RACE AMERICA

INNOVATION. TECHNOLOGY. RELIABILITY.

Model 3210 Series
Timer MB

Mud Bog & ATV Timing System Owner's Manual

Rev J1

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THEORY OF OPERATION

The 3210 Series Timers are completely self-contained race timing systems made with the latest technology CMOS circuit components to provide a highly accurate timing solution. The system contains an internal quartz crystal clock to maintain time accuracy and display of race results to one thousandth of a second.

Power is supplied to the timer console and track sensor components of the 3210 by the 12VDC automotive battery connected to the RED and BLACK alligator clips, cigarette lighter adapter, or an AC adapter. An absolute minimum of 11.0VDC is required for reliable operation of the system. Under normal conditions, charged batteries will operate for several days of racing without requiring a recharge.

The Beam Emitters and Track Sensors operate on invisible (to the unaided human eye) Infra Red (IR) light. The coded light frequencies are constantly received by the Track Sensors until a car interrupts reception ('breaks' the beam). Connections to the console can be hard wired or wirelessly connected via T-Link track electronics.

The IR Beam Emitter to Track Sensor transmission operates on Line-of-Sight principles. This makes alignment of these units critical. Tips are provided to aid alignment on surfaces that are other than ideal. These units will operate over a wide range of conditions but should not be operated beyond the specification parameters (less than 4 ft or more than 50 ft).

Once the system is properly set up and aligned on the racing surface, the timer console will 'monitor' the track sensors each time a run is made.

PACKAGE COMPONENTS

The Timer MB is sold in hard wire versions (3210D), wireless versions (3210D-W) and with slower response IR beams (3210DS and 3210DS-W with '58' beams).

Each 3210 Series Timer MB hard wired timing system package includes:

1 - 3210D/3210DS Console Unit
2 - IR Beam Emitters Model 5040/5058
2 - IR Track Sensors Model 5140/5158
1 - Cable Assembly for Track Sensors
1 - 12VDC Power Patch Cord
1 - Owners Manual

Each 3210 Series Timer MB wireless timing with external sensors system package includes:

1 - 3210D-W/3210DS-W Console Unit with 5801 T-Link console module
2 - 5800 T-Link units (IDs A/B)
2 - 05-5825 T-Link to Sensor cable
2 - IR Beam Emitters Model 5040/5058
2 - IR Track Sensors Model 5140/5158
2 - 5890 T-Link battery chargers
1 - 12VDC Power Patch Cord
1 - Owners Manual

Each 3210 Series Timer MB wireless timing with internal sensor system package includes:

1 - 3210D-W/3210DS-W Console Unit with 5801 T-Link console module
2 - 5805/5808 T-Link units (IDs A/B)
2 - IR Beam Emitters Model 5040/5058
2 - 5890 T-Link battery chargers
1 - 12VDC Power Patch Cord
1 - Owners Manual

NOTE: Sensors and Emitters work in pairs; 5040 emitters work with 5140 sensors and slow response 5058 emitters work with 5158 sensors. Do not mix sensor pairings!

POWER REQUIREMENTS

You will need these additional items to operate your 3210 Series timing system:

1 - 12VDC auto battery for Console
8 - 'AA' batteries for Beam Emitters

NOTE: Operating the timer from a battery connected to a charger or running car engine will result in an over voltage condition and damage the timer.

Model 3210 AVAILABLE OPTIONS

5801 T-Link Wireless (on timer module)
5808 T-Link Wireless Sensor (req 5058)
06-TL01 T-Link to PC Cable
06-TT01 T-Link to Timer Cable 10 ft
06-TT02 T-Link to Timer Cable 25 ft
06-58AX - T-Link ID reconfigure kit
4500B Data Communication POD
(for printers and displays >100ft from console - 2 req'd)
4520A Wireless RF Data Link (2 req'd)
6070B Carry/Storage Case
6502A AC Power Adapter
6460/6560/6650/6860 ET Display Brds
3121A Data Capture Software for PCs
5050/5078 - Extended range Emitter - 75 ft
7540 - Foam Stands for Sensors/Emitters

PRODUCT SPECIFICATIONS

The following listing provides the designed performance specifications for the 3210E Series timing systems:

Lane Width	4 to 50 feet
ET Capacity	up to 999.999 sec
Time Accuracy	0.001 seconds
Timer to Start*	100 feet
Start to Finish*	200 feet

* Wireless allows greater distances; several other wired cable lengths available.

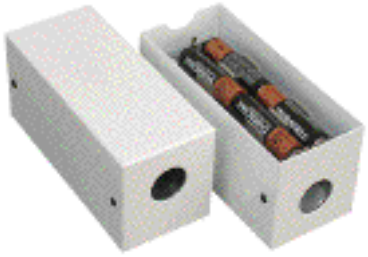
SET-UP STEPS - 3210 SERIES

STEP 1 -

Familiarize yourself with the components pictured in this manual and how they interconnect. The Track Sensor Cable is configured for connection between the a Sensors and Timer Console.

All connectors are keyed for proper orientation. The 12VDC battery is connected with the RED alligator clip to plus (+) terminal of the battery and the BLACK alligator clip to (-) terminal of the battery.

The free standing, battery powered Model 5040/5058 IR Beam Emitters are placed on the one side of the track at the start and finish lines



Model 5040/5058 - IR Beam Emitter

Note On/Off switch and placement for four AA batteries for each Beam Emitter. Beam Emitters are interchangeable with similar models. Picture shows top and bottom of units.

Model 5140/5158 - IR Track Sensor

Note cable connector is located in the side facing away from the track. Track Sensors are interchangeable with similar models. Track Sensor is pictured both top and bottom sides up.

and the Model 5140/5158 IR Track Sensors are placed on the track opposite the similar Emitters. The Track Sensor Cable is keyed to match the Start and Finish track sensor positions as marked at the end of the cable (see cable diagram).

