

TR610 User's Manual

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Part



1 Introduction



PROMAG™

Last update: 28 March 2010

[Update history can be found here](#)

The TR610 is a versatile, yet easy-to-use Time Recorder. It utilizes RFID technology to allow for quick user registration -- users may not even have to take their employee card out of their wallet to scan it.

The TR610's bright LCD display and four buttons make for a user-friendly interface with a very low learning curve. While regular users quickly understand how to use the device, it also features a complete onscreen setup menu which allows an administrator to fully configure all settings (functioning parameters) using a "master card". The menu system is navigated using the four buttons on the device.

Ethernet connectivity make the TR610 easy to administer remotely. All device settings can be configured, the event log may be viewed, searched and downloaded.

Since the TR610 has a built-in web administration interface ("web admin"), it does not require any additional software to administer. Alternatively, for larger systems with multiple terminals, you could use [Tibbo AggreGate](#) software as an administrative back-end.

To keep time and date precise, the TR610 can automatically synchronize the internal clock with an Internet time server, while taking into account the pre-set timezone.

System integrators and developers may also be interested to know that the TR610 is internally based on Tibbo BASIC, its application is open-source and may be obtained freely and customized. Interested parties can even develop entirely new applications, from scratch.

Features

- Bright, clear LCD display
- Uses RFID (Proximity) technology - 125K (TR610R) and Mifare (TR610MF)
- 10/100 Base-T Ethernet port
- RS232 serial port for connecting external serial devices (such as a barcode scanner)
- Two relays to control external loads, such as an electric bell and a turnstile

- "White list" functionality for specifying which users trigger relays
- Internal flash memory stores approx. 17,500 event log records
- Wall-mount or desktop operation (display image orientation may be configured)
- Internal backup battery for the real-time clock*
- Firmware may be upgraded through the network or serial port
- Built-in web administration interface ("web admin")
- IP address configuration using DHCP
- Time/Date synchronization through SNTP (time-zone can be preset)
- Works with Tibbo AggreGate
- Internal application written in Tibbo BASIC and may be changed or customized

* Keeps time accurate for up to 7 days with no external power.

Part



2 Getting started

These topics cover the basics of what the TR610 is, and how to begin using it.

[Hardware Installation](#)^[9] - Shows you how to connect the TR610 and prepare it for use.

[Powering Up For the First Time](#)^[13] - Shows you what to expect when you turn the device on for the first time.

[Setting a New IP Address](#)^[15] - Goes over setting an IP address for the device.

[Time Synchronization](#)^[17] - Shows how to set up time synchronization with a time server.

[Working in the Normal Mode](#)^[19] - Provides an overview of normal use of the device. You can let your users read this topic if they have any questions about operating the terminal.

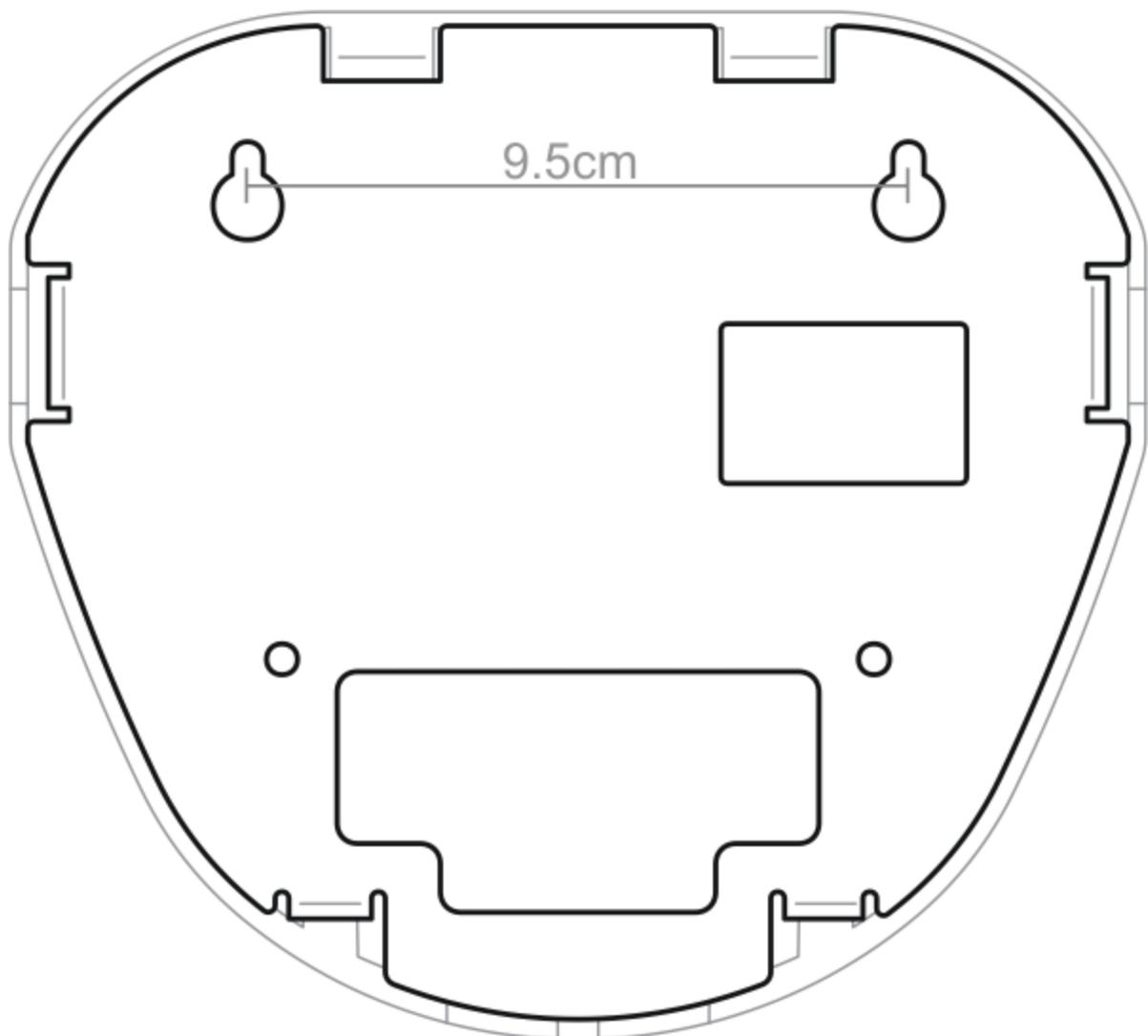
2.1 Hardware Installation

The TR610 can be mounted on a wall or placed on a desk. To install the terminal:

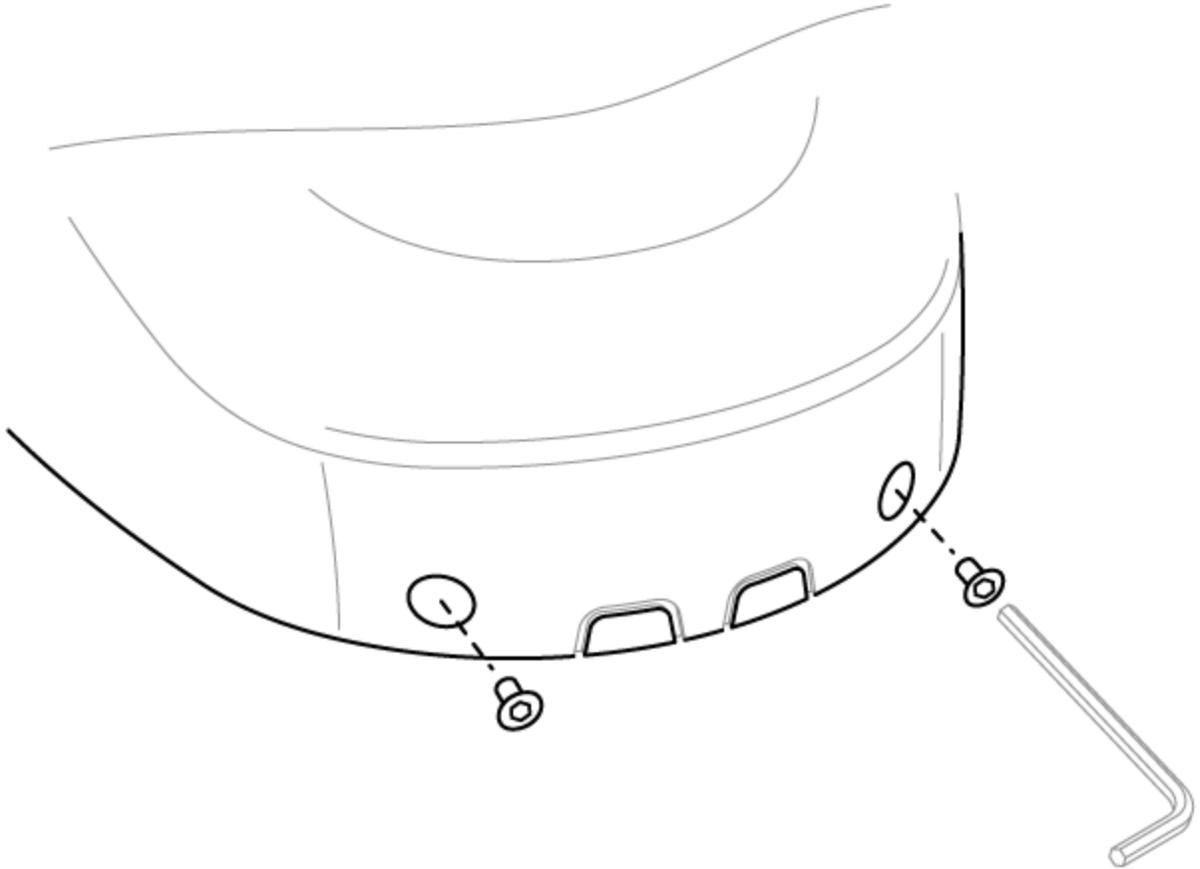
1. Open the box the terminal came in, and take it out of the box. The kit should include the following:

- TR610 Terminal
- 12V Power Adaptor
- Two mounting screws
- Two screw anchors (for drilling into the wall)
- One Allen-type (hexagonal) screwdriver
- CD with manual and software

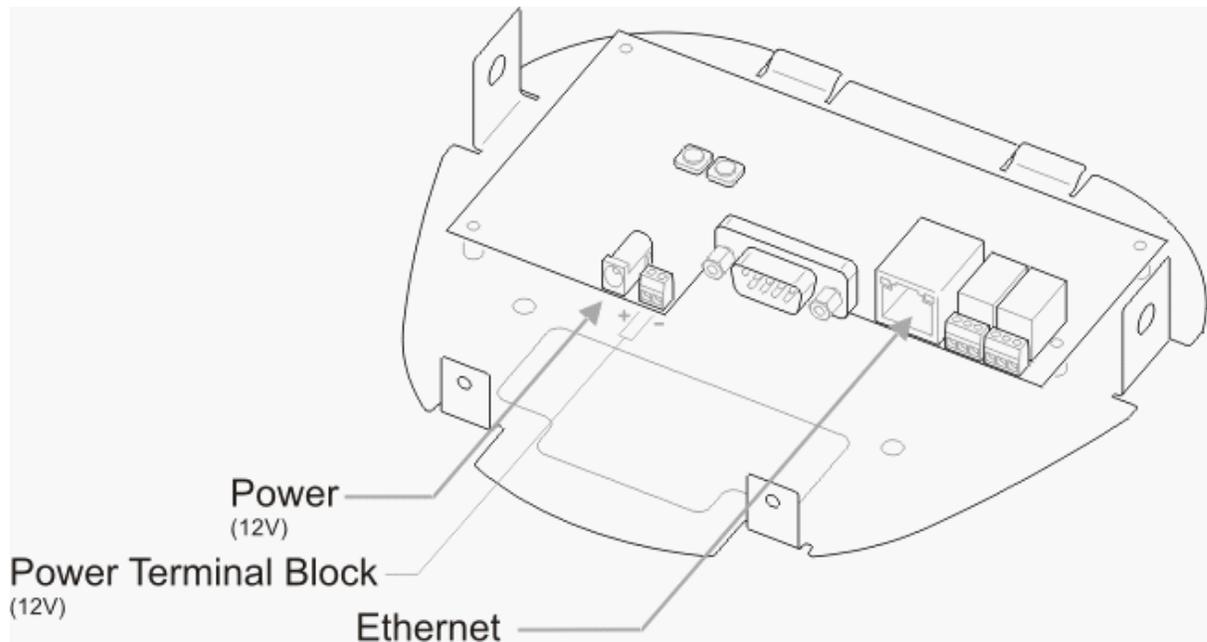
2. **If mounting on a wall:** Drive the two provided mounting screws into the wall, 9.5cm apart, using the provided screw anchors as needed. These should fit the terminal's mounting holes:



3. Use the included screwdriver to remove the two screws in the front of the cover:



4. Carefully flip the top cover up, by holding the metal base of the terminal and pulling up the edge from which you removed the screws. **Note! The top does not come off.** It is connected via a ribbon cable - it only flips up.
5. With the terminal open, locate the Ethernet and power connectors:



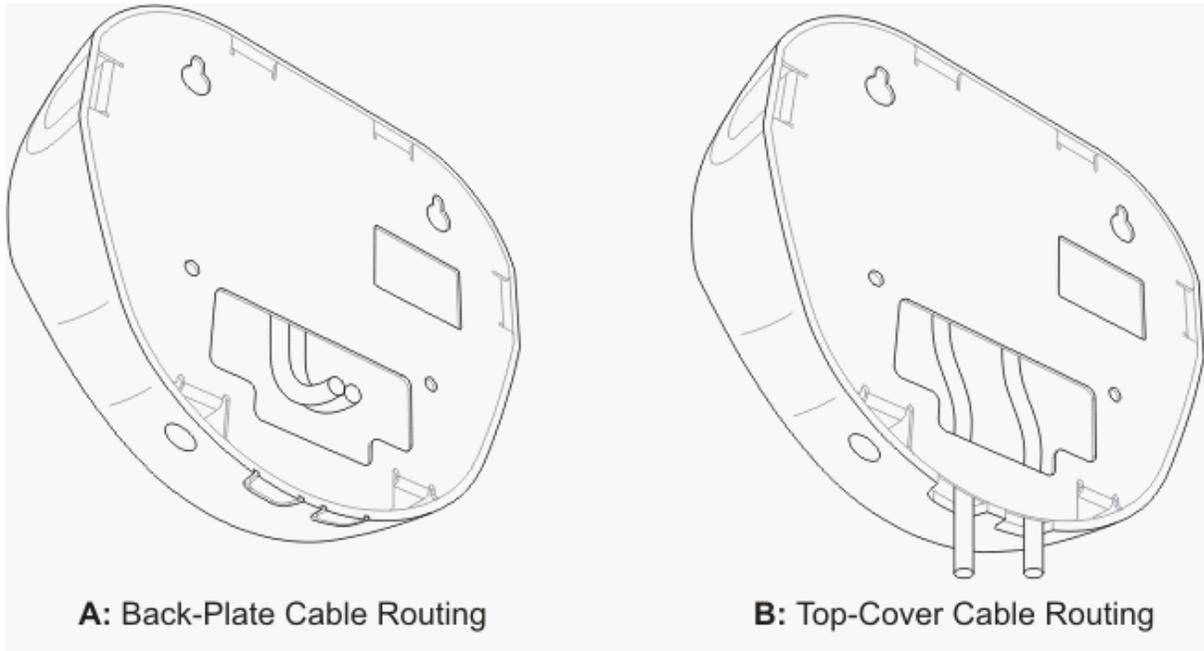
To power the TR610, plug the provided 12V adaptor into the power jack. Alternatively, wire a power cable into the terminal block located next to the power jack.



