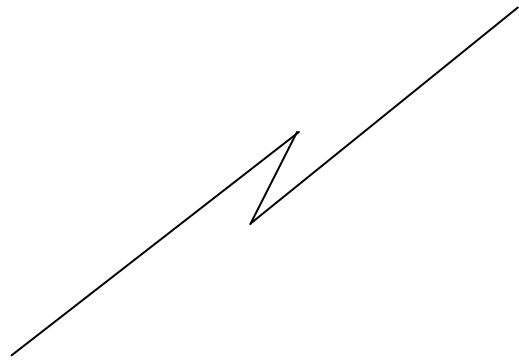


Raceclock Wireless Gun-Start System User's Guide

For use with the Raceclock LM & XL Series Display Clocks



Developed and maintained by
Flying Feet Computers, Inc.
www.timemachine.org

INSTRUCTION TO THE USER

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

The Receiver Unit has been tested to comply with FCC standards. FOR HOME OR OFFICE USE.

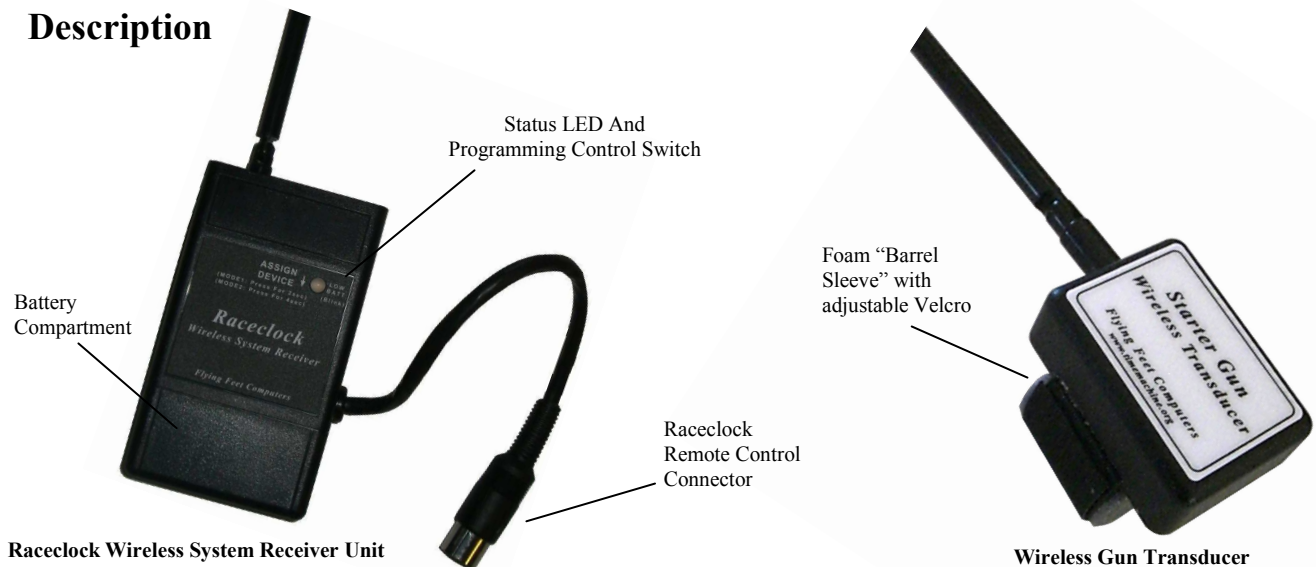
Latest revision: 10-29-15

Thank you for purchasing the Raceclock Wireless Gun-Start System for use with your Raceclock LM or XL Series Display Clock. The Raceclock Wireless Gun-Start System provides you with a convenient wireless link between your Raceclock and a starting pistol for distances of up to 450 feet. The wireless system utilizes high quality RF technology and components to provide you with a reliable timing solution.

The Wireless Gun-Start Transducer is rugged, sealed, and water resistant. It also features a sophisticated power circuit utilizing an internal battery that does not require replacement. The battery will typically last for up to 20 years or up to approximately 1.6 million starts.

The Raceclock Wireless Gun-Start System can enhance your operation by providing wireless connectivity to multiple Raceclocks at the same time. If you use more than one Raceclock to display timeclock data, a single Wireless Gun Transducer can easily be assigned to start all Raceclocks simultaneously – provided that each Raceclock has a receiver unit connected to it.

I. Description



The Raceclock Wireless Gun-Start System consists of two components: a Receiver Unit and a Wireless Gun Transducer. The Receiver unit has a connector that plugs into the Remote Control port of your Raceclock. Power for the Receiver unit is supplied by two AA batteries housed in the battery compartment. The Receiver's power will turn on or off when your Raceclock's power is turned on or off. Please refer to the **Raceclock Wireless System Receiver User's Guide** for detailed information about programming and using the receiver unit.

Gun Transducer ID Code

Each Wireless Gun Transducer transmits a unique ID code when triggered; therefore it will only start a Raceclock using a Receiver Unit that has been programmed to receive its signal. When programmed, the Receiver Unit stores the Gun Transducer's ID code in memory so that it can recognize a transmitted ID code and respond by starting the Raceclock(s).