NOTE: Sensors and Emitters work in pairs; 5040 emitters work with 5140 sensors and slow response 5058 emitters work with 5158 sensors. Do not mix sensor pairings!

STEP 2 -

Identify the emitter/sensor placements on the track. The lane width should be set between four (4) and fifty (50) feet. To help in determining initial Beam Emitter to Track Sensor alignment in larger track widths, use a string stretched between the beam emitter and track sensor or eyeball a straight line between units.

STEP 3 -

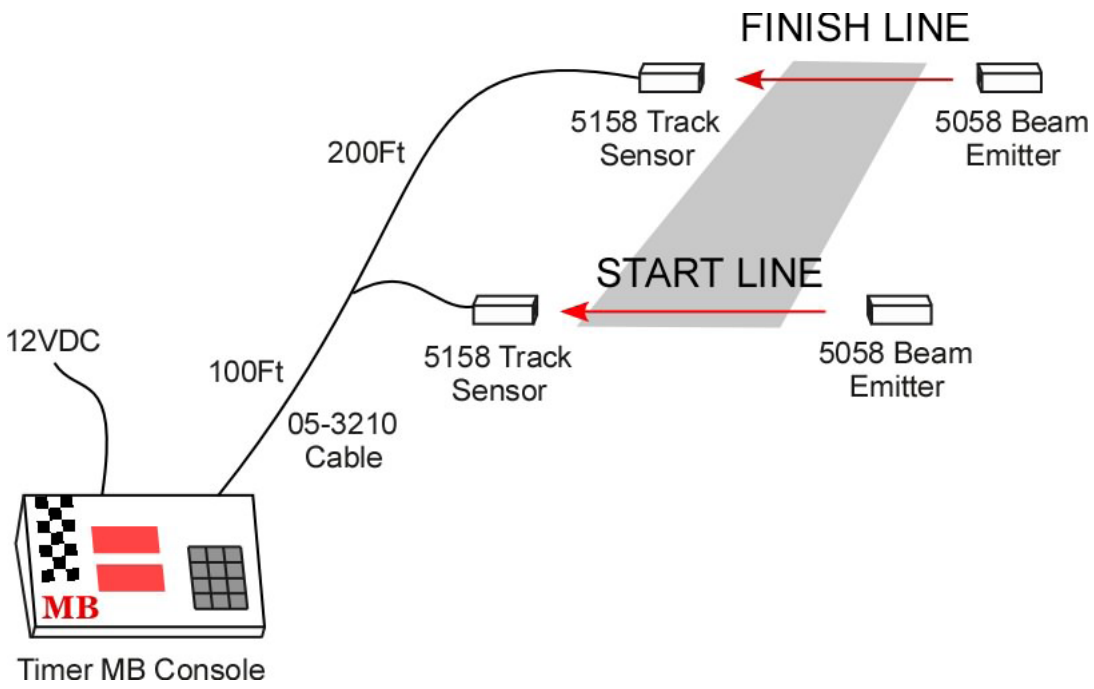


Fig 1 - Hard-wired Track Sensors

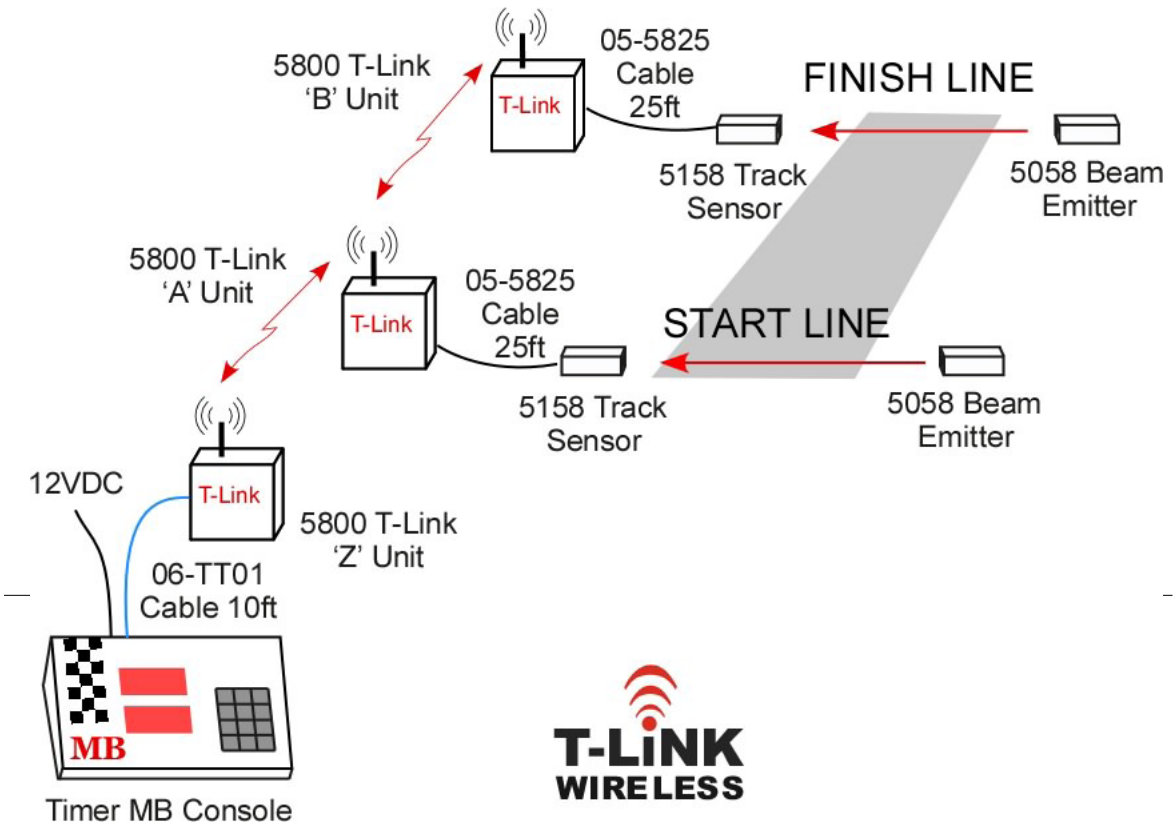


Fig 2 - T-Link wireless with external Track Sensors

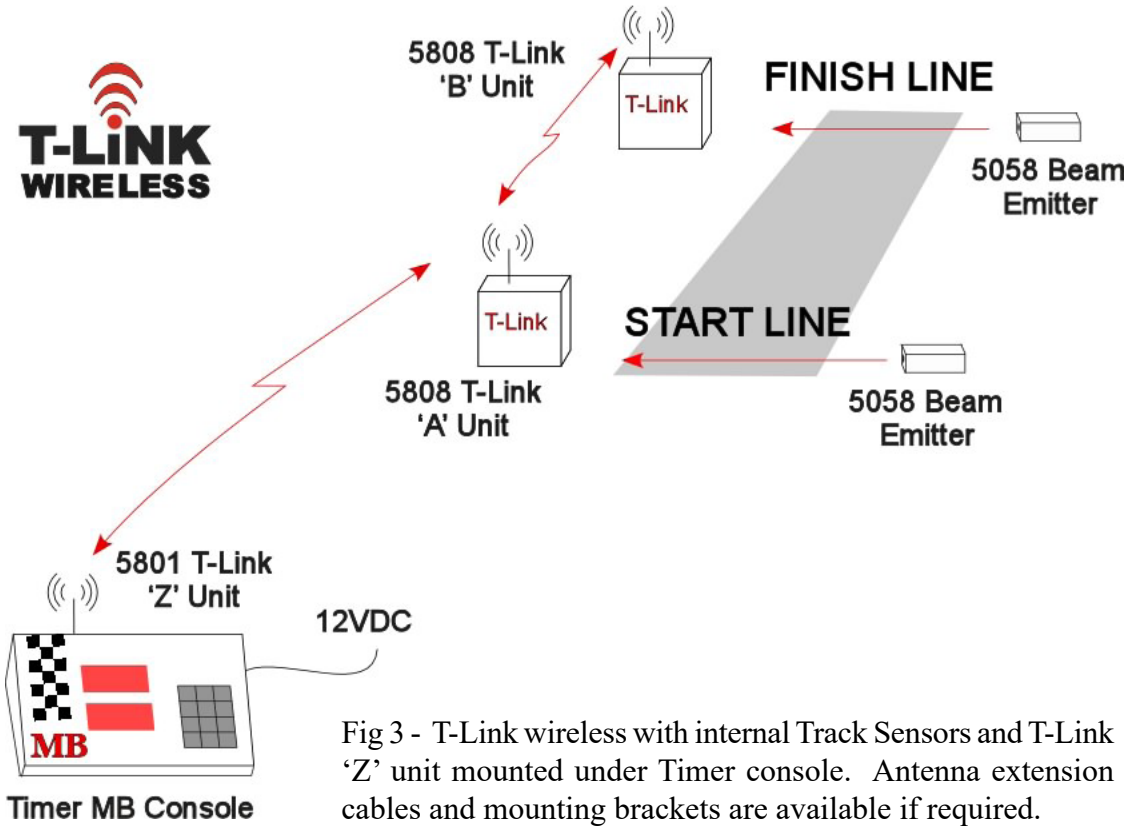


Fig 3 - T-Link wireless with internal Track Sensors and T-Link 'Z' unit mounted under Timer console. Antenna extension cables and mounting brackets are available if required.

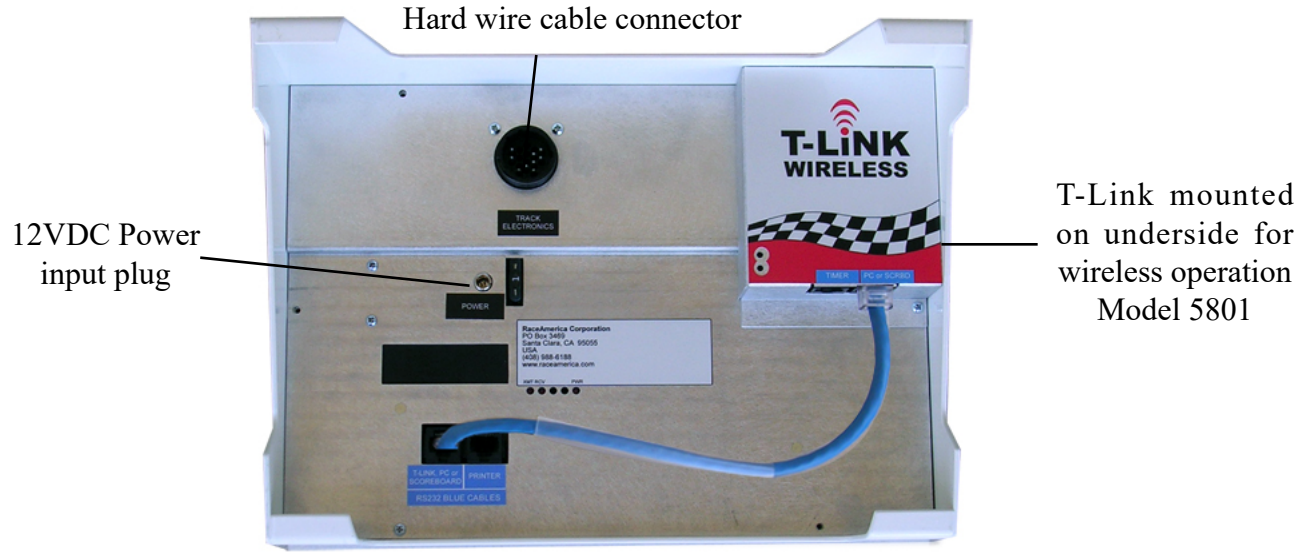


Fig 4 - Underside cable connections for Timer MB
Hard wire and wireless sensors cannot be mixed!

