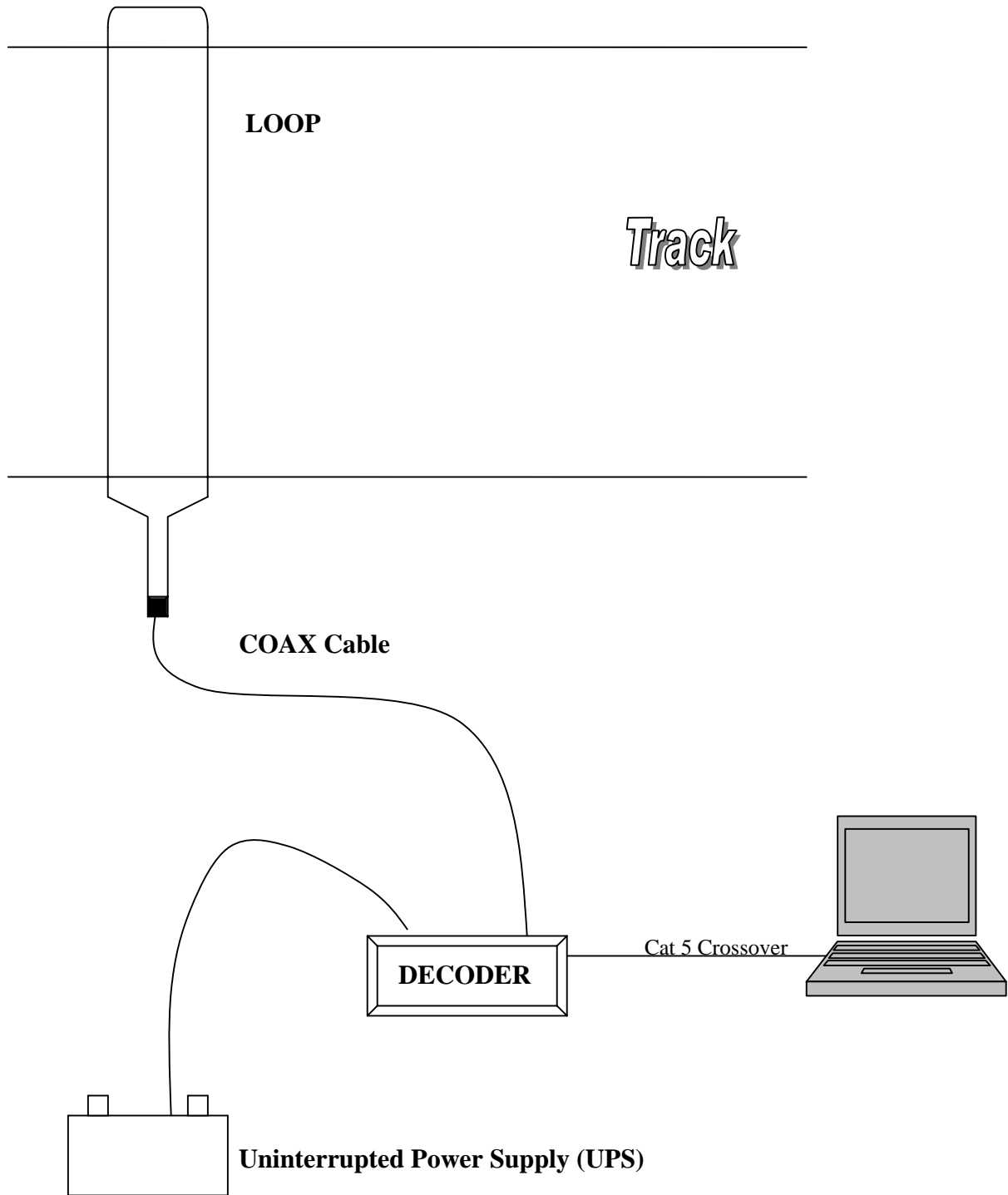


Transponder Equipment



Transponder Equipment Defined

The following equipment makes up the Trackside scoring system.

1. **Decoder** – the decoder is the red box which connects to the scoring PC via a CAT 5 Crossover cable. The decoder can be assigned an IP address manually or can be set to obtain an IP Address if you connect it to a router. When scoring, the decoder should always be plugged into an uninterrupted power supply (UPS). As long as the decoder maintains power, the decoder will store that most recent scans of transponders. This provides a great source of backup in case you are to lose data in your PC. The decoder also will sound a beep for each transponder passing.
2. **COAX Cable** – the decoder connects to the loop using the coax cable provided with your system. The coax cable comes in three lengths, 20 meters, 50 meters or 100 meters. You should always use the shortest cable that is needed for your installation. If you have excess cable, you should roll it up and keep it in an area away from your transponders. One end of the coax has a connector that fits onto the back of the decoder. The other end of the coax has two wires to connect directly to each end of the loop.
3. **Loop** – the loop is a small wire placed across the track. The loop serves as the antennae for the scoring system. The loop wires must be laid across the track parallel to each other 24 inches apart. Each end of the loop will connect to the coax wires. The other end of the loop has a resistor which will remain in the center on the loop on the opposite side of the finish line. Always cut your loop wire to be the exact size needed for your finish line.
4. **Transponders** – the transponders are mounted to a motorcycle by placing the mounting bracket on the fork tube behind the number plate then placing the transponder in the mounting bracket.