For a complete overview of the different parts in the diagram, see [I/O Connector Pin Assignment & Cable Wiring](#) ^[64] in the Reference section.

6. Now route the cables into the terminal and connect them (Ethernet and power).

If mounting on a wall: There are two possible ways to route cables into the terminal:



Method **A** (routing via the back-plate) may be used when you don't want any cables to be visible around the device. Using this method, the cable comes from within the wall. The cables are routed through the opening in the back plate (shown above).

Method **B** may be used when cables are routed on the surface of the wall, or using wiring ducts. To route the cables through the top cover, the two plastic flaps covering the cable holes should be snapped off (see drawing **B** above - these are the holes through which the cables go).

If mounting on a desk: Usually method **B** should be used (unless you wish to route the cables through the actual surface of the desk by making a hole).

7. Once the cables are routed properly into the terminal and connected, close the top cover and re-insert the screws.

2.2 Powering Up for The First Time

When you connect the TR610 to a power source for the first time, the following sequence of screens will be shown:

Logo Screen

The first screen displays the GIGA-TMS logo and the current version of the internal firmware. This screen is shown every time the device boots.



Information Screen



This screen provides an overview of basic device settings, as follows:

ON: Owner Name. See [General Settings](#) [25].

DN: Device Name. See [General Settings](#) [25].

DHCP: Status of IP address configuration through Dynamic Host Configuration Protocol (OFF, OK or FAIL). See [Network Settings](#) [26].

IP: The current IP address of the terminal. See [Web-based Setup and Administration](#) [22] and [Network Settings](#) [26].

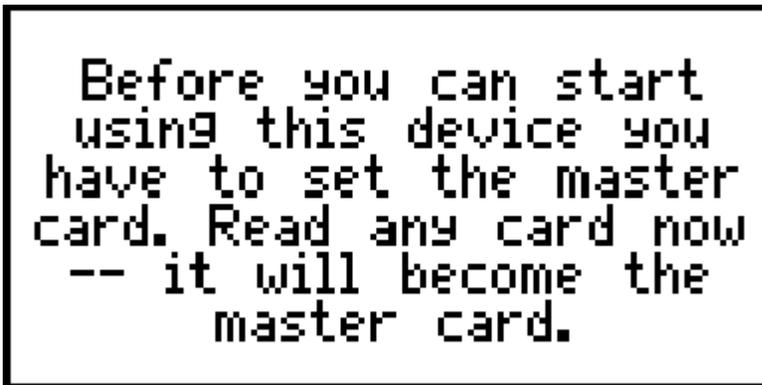
MAC: Media Access Control address. This is a unique address every Ethernet device has. Unlike other device settings, it may not be changed using the onscreen setup or web admin. It should be treated as read-only. You can learn more about MAC addresses on [Wikipedia](#).

This screen is shown every time the device boots.

Master Card Enrollment Screen

To administer the TR610, you need to designate one RFID card as the **master card**. This card would then be used to access the TR610's onscreen Setup menu. Don't use your own employee card -- then you won't be able to use it to clock in/out.

If this is the first time the device is powered up (or if it has just been [initialized](#)⁵³), the master card enrollment screen is shown:



```
Before you can start
using this device you
have to set the master
card. Read any card now
-- it will become the
master card.
```

You should now scan the RFID card which you designated as the master card.

Master Card Confirmation Screen

Once you scan the master card, you will hear a beep, and the following screen will be shown:



```
Master card has been
set. Store it securely
for future access to
device setup.
Press any key to
continue.
```

You can now use this card to access the terminal's internal [setup menus](#)³⁷. Keep it in a safe place!

If you do lose the card, you would have to [initialize](#)⁵³ the terminal.

Now hit any of the terminal's four buttons, and you will soon see the [Normal Mode](#)¹⁹ screen.

The next thing to do is to set the terminal's [IP address](#)¹⁵.

2.3 Configuring IP, Gateway & Netmask

The terminal is now on, but can you reach it to download records and configure it from a web browser?

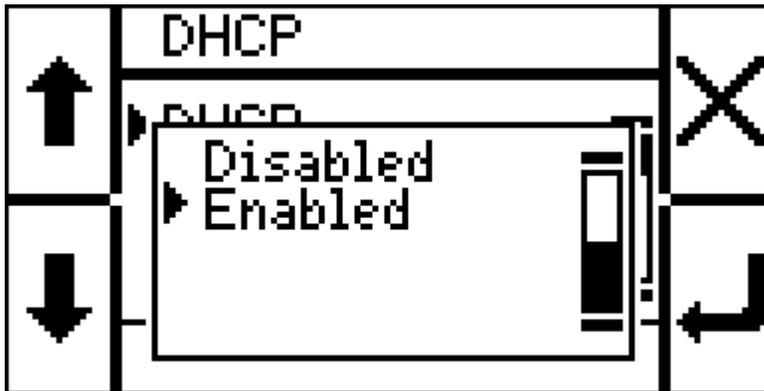
For you to be able to do so, a correct IP address must be configured, along with all other network settings. There are two ways to configure these settings:

Automatic Configuration Using DHCP

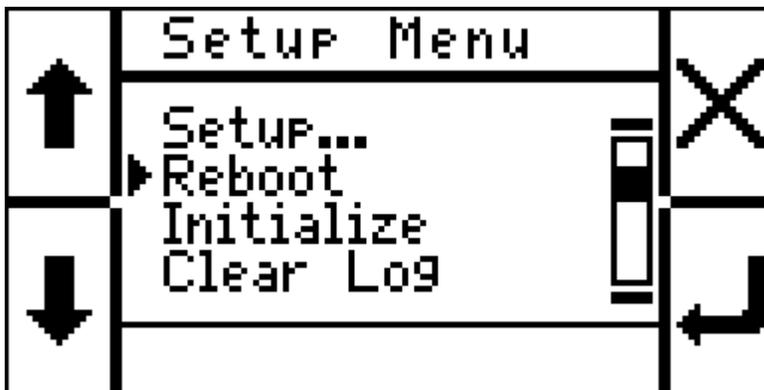
By default, DHCP (Dynamic Host Configuration Protocol, see more [here](#)^[26]) is enabled. When you power up the device, watch the information screen closely: DHCP should say **ENABLED** and then the IP address of the device will be displayed.

In case DHCP is disabled perform the following operations to enable it:

1. Scan the master card to go into the onscreen setup. For a description of the controls in the onscreen setup, see [Onscreen Setup and Administration](#)^[37].
2. Go to **Setup > Network > DHCP** and select **Enabled**:



3. Go back in the menu system and select **Reboot** in the main menu:



The device will now reboot. Watch the information screen closely: DHCP should say **ENABLED** and then the IP address of the device will be displayed.

Manual Configuration

Sometimes, DHCP does not work or is not configured. In such a case, the settings need to be manually configured:

1. You will need to know the **netmask** and **gateway IP** used in your network, as well as what IP address to assign the terminal. If you do not know these settings, find out first from your system administrator, and then continue with the steps below. Make sure you have these to hand.
2. Scan the master card to go into the onscreen setup.
3. Go to **Setup > Network > DHCP** and select **Disabled**.
4. Go back to the Network menu, and go to IP Address.
5. Using the left-side buttons on the device, enter the desired IP address. The system of entering strings and numbers using the buttons is described [here](#).
6. Go back to the Network menu, and go to Gateway IP. Enter the gateway IP using the same method.
7. Finally, enter the Netmask using the same method.
8. Go back in the menu system and select **Reboot** in the main menu. The device should now reboot and show a screen similar to this:

```
ON:      admin
DN:      TR610
DHCP:    OFF
IP:      192.168.0.15
MAC:     0.127.0.0.43.88

Push any button to
continue...
```

As you can see, DHCP is off, and the IP address you set for the device should appear.

Testing the IP Address

To see if the TR610 is indeed configured and connected to the network, open a web browser (Firefox, Internet Explorer, etc) and enter the terminal's IP address in the navigation bar. You should get the [Web-based Setup](#) screen.

The next thing to do would be configuring [automatic time synchronization](#) (or just setting the correct time, if synchronization is not needed).

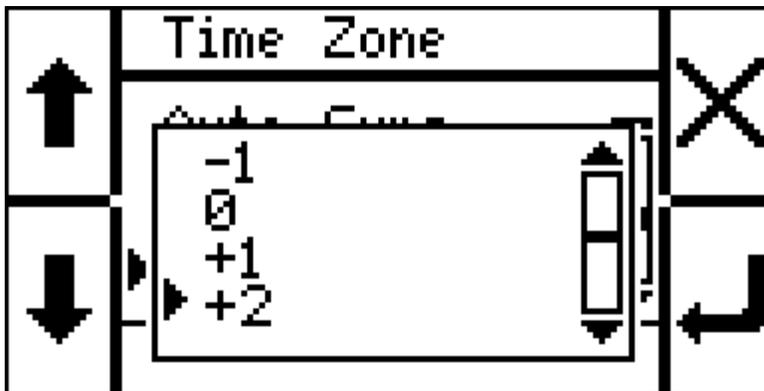
2.4 Time Synchronization

The TR610 features time synchronization using SNTP (Simple Network Time Protocol, see [Google Knowl article on the subject](#) for more information).

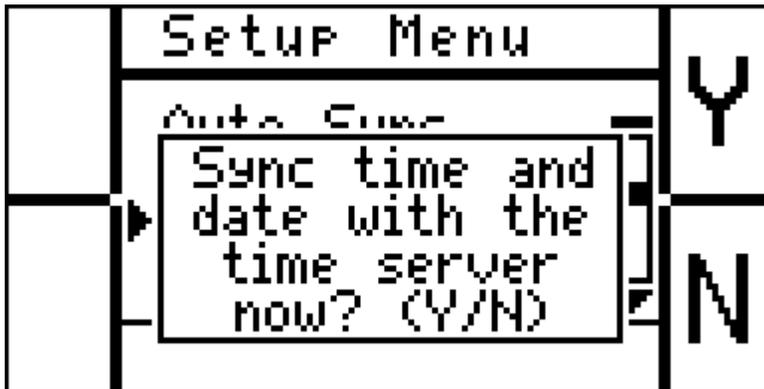
Configuring Time Synchronization

These instructions apply to the onscreen setup, based on the assumption that they will be done immediately after [setting a new IP address](#)^[15]. They can also be done using the [web administration](#)^[22] interface.

1. Scan your master card to go into the onscreen setup, if you are not yet there.
2. Go to **Setup > Date/Time > Time Server**. By default, the SNTP server used is 192.43.244.18, which is the IP address for time.nist.gov. Ordinarily, there should be no reason to change the default value. Make sure this is the correct value, or enter another one if you wish to switch to another SNTP server.
3. Go to **Setup > Date/Time > Time Zone** and select your current time zone (relative to UTC/GMT -- you can look for your time zone in the [Time Zones](#)^[66] section of this manual):



4. Now test it: Go to **Setup Date/Time > Sync Now**. You will get the following prompt:



5. Select Y (yes) and watch the screen. If all goes well, time sync should work now. If it fails for some reason, re-check your network settings and Time Server address.

Configuring Auto-sync

Auto-sync allows the TR610 to connect to the timeserver once a day, and re-set its internal clock so

that the time is always accurate.



If your TR610 connects to AggreGate LinkServer, LinkServer software will automatically set its internal clock. In this mode, time synchronization with an SNTP server is not available.

1. Go to **Setup > Date/Time > Auto Sync > Enable/Disable**.
2. Select **Enable**.
3. Go to **Setup > Date/Time > Auto Sync > Sync Time**. (For help in entering the time, see [Text Entry](#) )
4. Enter the time of day in which you wish the terminal to connect to the time server.
5. That's it. When the time comes, the terminal would connect to the time server (configured above) and get the correct time.



Note that DST (Daylight Savings Time) is not accounted for. Thus, when the clock shifts to/from DST, you would have to re-configure the **Time Zone** setting to keep the terminal showing the correct time.

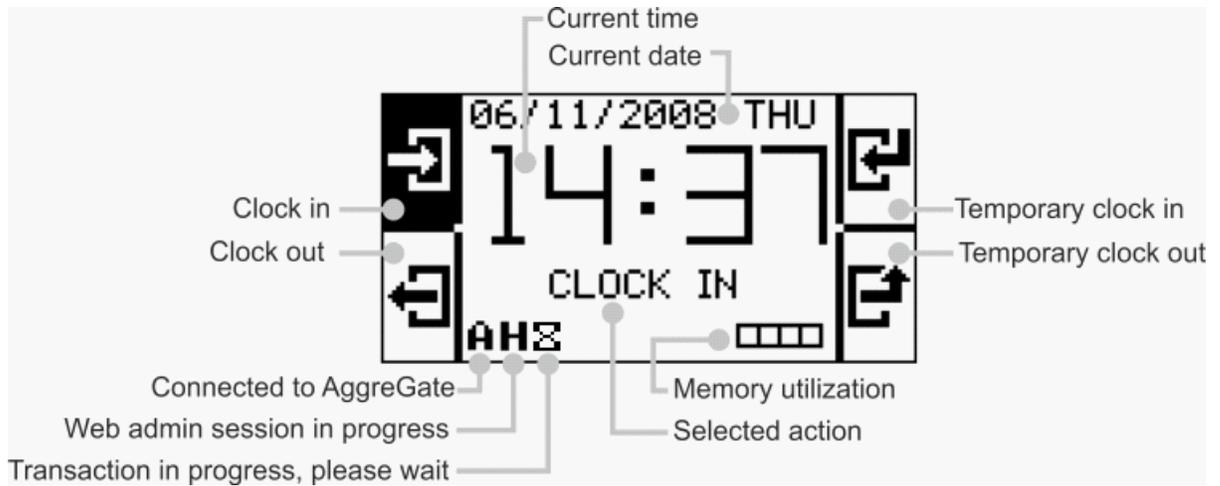
Manually Setting The Date And Time

Sometimes, time synchronization may not be needed (or possible). In those cases, you can configure the current date and time manually:

1. Go to **Setup > Date/Time > Set Date**.
2. Set the current date. The system for entering numbers and strings using the onscreen setup is described [here](#) .
3. Go to **Setup > Date/Time > Set Time**.
4. Set the current time, in 24-hour format ("military time").

2.5 Working in the Normal Mode

These are the parts of the interface in normal mode:



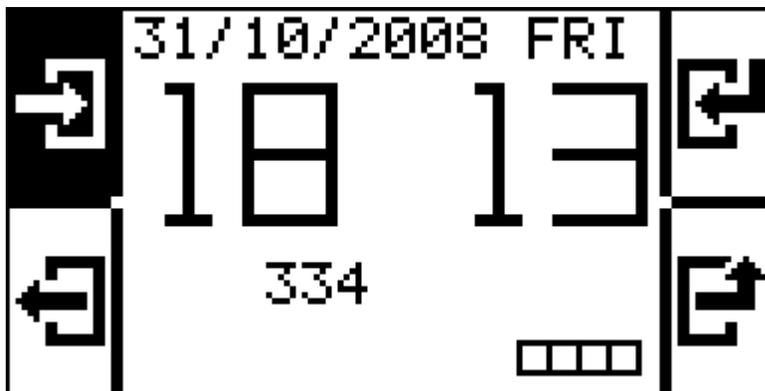
Web admin and **AggreGate** sessions are mutually exclusive -- you will never see both an "A" and an "H" at the same time.

Memory utilization expresses the amount of free memory on the device using a series of squares (each square represents 25% of available device memory for records). When a square becomes black, it means this amount of memory is occupied. So two black squares and two white squares, for example, mean that 50% of the memory space for records is occupied.

