



Finish Line Timer
Quickstart Instructions



USB Version

Nancy and Richard Fritz
36 Matuk Drive
Hyde Park, NY 12538
(845)-229-5189
www.eTekGadget.com

We thank you for purchasing the eTekGadget SmartLine Finish Line Timer System. Please review these instructions and FAQ section on our website before calling. The best way to get a quick answer is to send us an email with your question. Set up your timer and software in advance to familiarize yourself with them.

Setup SmartLine Finish Line Timer hardware

Install the SmartLine Pinewood Derby Finish Line Timer using the following steps. Additional instructions are found in the SmartLine Installation Manual if you are drilling your own holes and in the Space Derby Manual for setup on the Space track.

1. Set up the mounting bar:

Anchor the SmartLine Finish Line Timer to the track using the method that is appropriate for the track you have.

- Method 1: The BestTrack type sensor bar is an aluminum bar with foam pads installed to hold the sensors in place. It is mounted onto the bottom of the timer when shipped. The sensors are pre-mounted on the sensor bar. We supply nuts and bolts to secure the timer onto the BestTrack track. See Appendix A for details.
- Method 2: See Appendix B “Special Note for Custom Tracks” if you have a custom size track.

2. USB version of timer only:

Plug the USB B connector into the SmartLine timer. Plug the other end into the USB 2.0 Extension Cable. Make sure the computer you are using is connected to the internet if possible. If it is not, you may need to install the USB driver from the SmartLine Finish Line Timer CD. If you are connected to the internet, you can find the driver setup program on the FTDI website or on our eTekGadget.com/manuals page.

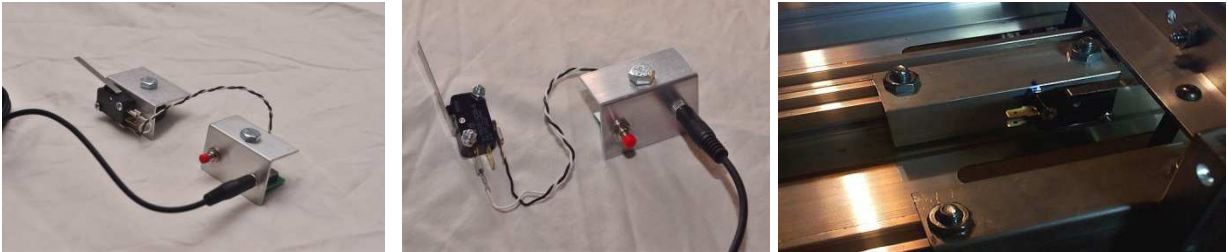
Since most computers no longer have the Serial COM port, we now offer a USB version of the timer. We use the FTDI FT230X chip in the timer. You will need the VCP (Virtual Com Port) driver from FTDI.

Most new Windows Operating Systems know about the driver for this chip and will install it when you plug the cable in. However, if you need to install the driver follow the instructions in the FTDI Installation Guide for the Operating System you are using. You can find the Installation Guides at <https://www.ftdichip.com/Support/Documents/InstallGuides.htm>.

3. Set up the Reset/Start gate Switches:

You need the Start Switch if you use the time to determine your race. If you only need the placement you do not need it.

Putting the wires on the correct terminals is very important. If it is not correct the timer will not time the race properly. When the timer is timing there will be dashes on the displays so there should be dashes on the displays while the cars are racing down the track. The displays also indicate that the start gate is still open after the timer resets by displaying a dot on each display. They will be blank when everything is set for a new race.



WIRING INSTRUCTIONS: The supplied sensor switch has three terminals marked C(Common), NC(Normally Closed) and NO(Normally Open). The preferred method is to have the switch pressed before the race and un-pressed when the race starts. This method requires the use of the C and NC contacts. **The timer is shipped with the green (or black) wire on C and the white wire on NC.**



If you want the switch to be normally open (un-pressed) before the race and closed (pressed) when the race starts, then the push-on terminal needs to be on the NO contact as indicated below. This is not standard.

4. **Plug it in! It is vital that you use the correct AC adapter.**

We supply the adapter that you need. We label the power supply with a **SmartLine** label. **Our timer uses a 12V Center Positive adapter.** Anything over **500mA for a 4 lane** or less and **800mA for a 6 lane** or more. **We currently use a 1A AC Adapter.** Some other equipment such as the remote start gate use **24 V power supply and that will do irreparable damage** to the timer.

5. **Power up conditions and indicators:**

You will see an “**SL**” on the timer displays for a few seconds when the timer is plugged in. The timer communication is ready in SmartLine native command mode.

