



WORRY-FREE FLASHER SYSTEM INSTALLATION GUIDE

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GLOSSARY

Note: This document contains attachments to Guardian Installation Guides and the AP22 Programming Manual. It also has bookmarks throughout the Guide that can assist you with navigation.

If you do not see a sidebar beside the document with the target and paper clip icons representing these items, follow these instructions:

- *From the top toolbar, select "View"*
- *Hover your mouse over "Show/Hide"*
- *Move your mouse to the sub-menu and hover over "Navigation Panes"*
- *Click on either "Attachments" or "Bookmarks"*
- *A sidebar will appear next to the document. Click on the target icon for bookmarks and the paperclip icon for attachments.*

INTRODUCTION

RTC Manufacturing's industry leading school zone flasher equipment is enhanced by an impressive supporting cast that makes the monitoring, communicating, and scheduling of school zone flashers a worry-free process.

The Worry-Free Flasher system consists of:

RTC Connect™ - [RTC Connect™](#) is the premier central software platform for programming and maintaining school zone flasher systems. It is customizable, easy to configure, and the best way to get a snapshot of the school zone flashers in your area. RTC Connect™ is the "command center" for the scheduling, monitoring, and troubleshooting of your system.

Guardian Monitoring - The [Guardian](#) Series product line monitors and alerts users of current and potential problems with batteries, solar panels, time switches, and power supplies located in school zone flasher systems or any other electronic device. Alerts are sent via text or e-mail to an unlimited number of recipients and can be set to send around-the-clock or only during user-defined business hours. The Guardian works as the "watchdog" of your cabinet, keeping an eye on things when you aren't around.

AP22 Time Switch - The [AP22](#) from RTC has been the industry standard for school zone time switches for over 30 years. The low maintenance, user-friendly time switch stores and runs the programming for school zone flasher systems and works seamlessly with RTC Connect. Think of it as the "brain" of the system.

M2M Cellular Communication - RTC's [M2M](#) is a compact cell modem that enables quick, reliable, two-way communication between your school zone flasher cabinet and RTC Connect. The simple, plug-and-play equipment eliminates the need for additional infrastructure, enables programming changes to be made remotely, and ensures Guardian alerts are received as quickly as possible. A cabinet equipped with an M2M modem gives you "boots on the ground", allowing you to make changes to your AP22 time switch and notice potential problems in your cabinet without ever leaving the office.

Note: Although using an AP22 is strongly recommended, the Worry-Free Flasher System can also incorporate RTC's [CPR 2012 Time Switch](#).

SECTION 1: DOWNLOADING RTC CONNECT™

You can download the latest version of RTC Connect™ by navigating to our website – **RTC-Traffic.com**. We recommend using the latest version of Google Chrome or Internet Explorer as your browser.

Near the middle of the page, under the RTC Connect™ logo, click on the “GET LATEST VERSION” button. This will take you to a new page, where you will see a link to download the latest version of the software. Click on the link to begin the download.

Internet Explorer Troubleshooting: In some instances, your computer might block RTC Connect™ from downloading. If you receive an error message using Internet Explorer, click the “gear” icon on the top right corner of the browser window. Then, scroll down and click on “Internet Options.” A new window should pop up. Click on the far-right tab, “Advanced.” Scroll down the box inside this window until you find the “Security” section and a line that says “Allow software to run or install even if the signature is invalid.” Click on the box to check this line. You can then press “Apply” followed by “OK”. This should allow you to download the software program.

Once RTC Connect™ has been successfully downloaded, click on the download to run the application.

An RTC Connect™ Setup Wizard window will open and you can click “Next” to begin. Choose an installation folder location and click “Next.” Clicking “Next” again will start the installation. At some point, you will see a pop-up window asking to make changes to the computer. Click “Yes.” The installer will finish running and you will be able to press “Close” once installation is complete.

You will see the software shortcut icon on your desktop. Clicking this icon will launch the software.

SECTION 2: UTILITIES (INITIAL SET-UP)

For initial set-up of the software, make sure you have a strong internet connection.

After RTC Connect™ has launched, click on the “Utilities” button on the RTC Connect Tool Bar located on the left side of the Main Screen.

The [Utilities](#) window will open. You’ll see on the top left of the Utilities window that “Use Master Groups” is checked by default. A [Master Group](#) is the highest level of organization for [Locations](#) within RTC Connect. **We highly recommend leaving “Use Master Groups” checked**, but if you have fewer than 99 Locations and don’t have groups of Locations that you want/need to uniquely define as a part of a larger group (like a county, district, or maintenance area), you may choose to uncheck this box.

Under “Data Communication Options”, confirm that the [“Use RTC SQL Database”](#) box is checked. The other option, [“Use CSV M2M Disabled”](#) is used in non-M2M installations, where direct connection is used instead of M2M. If the “Use RTC SQL Database” box is not checked, do so now.

Still within the Utilities window, click “Edit Agency Name.” Type in the Agency Name and Password that was provided to you by RTC. Click the “Save” button and then click “Done.” You should see a Password Check Result window appear that confirms the correct Agency Name and Password. Click “OK.”

If Guardian boards have been purchased and installed in your agency, make a note to come back to this screen and click the [Edit Users](#) button, which allows you to choose who, when, and how Guardian Alert Notifications get sent. This can be done at any time.

This concludes the initial set-up of RTC Connect using the Utilities Menu.

For more information, definitions, and detail on the rest of the tools in the Utilities Menu ([Com Port](#), [General Options](#), [Validate](#), [CPR4 Loader](#), [Version](#), [Data Connection Information](#), and [Automatic Actions](#)), please view the [Glossary](#) at the end of this document.

SECTION 3: ADDING AND EDITING MASTER GROUPS

A Master Group is the highest level of organization for Locations in RTC Connect. [Master Groups](#) are made up of [Groups](#) (schools), which are made up of [Locations](#) (flashers). Using Master Groups is recommended, but optional in certain circumstances (see Section 2).

Master Groups are best used to represent individual school districts, defined maintenance areas, or other unique distinctions based on location. *Note: There is a 99 Group limit for each Master Group, so if you have more than 99 schools to manage, it is imperative to divide them into Master Groups that make sense to you.*

Unless you chose to disable Master Groups in Section 2, upon logging into RTC Connect, you should see Master Group 1 at the top of the [Tree Navigation Panel](#) on the Main Screen.

RTC Connect contains 9 Master Groups that are available to use. As long as there is one Group in a Master Group, it will appear in the Tree Navigation Panel. “Empty” or Groupless Master Groups do not appear on the tree, for simplicity’s sake.

In order for a new Master Group to appear, you have to first create a Group and assign it to the new Master Group. The process of adding a Group, and therefore having “new” Master Groups appear in the Tree Navigation Panel, is explained in Section 4.