Overall Process – The **loop** is laid across the finish line inside conduit buried approximately 12 inches deep. The **loop** is connected to the **coax**. The **coax** is plugged into the **decoder** which is connected to the scoring PC. As a **transponder** passes over the **loop**, the **decoder** detects it. The **decoder** checks the signals from the **transponder** passing and assigns a timestamp for the exact time of passing. The transponder id and time of passing is then sent to the scoring PC to be processed. The scoring PC will check the database to see which racer is assigned the transponder id. The scoring PC calculates how many times the **transponder** has passed compared to other **transponders** and scores the race.

Transponder Equipment Setup

LOOP

The LOOP is the first step in setting up your Trackside Transponder scoring system. It should be placed in the ground at the finish line in conduit 1½ to 3 inches in diameter and will act as the finish line for the scoring system. The LOOP will cross the track twice. Two lines of conduit must run parallel to one another across the entire track maintaining a 20-24 inch span. At the end of each line, a 90° elbow can be run to bring the LOOP to the surface.

The middle of the LOOP has a small resistor, which will be at the far end of the track's finish line with each end coming through one of the lines of conduit. The open ends of the LOOP are then connected to the COAX.

Keep these requirements in mind when setting up the LOOP.

- The LOOP should be buried 8 to 12 inches deep
- Do not set the LOOP up near metal
- LOOP wires should be spread 20-24 inches apart the entire distance of the LOOP
- The LOOP should be placed so that bikes are on the ground when passing over it
- The LOOP should be cut as short as needed for better performance
- The finish line will become the center of the 2 wires crossing the track

COAX

The COAX cable connects the decoder to the LOOP. Best performance will be gained if you solder the LOOP wires to the COAX wires. Make sure to keep the coax cable away from all power cords and anything else that may cause interference. to turn on.

DECODER

The DECODER connects to the scoring PC using the networking card of the PC. The decoder can be connected directly to the PC or can be connected to a router. You have the option to set the IP address or let the decoder obtain an IP address.

A headset or computer speaker should be plugged into the DECODER so that you can verify a beep for each transponder detected. Finally, the DECODER must be plugged into a power source. It is recommended that you run your power from a UPS.

Transponder Equipment Setup Directions

Before starting these step-by-step directions, you should be familiar with the components that make up the scoring system. It is very important that you follow these directions closely to obtain the best performance from your scoring system. Do not provide power to any of the equipment until the directions tell you to do so.

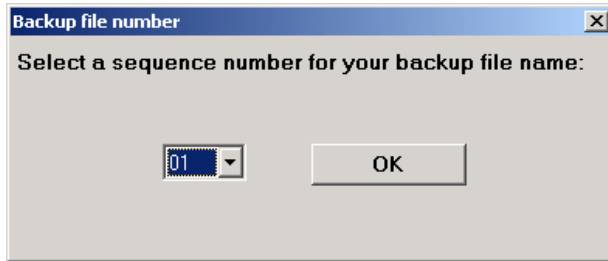
1. Place the LOOP across the finish line in the conduit as described previously.
2. Connect the ends of the LOOP to the wire ends coming from the COAX.
3. (It doesn't matter which wire on the LOOP plugs into which COAX wire)
4. Plug the other end of the coax cable into the back of the DECODER.
5. Plug the headset provided or a computer speaker into the jack on the DECODER.
6. Using a CAT 5 crossover cable, connect the DECODER to the scoring PC.
7. Set the IP addresses so the PC can network with the DECODER.
8. Power on the PC and start Trackside.
9. In Trackside, open an event then connect to the DECODER and check your interference meter. The meter should show a number less than 30 for best performance.

Your system is now set up and you are ready to start scoring using Trackside. It is very important that you maintain power to your equipment at all times. Be sure that you plug your DECODER into a UPS.

Open the transponder scoring window

The transponder scoring window can be opened only after you have an event open in Trackside. From the menu, you can select TRANSPONDER, OPEN SCORING CONTROL to open the window.

Each time the transponder scoring window is opened the user will be presented with two popup windows. The first popup window asks the user to pick a Sequence Number used in naming the back-up log file.



Any time the scoring window is open, Trackside is writing all the activity to a back up log file. This file will have a log of the user's activity and the transponders scanned. It is a very helpful file in that it can be used to recover scans from an event where you may have lost the data.

The number the user selects here becomes part of the back up log file name. By default, the backup file will be stored in the "C:\Trackside\" folder and will be named using this naming convention.

"MYLAPS_SCAN_LOG_" + Current Date(mmddyyyy) + "_" + Sequence Number + ".txt"

Here is an example where the user has selected 04 as the sequence number.

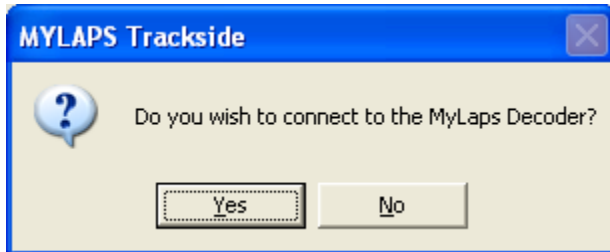
"MYLAPS_SCAN_LOG_10192012_04.txt"

Each time the user opens this window, they should pick the next number from the previous time assuming they want to start a new file and not add to the current one. The user can always pick the same Sequence Number and not cause a problem. However, if you need to recover data using the backup file, you will have the entire days log written in this file and it will be difficult to recover from because of its size.

It is recommended you start a new backup file after practice, then one after the first set of motos. This will allow you to keep a reasonably sized file should you need to use this file to recover lost data.

Open the transponder scoring window

The second popup window which is displayed each time the transponder scoring window is opened asks the user if they want to connect to the decoder. In most all cases you will select YES since you would not normally be coming to this window unless it were for scoring purposes.