Each button activates a corresponding icon on the screen.

Ordinary use consists of two steps:

1. Hit the correct button (if it's not already selected). The button's associated action will be displayed at the center of the screen.
2. Scan your card. The terminal will beep and display the card number or username (if the user is in the [white list](#)^[31]):



A new record would be added to the event log.

This would happen for all cards, except for the **master card** you designated before. Scanning this card would take you to the onscreen [setup menu](#)^[37].

Part



3 Administration

These topics are meant for system administrators, and explain the various ways in which the TR610 may be configured, including the meaning of all device settings.

[Web-based Setup and Administration](#)^[22] - Explains the web setup system and all device settings.

[Onscreen Setup and Administration](#)^[37] - Explains the onscreen setup system, including how to navigate the menu and enter text and numbers using the four buttons of the device.

[AggreGate Integration](#)^[40] - Explains how to connect the TR610 to AggreGate LinkServer.

[Programming Priorities](#)^[48] - Shows what happens when a programming session is started when another session is already in progress.

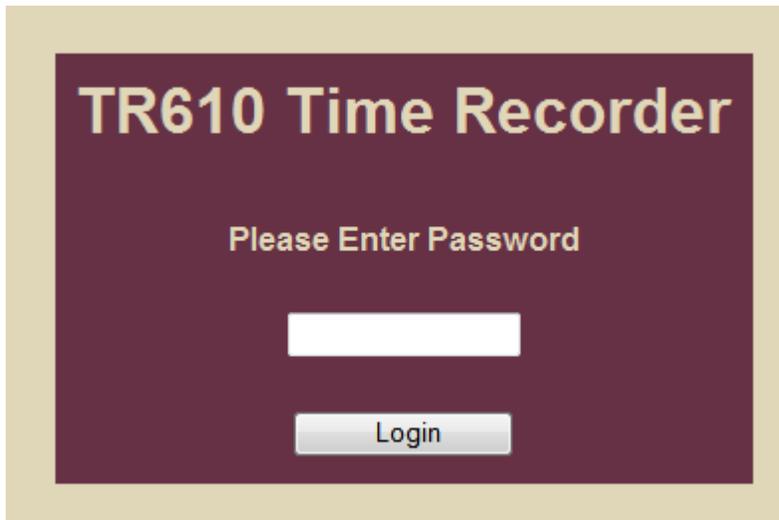
3.1 Web-based Setup and Administration

To access the web-based menu system, run a web browser (Internet Explorer or Mozilla Firefox), and enter the terminal's IP in the Address Bar .



To find the terminal's IP address, look at the terminal itself as it boots (you may need to disconnect and reconnect the power right when you're by the terminal) and note the IP address listed in the [startup information screen](#)¹³.

Once you've accessed the terminal's IP address, you should get the following screen:



By default, there is no password. Just click **Login**. You can configure a password once you've logged in.

Once you log in, you'll see the administration interface:

Giga-TMS TR610

General Settings

Setting name	Setting value
Owner name (AggreGate User Account)	admin
Device name (AggreGate Device Account)	Test_1024k
Password	
Mounting method	Desktop
White list	Disabled

Save Reload

• Owner Name: admin
 • Device Name: Test_1024k
 • DHCP Status: OK
 • IP: 192.168.1.78
 • MAC: 0.24.77.80.30.167

At first, the main menu (on the left side, shown fully expanded above) is collapsed to its main categories. Clicking each category reveals the following options:

- [Settings](#)^[24] define device operational parameters.
 - [General](#)^[25]: Set owner/device name, password and display mode.
 - [Network](#)^[26]: Configure IP address and other network parameters.
 - [AggreGate](#)^[27]: Configure parameters for accessing [AggreGate](#)^[40] LinkServer.
 - [Date/Time](#)^[28]: Configure current date/time and auto-synchronization with a time server.
- [EventLog](#)^[29] is the ongoing record of users punching in and out using the TR610.
 - [Search:](#)^[29] Find specific records and reviewing the log on the device.
 - [Download:](#)^[30] Get a file with the log contents (in comma-separated format) for an external payroll system.
 - [Clear:](#)^[31] Delete event log contents.
- [White list:](#)^[31] Controls which users can trigger the device's relay and thus open a door.
 - [Search:](#)^[32] Find a specific user on the white list by user name or card ID.
 - [Add users](#)^[32]: Add a new user to the white list.
 - [Download:](#)^[33] Download a file containing the current white list.

- [Upload](#)^[33]: Upload a file for adding users to the white list in bulk.
- [Clear](#)^[34]: Delete the contents of the white list.
- [Device Operations](#)^[34]
- [Reboot](#)^[34]: Restart the terminal so that changes in settings can take effect.
- [Initialize settings](#)^[35]: Reset the terminal to its default configuration.
- [Format disk](#)^[35]: Erase all stored data (white list and event log) without affecting settings.
- [Log out](#)^[35]: For ending the web-based setup session.
- [Device status](#)^[35] section: Shows current IP address and network information. This is the same information as appears in the Information Screen on [device startup](#)^[13].

Onscreen Information

When a web admin session is in progress, a small **H** (for HTTP) is displayed at the lower-left corner of the TR610 screen:



The onscreen setup cannot be used when the web admin is in the middle of a transaction. In that case, a small "hourglass" icon appears next to the H and the onscreen setup appears frozen (doesn't respond to user input). As soon as the transaction ends, the hourglass disappears and you can keep using the terminal normally.



The web admin will not always be available. When the [onscreen setup](#)^[37] is used and the user is modifying a setting (i.e, editing a listbox or a textbox), the web admin will not reply to incoming requests; it will time out, and the TR610 would appear to be unavailable. Once the user finishes editing the setting, the web admin would become available again. It would then show an alert saying that another user is currently logged in from a client with higher priority. Then, when the user exits the onscreen setup completely, the web admin would become fully available.

3.1.1 Settings

Settings define device operational parameters.

- [General](#)^[38]: Set owner/device name, password and display style.
- [Network](#)^[38]: Configure IP address and other network parameters.

- [AggreGate](#)^[27]: Configure parameters for accessing [AggreGate](#)^[40] LinkServer.
- [Date/Time](#)^[28]: Configure current date/time and auto-synchronization with a time server.

3.1.1.1 General

General Settings	
Setting name	Setting value
Owner name (AggreGate User Account)	<input type="text" value="admin"/>
Device name (AggreGate Device Account)	<input type="text" value="Clock01"/>
Password	<input type="text"/>
Mounting method	<input type="text" value="Desktop"/>
White list	<input type="text" value="Disabled"/>
<input type="button" value="Save"/> <input type="button" value="Reload"/>	

This menu lets you configure the following:

Owner name (AggreGate user account): A meaningful name for the TR610's administrator. Also used in [AggreGate](#)^[40].

Device name (AggreGate device account): A meaningful name selected for this specific TR610. Also used in AggreGate.

Password: The password used for logging into the web admin and [AggreGate](#)^[40]. Note that the password is not hidden either in the web admin nor in the [onscreen setup](#)^[37].

Mounting method: This is the orientation of the device (Desktop or Wall). It controls the orientation of text on the display.

White list: Enable or disable the [white list](#)^[31] functionality.

Once you have changed the settings as required, click **Save**. You may have to [reboot](#)^[34] the device for all settings to apply.

3.1.1.2 Network

Network Settings	
Setting name	Setting value
DHCP	Enabled ▾
IP address	192.168.0.6
Gateway IP	192.168.0.1
Netmask	255.255.255.0
<input type="button" value="Save"/> <input type="button" value="Reload"/>	

This menu lets you configure the following:

DHCP: Dynamic Host Configuration Protocol (DHCP) is used to obtain an IP address automatically within the network. With DHCP enabled and a suitable network setup, you would not have to manually set an IP address, Gateway IP or a netmask.



Just because the DHCP setting is **Enabled** does not mean it will necessarily work. If DHCP is enabled but fails for some reason (e.g, is not configured on the local subnet), the TR610 will keep trying to acquire an IP address using DHCP every few minutes.

IP address: This is the IP address for the TR610. It needs to be manually assigned only if DHCP is disabled. With DHCP enabled, this field displays the currently assigned address.

Gateway IP: This is the IP address for the gateway connecting the terminal's subnet with a larger network (usually the Internet). It is used for accessing time servers for [automatic time synchronization](#) [17], and also for accessing the [AggreGate](#) [40] server, in case it is outside the current local subnet.

Netmask: This is the netmask for the network on which the terminal is installed.

Once you have changed the settings as required, click **Save**. You may have to [reboot](#) [34] the device for all settings to apply.

3.1.1.3 AggreGate

AggreGate Settings	
Setting name	Setting value
AggreGate connection	Enabled ▾
Connection timeout (minutes, 0 to disable)	10
Server IP	192.168.0.7
Server port	6480
<input type="button" value="Save"/> <input type="button" value="Reload"/>	

These settings need to be configured only when working with an [AggreGate](#)⁴⁰⁾ server.

AggreGate connection: When this setting is enabled, the TR610 will attempt to connect to the AggreGate server upon booting and maintain the connection alive at all times. If you use AggreGate, this setting should be enabled.

Connection timeout (minutes, 0 to disable): If there is no data traffic between the TR610 and AggreGate for the duration configured here, the connection "times out". This means TR610 ends it, and tries to reconnect to AggreGate again. It will keep trying to reconnect until a new connection is established. This value should be higher than AggreGate's "Synchronize period" setting for the device, so that AggreGate will poll the device often enough for the connection not to time out.

Server IP: This is the IP address of an AggreGate server.

Server Port: This is the port on the AggreGate server at which the TR610 will attempt to log in, assuming a server is configured.

Once you have changed the settings as required, click **Save**. You may have to [reboot](#)³⁴⁾ the device for all settings to apply.

3.1.1.4 Date/Time

Date/Time Settings	
Setting name	Setting value
Time server IP	192.43.244.18
Auto synchronization	Disabled <input type="button" value="v"/>
Auto synchronization time (hh:mm)	00:00
Time zone	+8 <input type="button" value="v"/>
Date (dd/mm/yyyy)	24/03/2010
Time (hh:mm)	10:48
<input type="button" value="Save"/> <input type="button" value="Reload"/> <input type="button" value="Synchronize"/>	

This menu lets you configure the following:

Time server IP: This is the IP address of an SNTP (Simple Network Time Protocol) server, used for synchronizing the time automatically. The value of this setting is preset and should normally work without requiring change. You can read more about this under [Time Synchronization](#)^[17].



If your TR610 connects to [AggreGate](#)^[40] LinkServer, LinkServer will automatically set its internal clock. In this mode, Time Synchronization with an SNTP server is not available.

Auto synchronization: This option enables or disables automatic daily synchronization with the SNTP server.

Auto synchronization time: This option sets the time of day in which automatic synchronization will take place, if enabled.

Time zone: When using time synchronization, the terminal gets the time in GMT (UTC). For the time to be correct, the time zone for your geographic location must be set. You may use the list of [Time Zones](#)^[66] (in the [Reference](#)^[52] section) for this setting.

Date (dd/mm/yyyy): Enter the current date here, if you're not using the [Auto Sync](#)^[17] or [AggreGate](#)^[40] features.

Time (hh:mm): If you're not using the [Auto Sync](#)^[17] or [AggreGate](#)^[40] features, enter the current time here, in 24-hour ("military time") format. So 4:00 pm would be 16:00.

Synchronize (button): Initiates SNTP synchronization using the settings above.

Once you have changed the settings as needed, click **Save**. These settings apply immediately and do not require a reboot.

3.1.2 Event Log

[Event Log](#) is the ongoing record of users punching in and out using the TR610.

- [Search](#): Find specific records and review the log on the device.
- [Download](#): Get a file with the log contents for an external payroll system.
- [Clear](#): Delete event log contents. The **Event Log** page lets you browse and filter the events accumulated by the terminal.

3.1.2.1 Search

Find Record

The **Find Record** section lets you search the internal event log by date, event, and user ID. By default, it is empty, so everything is shown.

Find Record	
Field name	Field value
ID	<input type="text"/>
Event	All <input type="button" value="v"/>
Date (After)	<input type="text"/> <input type="button" value="Select Date"/>
Time (After)	-- <input type="button" value="v"/> : -- <input type="button" value="v"/>
Date (Before)	<input type="text"/> <input type="button" value="Select Date"/>
Time (Before)	-- <input type="button" value="v"/> : -- <input type="button" value="v"/>
<input type="button" value="Search"/> <input type="button" value="Reset criteria"/>	

ID: Used for searching events coming from a specific user. Wildcards are not supported - the user ID (last 8 digits of card number) has to be specified in full.

Event: Used for limiting the filter to a specific event type (In, Out, Temp In and Temp Out).

Date (After) and **Time (After):** Used for finding events which have been recorded after a certain date/time. You can fill in only part of the data (for example, put in the date but not the time).

Date (Before) and **Time (Before):** This is used for finding events which were recorded before a certain date or time. Again, you don't need to fill out every field.

Search (button): Searches the log according to the criteria specified above. If no criteria are specified, displays the complete log.

Reset Criteria (button): Clears all criteria fields.

Event Log

The lower part of the Event Log screen displays event log records (either a complete listing, or a search result, as determined by the Filter above). The most recent entries are presented first.

Event Log			
ID	Event	Date	Time
12371237	CLOCK IN	26/02/2010	08:44:59
12371237	CLOCK OUT	26/02/2010	17:05:57
12371237	CLOCK IN	27/02/2010	8:47:17
12371237	CLOCK OUT	27/02/2010	18:07:19
12371237	CLOCK IN	01/03/2010	09:05:52
12371237	CLOCK OUT	01/03/2010	18:00:50
12371237	CLOCK IN	02/03/2010	08:30:48
12371237	CLOCK OUT	02/03/2010	17:37:54
12371237	CLOCK IN	03/03/2010	9:44:45
12371237	CLOCK OUT	03/03/2010	18:30:15

[Top](#)
[Previous](#)
[Next](#)
[Bottom](#)

Table Columns:

ID: The user ID (8 digits).

Event: Can be CLOCK IN, CLOCK OUT, TEMP IN (Temporary Clock In) or TEMP OUT (Temporary Clock Out).

Date: The date in which each event occurred, in dd/mm/yyyy format.

Time: The time in which each event occurred, in hh:mm:ss (24-hour) format.

Buttons:

Top: Go to the beginning (most recent) page of the log or search results.

Previous: Go to the previous page (containing newer entries) of the log or search results. This button is shown only when there is more than one page to display.

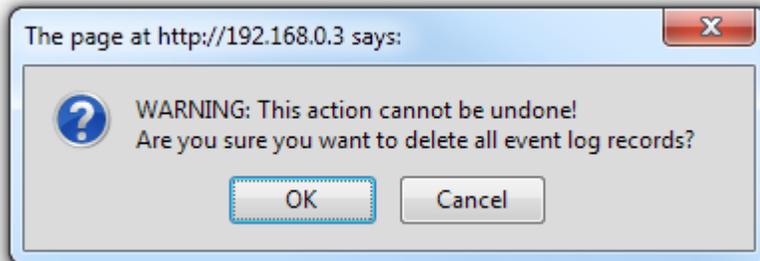
Next: Go to the next page (containing older entries) of the log or search results. This button is shown only when there is more than one page to display.

Bottom: Go to the end (oldest page) of the log or search results.

3.1.2.2 Download

This option downloads the complete event log. Log file format is described [here](#)^[63]. Note that the log is not cleared once you download it - it remains on the TR610 as a backup, and new entries are appended to it. Clearing the log is done [manually](#)^[31], to prevent accidental data loss.