Manual Timing Correction Factor

The Wireless Gun Transducer can be assigned to the Receiver either with or without a Manual Timing Correction Factor applied. The Manual Timing Correction Factor is used to correct your timing results when using a Gun Transducer with "manually timed" finishes. The typical human reaction time between observing a gun blast and triggering the "start" button is 0.24 seconds. This is the accepted correction time adjustment between automatic and manual timing presented in the NCAA/NF rule book and it matches very well with experimentation. So when the Gun Transducer is assigned with the Manual Timing Correction Factor, a 0.24 second delay will occur between the sensing of the gun blast and the starting of the Raceclock. This will simulate the human reaction time and provide you with accurate "Manual Timing" results – even though you used an automatic gun start. If the user prefers not to use this feature, it may be bypassed by simply assigning the Gun Transducer with "No Correction". Please refer to section III for information on how to program the Receiver Unit in order to make either of these assignments.

II. Using the Wireless Gun-Start System

The Wireless Gun-Start System comes pre-programmed and ready-to-use out of the box – however if you purchased the Gun Transducer separately, then you will need to program the Receiver Unit (see section III below). Just connect the Wireless Receiver Unit to your Raceclock's Remote Control Port connector, turn the Raceclock on and you are ready to start a race using the Wireless Gun Transducer. The Wireless Gun Transducer attaches to the barrel of your starting pistol. Simply insert the barrel into the foam "Barrel Sleeve" located on the bottom side of the enclosure. The Sleeve can be adjusted for different barrel sizes using the adjustable Velcro strap.

The Wireless Gun Transducer does not use an on/off switch to turn on - it automatically turns on and transmits a start signal when it senses that a gun has been fired. After transmitting the start signal, the Gun Transducer automatically turns itself off. Therefore it does not require any power from its internal battery until it is triggered. This provides a typical battery life of 20 years or more.

The Gun Transducer Antenna should be oriented near vertical in order to achieve maximum signal strength.

(NOTE: The Gun Transducer Antenna can easily be swiveled and rotated to any angle in order to point it vertically).

For test purposes, the Gun Transducer can be triggered without firing any blanks. The Gun Transducer is sensitive enough to be triggered by just the impact of the gun's hammer when the trigger is pulled. Simply remove any shells from the gun cylinder (or remove the cylinder if possible) and then pull the trigger. The impact of the gun's hammer (metal-to-metal) will cause the transducer to activate and transmit a start signal.

In order to avoid inadvertent triggering of the transducer, it is recommended that the Gun Transducer be surrounded by foam or a thick cloth when not in use or when placed in storage.



Barrel of Starting Pistol inserted into foam "Barrel Sleeve"

III. Programming the Receiver Unit

The Receiver Unit must be programmed to detect the Wireless Gun Transducer. After the Receiver is programmed, this information is saved in non-volatile memory and used by the receiver to interpret and start the Raceclock whenever a Gun Transducer is triggered. Once the Receiver Unit has been initially programmed, it does not need to be reprogrammed again unless an assignment change is required. It will always have the same assignment in memory each time the system is powered on – or until the user decides to change it.

Programming the Receiver is accomplished by a simple 2 step process:

To Program a Wireless Gun Transducer for Mode 1 (With Manual Timing Correction Applied) into the Receiver:

- 1. Press the ASSIGN DEVICE Switch (the Status LED) and hold for ~2 seconds. Release switch when LED turns Green. The LED will toggle Red/Green.**
- 2. Strike the Gun Transducer Enclosure with a Blunt Object or use the Starting Pistol as described above.**

To Program a Wireless Gun Transducer for Mode 2 (Without Manual Timing Correction) into the Receiver:

- 1. Press the ASSIGN DEVICE Switch (the Status LED) and hold for ~4 seconds. Release switch when LED turns from Green to Orange. The LED will toggle Orange/Green.**
- 2. Strike the Gun Transducer Enclosure with a Blunt Object or use the Starting Pistol as described above.**

Note:

If the Gun Transducer is assigned to multiple Raceclocks equipped with receiver units, then all Raceclocks will start together when the starting pistol is fired.

V. Warranty Statement

The manufacturer warrants the original purchaser of the RACECLOCK WIRELESS GUN-START SYSTEM (RWGNSS) that it shall be free of defects resulting from faulty manufacturer of the product or its components for a period of one year from the date of sale. Defects covered by this warranty shall, at the option of the manufacturer, be corrected either by repair or by replacement. The replaced components will be warranted for the remainder of the original one year period.

The sole obligation of the manufacturer under this warranty is limited to repair or replacement of products pertaining to the RWGNSS only, which prove to be defective within one year of purchase. The manufacturer shall not, in any event, be liable for any consequential damages or loss of profits of any kind resulting from the use of the RWGNSS or the technical information enclosed in this document.

Please fill out the Product Registration Form and fax, email or mail it to Flying Feet Computers, Inc. This product must be registered within thirty (30) days from the date of purchase in order to activate your warranty coverage.

Product Registration Form

Please fill out the following information and fax, email or send it to:

Flying Feet Computers, Inc.
11112 204th Ave Ct. East
Bonney Lake, WA 98391
(800) 328-4070 ph.
(253) 863-1689 fax
www.timemachine.org

By sending this form back to us, we can let you know of additional products and upgrades as they become available. This form is also used to activate your warranty coverage.

Name	Company Name	
Phone#	Address	
Cell#	City	
Purchased From	State	Zip
Date Purchased	Email	