Connecting System Options

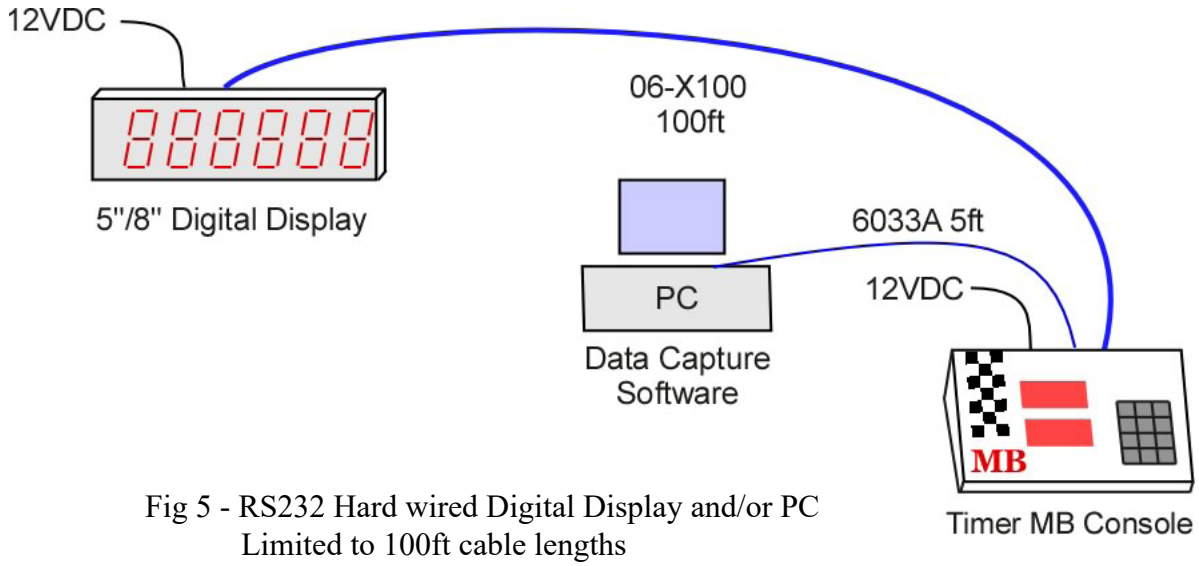


Fig 5 - RS232 Hard wired Digital Display and/or PC
Limited to 100ft cable lengths

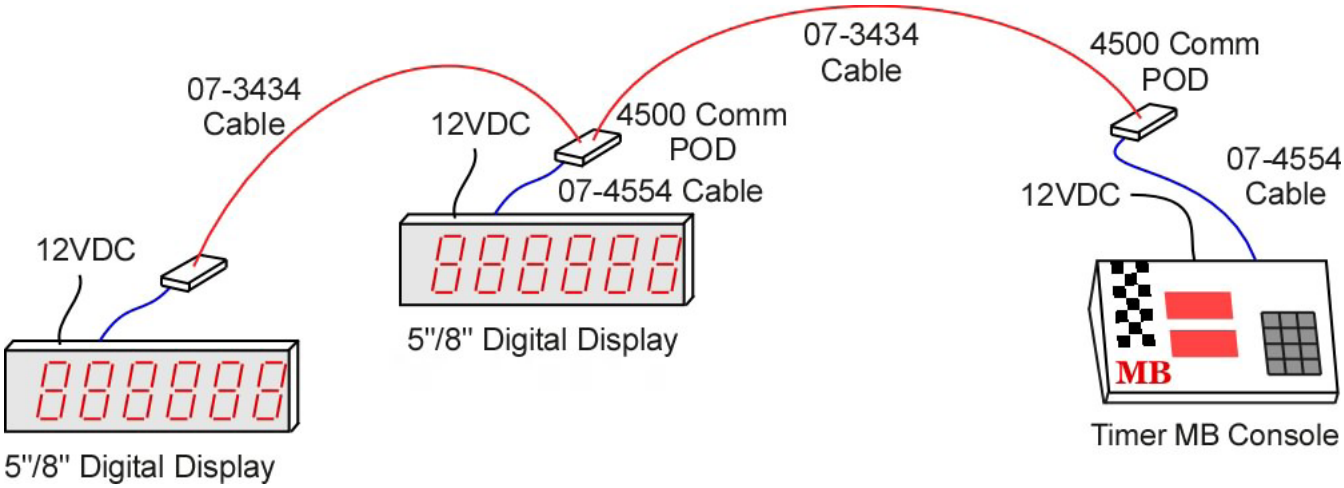


Fig 6 - Hard wired Digital Displays utilizing Communication PODs
for 5"/8" displays; 15"/24" displays have internal PODs