3.1.2.3 Clear

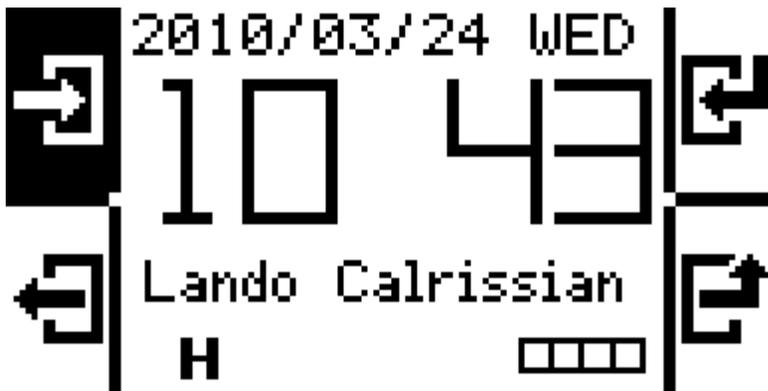


Deletes all entries from the event log. This operation cannot be undone.

3.1.3 White list

The white list is a feature which lets integrate physical access control functionality into TR610. The TR610 features [two relays](#)^[64] which can be connected to electromagnetic locks, turnstiles or other physical access-control devices.

When a user who is in the white list swipes their card, the relay changes states (closes or opens, depends on how you connected it). This can make the electromagnetic lock open, and then your user could go through. It does not matter whether the user is punching in or out -- any swipe of the card would activate the relay. Also, the user's name would appear on-screen at that moment:



Note that not *all* TR610 users get this functionality by default; only those users whom you manually add to the white list.

Available menu options:

- [Search:](#)^[32] Find a specific user on the white list by user ID or card.
- [Add Users](#)^[32]: Add a new user to the white list.
- [Download:](#)^[33] Download a file containing the current white list.
- [Upload:](#)^[33] Upload a file for adding users to the white list in bulk. Note that a file upload overwrites any existing white list entries.

- [Clear](#):  Delete the contents of the white list.

3.1.3.1 Search

You can search either by card ID (8 digits) or by name. Note that the name must be exact -- partial matches and wildcards are not supported.

Find White List User	
Field name	Field value
ID	<input type="text"/>
Name	<input type="text"/>
<input type="button" value="Submit"/>	<input type="button" value="Clear"/>

The table at the bottom of the page lets you browse the list, download it, and upload new users:

User Table		
<input type="checkbox"/>	ID	Name
<input type="checkbox"/>	43214321	Mira Jones
<input type="checkbox"/>	12341234	Joe Jones
<input type="button" value="Delete selected"/>		<input type="button" value="Top"/> <input type="button" value="Bottom"/>

Delete Selected: Delete any selected entries.

Top: Go to the beginning (most recent) page of the log or search results.

Previous: Go to the previous page (more recent than this one) of the log or search results. This button is shown only when there is more than one page to display.

Next: Go to the next page (containing older entries) of the log or search results. This button is shown only when there is more than one page to display.

Bottom: Go to the end (oldest page) of the log or search results.

3.1.3.2 Add Users

Add White List User	
Field name	Field value
ID	<input type="text"/>
Name	<input type="text"/>
<input type="button" value="Add"/>	<input type="button" value="Clear"/>

ID: User ID, needs to be exactly 8 characters in length, only HEX digits (0-F) and all uppercase.

Name: Username, up to 20 characters, for your own reference. This appears in the [white list](#)^[31] table, so you can later remove that user easily if needed, without having to consult an external table for their card number. When a card which is in the white list is scanned, the card user's name appears on-screen. Some symbols may not be used within the name: "." (dot) " " (space) and "-" (hyphen). Try using underscores "_" instead.

Add: Adds that ID and username to the list.

Clear: Resets the form. Does not "delete" any white list user; that's done in the [white list](#)^[31] page.

3.1.3.3 Download

This option downloads the white list in comma-separated format (file extension is LOG). You can then use this file to add new users in bulk by editing it in a plain text editor and [uploading](#)^[33] it back to the device.



Do **not** use Excel (or any other spreadsheet program) for editing the file. This will mess it up, since by default Excel strips all leading zeros. So an ID such as 005498FF would become 5498FF on re-saving the file, and would be considered invalid by the TR610 on upload. The solution is to use Notepad or any other text editor.

3.1.3.4 Upload

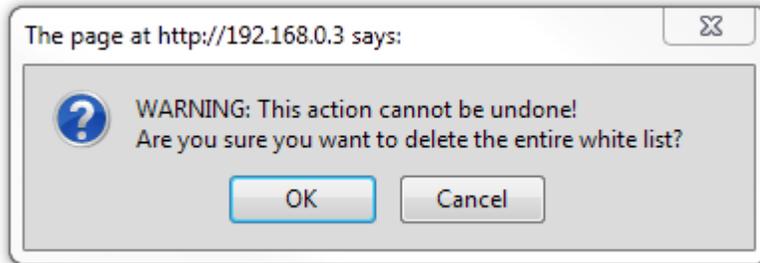
The screenshot shows a web interface for uploading a whitelist. At the top, there is a header 'Uploading whitelist'. Below this, there is a text input field followed by a 'Browse...' button. Underneath the input field is a 'Send' button. At the bottom of the interface, there is a red warning message: 'Please do not operate the device while uploading files.'

This option lets you load the device with a ready-made white list. This means you can use one white list for several devices, or make changes to the white list offline and then load it back onto the device. Note that file format must be exactly like the file you get when [downloading](#)^[33] the white list from the device (**ID,username**).

Cautions

- Uploading a white list **overwrites any existing white list data**. So make sure you *append* to the file you download, rather than upload a whole new file which does not contain the previous records.
- You can have no more than 255 records in the white list.
- If two ID numbers in the uploaded list are the same, you will get an error message saying **Key field violation. Make sure each ID is unique**.
- Connecting via a proxy may cause timeouts during file upload. In other words, you upload may "stop" mid-way. If that happens, try connecting to the TR610 not via a proxy server.

3.1.3.5 Clear



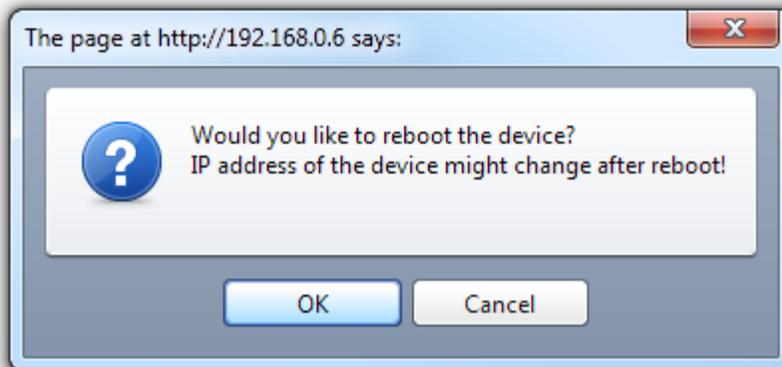
This option removes all entries from the white list in bulk.

3.1.4 Device Operations

These are needed for troubleshooting or applying settings:

- [Reboot](#)^[34]: Restart the terminal so that changes in settings can take effect.
- [Initialize settings](#)^[35]: Reset the terminal to its default configuration.
- [Format Disk](#)^[36]: Erase all stored data (white list and even log) without affecting settings, to fix some disk problems.

3.1.4.1 Reboot

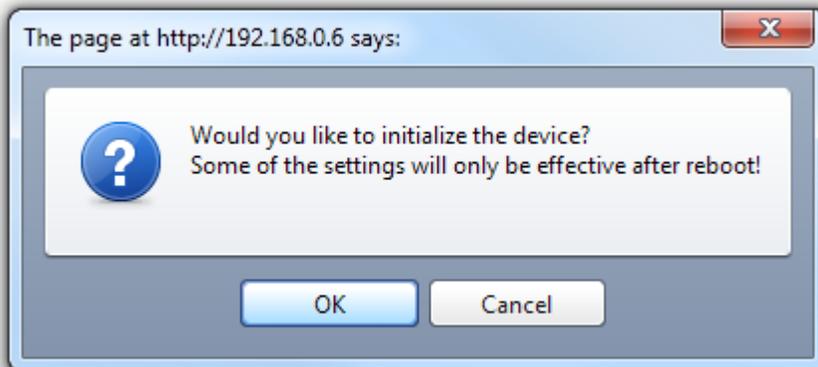


A reboot is needed for some settings to be applied.

The message box shown above says that the IP address of the device might change after reboot. This can happen if [DHCP](#)^[37] is being used and the DHCP server decides to assign the terminal a new IP address. Of course, it will also change if you manually set a new IP address and then reboot the device.

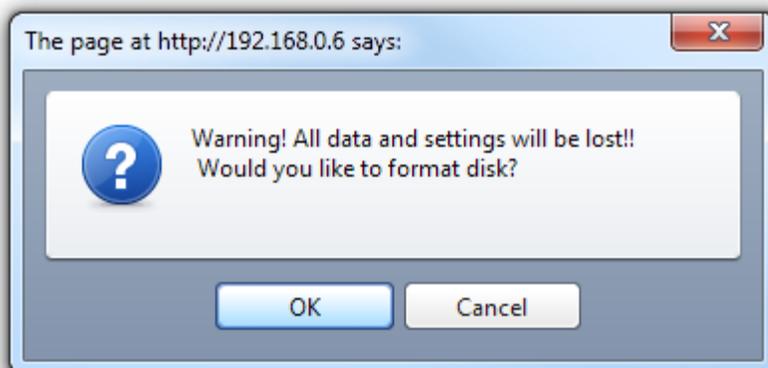
Once the device starts up, try to access it again using the same IP address you used before. Most likely it will work. If it doesn't work, watch the terminal physically as it boots (you may need to disconnect and reconnect the power right when you're by the terminal) and note the IP address listed in the [startup information screen](#)^[13].

3.1.4.2 Initialize settings



Clicking **OK** [initializes](#) ⁵³ the device, and all settings are returned to their factory default values. The device will automatically reboot, to complete the initialization.

3.1.4.3 Format Disk



"Formatting" the disk actually deletes all entries from the internal data log *and* the white list, but leaves device settings intact. This operation can be used if new files cannot be created or in case of some other problem using the disk; a reformatted disk should work properly once more.

3.1.5 Log Out

Clicking **Log Out** in the web admin will end the current session and bring you back to the [login screen](#) ²².

Note that logout may also occur automatically, after a certain period of inactivity. This is a security feature, meant to prevent unauthorized tampering with TR610 configuration.

You will also be logged out if anyone logs onto the device's [onscreen setup menu](#) ³⁷ (see [Configuration Priorities](#) ⁴⁸).

3.1.6 Device status

```
Owner Name: admin  
Device Name: Clock01  
DHCP Status: OK  
IP: 192.168.0.3  
MAC: 0.127.0.0.43.88
```

Owner Name, Device Name: Used mainly in [AggreGate](#)⁴⁰.

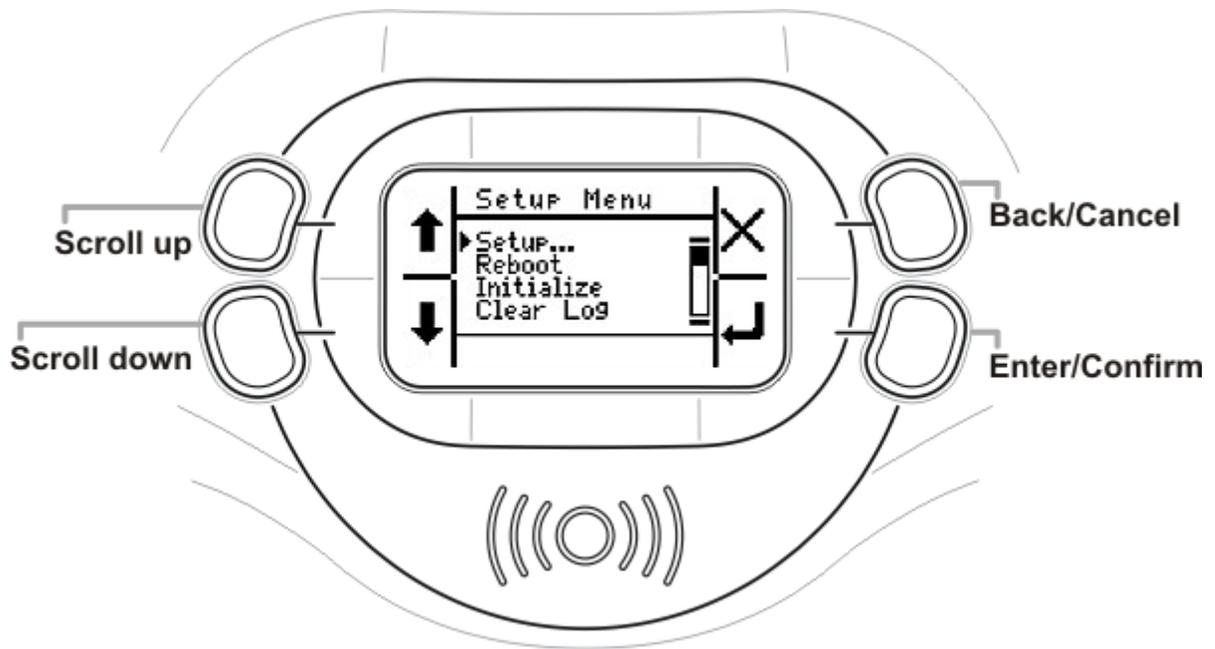
DHCP Status: Shows if the device got its current IP automatically.

IP: Currently assigned to the device. You actually know this if you're seeing it (since it is needed to access the web admin).

MAC: The device's Media Access Control address.

3.2 Onscreen Setup and Administration

To enter the onscreen setup, scan the [master card](#)¹³. You should then see the following screen:



Setup Menu Hierarchy

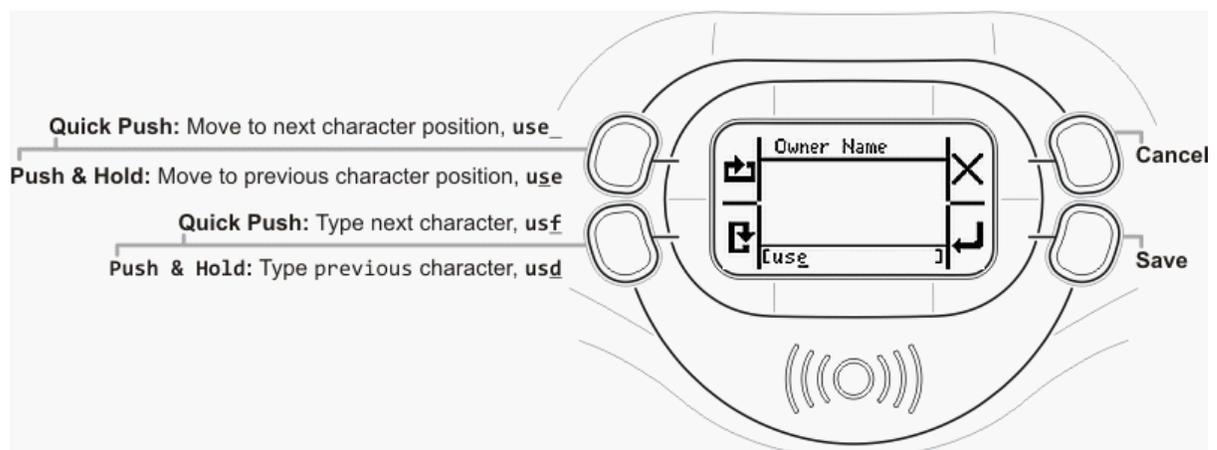
Below is the setup menu tree. Each setting is linked to its description in the web admin documentation.