After selecting YES, you will be presented with a message that states “You are now connected to the Decoder”. If you do not get this message, close the window and check to make sure the Decoder is connected to the PC and that the Decoder has power to it.

Transponder Scoring Window

The entire Scoring system is controlled in one window. This window is accessed by clicking on TRANSPONDER in the Trackside menu then clicking OPEN SCORING CONTROL. The following window will open:

The screenshot shows the 'Decoder Control' window with the following sections:

Scanned Records

12	TpId	Scan Date	Scan Time	Hits	Strength
	TC-19529	12/20/2004	15:50:08.476	67	101
	RC-48357	12/20/2004	15:50:07.328	20	102
	HR-18490	12/20/2004	15:50:04.261	34	100
	HR-18490	12/20/2004	15:49:09.664	51	106
	RC-48357	12/20/2004	15:49:08.562	108	105
	TC-19529	12/20/2004	15:49:06.811	17	107
	HR-18490	12/20/2004	15:48:04.280	40	105
	RC-48357	12/20/2004	15:48:03.207	16	98
	TC-19529	12/20/2004	15:48:02.091	37	105
	HR-18490	12/20/2004	15:47:06.588	43	104
	RC-48357	12/20/2004	15:47:05.468	22	101
	TC-19529	12/20/2004	15:47:04.246	33	101

12 Reads

Place	Nbr	Racer	Class Id	Lap Time	Tp Id	Lap	Scanned
3	29	Slippery Pete	125 Pro Am	01:01.665	TC-19529	4	15:50:08.476
2	57	John Dains	125 Pro Am	00:58.766	RC-48357	4	15:50:07.328
1	90	Neema Fastcat	125 Pro Am	00:54.597	HR-18490	4	15:50:04.261
3	90	Neema Fastcat	125 Pro Am	01:05.384	HR-18490	3	15:49:09.664
2	57	John Dains	125 Pro Am	01:05.355	RC-48357	3	15:49:08.562
1	29	Slippery Pete	125 Pro Am	01:04.720	TC-19529	3	15:49:06.811
3	90	Neema Fastcat	125 Pro Am	00:57.692	HR-18490	2	15:48:04.280
2	57	John Dains	125 Pro Am	00:57.739	RC-48357	2	15:48:03.207
1	29	Slippery Pete	125 Pro Am	00:57.845	TC-19529	2	15:48:02.091
3	90	Neema Fastcat	125 Pro Am	00:00.000	HR-18490	1	15:47:06.588
2	57	John Dains	125 Pro Am	00:00.000	RC-48357	1	15:47:05.468
1	29	Slippery Pete	125 Pro Am	00:00.000	TC-19529	1	15:47:04.246

Announcer's Data

Place	Nbr	Racer	Class Id	Lap Time	Tp Id	Lap	Scanned
3	29	Slippery Pete	125 Pro Am	01:01.665	TC-19529	4	15:50:08.476
2	57	John Dains	125 Pro Am	00:58.766	RC-48357	4	15:50:07.328
1	90	Neema Fastcat	125 Pro Am	00:54.597	HR-18490	4	15:50:04.261
3	90	Neema Fastcat	125 Pro Am	01:05.384	HR-18490	3	15:49:09.664
2	57	John Dains	125 Pro Am	01:05.355	RC-48357	3	15:49:08.562
1	29	Slippery Pete	125 Pro Am	01:04.720	TC-19529	3	15:49:06.811
3	90	Neema Fastcat	125 Pro Am	00:57.692	HR-18490	2	15:48:04.280
2	57	John Dains	125 Pro Am	00:57.739	RC-48357	2	15:48:03.207
1	29	Slippery Pete	125 Pro Am	00:57.845	TC-19529	2	15:48:02.091
3	90	Neema Fastcat	125 Pro Am	00:00.000	HR-18490	1	15:47:06.588
2	57	John Dains	125 Pro Am	00:00.000	RC-48357	1	15:47:05.468
1	29	Slippery Pete	125 Pro Am	00:00.000	TC-19529	1	15:47:04.246

Entries in Race

3 Entries	TP ID	Nbr
125 Pro Am		
1.)	TC-19529	29
2.)	RC-48357	57
3.)	HR-18490	90

Additional interface elements include: Start Race, Stop Race, Auto Stop and Start Next Race, Send to Announcer Screen (checked), Refresh, Save Scans, Clear Scans, Connect, Noise (23), Connection status, Racing Nbr, Manual Process, TP ID, Simulate Tag Passing, Write to backup file, Reprocess Scans, AMB Memory Dump, and Close.

From this screen, the user can:

- Check the Interference level from the scoring system.
- See each time a transponder is detected by the scoring system.
- Start and stop races and practices sessions.
- View the current position of the racers as they pass.
- Clear the current scans out.
- Refresh the list of transponder ids the software is trying to match.
- Manually enter a transponder or bike number passing.
- Save the transponder scans captured to a text file.
- Download all the scans in the Decoder's memory.
- Write messages to the back up file.
- Make a connection to the Decoder.

Transponder Scoring Window – data windows

All communication with the Decoder is accomplished in the transponder scoring window. This window also controls the capturing of each transponder which passes over the Loop.

The transponder scoring window can perform many functions. Each will be listed separately in this manual. The window is divided into three data windows. Each window is for viewing only and you will not enter or modify data here. The windows are:

1. Scanned Records
2. Announcer's Data
3. Entries in Race

Scanned Records – This window will show the ID of each passing transponder, timestamp of when the transponder passed, the number of times the transponder was recognized and the strength of the transponder signal. In ideal conditions, the transponder hits should be at least 20 and the strength at least 100. If a transponder is consistently lower on both, the transponder may need replaced. A record is only written to this window when you have clicked on the START RACE button. The most recent record will be at the top and cause all others to scroll down. If a transponder passes and you have not started the race, the record is only written to the log file, however a beep will still sound from the Decoder.