- The timer display can indicate a couple different things.
 - i. There is a dot “.” displayed when the start gate is opened and the timer reset for the next race. If you close the gate, the dots will go out. The timer displays will be blank when it is ready for the next race.
 - ii. A “c” shown on any lane that is blocked (light cannot reach the sensor). Check that the LED is shining down through the hole above the sensor. Check that the sensor is clear of any dust or debris. Make sure the sensor wires are not pinched or shorted.
 - iii. When a race starts, the displays will show a dash “-“ in the center of the display.
- You may put the timer in a TEST mode if you hold the reset button down for 3 seconds. To get it out of TEST mode simply press the reset button (but don't hold it down). This allows you to test the sensors and start gate without starting a race.

The SmartLine Utility Program

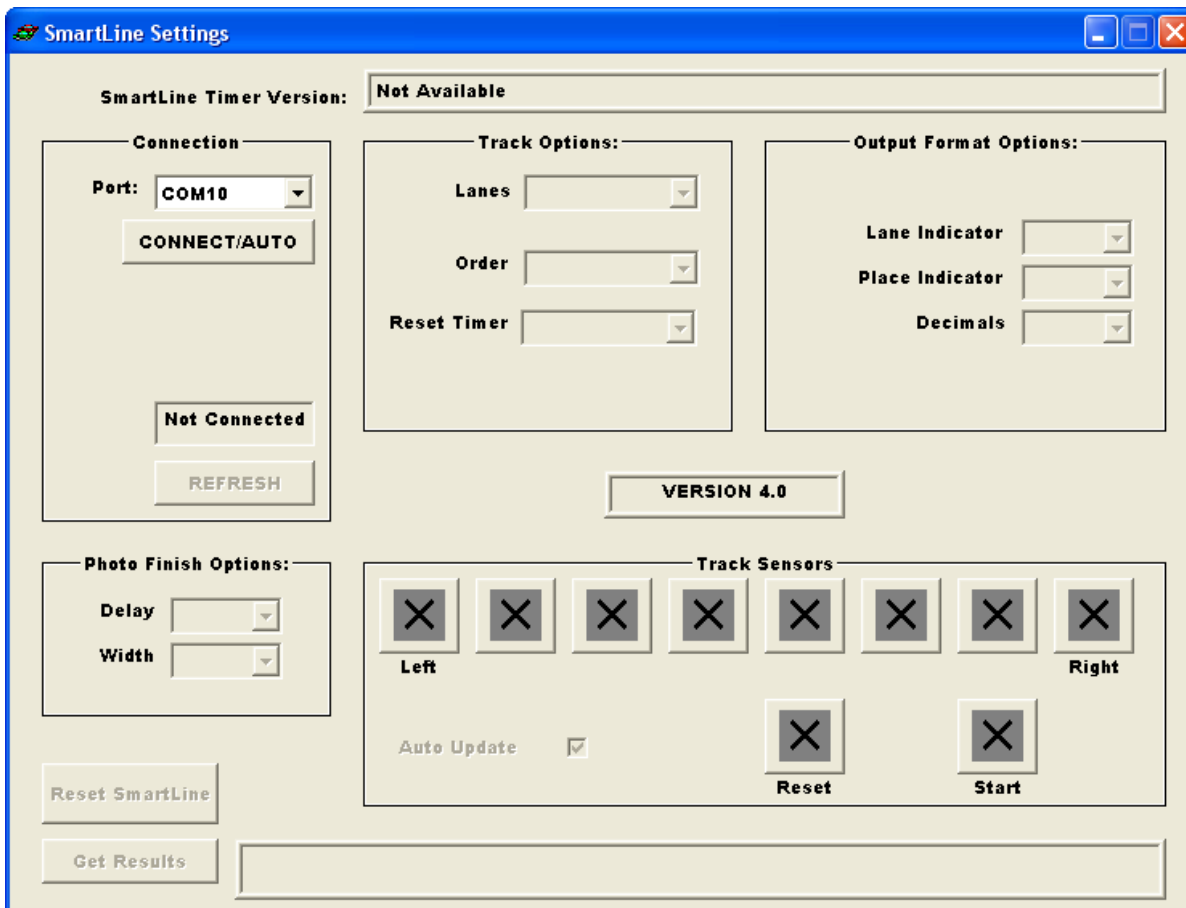
LineSetup4.exe

We supply the SmartLine Utility Program (LINESETUP4.EXE) on the SmartLine Finish Line Timer CD to establish the initial communication and for easily updating any settings that you want to change.