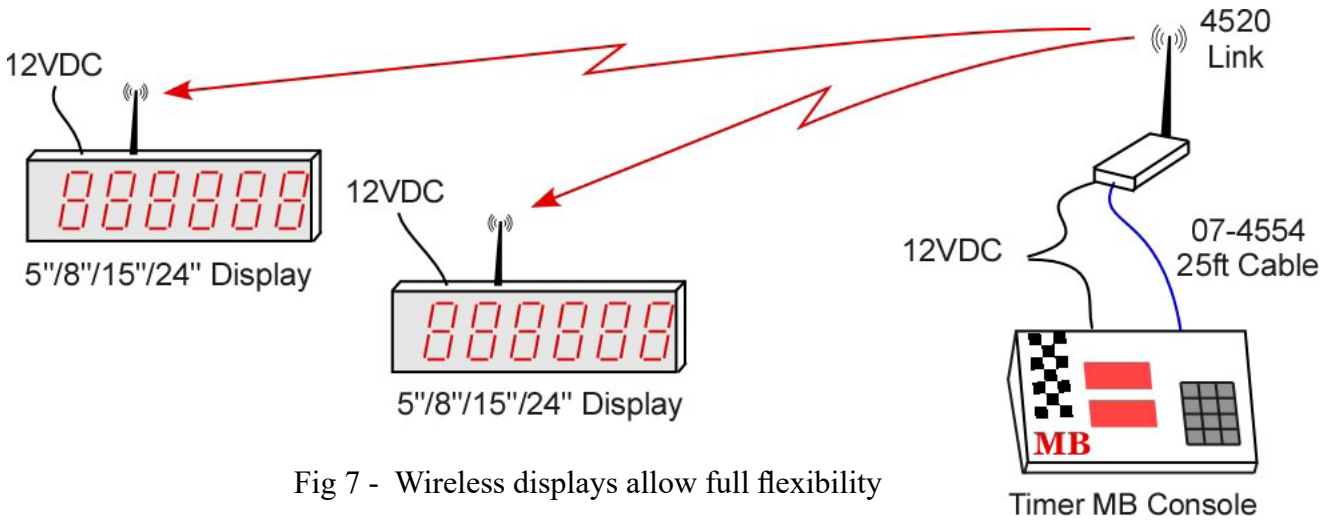


Fig 7 - Wireless displays allow full flexibility

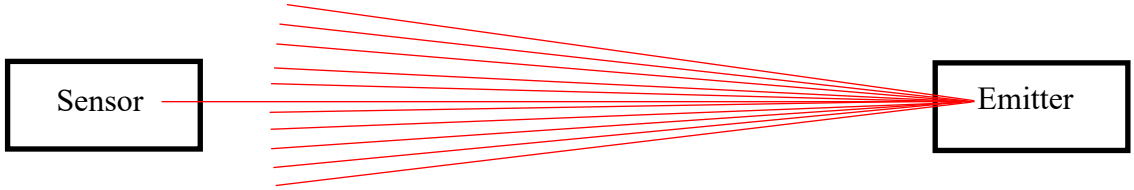


Fig 8 - Infrared Beam Alignment - The Emitter throws a spot light like beam of infrared light; the Sensor should be aligned near the center of the beam for optimal reception and alignment.

Layout the Track Sensor Cables on the track site (see cable diagram Fig 1). The large round connector connects to the Console and the two smaller connectors (RJ12) connect to the Track Sensors at the Start and Finish lines as indicated on the cable near the RJ12 connector. Install the Emitter and Sensors in the Foam Stands (if this option was purchased); connect the Cable to the Timer Console and the Track Sensors (through the opening in the back of the Foam Stand).

If T-Link wireless unit sensors (external or internal) are being used, Place the 'A' unit at the Start and the 'B' unit at the Finish per diagrams (Fig 2 or 3). Place the 'Z' unit in the proximity of the console and connect to the Serial Port (Blue cable 06-TT01 or 06-TT02). The 'Z' unit may actually be mounted underneath the console (Model 5801). Positioning the antenna(s) as high in the air as possible and with line-of-sight between units will optimize performance. With the under side unit, connect the short cable between the T-Link and serial port (Fig 4).

STEP 4 -

Fig 9 - Timer MB Keypad

Connect any optional scoreboards, displays or PCs per owner manuals at this time. The drawings in Figs 5 thru 7 show some of the connection options.

Connections are for RS232 serial data at 9600 baud. When the option is located more than 100ft from the console, using wireless or RS422 communication PODs will accomplish the task.

STEP 5 -

Connect the RED (+) and BLACK (-) alligator clips to the 12VDC battery and you're ready to begin; use the AC Adapter if the option was purchased. Plug in the round plug into the power connector on the underside of the timer console.

POWER ON/SELF-TEST

Connecting the 12VDC source to the System Console places the RaceAmerica 3210 Series Timer into a self-test of the microprocessor circuitry and the LED (Light Emitting Diode) display. This is an internal test as well as a visual check of the LED display. The LED Displays progressively sequence the digit '8' through each segment of all digits and then progressively turns them off; finally, the display shows the product model number and code revision **[3210] [d00.0]** contained within the microprocessor in the upper and lower displays respectively (example only).

The timer auto recognizes whether the timer is configured for hard wired or wireless sensors and enables appropriate functioins. Both start and finish must operate in the same configuration.

After power-up, check sensor alignment and make any configuration changes to the default settings before timing a run.

SERIAL PORT CONFIGURATIONS

The RS232 Serial Port can be configured for T-Link Wireless Track Sensors or to interface to a PC running race management software.

The Serial Port is enabled for two way communications (in for T-Link data, out for PCs and displays. The Display port is also a serial port and transmits data in Chronomix format.

NOTE: When connecting to the Serial Port, the PC or display must be configured at 9600 baud, 8 data bits, no parity, 1 stop bit, no handshake (9600/8/N/1).

RF INTEGRITY

When operating the Timer MB with T-Link wireless sensors, the Radio Frequency Signal integrity can be monitored. Pressing **[3] RF** on the keypad will cause connected T-Link units to monitor the RF signal integrity. The display will show **[--rF--] [S----F]**. The left dash is the 'A' (start line) unit and the right dash is the 'B' (finish line) unit. The dashes on the display will begin to count up as signals are received from the T-Link units on the track **[--rF--] [S0--0F]**. 0 displayed represents 0%, 1 represents 10%, 2 represents 20% etc. until a dash appears representing 100%. This is an indication of the consistency of the RF integrity. If this number jumps around, there is a high level of interference in the area. If the number remains high, the RF signal strength is very good. If the number remains low, the RF integrity is somewhat weak due to the distance from the 'Z' unit or a there is a continuous level of RF interference. The position of the T-Links and their antennas should be moved to optimize the RF Integrity level. High gain antennas can be used to increase RF Integrity.

WIRELESS BATTERY LEVEL

When operating the Timer MB with T-Link Wireless sensors, The battery level of each wireless link unit can be monitored from the console. Press and release the **[6] BATT** key to monitor the Battery Level of the T-Links on the track indicated by **[tbAtt-] [S0--0F]**. The dashes represent 'A' sensor (Start) and 'B' sensor (Finish). The dashes will be replaced by the percentage of battery power remaining. 0 for 0%, 1 for 10%, 2 for 20%, etc and a dash for 100%. Any reading above 40% should be adequate for hours of operation.

