable tags can be sourced from any number of suppliers from as little as 7 US cents/tag. These prices are continuing to fall as the manufactured volumes increase, so don't be locked into one tag supplier and start saving straight away.
- ULTRA is the smallest and most compact of all timing systems on the market, which is a huge bonus when mobilising for events. When shipping units to distant countries or carrying equipment to the event, the ULTRA timing systems makes setup and take down the easiest system on the market.
- ULTRA delivers on flexibility. The ability to time a diverse range of events ranging from a single competitor time trial to a fun run of 50,000 is easily managed by the ULTRA. Additionally pro timers can chose to use patch antennas to capture tags on ski and water events where conventional timing mats are not practical.



Clubs and schools

- Accurate, portable, and user-friendly.
- Easy set up and pack away, just join 4 mats together; plug them into ULTRA and start! It's as easy as that!
- Compact and rugged the ULTRA will put up with the punishment of the outdoors.
- Use cost effective disposable tags or invest in a set of the ULTRATAGs which can be reused over and over.
- Upgradeable: The ULTRA 4 can be upgraded to an 8 port unit at any stage if a more powerful unit is required to tackle the larger numbers as events develop with popularity.

FAQ's

What is UHF?

UHF stands for Ultra High Frequency. Ultra uses UHF RFID to communicate between reader and tag around the 900MHz spectrum. The FCC standard for USA is 902-928 MHz whilst Europe is more stringent with just 4 channels near 867Mhz. Countries like Hong Kong, Singapore and Australia/NZ use a similar spectrum between 918-924 Mhz. Readers are preconfigured to these spectrums and country specific protocols (ie. frequency hopping or fixed frequency).

What advantages does UHF have over LF and dual frequency?

The number of vendors that manufacture UHF tags is the greatest. That means UHF tags are some of the least expensive of RFID transponders on the market owing to manufacture volumes and minimal use of copper and silicon. This makes the UHF tag priced low enough to make it disposable after use. Also UHF RFID systems are a lot less prone to interference and metal objects in the ground.

Is it true that ULTRA can use any type of UHF Tag?

Yes, Ultra can read any Gen2 UHF protocol tag making it the most flexible and cost effective RFID-UHF timing system in the market.

Are there many tag suppliers, and what is the choice in tags available?

The world of RFID technology is considerably wider than the application for sports timing, and as such there are numerous producers of tags around the world. Due to the diverse nature of RFID users, many different options exist in disposable tags varying in size, style and price. RFID Race Timing has thoroughly researched the market and will provide guidance as to preferred suppliers for race timing. We also provide very competitive tags based on the volume discounts we have available to us.

Why do the competitors only use one type of tag?

Our competitors choose to have a single tag tied to their system so they can become the sole supplier and control the price you pay for tags. The business model they operate is to discount their system prices knowing that once you are on board they will more than recoup the discount in inflated tag prices. Compare the savings on our online calculator and see the true price you are paying for your timing system.



FAQ's

Why are the competitor's tags so expensive?

The price of our supplier's tags is well below that of our competitors. The only reasons we can think why this may be is either the manufacturing costs of their unique tags are dramatically more expensive, or they are taking advantage of the fact that "if you have their system then you have to pay their prices". We ask the simple question, "why pay more than twice the price for the consumable tags when you don't have to with ULTRA?" Ultra can use the exact same Smartrac tags used by our biggest competitors.

What is the big deal of a few more cents in tag price?

A few cents price difference multiplied by large numbers of competitors becomes significant amounts of money. Just think in a 50,000 competitor event, saving 10 cents is \$5,000.....but a 60 cent/tag saving will be a cool \$30,000 to your bottom line. We know that you can save this much in tag prices.

Can ULTRA be used for multisport events?

Yes, with the advent of our re-usable ULTRATAG, UHF is now a reality for multi-sport. Encapsulated in a specially designed ankle strap the ULTRATAG is a Gen2 RFID tag that is easily read by the ULTRA, perfect for swimming, triathlons and adventure races. We have proven in trials that this tag can still be read when fully immersed in a glass of water.



Technical Specifications for ULTRA

	ULTRA 8	ULTRA 4
Power supply	28V DC Internal rechargeable Li Battery, 110 – 240v mains power (internal battery charger)	
Run Time	5.5 hours	8 Hours
Transponder type	UHF Gen 2 RFID protocol tags both as disposable inlays or re-useable ULTRATAG	
Read zone	8m ²	4m ²
Maximum read rate	300 tags per second sustained	
Precision	1 millisecond on timestamp. Internal GPS clock accurate to 1 millisecond.	
Networking	TCP/IP using Internal Ethernet switch (2 ports) and Wifi Ethernet Bridge	
Trigger input	Gun start, or light beam trigger	
Control box dimensions (LxWxD)	320mm x 200mm x 380mm	
ULTRA Weight	7.8kg	7.1 kg
Memory Storage	Over 1 million individual tag/time records	
Reader type	Impinj Speedway Revolution Gen2 RFID readers	
Number of readers	2	1
Antenna Ports	8	4
Reader sensitivity	-82 dBm	
Reader regions	FCC, EU, AUS, JAP, ISR, SING, HK, SA, NZ	
Options	GPRS modem, 3G modem, Trigger	
Software	RFIDServer	

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