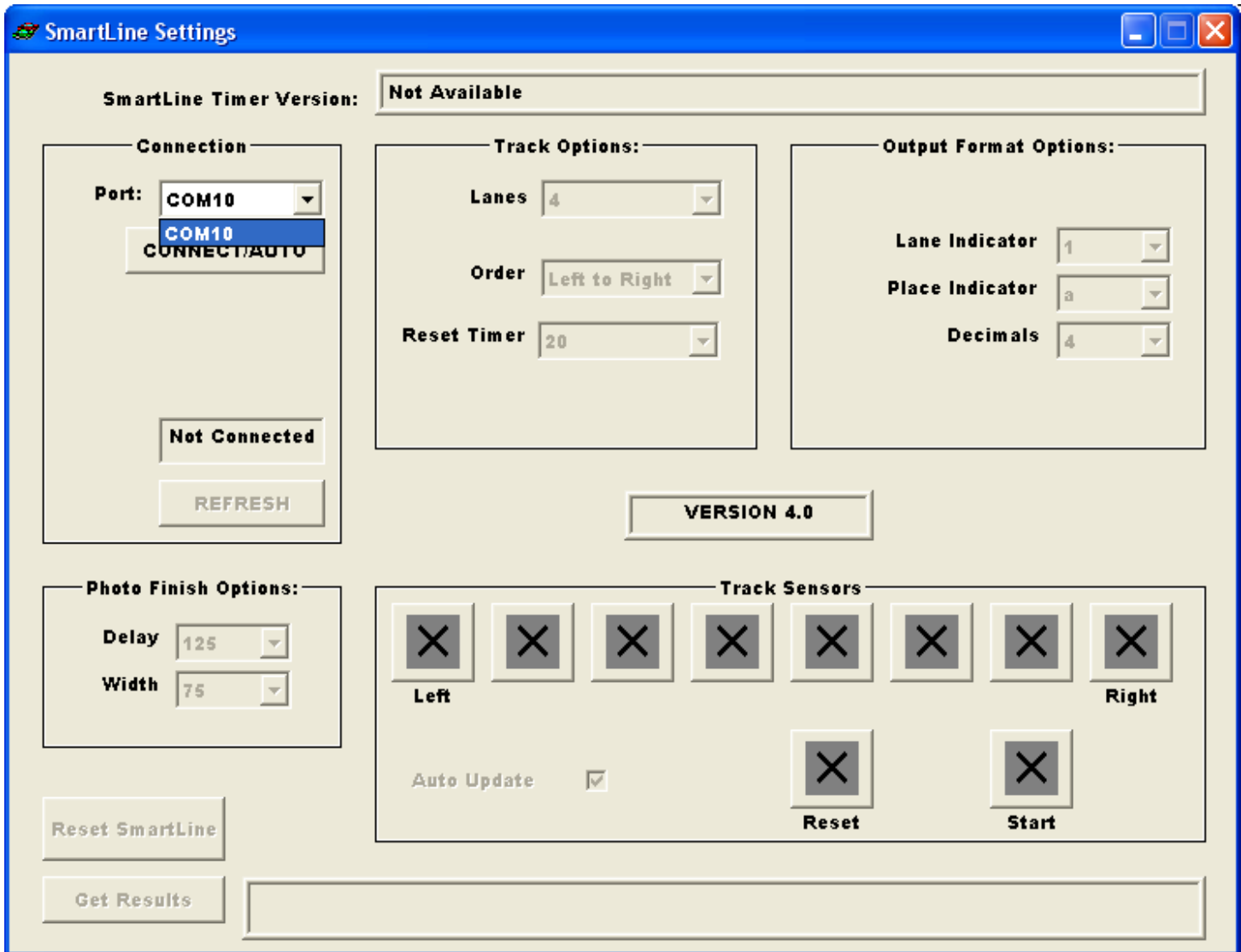
Install the driver for the USB to serial converter. Details are in step 2 above. Plug the SmartLine Timer serial plug into the USB to serial converter or directly into the computer if it has a serial port.

Use the LINESETUP4 program directly from the CD or copy it to any directory of your choice. You only need the one file, LINESETUP4.EXE, to run this program. Make sure that you do **NOT** have any other programs running that use the same COM port, such as a race manager program. If you are using Windows 7 or greater, you **may** need to right-click on the program name (LINESETUP4.EXE) and set the compatibility mode for the program to Windows XP (Service Pack 3). Try it normally first.

To start the SmartLine Setup Program, double-click on the LINESETUP4.EXE program name. You will see the following screen:



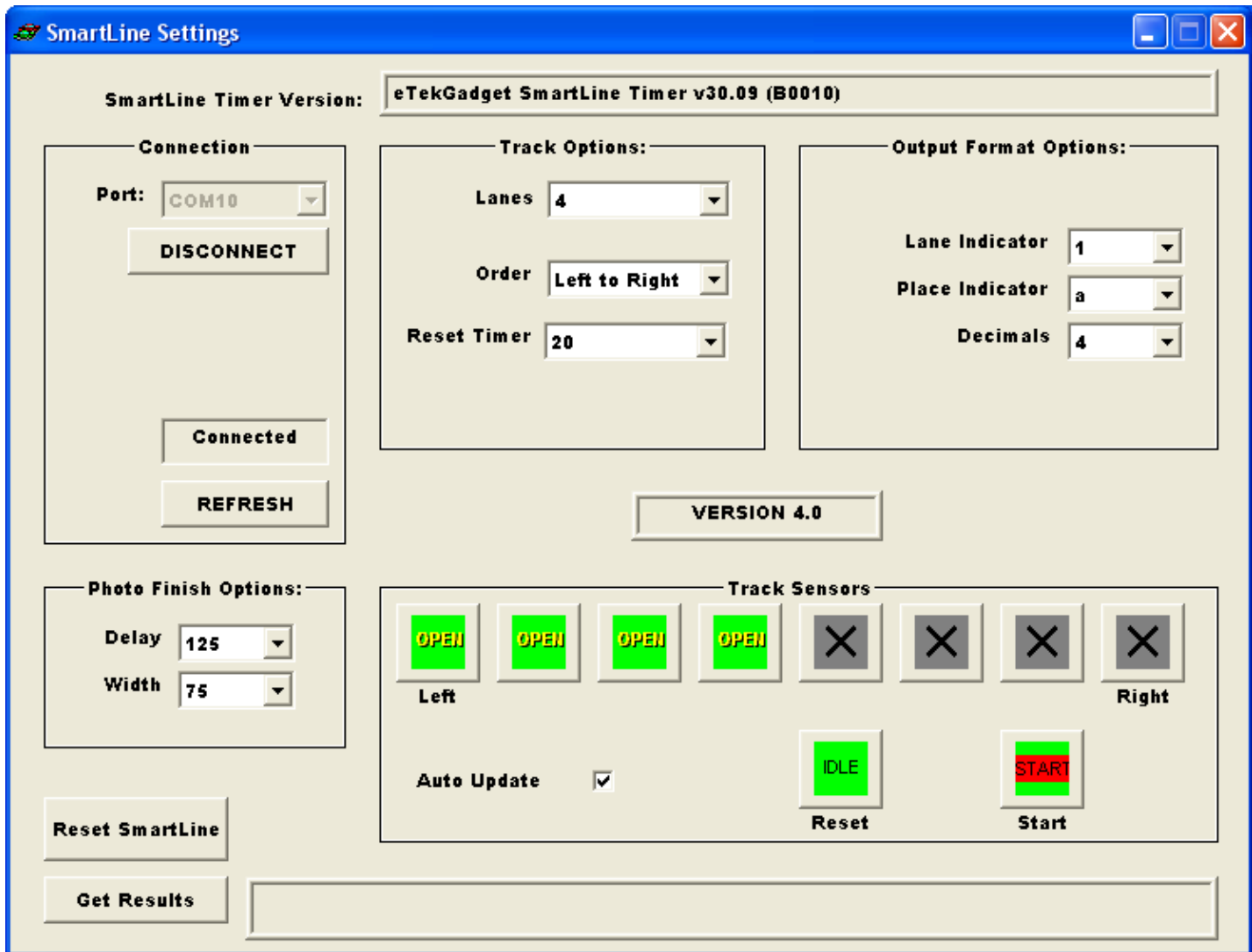
Select the COM port you will be using for communication in the Connection Port dropdown box. Any COM ports that are active on your computer will be shown in the dropdown list.



You should know the COM number assignment after installation of the driver. If there are more than one listed, you can try selecting them until the timer responds. You may also determine what the COM number is by looking at the “ports” section of the “Device Manager”. The Device manager is found in the “Control Panel” under the “System” icon.

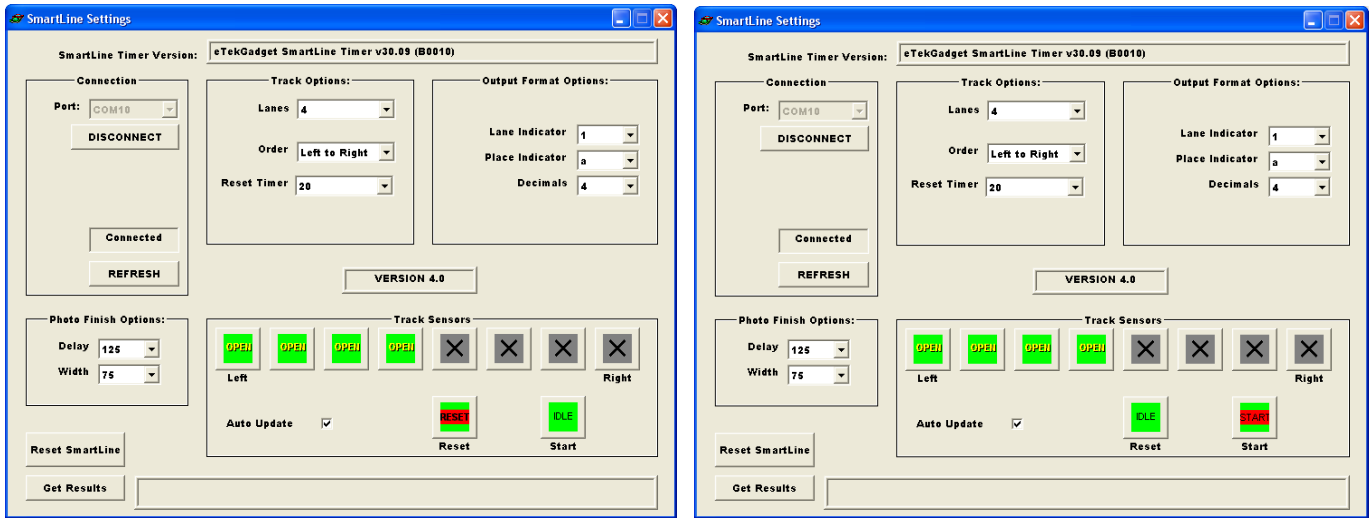
Click the “CONNECT/AUTO” button.