ALIGNMENT MODE

Hard Wired Sensor Alignment -

To verify hard wired Track Sensors are properly aligned with their Beam Emitters, select the hard wired Alignment Mode by pressing the **[5] ALIGN** key on the Keypad. The Status Display momentarily indicates the position on each sensor on the display with letters represent each emitter/sensor pair **[S----F]** with the SF blinking. The **[S]** indicates the START emitter/sensor pair, the **[F]** indicates the FINISH line emitter/sensor pair. The Status Display then changes each digit to a zero for each sensor being monitored **[S0--0F]**. If the Beam Emitter and Track Sensor are operating properly and aligned, the 0 digit will not change. If the Beam Emitter and Track Sensor are not properly aligned, the 0 digit for each emitter/sensor pair will count slowly if slightly out of alignment or continuously if they are not functioning properly or way out of alignment. Once the emitter/sensor pair are aligned properly, the digit will stop counting. If the alignment is off a little or intermittent, the digit for that emitter/sensor pair will count when they float out of alignment. Remember, the Beam Emitters and Track Sensors operate on a 'Line-of-Sight' concept and may require shims if they are installed on a street with a crown. Leaves, people, and other debris will also break the beams and could give false signals, so keep everyone and everything clear of the Beam Emitters and Track Sensor during racing activity.

To maximize the alignment of the emitter/sensor pairs, it is suggested to rotate the Beam Emitter slowly left and right until the alignment for that pair begins to count. This technique will determine the maximum lateral detection angle. Rotating the Beam Emitter up and down until the alignment starts counting determines the maximum

vertical detection angle. Once these extremes are established, position the Beam Emitter in the center of the left/right detection angle and up/down detection angle. Repeat this same process with the other Beam Emitter and both Track Sensors. This will maximize the alignment accuracy. Press the **[#] ENTER** key to exit Alignment Mode. It should also be noted that once the zero digit has started counting, it will never stop at zero again unless Alignment Mode is exited and reentered. This can be helpful for leaving the system in alignment mode for an extended period of time to check on an intermittent condition.

T-Link Alignment -

Proper alignment can be determined by observing the Left LED on the T-Link connected to the sensor (or with an internal sensor). When the LED is blinking slowly, the emitter and sensor are aligned; when the LED is ON solid, the sensor is not properly aligned. Use the same alignment technique discussed for hard wired sensors to attain correct alignment while monitoring the LED status. Do this for both the Start and Finish sensor.

CONFIGURATION

The MB Timer ships with the following factory default settings:

Print Line Feeds	10
Auto Print Timeslip	1

If any of these settings need to be changed, press the **[8] CONFIG** key on the Keypad to enter the system configuration mode, the console displays **[ConFiG] [Print]** (Upper/Lower displays)**,** press **[#] ENTER** to enter printer details. **[LF] [10]** and the user is prompted for the number of line feeds (blinking digit) to add to the end of the timeslip to properly eject the timeslip for tearoff. Enter the number of line feeds required and press the **[#] ENTER** key to confirm. Next **[Auto-Pr] [1]** will show the number of timeslip copies to automatically print each time a race ends; press a number on the keypad (0-9) for desired number of copies; press **[#] ENTER** to save.

CONFIGURE PRINT HEADER

The Timer MB allows a custom four line timeslip print header of up to 39 characters per line. Input is accomplished using character codes for each desired character position (see work sheets). Press **88** on the keypad to enter the system configuration mode, the console displays **[ConFiG] [HEAdEr]**. Press **# [ENTER]** to view the setup dialog as follows **[L1 C01] [__XX00]** indicating Line 1 Character 01; the XX displays the existing code for Character 01 and is prompting for the character code for the desired character; refer to the worksheet for the correct code, enter the correct code or press **[#]** to move to character 02 **[L1 C02] [YYXXZZ]** where YY is Character 01 and XX is prompting for Character 02, ZZ is the existing code for Character 03; continue for up to all 39 characters in the line. Press **[*]** to move to Line 2 **[L2 C01] [XX00]** and continue for all four lines. When done with all four lines, press **[*]** to return to the main menu.

TIMING A RUN

Before timing a run, it may be desireable to enter the racer numbers so they will appear on the printout and in data transmitted to PC capture software. To enter a racer number, press the **[9] CAR#** key on the keypad to view the existing entries; press **[9]** again to enter new numbers; press **[#] ENTER** to accept the entries. It is not necessary to enter a car number.

To time a run, press the **[2] RUN** key. The timer immediately checks all track sensors to insure they are operating and aligned properly. The timer performs this function automatically while displaying **[rESEt] [------]** 1 to 6 dashes on the upper/lower LED displays. If a sensor fails the alignment test by triggering during this test, the timer will indicate **[FAIL] [S----F]** with the offending sensor position flashing. If both sensor/emitter pairs are aligned, the LED display will display **[rEAdy]** when it is ready to time a run. Once the START sensor is triggered, the upper display will count until the FINISH sensor is triggered. At this point the LED display displays **[ET] [XXX.XXX]** as the results of the run and sends