Menu	Corresponding web admin Setting
Setup	
General	General Settings ²⁵
Owner Name	General Settings ²⁵ -- Owner Name
Device Name	General Settings ²⁵ -- Device Name
Password	General Settings ²⁵ -- Password
Mounting	General Settings ²⁵ -- Mounting Method
Network	Network Settings ²⁶
DHCP	Network Settings ²⁶ -- DHCP
IP address	Network Settings ²⁶ -- IP address
Gateway IP	Network Settings ²⁶ -- Gateway IP
Netmask	Network Settings ²⁶ -- Netmask
AggreGate	AggreGate Settings ²⁷
Enable/Disable	AggreGate Settings ²⁷ -- Enable/Disable
Conn. timeout	AggreGate Settings ²⁷ -- Connection Timeout

Server IP	AggreGate Settings ^[27] -- Server IP
Server Port	AggreGate Settings ^[27] -- Server Port
Date/Time	Date/Time Settings ^[28]
Auto Sync	Date/Time Settings ^[28]
Enable/Disable	Date/Time Settings ^[28] -- Auto Sync
Sync time	Date/Time Settings ^[28] -- Auto Sync Time
Time server	Date/Time Settings ^[28] -- Time Server IP
Sync now	Date/Time Settings ^[28] -- Synchronize (button)
Time zone	Date/Time Settings ^[28] -- Time Zone
Set date	Date/Time Settings ^[28] -- Date
Set time	Date/Time Settings ^[28] -- Time
White list	White list ^[31]
Enable/Disable	General Settings ^[25] - White list Enable/Disable
Edit W/L	White list ^[31] editing (slightly different interface than web admin)
Clear W/L	White list - Clear ^[34]
Initialize	Initialize ^[36]
Reboot	Reboot ^[34]
Clear Log	Event Log - Clear Log ^[31]

3.2.1 Text Entry

Some menu options require you to enter numbers (IP addresses), or even strings (Owner/Device Name). It is recommended to set these options using the web admin. However, in some cases that may not be possible. Thus, a system for entering text and numbers using the device's four hardware buttons has been developed:



Button	Function
Top-left, quick push	Move to next character position
Top-left, push and hold	Move to previous character position
Bottom-left, quick push	Enter next character (a, then b, then c, etc)
Bottom-left, push and hold	Enter previous character (c, then b, then a)
Top-right	Abort (exit without saving string)
Bottom-right	Save string and exit

3.3 AggreGate Integration

Tibbo AggreGate is a complete device management solution that allows you to combine multiple terminals into a large system which can be administered as an integrated whole. At the heart of AggreGate is a powerful server, allowing multiple operators to access and work with multiple terminals at the same time.

AggreGate Time and Attendance is a specialized version of AggreGate. The system may be easily adapted to the attendance control standards of different countries. Advanced multi-level organization structure and employee management along with different types of shifts allow providing a centralized attendance control for large organizations with multiple branches and departments. Scalable system architecture is designed to perform well for installations with hundreds of employees and multiple entrance gates.

The TR610 seamlessly interfaces with AggreGate. Once you set up the terminal to connect to AggreGate, it will continuously transmit log events to AggreGate as they are generated. You can read more about AggreGate Time and Attendance at <http://aggregate.tibbo.com/solutions/time-attendance.html>, and look at its detailed technical documentation at http://aggregate.tibbo.com/docs/time_and_attendance.htm.

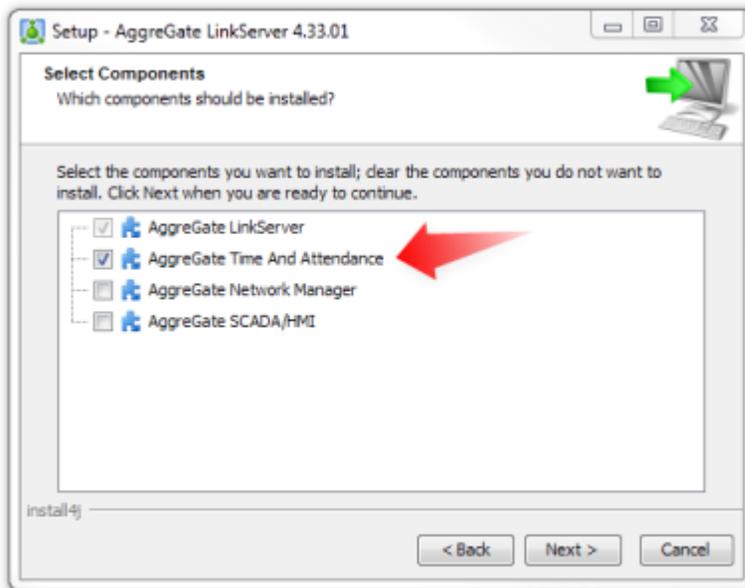
Working with AggreGate falls outside the scope of this manual. It is an extensive, complex system, which has its own documentation, including tutorials, at <http://aggregate.tibbo.com/docs/>. So if you're not sure what AggreGate is all about, go ahead and find out. The system is free to download and try.

The rest of this article assumes prior knowledge of AggreGate, and only serves as a short walk-through showing how to quickly set up your TR610 for working with AggreGate.

There are two main ways to connect the TR610 to AggreGate, with basic steps common to both ways.

The Common Steps

1. Configure the IP address and other network settings of TR610 as described [here](#)¹⁵. Make sure they work by testing the [web admin](#)²².
2. Get and install AggreGate LinkServer and AggreGate Client from <http://aggregate.tibbo.com>. When you install LinkServer, make sure **AggreGate Time and Attendance** is marked.



3. Note down the IP address of the computer running LinkServer, and make sure the TR610 can reach it (i.e, have them both on the same subnet, or configure the [gateway settings](#) ¹⁵ on the TR610).
4. Run AggreGate LinkServer.
5. Run AggreGate Client.
6. Connect Client to LinkServer. This is usually really simple if you're running both on the same computer. Just log in to Client with **admin** as the username and **admin** as the password, and it would detect LinkServer running on the same PC and prompt you to connect to it. If that doesn't happen, read the topic **Workspaces and Server Connections** in the AggreGate user manual or ask for help from AggreGate support.
7. Once you're in Client, The **Time and Attendance Quick Start** widget should pop up:

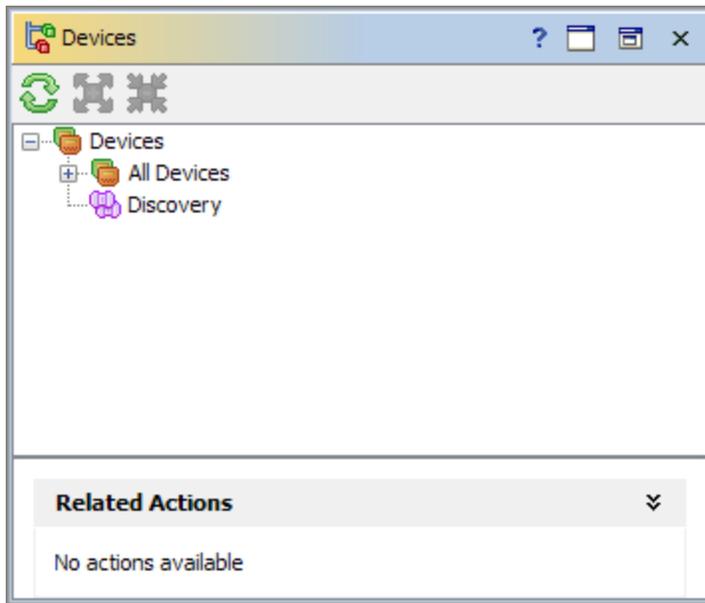


This means you correctly installed the Time and Attendance add-on. Now let's see both possible ways to connect your TR610, starting with the simpler one.

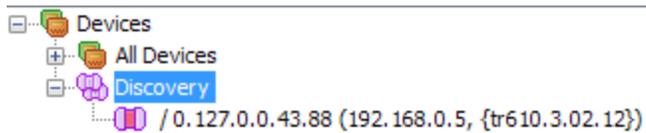
The Easy Way: Automatic Discovery

If LinkServer and your TR610 are on the same subnet, LinkServer should be able to discover the TR610 on its own.

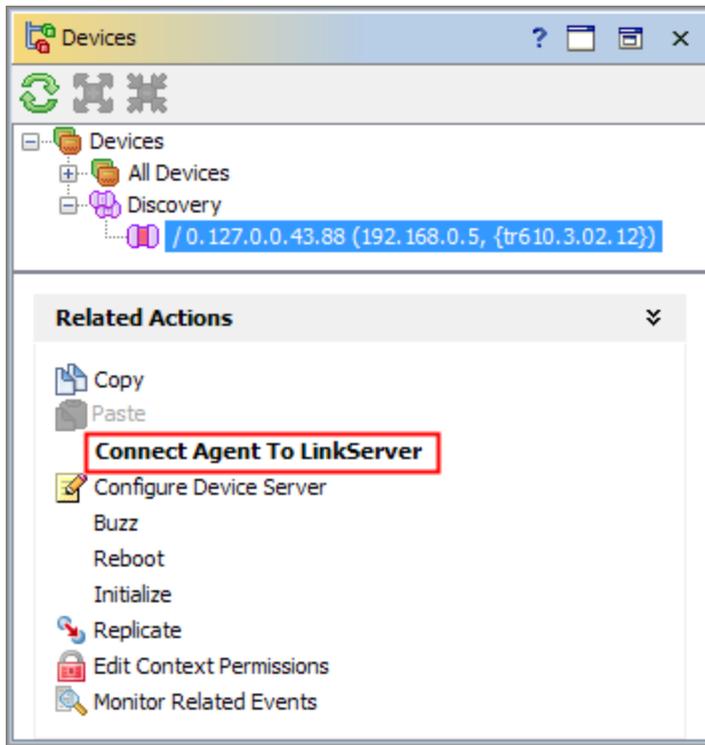
1. Click **Time Recorders** in the **Quick Start** widget. You should get a simple **Devices** tree:



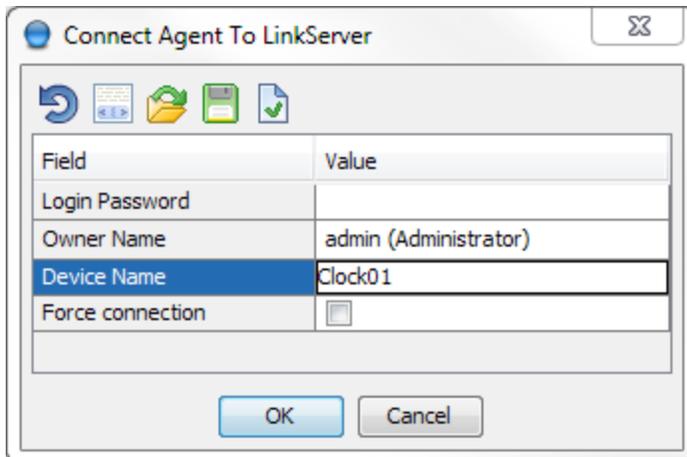
2. Double-click **Discovery**.
3. After a moment, the **Discovery** node should become expandable. Click the **+** to expand it:



4. There's your device! The / means there is no username or device name configured. If you did configure them beforehand, you would see them here. If you don't see your device here, the discovery failed -- move on the the **Manual Override** section.
5. Assuming you *do* see your device here, click it and select **Connect Agent to LinkServer** from the **Related Actions** list:



6. You should get the **Connect AggreGate to LinkServer** dialog:

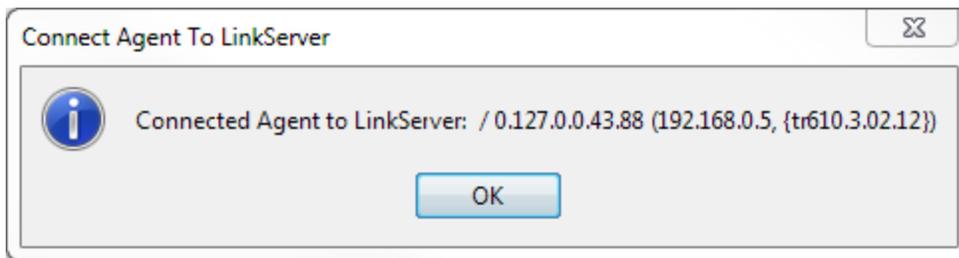


7. Select your AggreGate username from the list (**admin** by default)

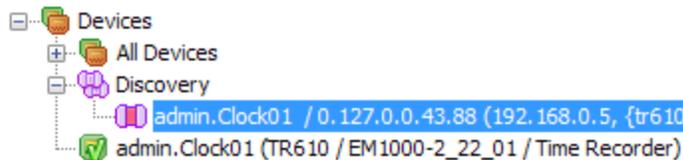
8. Enter a sensible name for the device (e.g, "Clock01").

9. Click **OK**.

10. On success, you should get a dialog like this:



You should also see your TR610 in the list:



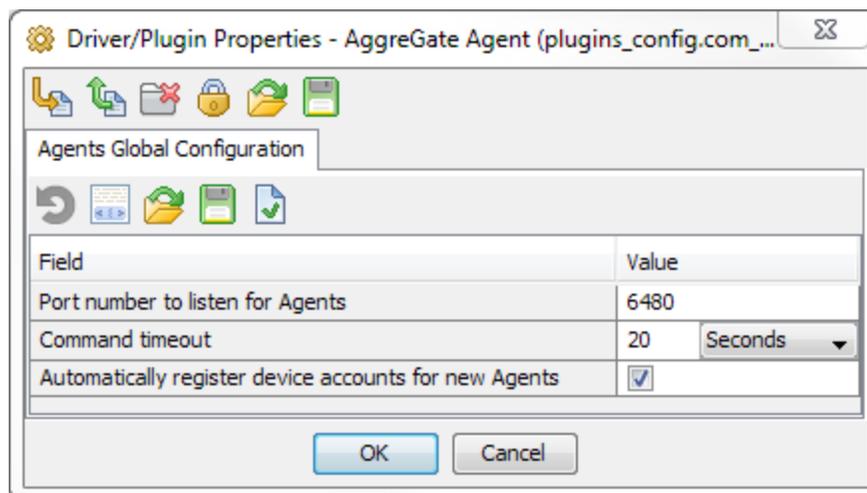
That's it! You've successfully connected your TR610 to AggreGate. To proceed from this point, see the **Time and Attendance** branch of the AggreGate user guide.

Manual Override: If Automatic Discovery Didn't Work

The "manual" method uses a different approach: We will have the TR610 initiate the connection, and the LinkServer will wait and listen for it. This is useful in WAN scenarios, when the LinkServer has a stable and accessible IP while the TR610 is behind a corporate firewall or a NAT router. In other words, only the TR610 can reach LinkServer, so discovery (the previous method) would not work.

AggreGate configuration:

1. In the System Tree, go to **Drivers/Plugins** and double-click **AggreGate Agent**.
2. Note down the **Port number to listen for Agents** (default is 6480). Make sure no firewall is blocking this port on the PC running LinkServer.
3. Make sure **Automatically register device accounts for new Agents** is checked.



TR610 configuration:

1. Access TR610 web admin.
2. Under **General Settings > Owner Name** enter your AggreGate User Account (default: **admin**).
3. Under **Device Name** enter a sensible name for the device (Clock01, etc).
4. In the left-column menu, click **AggreGate Settings** and set:
 - **AggreGate Connection** to **Enabled**,
 - **Connection Timeout** to 10 minutes,
 - **Server IP** to your LinkServer's IP (which should be reachable from the TR610, of course), and
 - **Server Port** to what you found in step 2 in **AggreGate Configuration** (6480 by default).