The timer will respond with the SmartLine Timer Version text as shown in the top of the window. The “CONNECT/AUTO” button changes to “DISCONNECT”.

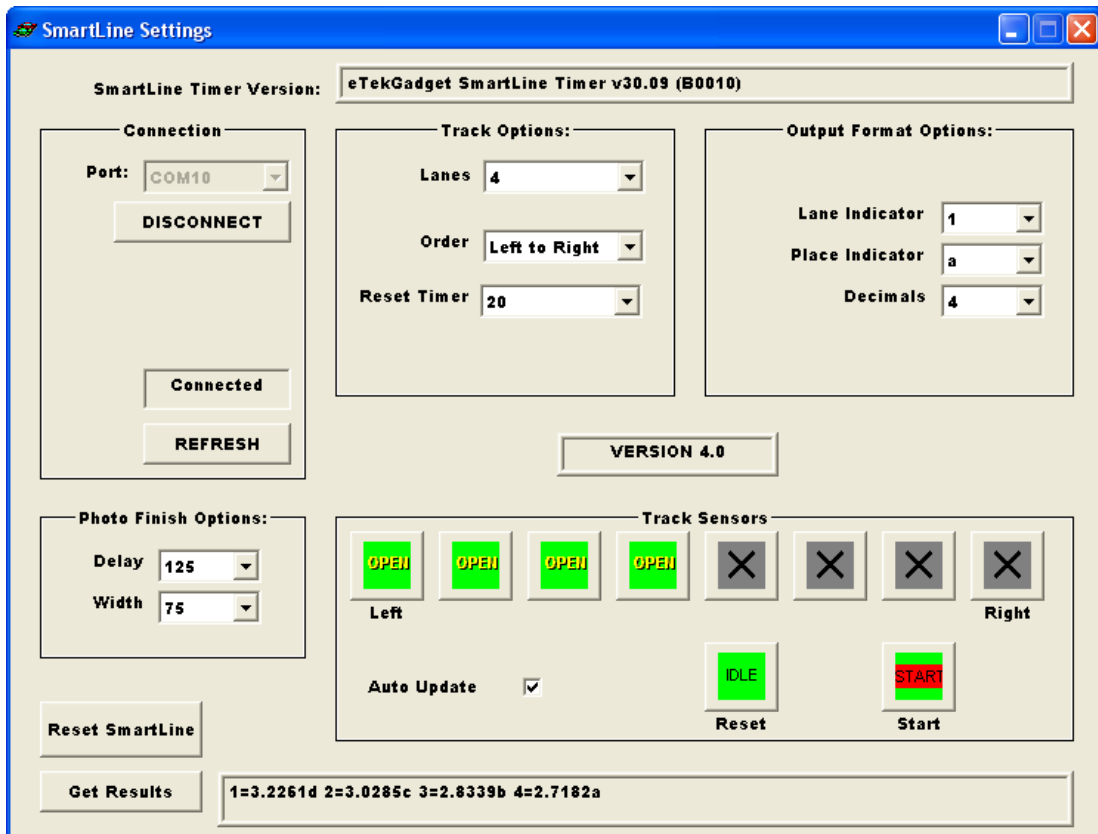


The Track Sensors area will show the state of the sensors and switches. The Auto Update checkbox will be checked to obtain continuous readings of the sensors and switches. This is the display as it appears when there are 4 lanes and communication has been established successfully.