The 9 Master Groups are given default names “Master Group 1” through “Master Group 9”. If you would like to change a Master Group name, you can right click on an existing Master Group name in the Tree Navigation Panel. On the pop-up selection tool that appears, find and click “Edit Master Group.” A pop-up window will appear prompting you to type in the new Master Group name of your choosing. After typing in the name, press Save. You will return to the Main Screen, where you will see the updated Master Group name.

Note: If you would like to narrow or expand the amount of Master Groups that appear on the Tree Navigation Panel and map, there is a drop-down selection tool titled [“Master Group Selection”](#) at the bottom of the RTC Connect Tool Bar on the left side of the Main Screen.

SECTION 4: ADDING AND EDITING GROUPS

A [Group](#) is the primary level of [Location](#) organization in RTC Connect. Groups are used to organize one or more Locations that have the same [Calendar Events](#) and programming.

RTC recommends adding and assigning a Group to represent each individual school. Since it is extremely likely that all flasher locations at a specific school will turn on/off at the same time and on the same days, the calendar and programming will be identical, thus qualifying as a Group.

Note: It is possible to put multiple schools in a single Group, but keep in mind that all scheduling and programming must be identical for the Group dynamic to work properly. New programming schedules, programming changes, and override commands will affect all Locations within a Group, so if a user can imagine scenarios in which they would only want to affect a single school and not another, it is recommended that schools be represented by separate Groups.

To add a Group, right click on a Master Group name (i.e. "Master Group 1") that you see in the [Tree Navigation Panel](#). A selection panel will appear. Find "Add Group" and click on it.

A new pop-up window will appear, prompting you to select a Master Group that the new Group will belong to. Click on the Master Group you want to assign the Group to and then click the "Add Group" button. *Note: Master Groups 1 through 9 are already created by RTC, but this is how you get a "new" Master Group to appear in the Tree Navigation Panel.*

After adding the Group to a Master Group, another pop-up window will appear where you can edit the Group details. In the "Group Name" field you will see something similar to "MG1 GP1". This stands for Master Group 01, Group 01. That is the default name for a new Group. Although it is OK to leave the Group name as the default, we recommend giving it a unique name that will be simple to identify, like a school name (i.e. DavisHS).

In the same window, you will also see a drop-down selection panel that prompts you to assign a Group Number to the new Group. Group Numbers that are already created and assigned to a group will not be available to be selected and by default, the lowest available number will appear. You can select available numbers 1-99, but **RTC recommends going with the default Group number.**

After you have entered the Group Name and Group Number, press the "Finished" button. The windows will close and you will be returned to the Main Screen. If you press the plus (+) button next to the proper Master Group name in the Tree Navigation Panel, you should see the new group you created. Use the minus (-) at any point to minimize what you see in the Tree Navigation Panel.

***** RTC recommends continuing this process to create all the Groups you will be using before adding and assigning Locations in Section 5. *****

To edit a Group, right-click the Group name in the Tree Navigation Panel. A pop-up selection menu will appear. Find "Edit Group" and click. A new pop-up window will appear where you can edit the Group name and Group number. Click "Finished" to save.

SECTION 5: ADDING AND EDITING LOCATIONS, GUARDIAN SET-UP

A Location is a specific place where a time switch exists. Typically, a Location represents a school zone flasher. One or more Locations (flashers) make up a Group (school), as long as those Locations all follow the same calendar and flasher programming.

To add a Location, right-click on the Group in the [Tree Navigation Panel](#) that you would like to assign it to. You may need to use the plus (+) button to expand the Master Groups and find the Group.

After right-clicking on the Group, a pop-up selection menu will appear. Find “Add Location” and click. A new pop-up window will appear with the new Location Details.

The first input box is for the Location Name. New Locations are given a default name that represents the Master Group, Group, and Location numbers (i.e. MG 1 GP1 LOC1). **RTC recommends renaming locations with a unique name that will be easy to identify.** For example, “Main St NB” would be helpful for a user to know that this specific flasher location is the one at Davis HS on Main Street on the North Bound side of the road. Choose a Location name and type it into the text box.

The next input is a dropdown selection to choose a Location Number. The lowest available Location Number will appear by default. You can choose any available number 1-99, but **RTC strongly recommends using the default number.**

The Clock Type text box doesn’t need to be changed in this scenario, so you can disregard it.

The Setup Guardian button will only be enabled if Guardian boards have been purchased and enabled for your agency by RTC. Clicking the Setup Guardian button will open a new window. In this window, you can check which Guardian Monitoring alerts you would like to receive. The monitoring and alerts include:

BATTERY REPORTING or AC POWER REPORTING [based on location type] – (default ON) monitors and reports if the battery level in DC installations dips below the user-set Battery Threshold level. In AC installations, Guardian boards monitor and report interruptions or loss in AC power.

FLASH 1 REPORTING – (default ON) monitors LED/lamp 1 terminals and sends an alert if an LED or lamp burns out or is vandalized

FLASH 2 REPORTING – (default OFF) monitors LED/lamp 2 terminals and sends an alert if an LED or lamp burns out or is vandalized

DOOR REPORTING – (default OFF) If a door switch has been purchased and installed correctly, this sends an alert when the cabinet door opens

TIME SWITCH POWER REPORTING – (default ON) monitors the internal time switch voltage and issues an alert if the time switch loses power

LOAD REPORTING – (default ON) monitors load terminals and issues an alert if the load voltage to the system is disconnected by the solar regulator; only applicable for DC installations

CONF REPORTING – (default OFF) monitors confirmation LED/lamp terminals and sends an alert if an LED or lamp burns out or is vandalized

BATTERY THRESHOLD – (default 9.1V) In DC installations, a user-set threshold that if Battery Reporting is turned ON, an alert is sent if the battery level falls below this voltage level threshold.

After you have finished choosing which Guardian alerts you'd like to receive, press the "Finished" button.

The Location Type, Asset Tag and Location Address input boxes are optional. Most users find the Location Type box useful for location-specific notes (i.e. "Median AC School Zone W/ Modem" or "Repeater Radio Station") so that the information is handy for quick reference. Any note put in the Location Type text box will be available via drop-down menu if you'd like to use the same Location Type note for future/multiple Locations. Asset Tag ID numbers and the physical address of the location can be inputted in the appropriate boxes as well, for the user's convenience, but are not required.

Check the "Use M2M" check box under the Communications Options heading.

At this point, you will need to choose which cell modem you will use with the Location you are adding. Select a modem and find the IMSI Number, located on the black RTC sticker on the top of the modem. Use the drop-down menu to find the correct IMSI number. RTC pairs the applicable IMSI numbers to each user's account, so you will only see the IMSI numbers of M2M modems that your agency has. You can use the "Show All" or "Show Available" check boxes to narrow or broaden the IMSI numbers you see in the drop-down menu. We recommend using "Show Available" to avoid assigning the same IMSI number to multiple Locations.