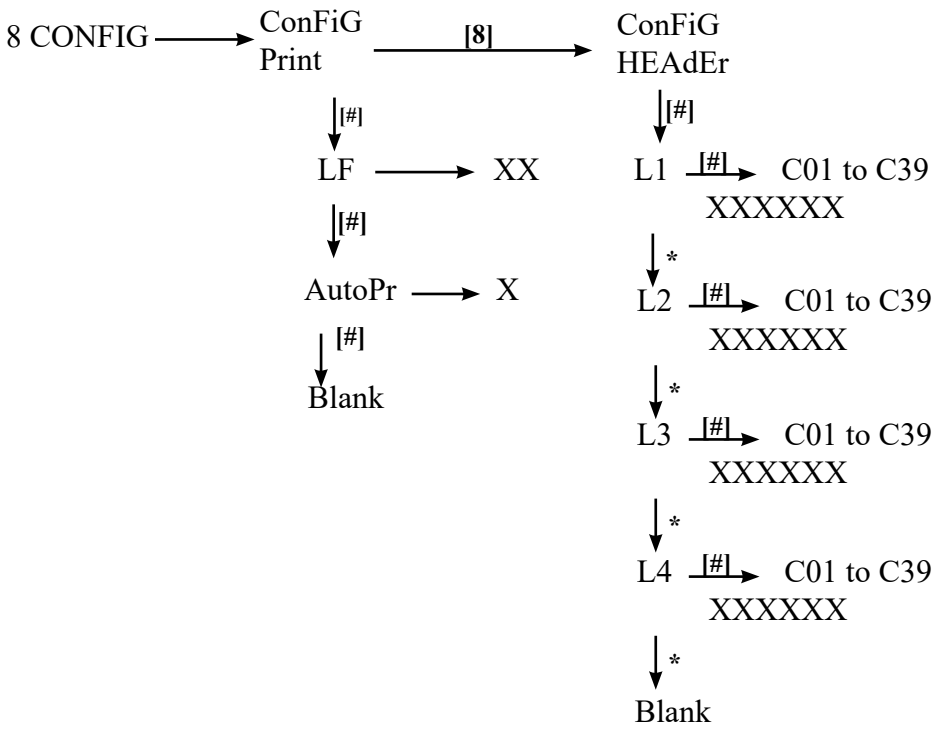


Fig 10 System Config Menu, Press **8 [CONFIG]**

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the results to any connected PCs, Scoreboards or printers. Press **PRINT [0]** to send or resend the data to the printer.

If a Fail condition is detected, press **[#] ENTER** to go to alignment mode (hard-wired mode) to correct the bad alignment, press **[#] ENTER** to leave alignment mode. In T-Link Wireless operation, see the alignment section of this manual.

When running with T-link Wireless sensors, the display will read **[rEAdy] [rF on]** each time the **[2] [RUN]** key is pressed.

Press **[2] [RUN]** to time another run.

ABORT A RUN PRIOR TO FINISH

To stop the timer during a run, press the **[#] ENTER** button and the timer will show **[Abort] [run]** in the upper/lower displays and **[ET] [XXX. XXX]** as the time up to the abort command; press **[#] ENTER** again to clear the displays.

In wireless operation, the ET will always display an ET of 0.000.

KEYPAD FUNCTIONS

KEY 0

The **[0] PRINT** key is used to print a timeslip.

KEY 1

Pressing **[1] ET** on the keypad will recall the last race elapsed time.

KEY 2

Pressing **[2] RUN** on the keypad will reset the timer to make a new run.

KEY 3

Pressing **[3] [RF]** on the keypad will cause connected T-Link units to monitor the RF signal integrity. The display will show **[-rF-] [S0--0F]**. The left zero is the start line and the right zero is the finish line. The digits on the display will begin to count up as signals are received from the T-Link units on the track. 0 displayed represents 0%, 1 represents 10%, 2 represents 20% etc. until a dash appears representing 100%. This is an indication of the consistency of the RF signal integrity. If this number jumps around, there is a high level of interference in the area. If the number remains high, the RF signal integrity is very good. If the number remains low, the RF signal is somewhat weak. The position of the T-Links and their antennas can be moved to optimize the RF Integrity level. This key is enabled when operating in T-Link wireless mode.

KEY 5

Pressing **[5] [ALIGN]** on the keypad in hard-wired mode will enter alignment mode. The Status Display momentarily indicates the position on each sensor on the display with letters represent each emitter/sensor pair **[S----F]** with the SF blinking. The **[S]** indicates the START emitter/sensor pair, the **[F]** indicates the FINISH line emitter/sensor pair. The Status Display then changes each digit to a zero for each sensor being monitored **[S0--0F]**. If the Beam Emitter and Track Sensor are operating properly and aligned, the 0 digit will not change. If the Beam Emitter and Track Sensor are not properly aligned, the 0 digit for each emitter/sensor pair will count slowly if slightly out of alignment or continuously if they are not functioning properly or way out of alignment. Once the emitter/sensor pair are aligned properly, the digit will stop counting.

KEY 6

Press and release the **[6] BATT** key to monitor the Battery Level of the T-Links on the track indicated by **[-bAtt-] [S9--8F]**. The digits represent 'A' sensor (Start) and 'B' sensor (Finish). The digits will be replaced by the percentage of battery power remaining. 0 for 0%, 1 for 10%, 2 for 20%, etc and a dash for 100%. The 'b' will be blinking. This key is enabled when operating in T-Link Wireless mode.

KEY 8

Press the **[8] CONFIG** key on the keypad to enter the system configuration mode, the console displays **[LF] [12]** (Upper/Lower displays) and the user is prompted for the number of line feeds (blinking digit) to add to the end of the timeslip to properly eject the timeslip for tearoff. Enter the number of line feeds required and press the [#] ENTER key to confirm. Next **[AutoPr] [1]** will show the number of timeslip copies to automatically print each time a race ends; press a number on the keypad (0-9) for desired number of copies; press **[#] ENTER** to save.

Press **[88] CONFIG** to go to **[ConFiG] [HEAdEr]** to input any desired print header (up to four lines by 39 characters).

K EY 9

Press the **[9] [CAR#]** key to view the existing

car number which will print on timeslips and be sent to PCs; press again to blank out the current number and receive a prompt to enter a new number; press **[#] [ENTER]** to accept.

SYSTEM OPTIONS

Several options (Printer, Digital Display or PC) can be connected by a RS232 cable connection up to 100 feet or by a Wireless Link for greater distances (line of sight up to a quarter mile). Connectors are on the underside of the console.