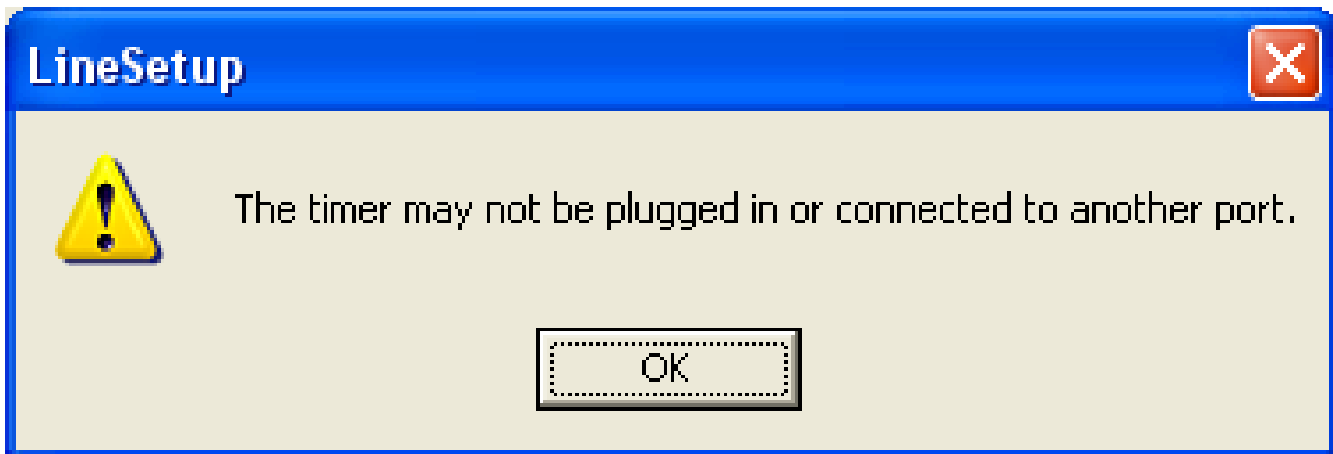
When you press the reset button, you will see a red bar in the Reset indicator. The Start switch will also show the red bar, but the polarity of the switch will dictate when the indicator is red. The timer comes with the white wire on the farthest terminal from the ground (black or green) wire. In this case the red indicator appears when the switch is not depressed.



To test the timers operation, press the reset button. If there are dots shown on the displays, the timer thinks that the start gate is still open. If the start gate is closed but the timer still shows dots, the polarity of the switch is not correct or the switch is not closed. Please refer to the switch diagrams in step 5 above. Make sure the green or black ground wire is on the terminal opposite the switch lever. Release the start gate. The displays should show dashes on the displays. This means the timer is timing the race and the cars should be racing down the track. In testing you can simulate this without the track by manually releasing the switch and waving a hand under the sensors to trigger the timer. Press the 'Get Results' button to see the result string from the timer at the bottom of the window. If you see times of 9.999, the timer reset before you pressed the button.



Error conditions:



The LineSetup program indicates if the power is not plugged in to the timer or the USB to serial converter is not available or installed correctly.

Setup the SmartLine Timer for use with various race management software packages.

GrandPrix Race Manager (Newer than Version 5.0) –

Select the SmartLine Timer in the GrandPrix Race Manager's Hardware Setup Options screen. Select the COM port that will be used.

You may test the communications at this point by pressing the Start Test button. The GrandPrix Race Manager will send the appropriate commands to the SmartLine Timer to get the readings from the next race. You may trigger the sensors, simulating a race, and the results will be displayed. You may also send individual commands to the timer.

When you select the SmartLine Timer in the Hardware Setup screen, a new tab will appear for setting the Photo Finish values. You may set the photo finish delay times at any time during the race.

DerbyMaster (Newer than version 8.0) –

Select the SmartLine Timer in the Hardware Setup screen.

DerbyMaster (any version before version 8.0) and GrandPrix Version 4.0 or less –

You must update your software to one of the current programs that support our timer.