The "Use IP" and "Use Serial Port" check boxes are not used in M2M installations, but are explained in the Glossary.

For now, you can disregard the latitude and longitude boxes under GIS information. The location coordinates will be found and inputted into the Time Switch in Section 12A/12B and these fields will be populated when RTC Connect uses the cell modem to update.

After you have completed the necessary fields, click "Finished".

**** Repeat this process to create all of the locations in your installation. ****

SECTION 6: CALENDAR – OVERVIEW

RTC Connect works with the AP22 Time Switch and CPR2102 to create programming schedules for school zone flashers. RTC uses a programming sequence that consists of Day Plans, the typical Week Plan, and Calendar Events (Annual Plans).

Keep in mind that programming happens on the Group level. By definition, all Locations within a Group have the same programming.

The order of the programming sequence is important.

[Day plans](#) must be created first. You can create up to 10 Day Plans per Group, which are made up of Relay ON and Relay OFF commands, called Steps (Section 7).

You will assign a Day Plan to each day of the week, making up the typical [Week Plan](#). The Week Plan is automatically programmed to every week of the year (Section 8).

Finally, you will create [Calendar Events](#) (Section 9) that are “exceptions” to the typical Week Plan (i.e. Labor Day, Spring Break, summer vacation). Calendar Events are simply a day or group of days that receive a different Day Plan than the one(s) assigned to them by the Week Plan.

***** To begin, RTC strongly recommends executing the programming sequence from start to finish with one Group. *****

After the first Group has received all of its Day Plans, Week Plan, and Calendar Events, you can either repeat the process one by one, or use some of the tips and shortcuts created by RTC to copy programming from one Group to one or more of the other Groups (Section 10).

SECTION 7: CALENDAR – DAY PLANS

The first step of the programming sequence is the creation of Day Plans. A Day Plan consists of all the Relay ON and Relay OFF flasher commands throughout a day, which RTC calls Steps. Think of the flashers turning on in the morning as one Step and the flashers turning off an hour later as a second Step. You'll likely have another pair of Steps in the afternoon, and may have even more pairs throughout the day. You can have up to 16 Steps in a single Day Plan.

To begin, access the Edit School Calendar window by clicking on the "Show Calendar" button on the RTC Connect Tool Bar on the left side of the Main Screen in RTC Connect.

In the Edit School Calendar window, you will see a Group Selection Panel. Select the Group that you would like to create a Day Plan for by clicking on the Group name. You can use the Master Group Selection drop-down tool at the bottom left of the first column to filter which Groups are shown in the selection panel.

Note: Remember, programming happens on the Group level and applies to all Locations within that Group. If there are certain Locations within the Group where certain programming doesn't apply, it does not belong in the Group. RTC recommends only putting Locations with identical schedules and programming in the same Groups.

After selecting the Group, you will see that Group name as the Active Group at the top of the second column in the Edit School Calendar window. Beneath this, you will see a color-coded list of Dayplans that can be created for this Group.

The top two Day Plans, Holiday and Vacation, are reserved for days that have no programming Steps, meaning the flashers won't turn on (or off). Later in the programming sequence, you will use these two Day Plans to schedule Calendar Events over holidays and breaks like Labor Day, Spring Break, and summer vacation. You can not add to or edit these Day Plans.

The next Day Plan on the list – Normal – is used for the most common school day scheduling for this Group.

The following seven Day Plans, all titled "Unassigned" by default, are for the less common flasher programming days (i.e. early dismissal, half days, and after school programming days) that the Locations in this Group will run from time to time.

The bottom Day Plan, "[Override](#)", is used for short-notice changes to schedules like snow days. Overrides are scheduled in a different window (See Glossary) and should be disregarded for now.

Begin by adding the steps for the Normal Day Plan. Double-click "Normal" from the color-coded Day Plan list. An Edit Dayplans and Steps window will appear. You'll see that the Group you've selected previously is already highlighted and that "Normal" is selected in the "Available Dayplans" panel. You'll also see a blank Edit Step panel.

To create the first step in the "Normal" Day Plan, click on the "Add Step" button beneath the Edit Step Panel.

An Edit Step Time window will appear. At the top of this window, you will see a Time Selection input. Click on the hours or minutes and type or use the arrows to input the time of your first Step. For example, if you want the school zone flashers in this Group to turn ON at 7:45a on normal school days, you would click on the hour, type in "07", click on the minutes, type in "45" or press the "Up" arrow until the time selection reads "07:45 AM".

The next step is choosing if you want the flasher relay to turn ON or OFF. If different than the default choice, click the correct box for Relay ON/OFF.

Click "Save" to complete the creation of the first Step. You will see the step appear in the "Edit Step" panel.

Create your next step, which will likely be the turning OFF of the flashers, by repeating the process – confirming you have the correct Group selected, clicking "Add Step", inputting the correct time, clicking the box for "Relay State OFF," and clicking "Save".

Continue following this process to create all the Steps for the selected Group's "Normal" Day Plan. If you ever need to edit or delete a Step, you can do so by clicking the Step in the "Edit Step" panel, and clicking the buttons "Edit Step" or "Delete Step."

After you've completed the "Normal" Day Plan, you can move on to the other Day Plans that will apply to this Group. Take a thorough look at your school calendar and identify all the days that have programming that differs from the "Normal" day. If you have a day that starts at the same time as the "Normal" Day Plan, but school ends an hour earlier, you will create a second Day Plan for that scheduling. If you have yet another school day that starts at the same time, but gets out at lunch, you will create a third Day Plan with that scheduling.

To create a new Day Plan from within the Edit Dayplans window, click the "Add Dayplan" button beneath the "Available Dayplans" panel. A window will appear allowing you to give a name to the new Day Plan. Choose and type a name that is specific enough to identify (i.e. "2HR Early Dismissal" or "Pep Rally") and click "Save".

Follow the process described above to add all of the steps that make up the new Day Plan(s).

Continue creating Day Plans to represent all of the unique schedules that pertain to the Group you are programming. After all the Day Plans have been issued and you see them in the color-coded panel, you are ready to enter the Typical Week Plan.

Note: RTC recommends completing Section 7, 8, & 9 in a sequence for a single Group before repeating the process for other Groups. Completing the programming sequence for a single Group will allow for easier programming of the rest of the Groups in your installation. Tips and explanations for adding programming to the rest of your Groups are explained in Section 10.

SECTION 8: CALENDAR – TYPICAL WEEK PLAN

The Typical Week Plan is the day-by-day scheduling of Day Plans for your most common school week. You will assign a Day Plan (created in Section 7) to each day of the week.

Reminder: Day Plans must be created for a Group before the Typical Week Plan can be scheduled.

If you no longer have the “Edit School Calendar” window up, click the “Show Calendar” button on the left side of the Main Screen.