Announcer's Data – Trackside will only write records to this window if you have checked the “Send to Announcer Screen” checkbox. When a transponder passes, Trackside will attempt to match the transponder id with a racer. Trackside will then calculate which place the racer is in, the lap number and lap time for the racer. If this is a practice session, Trackside will only calculate the lap time and lap number. The most recent record will be at the top. All others will scroll down.

Entries in Race – This window will display the bike numbers and the corresponding transponder ids for all racers in the moto you have selected when you started the race. If you are starting a practice session, all racers from the event are listed here. This is the data source Trackside uses to match a transponder id to a racer. If you see that you have racers not assigned a transponder id, you should go back and update the racer to have a transponder id. After an update of a transponder id, you should click the REFRESH button so Trackside will get new data for this window.

Transponder Scoring Window – functions

There is no menu for the transponder scoring window. All functions are executed by the user clicking on a button. Each button is described in detail below.

Start Race

– Use this button to make Trackside start capturing and processing the scans of a race or practice session. When you click this button, you will be asked to select a moto or a practice session. Once your selection is complete, Trackside will retrieve the data for the “Entries in Race” window. The START RACE button will then become a dim gray color indicating that Trackside is scoring. The button will be become enabled again once the race or practice has been stopped.

Stop Race

– Click this button when you are ready for Trackside to stop capturing the scans of a race or practice session. This is normally done when the last racer has exited the track. At the time you stop the race. Trackside will ask you if you want to save the scans. In most cases, you will answer YES and give the file a meaningful name so you can import it into the database later.

Auto Stop and Start Next Race

– This function will perform the same action as if the user had stopped one race and immediately started the next. Trackside will use the race order to know which race has just ended and which one is about to start. The file is named according to the class name and saved in the C:\Trackside folder. If a duplicate file name already exists, Trackside will increment the number in the name by one. Here is an example file named using this function: “Race_01 125 Pro-01.txt” If you are using this function during practice, and example file will be: “Practice_01.txt” The button is not enabled until you have started a race or practice session.

Refresh

– The refresh button will cause Trackside to retrieve new data for the Entries in Race window. You only need to click this button if you have modified the data for the race you are currently scoring while this window has remained open.

Save Scans

– This button will allow you so save the records in the Scanned Records window to a text file. You will specify the name of file.

Clear Scans

– This button will clear the records from the Scanned Records window and the Announcer’s Data window.

Transponder Scoring Window – functions

The functions described on this page are not visible on the scoring window when the window is opened. To make these fields available, right click your mouse in the lower right area of the window and the buttons will appear. Right click again to hide them.

Manual Process

– Trackside gives you the option to manually enter a bike number of a racer who may have lost his transponder or is missed for some reason. You will enter the racing number in the Racing Nbr box. Trackside will use the Entries in Race window to match the number to a transponder id and add a record in the Scanned Records window as if it were a passing transponder.

Simulate Tag Passing

– Trackside gives you the option to manually enter a transponder id so it can be processed as if the system scanned it. Trackside will process the transponder id you have entered in the TP ID field.

Reprocess Scans

– This button will cause Trackside to reprocess all the scans in the Scanned Records window. The only time you may need to use this function is when you have turned on the “Send to Announcer Screen” after some transponders have passed.

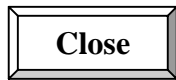
Transponder Scoring Window – functions

Trackside automatically writes the user's actions to a log file on several occasions. Some of the actions recorded in the log file are:

- When the user opens or closes this window
- When the user Starts or Stops a race or practice
- When the user selects the Auto Stop and Start
- When a transponder is detected
- When a user saves or clears the scanned records
- When a connection is made to the Decoder



– The Connect button is used to make a connection to the Decoder. This button will not be enabled if the system is already connected to the Decoder.



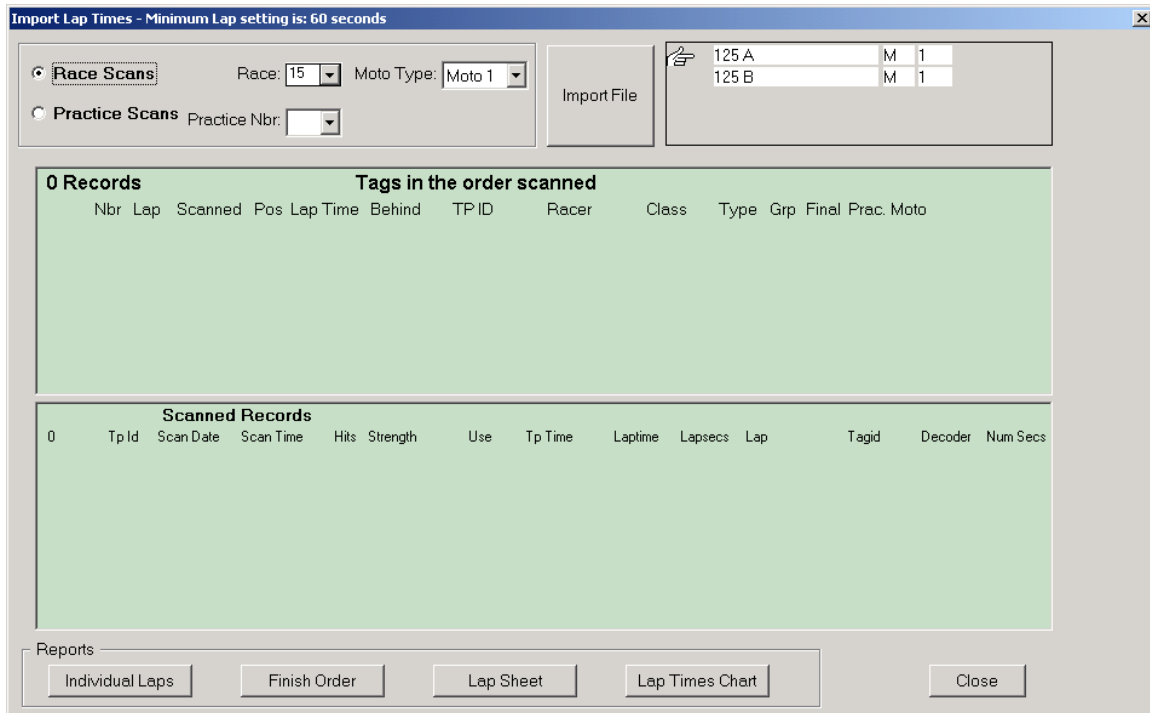
– This button is used to close the scoring window. You will not be able to close the window if you are currently set to score a race or get practice laps.