AggreGate Settings	
Setting name	Setting value
AggreGate Connection	Enabled ▾
Connection Timeout (minutes, 0 to disable)	10
Server IP	192.168.0.7
Server Port	6480
<input type="button" value="Save"/> <input type="button" value="Reload"/>	

5. Save your settings and restart the TR610.
6. The TR610 will now try to connect to LinkServer. If it succeeds, you should:
 - See the letter A on the LCD itself:



- See the device in AggreGate system tree with a green checkmark icon and "**(auto-registered)**" after its name:



What's Next?

To see what you can do with AggreGate now that you've configured it to work with your TR610, please read the [AggreGate Time and Attendance](#) module documentation.

3.4 Configuration Priorities

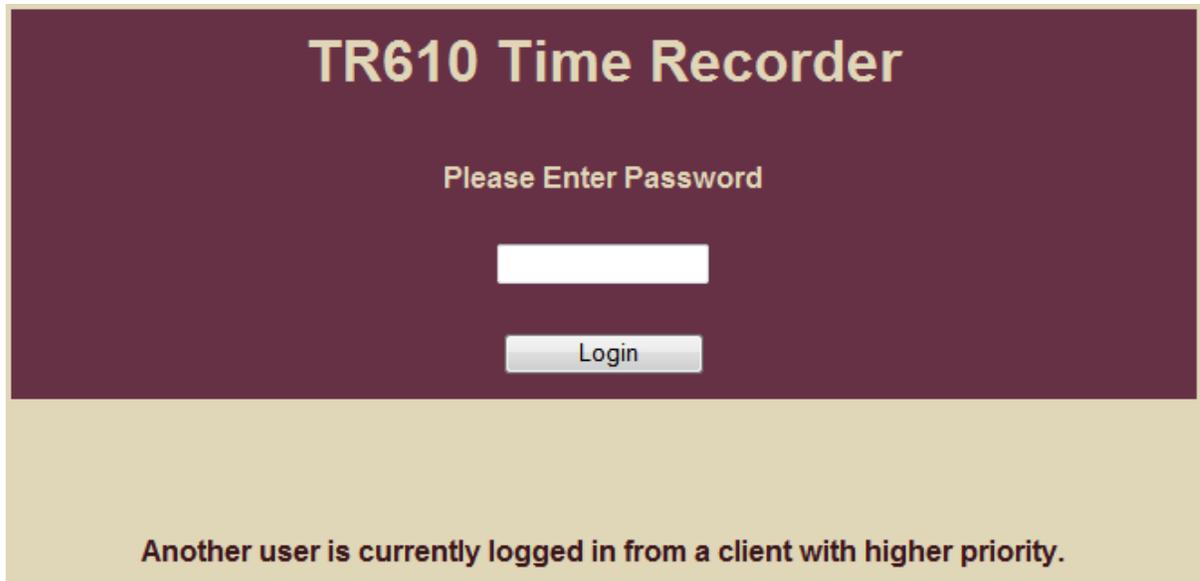
Since there are three main ways to access TR610 configuration and change settings, conflicts need to be accounted for.

For example, what happens if an onscreen configuration session is in progress, and someone tries to access device settings using AggreGate at the same time?

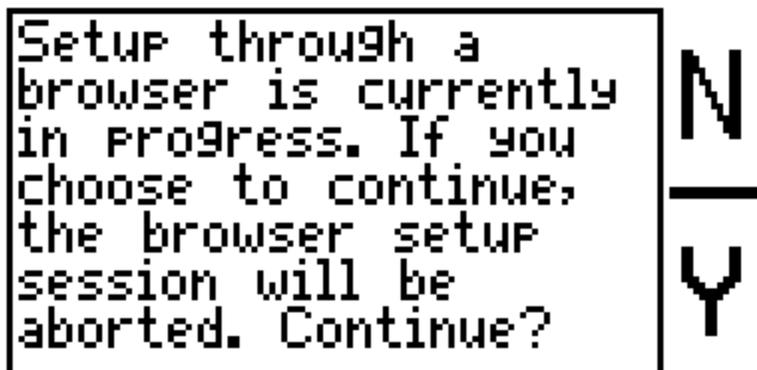
The following configuration priorities are used:

1. **Onscreen session:** This session type has the highest priority. While an onscreen configuration session is in progress, you cannot log in using the web admin, and the terminal is not connected to AggreGate.

For example, if you attempt to access the web admin while an onscreen configuration session is in progress, you will get the following error:

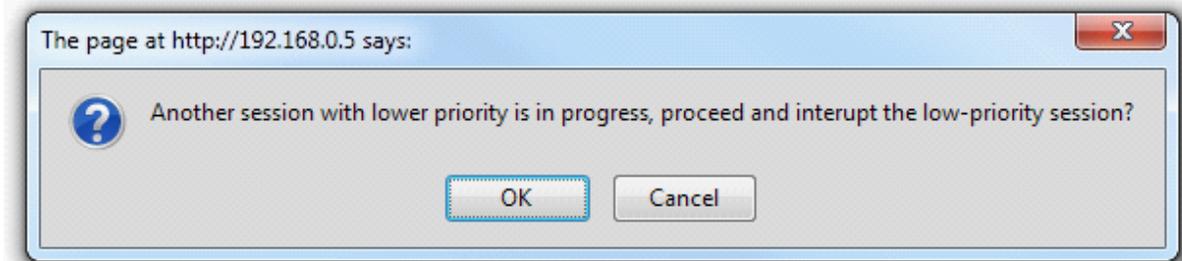


When a web admin session is already in progress and someone attempts to open an onscreen session, the following warning message is shown on the TR610 LCD:



Selecting Y will forcibly end the web admin session and allow you to use the onscreen setup.

2. **Web admin:** Configuration using the web admin has the second priority level. While a web admin session is in progress, AggreGate may not be used to configure TR610 settings. If you attempt to open the web admin while the TR610 is connected to AggreGate, the following dialog will be displayed:



3. **AggreGate:** The AggreGate link has the lowest priority level. While any other form of configuration is in progress, the terminal is disconnected from the AggreGate server. Once a higher-level configuration session is ended, the terminal re-establishes connection with AggreGate (if such a connection was configured).

On-Screen Information

The TR610 display shows the letter **A** in the lower-left corner when the terminal is connected to AggreGate, and the letter **H** (for HTTP) when a web admin session is in progress:



Connected to AggreGate.



Web admin session is in progress.

Part



4 Reference

These topics are for use as reference, and may not be needed in everyday use of the TR610.

[Initializing the Device](#)^[53] - Shows how to initialize the device back to default factory settings.

[Changing the TR610's Functionality](#)^[56] - A short overview of how the TR610 may be customized.

[Uploading New Firmware](#)^[57] - Showing how to upgrade the TR610 with new firmware.

[Event Log File Format](#)^[63] - Explains the structure of the event log file, for importing into time and attendance software.

[I/O Connector Pin Assignment & Cable Wiring](#)^[64] - Shows all connectors and their pinouts.

[Specifications](#)^[68] - Device hardware specifications.

[Update History](#)^[69] - History of changes since the initial release of TR610 manual.

4.1 Initializing the Device

Sometimes you may lose your [master card](#)^[13], or encounter some other circumstances (bugs in [modified firmware](#)^[36], etc) which might require you to initialize the TR610 and 'start over'.

There are three ways to initialize the device:

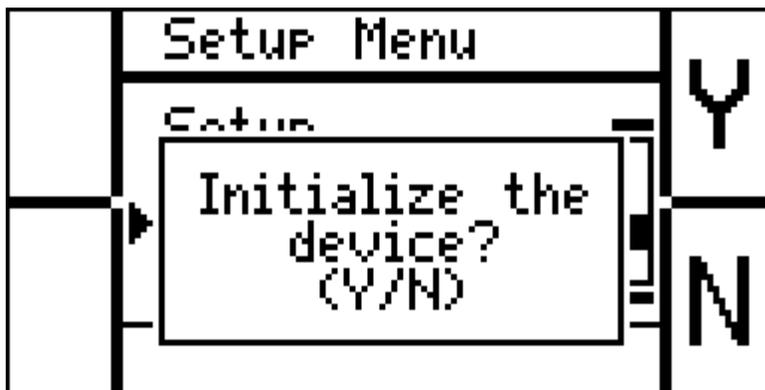
Using the Menu System

To use this method, you need a master card which works.

1. Scan your master card to go into the Setup menu.
2. Scroll down to **Initialize**:



3. Hit the lower-right (**Enter**) button. You will get a confirmation prompt.



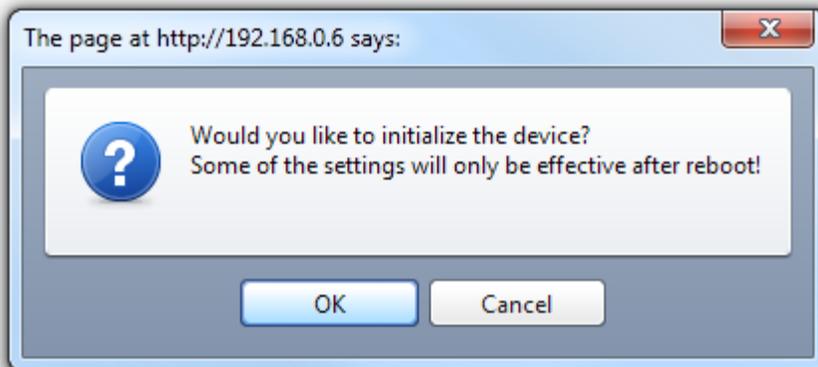
4. Hit the top-right (**Y**) button.
5. The device will now initialize and reboot.
6. Upon rebooting, the device will show the master card registration screen:

```
Before you can start
using this device you
have to set the master
card. Read any card now
-- it will become the
master card.
```

Using the Web Admin

This is a software-based method which can be used in case of loss of the master card.

1. Log onto the [web admin](#) ^[22].
2. In the left-column menu, click **Initialize**.
3. The following prompt will be displayed:

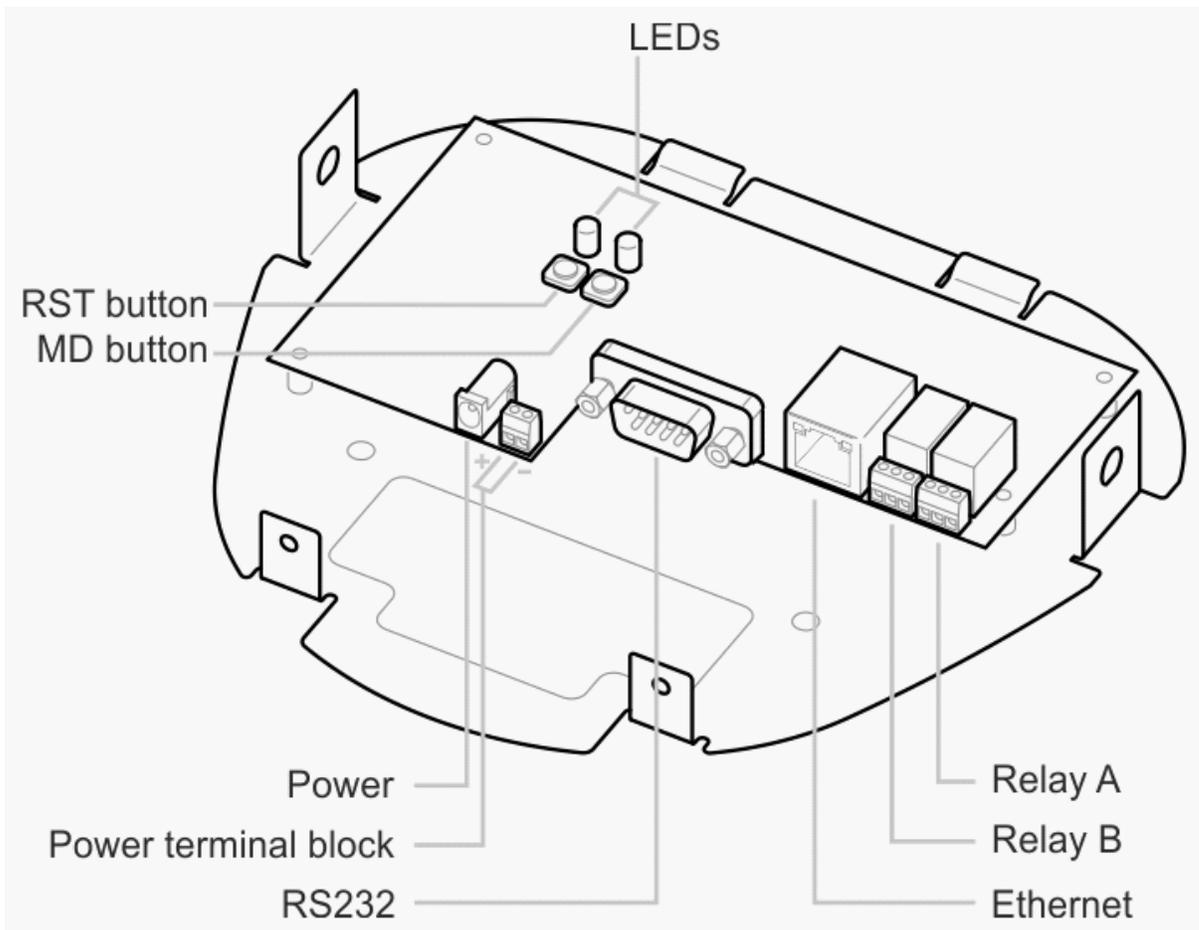


4. Click **OK** to initialize the device.
5. **NOTE:** You will now need to physically go to the device, because as soon as it initializes, it requires a new master card to be scanned. Until that is done, the device may not be used. Moreover, the first card scanned is taken as a master card, so if an employee inadvertently scans their card before you scan the master card, the employee's card will become the new master card (and the device would have to be initialized yet again, to set the proper master card).

Using the MD Button

This is a hardware-based method you can use if you lose the master card and also are unable to access the web admin.

1. Open up the TR610.
2. Inside, there are two small buttons: RST (left) and MD (right).



3. Push the MD button for three seconds. The LED pattern near the button should change. Now release the button.
4. The device will now reboot and show the master card [registration screen](#) ¹³.

4.2 Changing the TR610's Functionality

The TR610 is a programmable terminal, and its internal firmware can be changed, extended and customized. You can tailor it to your (or your client's) exact needs. For example, you could:

- Alter the icons and logo displayed.
- Change the appearance of the web admin.
- Add and remove menu options.
- Change the beeps, or eliminate them completely.

These are just a few of the things you could do. You are not limited to a pre-defined set of customizations.

The TR610 firmware is open-source, and is written in Tibbo BASIC, so it's easy to understand.

You can download the firmware source files and modify them using readily-available development tools.

Sounds interesting? Go to <http://www.programmableterminal.com/programmability.html> for more information.

4.3 Uploading New Firmware

The procedure for uploading new firmware described below is meant for administrators who wish to load the terminal with a new or different firmware binary (.bin). Attention Tibbo BASIC developers: If you wish to upgrade TIOS separately from the application, or make changes to the application, see [Changing the TR610's Functionality](#).