Once the window has appeared, make sure you have the correct Group highlighted in the “Select A Group” panel to continue the sequence with the Day Plans you created in Section 7.

Under the color-coded Day Plans panel is the Typical School Week scheduling tool. You will see each day of the week listed with a drop-down selection tool beside it. The drop-down selection tool contains each of the Day Plans you created for the selected Group.

By default, Saturday and Sunday are assigned “None”, which means no flasher programming is assigned. Monday through Friday default to “Normal”, which is your most common Day Plan (created and customized in Section 7).

As necessary, use the drop-down selection tool to change and assign a Day Plan to each Day of the Week, building out the most typical week you have.

If an Early Dismissal or pep rally (or any other Day Plan scheduling) happen in the majority of school weeks throughout the year, assign it in the Typical Week Plan. If it only happens on occasion, those do not get added to the Typical Week Plan.

As you change the Typical Week Plan (if necessary), you will notice the calendar on the right side of the window change colors. Each day on the calendar displays a color that matches the color-coding of the Day Plan in the available Dayplans panel.

After you have assigned a Day Plan to each day of the week in the Typical Week Plan, you are ready to program the Calendar Events.

Note: RTC recommends completing Section 7, 8, & 9 in a sequence for a single Group before repeating the process for other Groups. Completing the programming sequence for a single Group will allow for easier programming of the rest of the Groups in your installation. Tips and explanations for adding programming to the rest of your Groups are explained in Section 10.

SECTION 9: CALENDAR – CALENDAR EVENTS (ANNUAL PLANS)

Calendar Events (also known as Annual Plans) are Day Plans that get assigned to a specific day (or range of days) that break up the pattern of the Typical Week Plan. A great example of a Calendar Event is a holiday, Spring Break, or early-dismissal exam day.

In each of these examples, the flasher programming needs to alter from the typical Week Plan, which you programmed in Section 8. Perhaps instead of the “Normal” Day Plan on the Monday of Labor Day, you need to add the “Holiday” Day Plan because the flashers do not need to be in use. Or you might need to assign the “2HR Early Dismissal” Day Plan (created in Section 7) to June 2nd and 3rd because of final exam days.

RTC recommends scheduling your Annual (Exception) Plans for the entire year in advance, so you don't forget to schedule them down the road. **RTC recommends referencing a school calendar to make sure you cover all holidays, breaks, and other irregular days.**

If you no longer have the “Edit School Calendar” window up, click the “Show Calendar” button on the left side of the Main Screen. Make sure the correct Group is selected in the “Select a Group” panel on the left side of the window.

To schedule an Calendar Event for a single day, for instance the first holiday you see on your school calendar, find the correct date on the calendar on the right side of the window. *Note: If you'd like to change the view or date range, you can use the “Select View” and “Select Date Range” drop-down tools above the calendar.*

Click on the date of the Calendar Event. A circle should appear around the date number, confirming the date selected. Then, right-click on the date again. A selection panel will appear that lists the Day Plans for the selected Group. Choose a Day Plan to assign to this day by clicking on the Day Plan name. *Note: “Holiday” and “Vacation” are both stored Day Plans with no programming Steps. Assigning these to a day will result in no flasher activity. The other Day Plans contain whatever Steps you programmed them with in Section 7.*

Choosing and clicking the Day Plan completes the Calendar Event process. You will see the color square of the date you affected change to the color assigned to the specific Day Plan.

Scheduling Calendar Events for multiple days at a time is useful for longer breaks like Spring Break or summer vacation.

To affect several consecutive days, click on the day you would like the Calendar Event to begin. Then, hold down the SHIFT key and click on the day you would like the Calendar Event to end. You will see that all of the dates in the range you selected will be circled. You can then follow the process above of right-clicking on one of the selected/circled dates to view the Day Plans. Click the Day Plan you wish to assign to the range of days.

You can also select multiple days that may or may not be consecutive and assign a Calendar Event to them. Do so by individually clicking on dates with the CTRL key held down. Once all of the days you wish to assign have been selected, you should see circles around all of the dates. Right-click one of the selected/circled dates to view the Day Plans, and click one to assign the Day Plan to all of the selected days.

After the selected Group has received all of its Day Plans, Week Plan, and Calendar Events, you have completed the programming sequence. At this point, you can choose to repeat the process one by one for the rest of the groups in your installation or use some of the tips and shortcuts created by RTC to copy programming from one Group to one or more of the other Groups (see Section 10).

SECTION 10: CALENDAR – PROGRAMMING TIPS AND RECOMMENDATIONS

After creating the Day Plans, Typical Week Plan, and Calendar Events for a single Group, you'll need to create the programming for the rest of the Groups in your installation.

Since it can be a time consuming task, RTC has developed a few tips and shortcuts to help complete this process.

I. The first tip and recommendation is utilizing the Computer Programming Copy & Paste options, which consist of:

COPY ALL PROGRAMMING: this option copies all Day Plans and all Calendar Events from a selected Group and enables you to paste the data to another Group or multiple Groups. Note: The paste action will write over all existing programming.

COPY CALENDAR EVENTS: this option copies all of the Calendar Events from the selected Group and enables you to paste them to another Group or Multiple Groups. *Remember, Calendar Events have Day Plans assigned to them. **When copying and pasting Calendar Events only, the Calendar Events will reference the Day Plan number that it has associated with it. The Calendar Events will use whatever steps are in the associated Day Plans in Groups you are pasting them into, and not reference the steps of the Day Plans that you are copying them from. So if a Calendar Event is tied to a Day Plan 3 and the Group you are pasting to does not have a Day Plan 3, there will be no flasher activity during that day(s). If that's not what you want, you'll need to add/edit the Day Plan to program the desired flasher activity. Note: The paste action will write over all existing Calendar Event programming.***

COPY DAY PLANS: this option copies all of the Day Plans from the selected Group and enables you to paste all of the programming to another Group or multiple Groups. Note: The paste action will write over all existing Day Plan programming.

These options are located in the Tree Navigation Panel on the Main Screen of RTC Connect. Use the plus (+) icons to expand down to the Group that you want to copy programming from. Clicking the plus (+) sign next to the Group Name will reveal a sub-level of navigation titled "Computer Programming." Right-click on the words "Computer Programming." On the pop-up selection menu, find and click the copy option that you want. To paste, right-click on any Group name. Find "Programming" on the pop-up selection menu and take your mouse over to the sub-menu. Clicking "Paste Programming" will result in a "Paste Calendar Information" pop-up window. In this window, click on the Groups you want to paste the copied programming to. You can use the "Master Group Selection" drop-down selection tool to broaden or narrow the Groups you can choose from. Clicking on a Group Name will select the Group and clicking again will deselect it. You can copy the programming to as many Groups as you'd like. Once you've selected the Group(s), click the "Paste Programming" button on the left side of the window. A confirmation pop-up window will appear and you can click "OK." Clicking "Finished" will close the "Paste Calendar Information" window.