NOISE METER – Every 5 seconds, the Decoder sends a STATUS message to Trackside reporting the amount of interference it is receiving. The amount is displayed in the NOISE METER. If the Noise Meter is greater than 30, check the Loop and Activator setup.

CONNECTION – The CONNECTION boxes are an indicator that Trackside is still maintaining communication with the Decoder. Each time the Decoder sends a status record, Trackside will move the indicator to the next block. If you notice the indicator block has not moved in more than 5 seconds, the connection to the Decoder may have been lost. Trackside will display a message box if the connection is lost.

Importing Transponder Scans

Though Trackside reported the current positions on the screen, the results and lap times were not inserted into the database. The data during scoring is display only. In order to write the results to the database, you will need to open the Import Lap Times window by clicking TRANSPONDER, IMPORT LAP TIMES from the menu



From this screen, the user can:

- Import lap times for a race or practice.
- Print various reports.

During the importing of lap times, Trackside will:

- Verify the lap time is not shorter than the set minimum lap time.
- Check the transponder ids to make sure none are reported lost or stolen.
- Make sure every transponder id is matched to a racer in the selected race.

Importing Transponder Scans

Before opening the Import Lap Times window, you should set the Minimum Lap Time under the menu EDIT, PREFERENCES. This is the number of seconds that Trackside will use to eliminate laps that are shorter than possible. For a track where the fastest racer will take 2 minutes to make a lap, you will want to set the minimum seconds to 115. The number of seconds is displayed in the title bar.

You are now ready to import the file with the lap times. This is the file created in the transponder scoring window. The importing should take place on a different computer than the scoring computer, however, it will be connected to the database on the scoring computer.

To import a lap times file, you will select either RACE SCANS or PRACTICE SCANS. If you select PRACTICE SCANS, you will need to select a PRACTICE NBR also. If you select RACE SCANS, you will need to select the RACE number and the MOTO TYPE. The results will be placed in the MOTO you select. If the race is a Division race, Trackside will select "Division" for you.

After you have selected the type of lap times you are importing, click the mouse on the IMPORT FILE button and select the file you wish to import. The file you are importing may have multiple classes in it. Trackside will sort the racers during the import. If you are importing a race, Trackside will prompt you with a screen to enter the start time of the race. The default value will be the time the leader passed on the first lap. If you do not capture the start time, just subtract a set number of seconds from the time defaulted. This is not a problem since it is difficult to capture the start time of every moto and the first lap is usually not a complete lap.

If you are importing practice lap times, a racer who has gone past 5 times will only be considered to have 4 laps. The first time the racer passes is considered the start time for that racer.

After you have clicked the IMPORT FILE button, it will become disabled and you must close and re-open the window to import the next file.

Once the import is complete you have the option to print reports from this screen. If there are multiple classes in the race, you will have to select the class you want to view from the window in the upper right corner. The reports can be run from this screen simply by selecting the race or practice that has already been imported then select the desired report button.

The data is now loaded and stored in the Trackside database. Close this window by clicking on the CLOSE button.

Printing Reports

Several reports are available to you pertaining to the transponder scoring. Most important is the ability to print reports for finish order and lap times. The window below provides you with the ability to print reports for classes that have already had the lap times imported. To open this window, click the menu REPORTS, AMB LAP TIMING.

Class	M	1
125 A	M	1
125 B	M	1

Select the options on this screen to create the desired report. If multiple classes are in the same race, you will have to select the exact class you want to report on from the middle of the window.

Entering Transponder IDs in Trackside

Trackside relies on accurate data in order to score your races. Each racer must be assigned a transponder id in Trackside. No matter how many classes a racer is in, the racer will only need to be assigned the transponder id one time. The transponder id must be 8 characters long and you must enter the dash as part of the ID. Transponder ids are preloaded into your database and retrieved into the drop down window for easier data entry. You will enter the first few characters of the id then hit the ARROW DOWN on your key board to make Trackside attempt to find the id. If the id is in the list, you will see it appear, otherwise, Trackside will go to the first transponder in the list. In this case, you will need to enter the entire 8 character id.

Trackside allows you to assign transponder ids to racers in several different places.

SIGN UP TAB – Most commonly you will enter the transponder id at the time you are signing a racer into the event. This data is entered in the same manner you enter the racer's bike number or class. Once a racer has been entered using a transponder id, Trackside will remember the id for the next entry.