When To Upload New Firmware

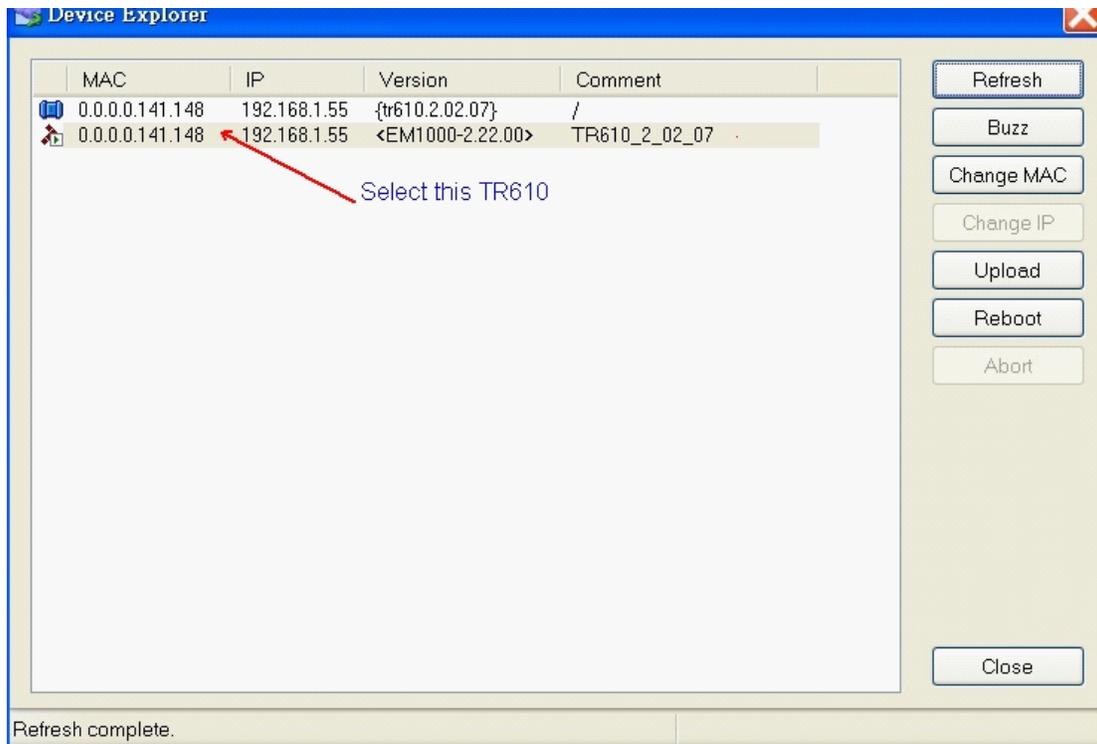
Uploading new firmware should usually be done under one of the following circumstance:

1. An updated firmware version has been officially released, with extended functionality or bugfixes.
2. You have received new firmware from an OEM, customizing the device for your needs.
3. Your device is malfunctioning and an [initializing](#) it did not solve the problem.

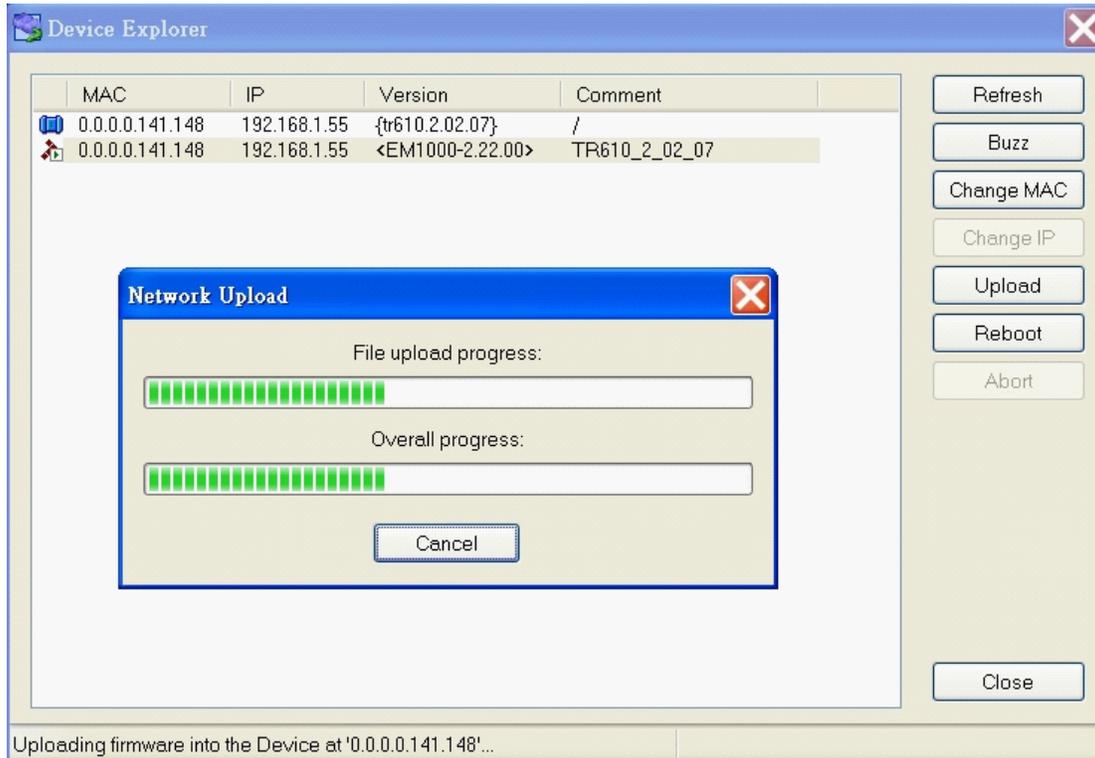
Uploading Via The Network

The easiest way to upload new firmware is via the network, using the Device Explorer utility which can be freely downloaded at <http://tibbo.com/downloads/basic/software.html>.

1. Run Device Explorer and locate your TR610. It should have two icons -- click the row with the "T" icon (marked below). If you cannot see it, try disabling your firewall and make sure Device Explorer is running on a computer which is on the same subnet (network segment) as your TR610. If you still cannot see your device, try [Serial Upload](#).



2. Once you selected your TR610, click **Upload** and select the BIN file you wish to load onto your TR610. You should now see the following progress dialog:



3. Once the upload has completed, the TR610 will reboot with the new firmware. Note that you may receive an error message as described below.

Post-upgrade Errors

The device may display an error message when first booting up after a major firmware update: "**Data is corrupted, please format the disk!**" This is due to differences in firmware. Press "Y" and the TR610 will format the flash disk (thus losing all data).

Press the "Y" button and TR610 will format the flash disk. This means that all current data and settings will be lost. You will then be prompted for a master card -- continue as per [Powering Up for The First Time](#)^[13].

4.3.1 Serial Upload

Serial firmware upload maybe used when upload via the network fails or is impossible for some reason (such as network topology, firewall restrictions, etc.).

Before You Start

The upload process requires the following:

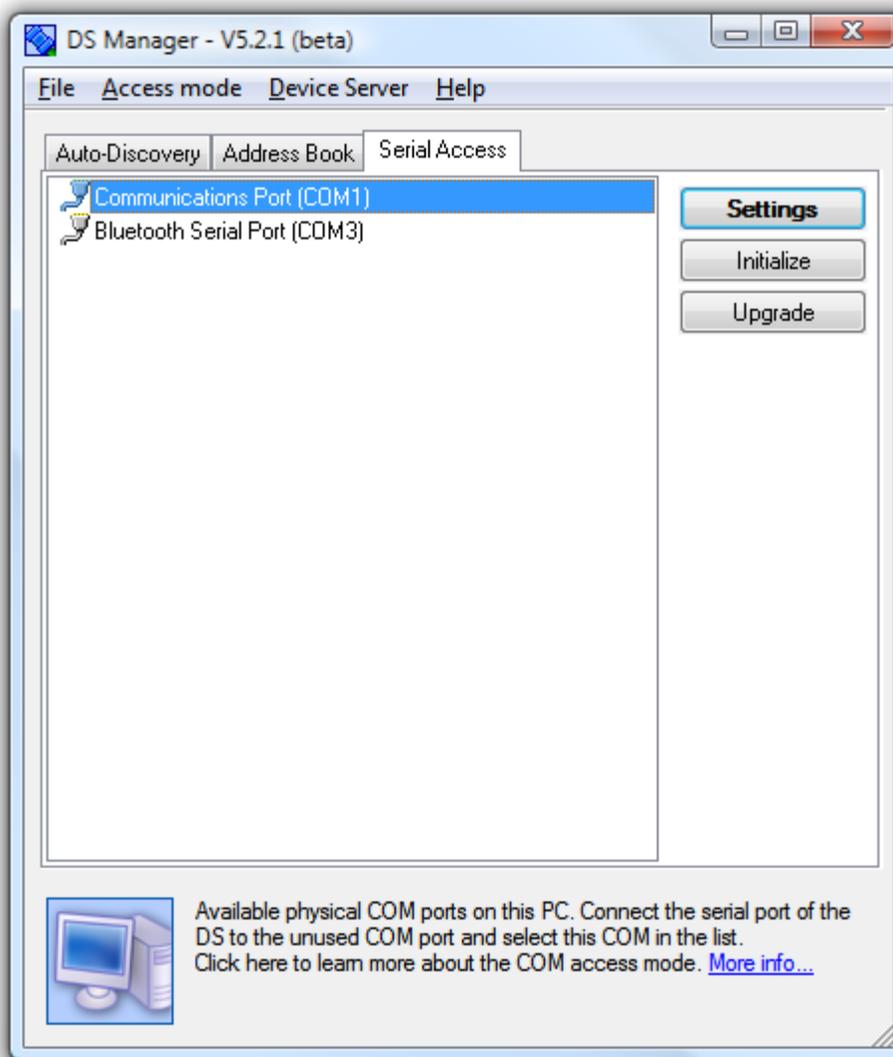
1. Tibbo DS Manager, which is a part of the TDST (Tibbo Device Server Toolkit). Please download it from <http://tibbo.com/downloads> and install it before proceeding.
2. The firmware file you intend to upload onto the device. This can be obtained from your reseller, or directly from programableterminal.com.
3. A female-female serial cable for connecting the TR610 to the computer. The port pinout is [here](#)^[64]. A

"regular" RS232 crossover cable should work.

4. The included screwdriver for opening the TR610.
5. Download all records from the TR610. You may lose them in the upgrade process (upgrade often requires formatting the internal disk).

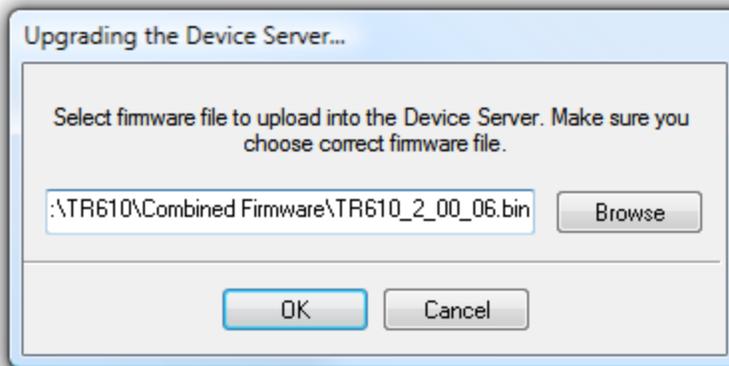
The Upload Process

1. Bring the TR610 close to your computer. Unmount it from the wall if needed.
2. Open the TR610, as shown under [Hardware Installation](#)⁹.
3. Connect the serial cable to your computer's COM port, and to the COM port on the TR610. Leave the TR610 open - you will need to press a button inside the device later on.
4. Run DS Manager, switch to the Serial Access tab and click the COM port to which the TR610 is connected:



5. Click the **Upgrade** button. The following dialog will be shown. Click **Browse** and select the firmware

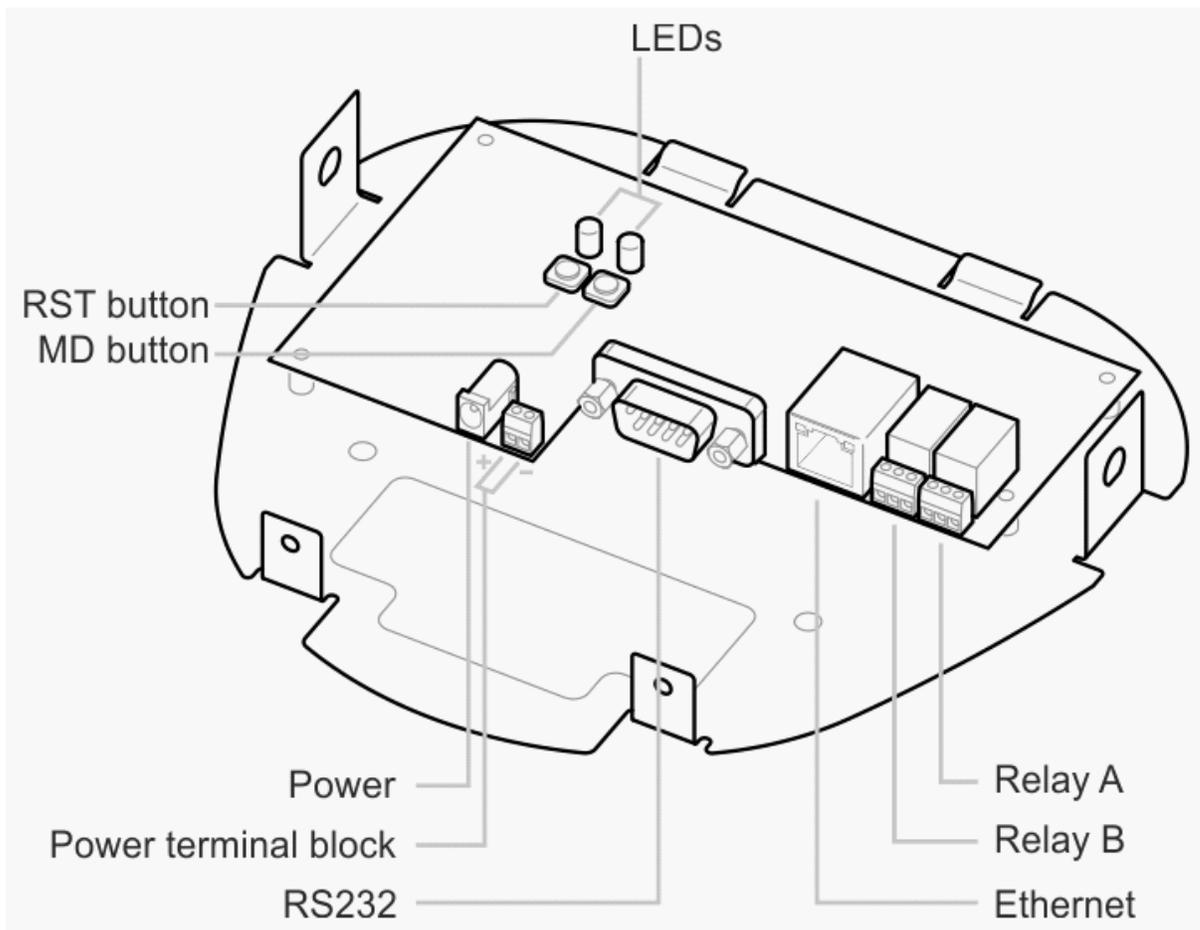
file you wish to upload.