A few recommendations when utilizing the Computer Programming Copy & Paste options:

1. If you have any Groups (schools) that operate exactly the same as the initial Group you programmed, both in terms of daily programming times and Calendar Events, go ahead and copy and paste all programming from the initial Group to the other identical Groups.
2. Second, we've found that many users will copy and paste the Calendar Events from the initial Group to all of the Groups, using the directions above. Since most users manage Groups within the same school district, Calendar Events like Spring Break, holidays, and summer vacation all occur on the same day(s), regardless if it's an elementary school or high school. Even though the Calendar Events are associated with Day Plans, which might not have been created yet and may vary based on school type, this will still help the process go quicker, when applicable.
3. If you have standard programming times that many Groups follow, but differ from those in the initial Group (i.e. elementary school times vs. high school times), create the new Day Plans in a single Group, then use the copy and paste Day Plans feature to program the rest of the Groups. Remember, if you've already copied Calendar Events over to the Groups, you'll need to match the Day Plan programming with the Day Plan numbers associated with the Calendar Events.
4. Keep in mind it is possible to copy and paste, then edit. So if you prefer, you can copy and paste Day Plans or All Data and then go in and edit Steps, Calendar Events, or anything else you might want to. The copy and paste features are there to make the process more efficient.

II. Another tip and recommendation is the ability to copy, paste, and edit Steps within and between Day Plans.

Open the calendar and select the Group that you've completed the programming sequence with. Then, double click on one of your stored Day Plans (i.e. Normal). Beneath the Edit Step panel, there is a button that reads "Copy Steps." Clicking this button will copy whatever information is in the Edit Step panel. You can also click on one or more Steps to just copy the selected Steps. Then, choose another Day Plan. It can be within the same Group or a different one. Beneath the Edit Step panel of the new Group, you will see a "Paste Steps" button that you can click to paste whatever you have copied.

You can still go in and edit steps that you've pasted. To do so, click on a step from the "Edit Step" panel. Once the step that you want to edit has been selected and highlighted, an "Edit Step" button will become active beneath the panel. Clicking on this button will open a window that will allow you to make the necessary changes. The edits you make will only affect the Steps of the selected Day Plan.

SECTION 11: CONNECTING THE GUARDIAN BOARD, TIME SWITCH, & M2M

Note: Complete Guardian Installation Guides for all Guardian Products (AC, DC, and Carmanah) can be viewed and downloaded from our website – RTC-Traffic.com.

Please refer to the Guardian Install Guides within this PDF document that specifically describe the process of connecting the Guardian, Time Switch, and M2M to your flasher components.

RTC recommends that when connecting your flasher components, assign Flasher 1 to the higher flasher and Flasher 2 to the lower flasher. This will assist you (after receiving a Guardian alert) in knowing which flasher to troubleshoot and what kind of vehicle/equipment you might need.

Return to this document and Section 12 after installation is complete.

SECTION 12A: AP22 & M2M SET-UP

Note: this section explains the set-up for an AP22 & M2M installation. If you are using a CPR2102 Time Switch, please skip ahead to 12B.

**** IMPORTANT ** Before going into the field, it is imperative that:**

- 1. You have the ability to reference the Master Group, Group, and Location Numbers (known as the Time Switch Address) you assigned to each Location in RTC Connect. You will need to reference these numbers and input them into the AP22 at the installation location.**
- 2. You have knowledge of which M2M modem you paired with each Location (based on IMSI number). You will need to install the correct modem with the correct Time Switch at the correct Location.**

At the installation location, make sure the AP22 and modem have been installed and are receiving power. If necessary, slide the modem off the bracket so the AP22 keyboard is accessible.

Use the AP22 Keyboard to issue the following commands:

1. Time Switch Address - Press 22 * (enter)

Use the keypad enter the correct Master Group, Group and Location numbers for this location by keying in the numbers and pressing * (enter) to advance the cursor to the next spot. Use the zero before single digit numbers (ex. MG2, G3, L1 would be inputted as 02* 03* 01*). The final * (enter) will take you back to the home screen.

2. Latitude and Longitude - Press 41 * (enter)

On this screen, input the latitude and longitude by pressing a number, followed by the * (enter) key to move to the next digit on the screen. Use a smartphone or another device to determine the exact GPS coordinates of the installation location in digital format (DD.DDDDD). On most smartphones, you can open a maps application, then press and hold on the screen in your current location (often marked by a dot or arrow icon). If you can only find the latitude and longitude in Degrees, Minutes, Seconds format, there are several free websites or phone applications that can convert it into digital. The longitude will likely need to begin with a leading zero, since most longitudes will be 2-digit whole numbers followed by the decimals. Ignore the negative sign for longitude. After inputting the last number on the longitude line, pressing * (enter) will take you back to the home screen.

3. Communication Verification - Press 39 * (enter)

Make sure that the LS light on the cell modem is blinking. It may take a few minutes after powering on. After the LS light starts blinking, the 39 Command screen will scroll the IMSI and IMEI numbers of the modem. Then the screen will scroll to the CREG status. It should read "Registered OK" or "Roaming". Press # (exit) to return to the home screen.

4. Signal Strength - Press 38 * (enter)

The screen will display the signal strength of the modem. This number is in dB and ranges from -101 to -40, with -40 being stronger than -101. Ideally, it should read -95 or better (closer to -40). If it doesn't, an external antenna may be required. Press # (exit) to return to the home screen.

5. Manual On - Press 1* (enter) 1 * (enter)

This will turn the relay on and the lamps should flash.

6. Digital Adjust - Press DA ** (enter enter)

The screen will revert back to the home screen, then scroll through a "3G Connection Active" screen, a "Transmitting" screen, back to the home screen, and then to a "SMS Tx/ RX Commo In Progress" screen, before returning to the home screen. This command is manually connecting to the server to reprogram the AP22 with the most current flasher schedule.

7. Manual Off - Press 1* (enter) 1 * (enter)

This will turn the relay off and the lamps should stop flashing.

Return the modem to the mount on the front of the time switch. AP22 & M2M installation is complete and the hardware is programmed with the latest code.

For future use, the AP22 Programming Manual can be viewed and downloaded from our website - RTC-Traffic.com.

Videos explaining this process and many more AP22 processes can be found on our website as well.

After Section 12 is completed for all locations, you are finished with the field side installation. The remaining sections work back in RTC Connect.

SECTION 12B: CPR2012 & M2M SET-UP

Note: this section explains the set-up for a CPR2102 & M2M installation. If you are using a AP22 Time Switch, please view step to 12A.