CLASS DETEAIL – On this tab, you will double click on the racer's name. A window will open allowing you to assign transponder ids for all racers in the class.

RACE ORDER – From this tab, you can double click on a class in a race box and a window will open allowing you to assign the transponder ids for any racer in that race.

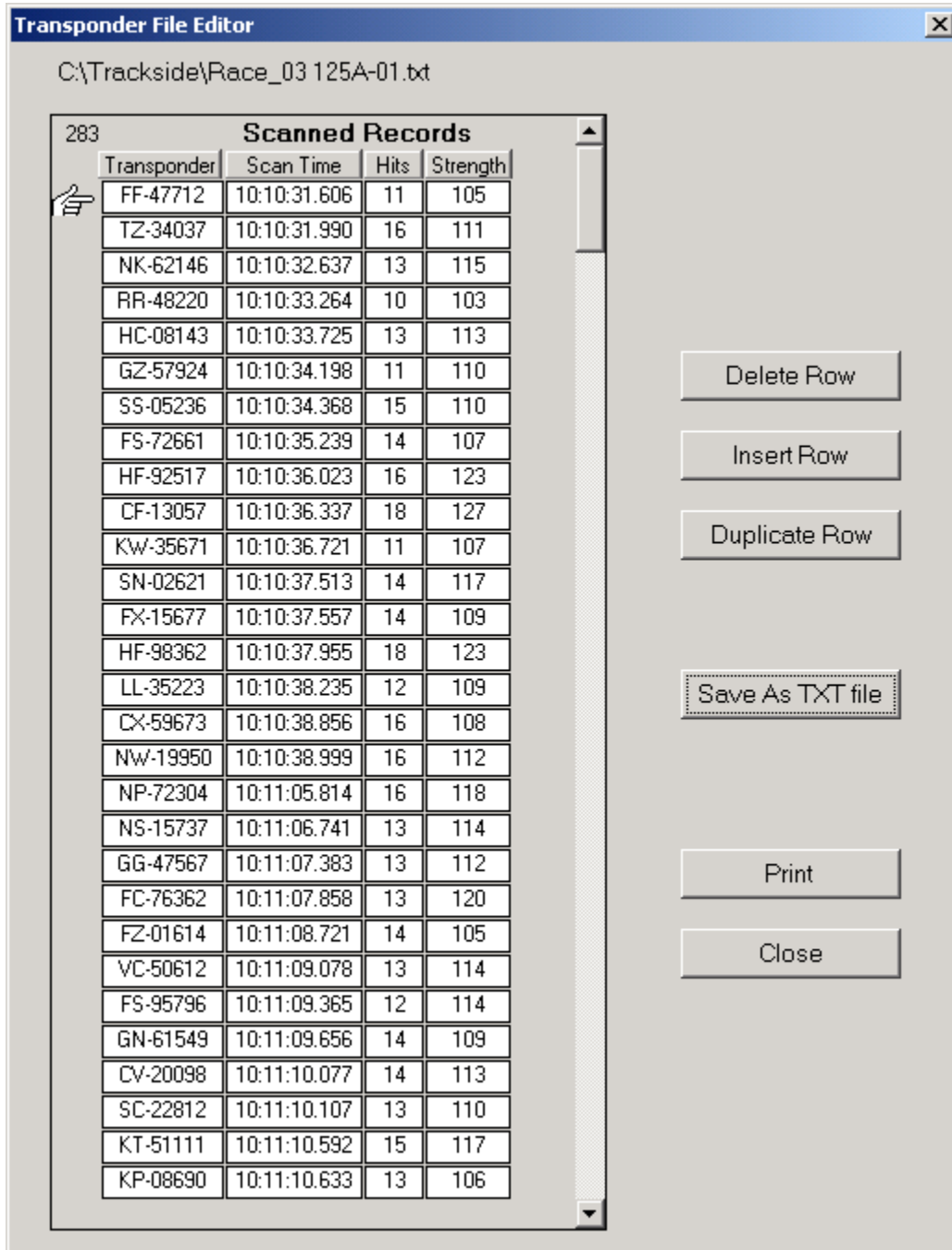
From the menu **TRANSPONDER, ASSIGNMENTS FOR ALL ENTRIES**, you can open a window that will allow you to assign transponder ids for all the racers in the event. Using this window, you can also print the list of racers and the transponder ids.

From the menu **REPORTS, TRANSPONDER NUMBERS**, transponder reports in various formats may also be printed.

The list of transponder ids loaded into the drop down windows can be maintained by clicking the menu **TRANSPONDER, LIST OF TRANSPONDERS MAINTENANCE**.

Editing the Lap Times File

After you have saved a race or practice session to a text file, you may need to edit that file. The file can be edited in Notepad or in Trackside. To edit the file in Trackside, click the menu TRANSPONDER, FILE EDITOR. The following window will open.