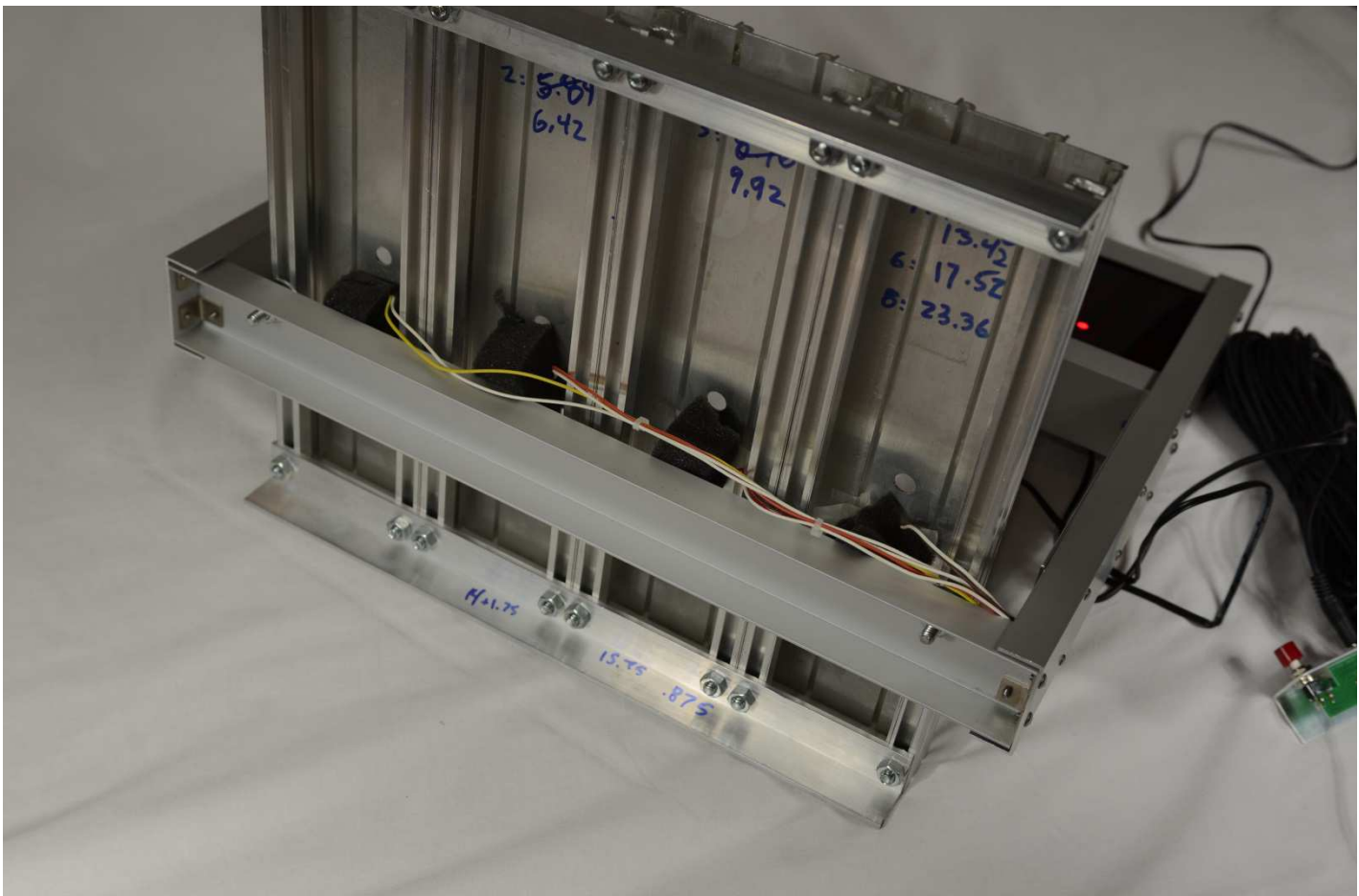
Call 845-229-5189 or email nfritz@etekgadget.com if you need assistance