**** IMPORTANT ** Before going into the field, it is imperative that:**

- 1. You have the ability to reference the Master Group, Group, and Location Numbers (known as the Time Switch Address) you assigned to each Location in RTC Connect. You will need to reference these numbers and input them into the CPR2012 at the installation location.**
- 2. You have knowledge of which M2M modem you paired with each Location (based on IMSI number). You will need to install the correct modem with the correct Time Switch at the correct Location.**

At the installation location, make sure the CPR2102 and modem have been installed and are receiving power. If necessary, slide the modem off the bracket so you can remove the cover off the CPR2102.

1. Time Switch Address

Remove the cover of the CPR2102 by unscrewing the thumb screws on the top and bottom of the lid.

Locate the dial in the middle of the circuit board that has the label "MASTER GROUP." You will use this dial to manually enter the Master Group number for this Location. The dial is labeled 0-9, followed by A-F. On the CPR2102, Master Group Dial Number = [Master Group Number - 1]. So if this Location is in Master Group 6, set the dial to 5. If it is in master Group 1, set the dial to 0. Use your finger or a pen to safely set the arrow on the dial to the number representing the Master Group Number, using the formula above.

Next, locate the black dip switch on the top third of the circuit board that has the label "GROUP ADDRESS." Use your finger or a pen to safely set the small white tabs on the 8-position dip switch to manually enter the Group number of this Location. Notice there are 4 tabs (numbered 1,2,4,8) for the 10s digit (labeled 10x on the circuit board) and 4 tabs (numbered 1,2,4,8) for the 1s digit (labeled 1x on the circuit board). For both the 10s digit and the 1s digit, use a combination of the 1, 2, 4, and 8 tabs to set the correct Group number. The tabs pressed down act like an addition problem to create the "sum", which is the digit number. For example, if you are programming Group 73, you would lower the 4 and 3 tabs on the 10x side ($4+3 = 7$) and lower the 2 and 1 tabs on the 1x side ($2+1=3$). If you are programming Group 19, you would just lower the 1 tab on the 10x side and the 8 and 1 tabs on the 1x side ($8+1 = 9$).

**** There is a CPR2102 dip switch document attachment with photos and details on this process. You can also find this document on our website, RTC-Traffic.com.**

Finally, locate the black dip switch next to the Group Address dip switch with the label "LOCATION ADDRESS." You will use this dip switch to manually enter the Location number assigned to this Location. The dip switch works the same as the one for the Group Address. Use your finger or a pen to safely set the tabs in the correct positions to enter the Location number.

After the Master Group, Group, and Location numbers have been manually inputted onto the CPR2102 circuit board, you can replace the lid and tighten using the provided thumbs screws.

2. Latitude and Longitude

If you purchased an RTC GPS box along with your CPR2102, you can use it to automatically find and input the location coordinates into the Time Switch to be used in RTC Connect. Attach the GPS box to the Time Switch using the DB9 connector on the GPS box. The box will receive power through the CPR2102 and you will see a red power light on the side of the box. After the GPS box has received the coordinates, you should see a blue light on the side of the box beside the power light. After the blue light appears, wait about 20 seconds. The GPS box will input the exact latitude and longitude into the Time Switch, which will be helpful when adding location icons in RTC Connect.

If you do not have an RTC GPS box, you can disregard this step. You will have to manually input the latitude and longitude into RTC Connect in Section 13.

3. Modem Status

If you removed the modem in Step 2, reconnect the modem to the CPR2102 using the DB9 connector. Make sure that the LS light on the cell modem is blinking. It may take a few minutes after powering on.

4. Manual On/Off

On the lid of the CPR2102, locate the hole labeled “Manual Control.” Using a pen or a paper clip, safely press the button located on the circuit board through the hole. Your flasher should turn on and you should see the light in the hole labeled “Relay On/Off” turn on. If the light on the circuit board turns on, but the flashers do not, you likely have a wiring issue. Safely press the “Manual Control” button again to turn the relay back off.

5. Digital Adjust

First, press the “Manual Control” button (as described above) to set the flasher relay in the opposite position of what it currently should be. Then, press and hold the “Manual Control” button for 10 seconds. This manually connects to the server to reprogram the CPR2102 with the most current flasher programming. At the end of the process, the flasher relay will switch states again automatically, so press the “Manual Control” button again (if necessary) to make sure the flasher is in the correct state before leaving.

Return the modem to the mount on the front of the time switch. CPR2102 & M2M installation is complete.

For future use, CPR2102 literature can be viewed and downloaded from our website – RTC-Traffic.com.

After Section 12 is completed for all locations, you are finished with the field side installation. The remaining sections work back in RTC Connect.

SECTION 13: ADDING LOCATION ICONS TO THE RTC CONNECT MAP

Reopen RTC Connect. In the Tree Navigation Panel, expand navigation by clicking the plus (+) buttons to view the first Location in your first Master Group and first Group. Right-click on the Location name.

If you programmed the Lat/Long into the Time Switch in Section 12A/12B:

In the pop-up selection panel, find “Diagnostics.” Roll your cursor over to the sub-navigation to find and click “GPS Auto Locate.” A new window will pop up with a “Lat / Lon in Database” and a “Lat / Lon in Time Switch” section. You will see the coordinates that you’ve entered in the “in Time Switch” section. Click the “Save Time Switch Lat/Lon to Database” button. This will save the coordinates into the database and create a location icon on the RTC Connect map. You can make minor changes to the location of the icon by clicking and dragging the icon on the map.

If you didn’t program the Lat/Long into the Time Switch in Section 12A/12B:

In the pop-up selection panel, click “Place Location on Map.” In the new pop-up window, there is a tool panel on the left hand side and a map on the right. A location icon will be centered on the map in a default location.

There are a few options to nail down the location for the icon:

SEARCH AND FIND: On the left panel, there is a box labeled “Center map by Address.” You can use this box to enter a physical address, school name (with city and state), and sometimes even other key words to approximate a location. Type in an address or name in the box and click the “Center” button. The map within this window will move to the searched location and you should see a location icon centered on the map. From here, you can click and drag the location icon to exactly where you want it on the map. Click “Save” once it is in the proper location.

ENTER LATITUDE AND LONGITUDE: On the left panel of the pop-up window, there are boxes labeled “Center Map by Lat Lon.” If you can find the exact latitude and longitude of the Location in digital/decimal format using a computer or smart phone, you can enter the numbers in the appropriate boxes. Click the “Center” button to move the location icon to the coordinates. From here, you can click and drag the location icon to exactly where you want it on the map, if needed. Click “Save” once it is in the proper location.

CLICK AND DRAG: As you add multiple Locations within a common Group to the map, the default location of the icon will center based on the other Locations. If the default location is already close enough to where it needs to be, you can click and drag the location icon to exactly where you want it on the map. Click “Save” once it is in the proper location.