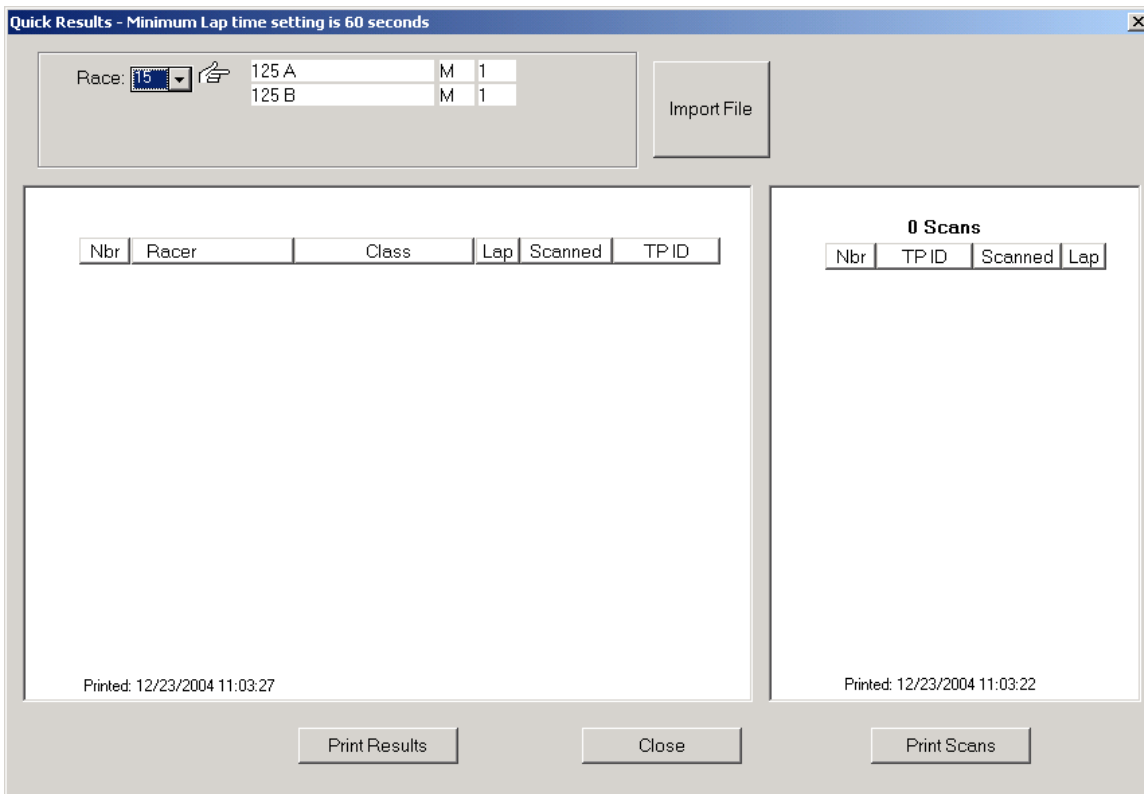
Quick Results

The purpose of Quick Results is to let you get scores for a race even if Trackside cannot match each transponder id to a racer. When Trackside imports lap time data, it must be able to match every transponder id to a racer in that race. Using the Quick Results window will allow you to determine results even if Trackside cannot match a racer to every transponder id.

When Trackside does not find a match, it will show the transponder id instead of the racer's name. This will allow you to get results for a race immediately. You can use the regular "import lap times" function when you have time to correct the data.

Using the Quick Results function will not update your database with results. The data is only displayed on the screen. When you close the screen, the data is gone and you will need to run the Quick Results function again.

To open the Quick Results window, click TRANSPONDER, QUICK RESULTS.