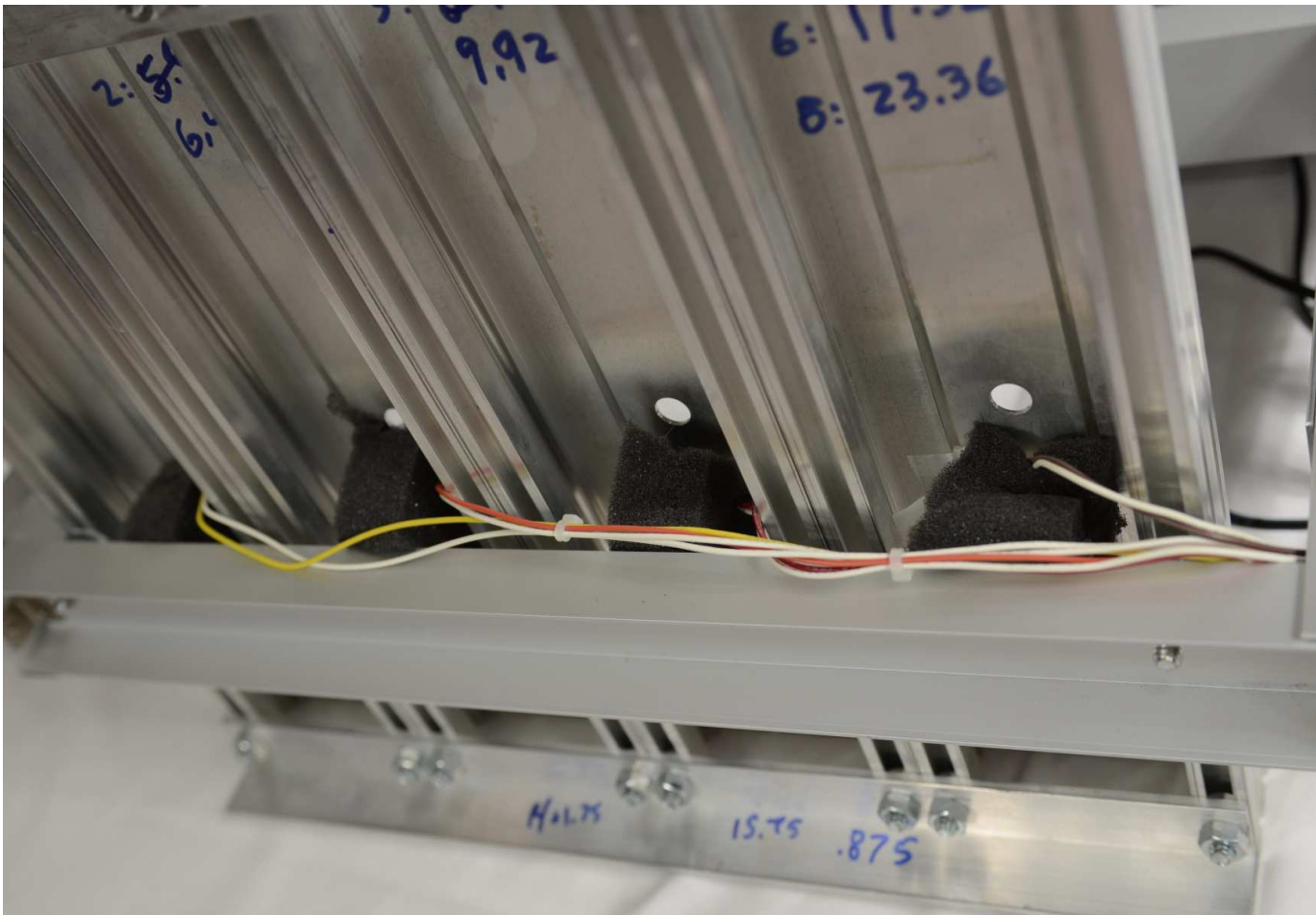
Appendix A: Special Note For BestTrack

Make sure that you attach the timer in the correct direction. The plug should be on the right side when you are looking at the front of the timer. The front of the timer should be facing the starting gate.

1. Attach the mounting bar to the track by sliding the head of the hex head bolts into the channel on the bottom of the track.
2. Position these bolts next to the middle hole in the track and set the sensors making sure the sensors are facing straight up.
3. Fasten down the bar to the track by tightening the nuts on the bolts that were slid into the channel. **Important: Make sure the wires are not pinched by the track.** You may add an extra nut as a spacer to make sure the wires are not crushed between the track and the bar.

The following 2 pictures show the timer mounted on a BestTrack track section.





Put sensors into center set of holes in BestTrack track. Make sure they are facing up through the hole.

Appendix B: Special Note For Custom Tracks

1. Make sure that you attach the timer in the correct direction. The front of the timer should be facing the starting gate. The cable connections should be on the right side when you are looking at the front of the timer.
2. The sensors are mounted onto the underbar with double sided tape. You may adjust these to line up through your track holes if necessary but a new piece of tape should be used. If you move them please do not pull on or cut the wires.
3. If you do not have holes in your track, follow the instructions in the Installation guide to drill holes in the center of each lane. There are diagrams and tips on this procedure that may be useful in that manual.
4. Set the bar with the sensors in place so that they are facing straight up into the hole in your track. Fasten the bar to the track with the screws and wing nuts provided. You may have to make adjustments to fit the timer on your track such as cutting a slot in the side rail of the track for the timer to sit in. You may need to raise the bottom of the track up off the floor $\frac{1}{2}$ " to accommodate the timer. If your track does not have mounting holes already, you may want to remove the bar from the bottom of the timer to use as a template. You can do this with a Phillips head screwdriver. The sensors can be unplugged from the CPU board. There is a locking tab on the side of this connector that you push in when pulling the connector off. Screw the wood

screw side into the track. The machine screw fits through the underbar and the wing nut holds the timer in place. **Important: Make sure the wires are not pinched by the track. We install a wire harness to hold them to the side of the timer underbar.**

5. Continue to follow the Quickstart instructions to connect communication cable, Start gate cable and power.

Custom Track Mounting

The mount screw for the custom track comes with a cork on it just to hold it in place. Remove this cork when you install the screw into the side bar of your track.



There is a wing nut on the bottom that you will use to hold the timer up onto the track rail.



The wires from the CPU board to the sensors must not be pinched under the track. We have mounted them on the side of the bar with a wire harness to protect them. On most custom tracks you need to cut a notch in the rail for the timer. Please cut the notch wider on the CPU side for the wires.

Contact us if you have any questions.

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