Repeat this process for every Location in your installation. As you go along, you should see each colored location icon populate on the map on the Main Screen in RTC Connect.

You can edit the icon location the same way you placed it originally, by right clicking on the Location name in the Tree Navigation Panel and clicking “Place Location on Map.”

SECTION 14: INITIAL TROUBLESHOOTING IN RTC CONNECT

Once you have created, installed, and added all of your Locations to the Map in RTC Connect, you should see your complete system in the Tree Navigation Panel and icons for every Location on the map.

The location icons might be several different colors, each representing a different flasher status with potential troubleshooting methods. You will also see colored dots next to Master Groups, Groups, and Locations within the Tree Navigation Panel. These colors represent different flasher statuses and most have troubleshooting possibilities.

GREEN – at the time of the most recent read, the programming data in the Time Switch matched the programming data in RTC Connect. No troubleshooting is required.

RED – at the time of the most recent read, the programming data in the Time Switch did not match the programming data in RTC Connect. To troubleshoot, **issue a Read Time Switch command. You can do so by right-clicking on the Location Name in the Tree Navigation Panel or the location icon on the map and then finding and clicking on “Read Time Switch”.** After the command has been executed, the location icon will likely turn to Green (confirming that the issue has been resolved) or Black (representing a communication issue). If it remains red, there is likely a hardware issue that needs to be resolved with RTC.

BLACK – a communication issue, likely poor signal or loss of modem power/connection. To troubleshoot, issue a Read Time Switch command (process in bold, above). If the location icon turns Green, the issue has been resolved. If it remains Black, a trip to the field to troubleshoot the modem is likely required.

PURPLE – the Location missed its automatic check-in with the database. To troubleshoot, issue a Read Time Switch command (process in bold, above). After the command has been executed, the location icon will likely turn to Green (confirming that the issue has been resolved), Black (representing a communication issue and likely requiring a troubleshooting trip to the field), or red (likely a hardware issue that RTC will help resolve).

YELLOW – a yellow location icon means that the current programming in RTC suggests the relay at the Location should be On. It does not confirm that the flashers are on, only that the current programming shows that it should be on.

BLUE/GUARDIAN – the blue icon with the yellow dot inside means the Location has a current Guardian Alert. When an agency has active Guardian Alerts, a button will appear over the map on the Main Screen where you can view the Guardian Alerts for each Location. You can also view what time the alert was triggered and which type of Guardian alert(s) is active. Troubleshooting varies based on alert type, but will almost certainly require a trip to the field.

GRAY/WHITE SNOWFLAKE – the gray and white snowflake location icon will not be seen in initial set-up, but represents a location that has an Override scheduled. No troubleshooting is required.

Note: The [Utilities](#) Menu (accessed via the “Utilities” button on the RTC Connect Tool Bar) is a great resource for future troubleshooting after initial set-up and installation. RTC support also has several advanced techniques to help with troubleshooting.

**** Other methods of troubleshooting and functions can be found within dropdown menus. Access these menus by right-clicking on either a Group name or a Location name in the Tree Navigation Panel.** These functions include:

GROUP MANUAL ON & OFF – sends a command that manually turns all Locations within the selected Group ON or OFF.

PROGRAM (ALL) GROUP(S) – in M2M installations, manually sends a read/write command to the selected Group or all Groups. This updates the Group(s) with the latest programming code for that Group. In non-M2M installations, this manually sends the write command only.

READ (ALL) GROUP(S) – in M2M installations, manually sends a read/write command to the selected Group or all Groups. This updates the Group(s) with the latest programming code for that Group. In non-M2M installations, this manually sends the read command only.

SHOW VALIDATE – opens the Validate screen within the Utilities menu

SHOW M2M TRAFFIC – shows when a text message has been sent or received between the server and cell modem

SHOW 3G DATA CONNECTIONS – shows the times a 3G connection has been made between the server and cell modem

SHOW GUARDIAN DATA – displays the Guardian data and graphs (for solar voltage, battery levels, etc.) on a day-by-day basis. Users can select which Group/Location they want to view as well as the date range

SHOW GUARDIAN ALERTS – for each Guardian-enabled Location, displays the specific Guardian Alert type, Alert start time, and Alert resolution time

DISABLE MAP – disables/hides the map feature on the RTC Connect Main Screen

SHOW MASTER GROUP / GROUP / ALL LOCATIONS ON MAP – allows the user to choose which Locations (based on selection in the Tree Navigation Panel) are visible on the map on the Main Screen.

MAP LEGEND – displays the definitions of different icons on the map

RELOAD SERVER DATA – serves as a manual “refresh” of the RTC Connect screen

MODEM DIAGNOSTIC – used primarily by RTC backoffice, allows for the troubleshooting of a modem connected directly to the computer

PROGRAM TIME SWITCH – in M2M installations, manually sends a read/write command to the selected Location. This updates the Location with the latest programming code. In non-M2M installations, this manually sends the write command only.

READ TIME SWITCH - in M2M installations, manually sends a read/write command to the selected Location. This updates the Location with the latest programming code for that Group. In non-M2M installations, this manually sends the read command only.

GLOSSARY

RTC Connect™ - RTC Connect™ the premier central software platform for programming and maintaining school zone flasher systems. It is customizable, easy to configure, and the best way to get a snapshot of the school zone flashers in your area. RTC Connect™ is the “command center” for the scheduling, monitoring, and troubleshooting of your system.

Guardian Monitoring – The Guardian Series product line monitors and alerts users of current and potential problems with batteries (including battery theft), solar panels, time switches, and power supplies located in school zone flasher systems or any other electronic device. Alerts are sent via text or e-mail to an unlimited number of recipients and can be set to send around-the-clock or only during user-defined business hours. The Guardian works as the “watch dog” of your cabinet, keeping an eye on things when you aren’t around.

AP22 Time Switch – The AP22 from RTC has been the industry standard for school zone time switches for over 30 years. The low maintenance, user-friendly time switch stores and runs the programming for school zone flasher systems and works seamlessly with RTC Connect. Think of it as the “brain” of the system.

M2M Cellular Communication – RTC’s M2M is a compact cell modem that enables quick, reliable, two-way communication between your school zone flasher cabinet and RTC Connect. The simple, plug-and-play equipment eliminates the need for additional infrastructure, enables programming changes to be made remotely, and ensures Guardian alerts are received as quickly as possible. A cabinet equipped with an M2M modem gives you “boots on the ground”, allowing you to make changes to your AP22 time switch and notice potential problems in your cabinet without ever leaving the office.

CPR2102 Time Switch – RTC’s CPR2102 Time Switch is a pager or M2M programmable time switch that can run and store programming for school zone flasher systems and works with RTC Connect.