PRINTER OPTION

Connect the timeslip printer interface cable to the 3210 Timer MB using the RS232 PRINTER PORT on the console. The 3210 will auto print the configured number of timeslips after each race. Additional copies can be printed by pressing the [0] PRINT key before the timer is reset. The print function is disabled if the timer is timing a run.

LED DISPLAY OPTIONS

The Timer MB can be connected to a LED Display to display race results for a crowd and the competitors. Connect the model 6450/6560/6860/6650 LED Display to view the ET immediately upon completion of each run.

ADDING PC CAPTURE SOFTWARE

The Timer MB can be connected to a PC (Windows 98 or later Operating System) to capture the times and build a file with racers names and race results. RaceAmerica offers an optional data capture software package for this purpose.

The software captures the timer data plus data/time stamps from the PC plus allows entry of racer information. All data is then saved in a tab delimited file for further use and analysis with popular spreadsheet and database application programs.

MAINTENANCE

The 3210 Series Console, Beam Emitters, and Track Sensors do not require any maintenance.

To insure uninterruptted operation on raceday, it is suggested to keep track of battery usage hours so as to have fully charged batteries. Plan to replace the 'AA' cells in the Beam Emitters after about 60 hours use. If you are using rechargeable 'AA' cells, recharge them each day. Low battery voltage (Emitter voltage below 4.3VDC) will cause intermittent operation of the system resulting in intermittent events at the finish line as the battery power weakens.

To maintain the highest level of timing accuracy and minimize false trips, annual preventative maintenance and calibration should be performed on all system track sensors and beam emitter units.

SPARE PARTS

Further to minimize race program interruptions, RaceAmerica recommends some spare parts. A spare emitter/sensor pair and track cable should be available in the event of an unfortunate accident during a program. Contact RaceAmerica for availability and pricing of spares items.

SUPPORT AGREEMENTS

Support agreements are available from RaceAmerica providing Telephone Assistance on technical issues and operational questions, repair and/or replacement of hardware failures, Software and Firmware updates and bug reporting, and Annual Preventative Maintenance on all system track sensors and beam emitter units. Contact RaceAmerica for more information and pricing of Support Agreements.

TIMESLIP HEADER CODES

The 3210 Series Console allows custom timeslip header input for four lines of up to 39 characters each to print at the top of each timeslip. Input for the Timeslip Header is found in the **[ConFig] [HEAdEr]** menu. Once the configuration is input, it is saved until changed or deleted. Input is from the keypad via a two-digit code for each character. The console display prompts for each line, character and character code (existing or new) being input.

The following table lists the codes for each character (note: upper and lower case letters have different codes). Use the worksheet on the next page to lay out the desired print text and cross-reference the codes for sequential input. Only desired text including spaces need to be input for each line; any line or lines can be left blank also.

Character	Code	Character	Code	Character	Code
Space	00	A	33	a	65
!	01	B	34	b	66
@	02	C	35	c	67
#	03	D	36	d	68
$	04	E	37	e	69
%	05	F	38	f	70
&	06	G	39	g	71
‘	07	H	40	h	72
(	08	I	41	i	73
)	09	J	42	j	74
*	10	K	43	k	75
+	11	L	44	l	76
‘	12	M	45	m	77
-	13	N	46	n	78
.	14	O	47	o	79
/	15	P	48	p	80
0	16	Q	49	q	81
1	17	R	50	r	82
2	18	S	51	s	83
3	19	T	52	t	84
4	20	U	53	u	85
5	21	V	54	v	86
6	22	W	55	w	87
7	23	X	56	x	88
8	24	Y	57	y	89
9	25	Z	58	z	90
:	26	[	59	{	91
;	27	v	60	|	92
<	28	|	61	}	93
=	29	]	62	~	94
>	30	_	63		
?	31	‘	64		
@	32				

Fig 11 - Timeslip Header Character Codes

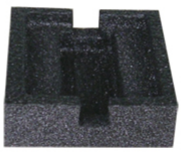
TIMESLIP LAYOUT WORKSHEET

	Character Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Line 1	Printed Character																																							
	Character Code																																							
Line 2	Printed Character																																							
	Character Code																																							
Line 3	Printed Character																																							
	Character Code																																							
Line 4	Priinted Character																																							
	Character Cod																																							

Fig 12- Timeslip Header Character Code Worksheet

7540C - Foam Stand Assembly Instructions


Base Foam

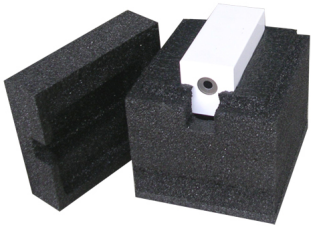

Top Foam


Emitter


Sensor

Assembly Components

'AA' Battery Emitter (5040B, 5050B & 5058B)
1. Install batteries and turn on the Emitter.
2. Separate the Base of the Foam Stand from the Top.
3. Place the 5040/5050/5058 Emitter into the Base foam with the battery side down.
4. Slide the Top on the Base. Place on the track.


Sensor/Emitter placement in Foam Base

Track Sensor (5140D & 5158D)
1. Separate the Base of the Foam Stand from the Top.
2. Connect the cable to the sensor
3. Place the 5140/5158 Sensor into the base (open end down)
4. Press the Top on the Base. Place on the track.


Sensor back
Note cable routing

'C' Battery Emitter (5042B)
1. Same as above except place the 'C' Battery pack in the Base standing on its edge.

For additional stability

1. Place weight in the Base well as required.

Outside Dimensions:
6.5" W x 7.25" L x 7.5" H


Complete Assembly

REVISION HISTORY

D - Live counting and Metal console unit
E - 11/04 -100’ Console to Start, keypad red
Move Rev history to last page.
F - 07/05 -Metal sensors and emitters
G - 05/07 - Switch pics to blk/white console; add wireless option; convert to InDesign
H - 04/08 - Switch to new board/CPU, add time-slip header config, model to 3210D,
option for 5058/5158 sensors and emitters; foam stands to 7540C
J - 01/09 - correct wireless pkg components errors and add internal sensors