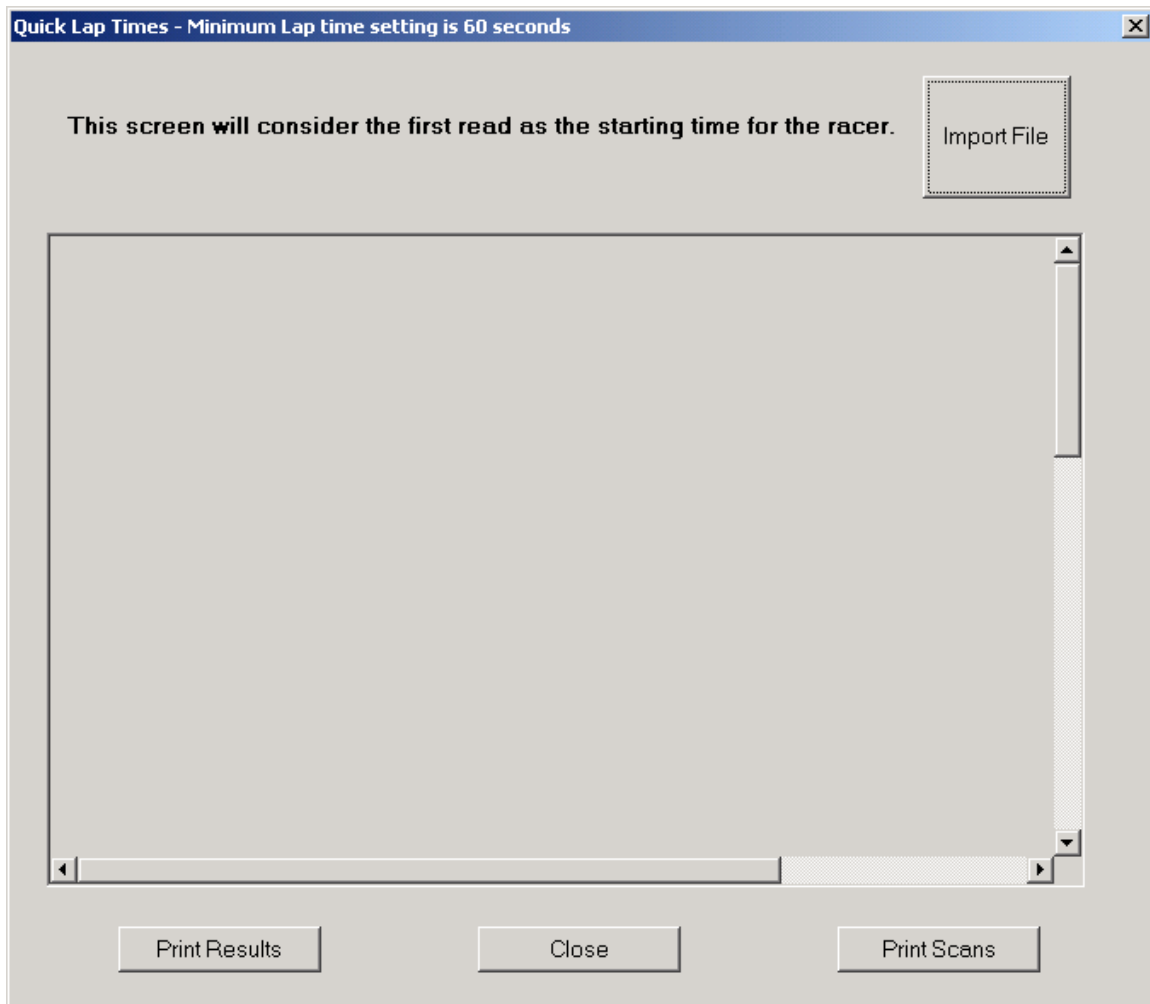
Quick Lap Times

Quick Lap Times works very similar to Quick Results. The purpose is to let you get lap times a practice session even if Trackside cannot match each transponder id to a racer.

When Trackside does not find a match, it will show the transponder id instead of the racer's name. This will allow you to get lap times from a practice session immediately.

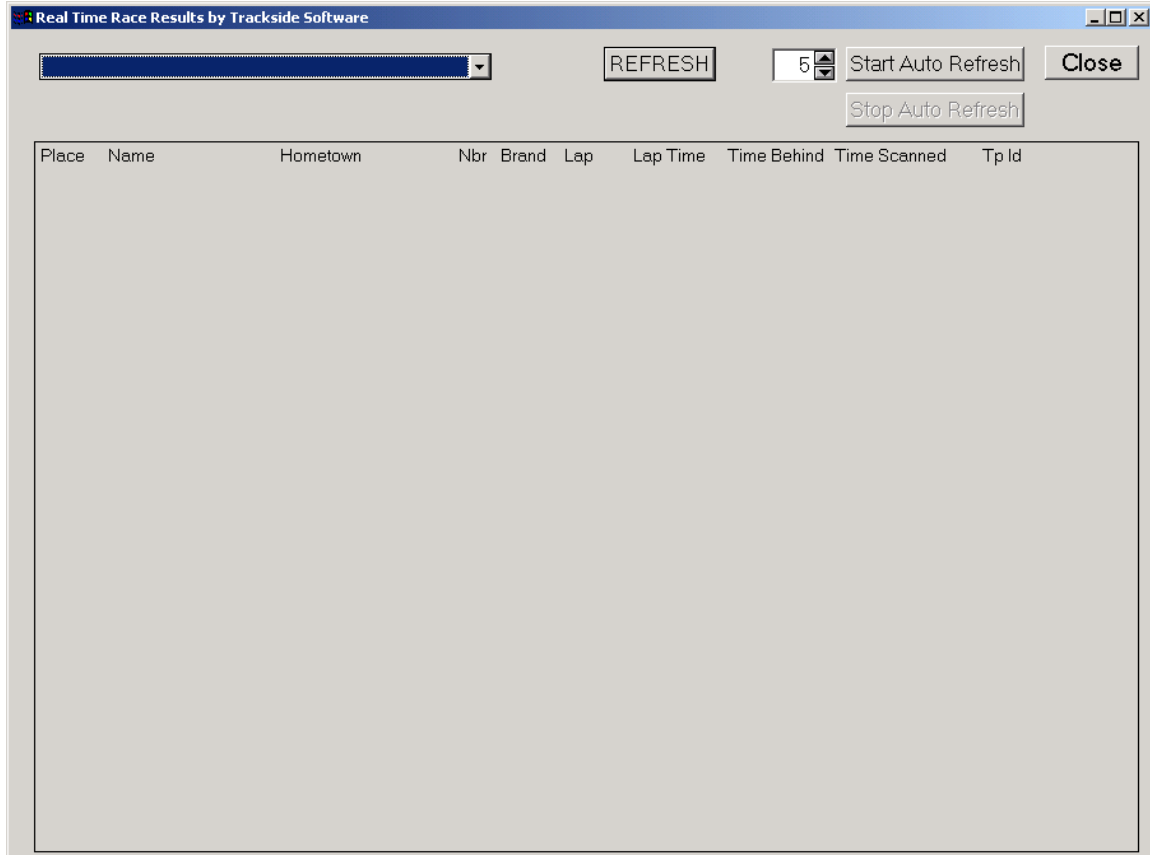
Using the Quick Lap Times function will not update your database with results. The data is only displayed on the screen. When you close the screen, the data is gone and you will need to run the Quick Lap Times function again.

To open the Quick Lap Times window, click TRANSPONDER, QUICK LAP TIMES.



Announcer Viewer Window

Trackside has a window created just for the announcer to view real time results during a race. In order for this to work, you must have checked the box “Send to Announcer Screen” on the transponder scoring window. Trackside will write the results to a temporary table in the database. The Announcer Viewer window will retrieve the data every X number of seconds. To open the Announcer view for either practice or racing, click TRANSPONDER, OPEN ANNOUNCER VIEWER.



You will not be able to select any class until some transponders have been detected. You may set the auto refresh on and the screen will select the first class in the list automatically and keep refreshing every set number of seconds.

From the transponder scoring window, if you click CLEAR SCANS, all the data for this screen will be cleared out.