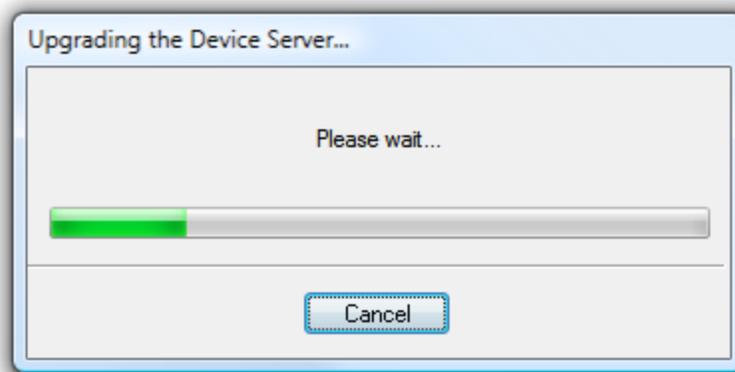
6. Click **OK**. The following dialog will be shown:



7. Look at the open TR610 on your desk, and visually locate the small **MD** and **RST** buttons on the PCB.



8. Now press the **RST** button and hold it pressed. While still pressing it, press the **MD** button and hold it as well. Now let go of the **RST** button and leave **MD** pressed. The device will boot with **MD** pressed, which will put it into firmware upgrade mode. Now let go of the **MD** button, and the following progress dialog will be shown:



9. Upon completion of the process, the following dialog will be shown:



10. Now press the RST button again. The TR610 should boot up using the new firmware. At this point, [initializing](#)^[53] the device is recommended.

Post-upgrade Errors

The device may display an error message when first booting up after a major firmware update: "**Data is corrupted, please format the disk!**" This is due to differences in firmware. Press "Y" and the TR610 will format the flash disk (thus losing all data).

Press the "Y" button and TR610 will format the flash disk. This means that all current data and settings will be lost. You will then be prompted for a master card -- continue as per [Powering Up for The First Time](#)^[13].

4.4 Event Log File Format

The Event Log file contains records accumulated in the terminal's memory. It is downloaded using the [web admin](#) ²⁹.

Following is a sample of log file output:

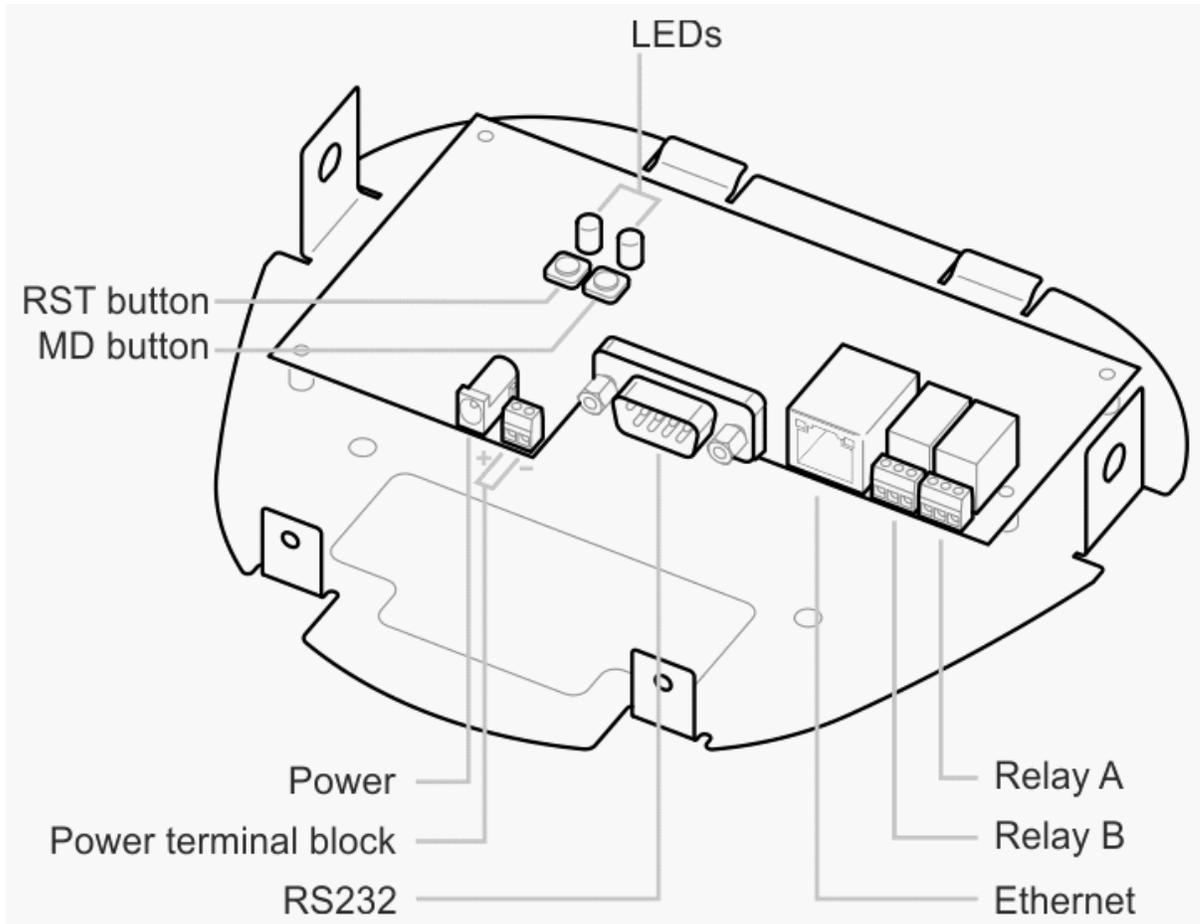
```
33445566,CLOCK IN,20100218083110
33445566,TEMP OUT,20100218122725
33445566,TEMP IN,20100218132022
33445566,CLOCK OUT,20100218180718
```

The fields are delimited (separated) using commas. Following are the fields within a single record:

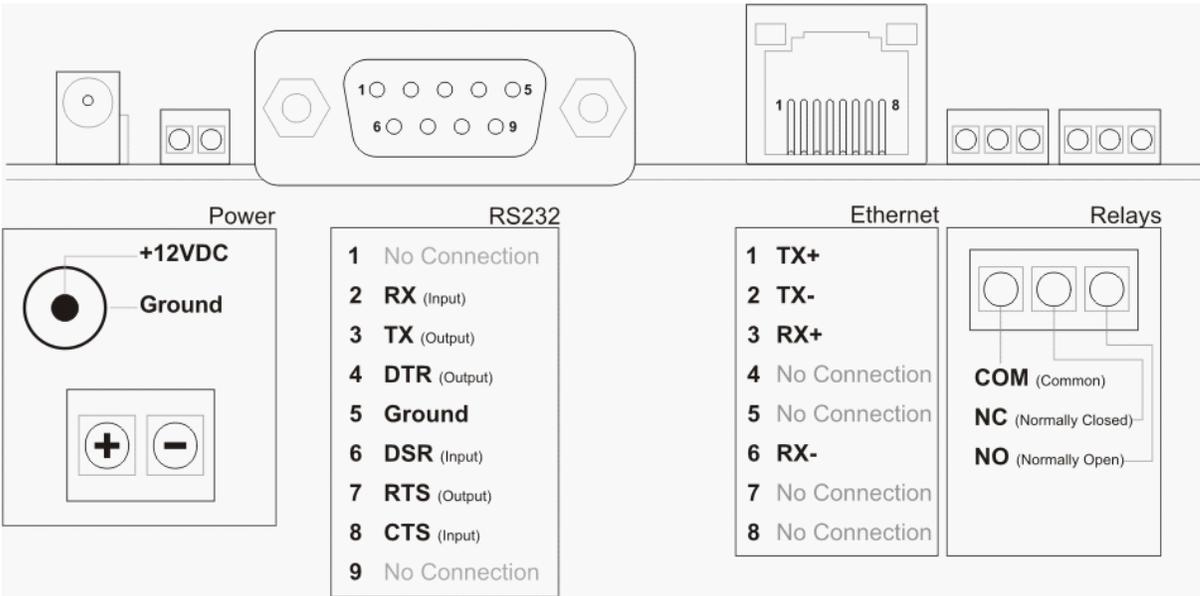
Card ID	Event	Time
33445566	CLOCK IN	20100218180718
Card ID. Limited to last 8 digits of card.	Can be: CLOCK IN TEMP OUT TEMP IN CLOCK OUT	Formatted as YYYYMMDDHHMMSS

4.5 I/O Connector Pin Assignment & Cable Wiring

The following diagram shows the user-serviceable parts of the TR610 PCB.



These are the pinouts for all internal connectors on the TR610:



4.6 Time Zones

You may use the list below to correctly set the Time Zone for your device, as described under [Date/Time Settings](#)²⁸⁾. Note that the list does not account for DST (daylight savings time), and is given below for general reference only.

Afghanistan +4:30, Albania +1:00, Algeria +1:00, American Samoa - 11:00, Andorra +1:00, Angola +1:00, Antarctica - 2:00, Antigua and Barbuda - 4:00, Argentina - 3:00, Armenia +4:00, Aruba - 4:00, Ascension +0:00, Australia North +9:30, Australia South +10:00, Australia West +8:00, Australia East +10:00, Austria +1:00, Azerbaijan +3:00

Bahamas - 5:00, Bahrain +3:00, Bangladesh +6:00, Barbados - 4:00, Belarus +2:00, Belgium +1:00, Belize - 6:00, Benin +1:00, Bermuda - 4:00, Bhutan +6:00, Bolivia - 4:00, Bosnia Herzegovina +1:00, Botswana +2:00, Brazil West - 4:00, Brazil East - 3:00, British Virgin Islands - 4:00, Brunei +8:00, Bulgaria +2:00, Burkina Faso +0:00, Burundi +2:00

Cambodia +7:00, Cameroon +1:00, Canada Central - 6:00, Canada Eastern - 5:00, Canada Mountain - 7:00, Canada Pacific - 8:00, Canada Newfoundland - 3:30, Cape Verde - 1:00, Cayman Islands - 5:00, Central African Rep +1:00, Chad Rep +1:00, Chile - 4:00, China +8:00, Christmas Is: - 10:00, Colombia - 5:00, Congo +1:00, Cook Is: - 10:00, Costa Rica - 6:00, Croatia +1:00, Cuba - 5:00, Cyprus +2:00, Czech Republic +1:00

Denmark +1:00, Djibouti +3:00, Dominica - 4:00, Dominican Republic - 4:00

Ecuador - 5:00, Egypt +2:00, El Salvador - 6:00, Equatorial Guinea +1:00, Eritrea +3:00, Estonia +2:00, Ethiopia +3:00

Faeroe Islands +0:00, Falkland Islands - 4:00, Fiji Islands +12:00, Finland +2:00, France +1:00, French Antilles (Martinique) - 3:00, French Guinea - 3:00, French Polynesia - 10:00

Gabon Republic +1:00, Gambia +0:00, Georgia +4:00, Germany +1:00, Ghana +0:00, Gibraltar +1:00, Greece +2:00, Greenland - 3:00, Grenada - 4:00, Guadeloupe - 4:00, Guam +10:00, Guatemala - 6:00, Guinea-Bissau +0:00, Guinea +0:00, Guyana - 3:00

Haiti - 5:00, Honduras - 6:00, Hong Kong +8:00, Hungary +1:00

Iceland +0:00, India +5:30, Indonesia Central +8:00, Indonesia East +9:00, Indonesia West +7:00, Iran +3:30, Iraq +3:00, Ireland +0:00, Israel +2:00, Italy +1:00

Jamaica - 5:00, Japan +9:00, Jordan +2:00

Kazakhstan +6:00, Kenya +3:00, Kiribati +12:00, Korea North +9:00, Korea South +9:00, Kuwait +3:00, Kyrgyzstan +5:00

Laos +7:00, Latvia +2:00, Lebanon +2:00, Lesotho +2:00, Liberia +0:00, Libya +2:00, Liechtenstein +1:00, Lithuania +2:00, Luxembourg +1:00

Macedonia +1:00, Madagascar +3:00, Malawi +2:00, Malaysia +8:00, Maldives +5:00, Mali Republic +0:00, Malta +1:00, Marshall Islands +12:00, Mauritania +0:00, Mauritius +4:00, Mayotte +3:00, Mexico Central - 6:00, Mexico East - 5:00, Mexico West - 7:00, Moldova +2:00, Monaco +1:00, Mongolia +8:00, Morocco +0:00, Mozambique +2:00, Myanmar +6:30

Namibia +1:00, Nauru +12:00, Nepal +5:30, Netherlands +1:00, Netherlands Antilles - 4:00, New Caledonia +11:00, New Zealand +12:00, Nicaragua - 6:00, Nigeria +1:00, Niger Republic +1:00, Norfolk Island +11:30, Norway +1:00

Oman +4:00

Pakistan +5:00, Palau +9:00, Panama Republic Of - 5:00, Papua New Guinea +10:00, Paraguay - 4:00, Peru - 5:00, Philippines +8:00, Poland +1:00, Portugal +1:00, Puerto Rico - 4:00

Qatar +3:00

Reunion Island +4:00, Romania +2:00, Russia West +2:00, Russia Central 1 +4:00, Russia Central 2 +7:00, Russia East +11:00, Rwanda +2:00

Saba - 4:00, Samoa - 11:00, San Marino +1:00, Sao Tome +0:00, Saudi Arabia +3:00, Senegal +0:00, Seychelles Islands +4:00, Sierra Leone +0:00, Singapore +8:00, Slovakia +1:00, Slovenia +1:00, Solomon Islands +11:00, Somalia +3:00, South Africa +2:00, Spain +1:00, Sri Lanka +5:30, St Lucia - 4:00, St Maarten - 4:00, St Pierre & Miquelon - 3:00, St Thomas - 4:00, St Vincent - 4:00, Sudan +2:00, Suriname - 3:00, Swaziland +2:00, Sweden +1:00, Switzerland +1:00, Syria +2:00

Taiwan +8:00, Tajikistan +6:00, Tanzania +3:00, Thailand +7:00, Togo +0:00, Tonga Islands +13:00, Trinidad and Tobago - 4:00, Tunisia +1:00, Turkey +2:00, Turkmenistan +5:00, Turks and Caicos - 5:00, Tuvalu +12:00

Uganda +3:00, Ukraine +2:00, United Arab Emirates +4:00, United Kingdom +0:00, Uruguay - 3:00, USA Central - 6:00, USA Eastern - 5:00, USA Mountain - 7:00, USA Pacific - 8:00, USA Alaska - 9:00, USA Hawaii - 10:00, Uzbekistan +5:00

Vanuatu +11:00, Vatican City +1:00, Venezuela - 4:00, Vietnam +7:00

Wallis And Futuna Islands +12:00

Yemen +3:00, Yugoslavia +1:00

Zaire +2:00, Zambia +2:00, Zimbabwe +2:00

4.7 Specifications

Display: 128x64 black/white, blue backlight

Proximity card type: RFID 125Khz (TR610R), Mifare (TR610MF)

Reading distance: 5cm. min (TR610R), 2cm. min (TR610MF)

Inter-unit distance: At least 50 cm between two TR610 units.

Internal memory: 1024KB flash, approx. 17,500 event log records

Interfaces: 10/100 Base-T Ethernet port, RS232 port

Relays: x2, 1Amp/12V rating

Configuration: Onscreen setup, web admin, Tibbo AggreGate software

Internal firmware: Upgradeable, open-source, written in Tibbo BASIC

Mounting: Wall or desktop (programmable display orientation)

Power supply: DC 12V, 500mA

Backup power: Internal battery for RTC (up to 7 days)

Operating temperature: 0-55 degree C

Operating humidity: 10-90%

Certification: CE- and FCC-approved

4.8 Update History

28 March 2010: Complete overhaul for new firmware version. Amongst major changes:

- [AggreGate](#)^[40] topic updated
- Changed web admin [menu system structure](#)^[22]
- Documented new [white list](#)^[31] functionality

10 August 2009: Changed specifications, added Mifare model

25 February 2009: Added Time Zone table, changed screwdriver type

24 November 2008: Initial release of manual.