UTILITIES – The Utilities button within RTC Connect™ can be found on the left panel, under the RTC Connect™ logo. Clicking on the button opens a window that allows you to disable the use of Master Groups, set up a com port, change the data communication options, enable map animation, sort the navigation tree alphabetically, show the satellite view of the map, run tests on errors using the “Validate” button, check the software version, run CPR4 loader, test/view/edit connection information, edit users and agency names, print reports, and other tasks within the software.

MASTER GROUPS – A Master Group is the highest level of organization for locations within RTC Connect™. Master Groups are required if you are managing more than 99 locations. Master Groups are best used to represent different maintenance areas, school districts, or other distinct clusters of groups, but can be used for other purposes of the customer’s choosing.

GROUPS - A group is the primary level of location organization in RTC Connect. Groups are used to organize two or more locations that have the same calendar and programming.

LOCATIONS - A Location is a specific place where a time switch exists. Typically, a Location represents a school zone flasher. One or more Locations (flashers) make up a Group (school), as long as those Locations all follow the same calendar and flasher programming.

USE CSV M2M DISABLED – An option within the Utilities Menu, this option box is checked in non-M2M installations, where the customer is collecting data and uploading it to RTC Connect using a CSV file. This is commonly done with radio systems and other direct connect installations.

USE RTC SQL DATABASE – An option within the Utilities Menu, this option box is checked on default and used in M2M installations, where RTC Connect and the M2M use RTC's SQL database for data communication. All programming data is stored on RTC's SQL database, which is maintained and backed up daily by RTC.

COM PORT FOR CPR4 LOADER & RADIO – An option within the Utilities Menu, this drop down menu allows a user to select a com port to be used for direct connection between the computer and time switch. The menu is set to “Disabled” by default and only shows com ports that were detected at the time RTC Connect was launched. If you have plugged in a com port after launching RTC Connect, you will need to restart the program to see it as an option in the drop down menu.

ENABLE MAP ANIMATION – An option within the Utilities Menu, this option box is checked by default and enables the “flashing” of different colored map icons that represent current location statuses and the “hopping” of selected locations. Having map animation enabled allows for users to see all of the statuses that pertain to each location. Disabling map animation leaves the location icons in a static state with only some of the location statuses visible (yellow and override icons will not appear on the map). RTC recommends leaving the option box checked.

SORT ALPHABETICAL - An option within the Utilities Menu, this option box is unchecked by default. Checking this box sorts the Navigation Tree in RTC Connect alphabetically by the Master Group, Group, and Location Name the user assigns.

SHOW SATELLITE – An option within the Utilities Menu, this option box is unchecked by default. Checking this box changes the map from “Normal Map” view to the “Satellite” view.

QUICK START GUIDE – An RTC Connect Quick Start Guide can be referenced by clicking the button within the Utilities Menu.

VALIDATE – The validate function can be found within the Utilities Menu and is used to view, test, and troubleshoot locations that are currently showing errors in RTC Connect. Within the Validate window, you will see the groups that have location errors in the left window. You can sort by Master Group by using the drop-down menu in the bottom left corner. The window on the right side is the Selection Window, where locations can be seen and different actions can be applied to. Other button actions include:

CLEAR ALL – clears all locations that have been added to the selection window

ADD ALL – adds all locations in the groups from the left window to the selection window, whether they have errors or not

ADD – adds only the locations in selected group(s) from the left window to the selection window

ADD ERRORS – adds all locations that have errors in the groups from the left window to the selection window

ADD RED – adds locations to the selection window that have programming errors and are marked red in RTC Connect

ADD BLACK – adds locations to the selection window that have communication errors and are marked black in RTC Connect

CLEAR – clears selected locations from the selection window

ADD MISSED TODAY – adds locations to the selection window that missed their daily check-in and are marked purple in RTC Connect

ADD MISSED TODAY GREEN ONLY – adds locations to the selection window that missed their daily check-in, but haven't been read yet and are still marked green in RTC Connect

START VALIDATE – issues one of two commands (explained below) and is used to troubleshoot errors and validate that they still exist

DOWNLOAD LOCATIONS – users can check this box and press “Start Validate” to issue a write command to the locations in the selection window

READ LOCATIONS – users can check this box and press “Start Validate” to issue a read command to the locations in the selection window

CPR4 LOADER – Located within the Utilities Menu, CPR4 Loader enables a user to manually connect a computer to a Time Switch. In order for this action button to be used, a com port must be selected in the Utilities Menu window. Through this you can transfer programming information and issue commands. This is typically only used in older installations and does not need to be used if a user has M2M.

VERSION – clicking this button within the Utilities Menu allows the user to view the current version of RTC Connect that is running. The latest version of RTC Connect can always be found by visiting our website, RTC-Traffic.com.

TREE NAVIGATION PANEL – On the main screen of RTC Connect, the left panel allows you to view Master Groups, Groups, and Locations and associated information in a “tree”-style hierarchy. Users can use the plus (+) and minus (-) signs to expand or minimize the tree to see as little or as much information as they desire.

MASTER GROUP SELECTION – A drop-down selection tool at the bottom of the left panel of the Main Screen that allows the user to select one or all Master Groups to appear in the Tree Navigation Panel and map.

DATA CONNECTION INFORMATION:

TEST DATA CONNECTION – checks to see if RTC Connect can connect to the RTC SQL database

TEST M2M CONNECTION – checks to see if SMS messages can be received by the RTC SQL database

ARCHIVE – allows you to manually create an archive of stored RTC Connect files on the current computer and allows you to restore past archives

CONVERT VERSION 9 CSV FILES – users that have version 9 code can take past source files and convert them into the new code

EDIT USERS – A button within the Utilities Menu in RTC Connect where you can add and edit users who wish to receive Guardian Alert Notifications, which method of notification, and time of notification. Click “Add New User” button and edit the information - names, e-mail address and/or phone number, time of day, and whether or not to include weekend notifications

SET-UP AUTOMATIC ACTIONS – Not used in M2M installations, automatic actions allows you to set up one time per week where RTC Connect sends out Read Location commands to the entire installation. In M2M installations, this is done every day, by default.

DAY PLAN – A Day Plan consists of all the Relay ON and Relay OFF flasher commands throughout a day, which RTC calls Steps. Think of the flashers turning on in the morning as one Step and the flashers turning off an hour later as a second Step. You'll likely have another pair of Steps in the afternoon, and may have even more pairs throughout the day. You can have up to 16 Steps in a single Day Plan.

TYPICAL WEEK PLAN – The Typical Week Plan is the day-by-day scheduling of Day Plans for your most common school week. You will assign a Day Plan (created in Section 7) to each day of the week.

CALENDAR EVENT (ANNUAL PLAN) - Calendar Events (also known as Annual Plans) are Day Plans that get assigned to a specific day (or range of days) that break up the pattern of the Typical Week Plan. A great example of a Calendar Event is a holiday, Spring Break, or early-dismissal exam day.

OVERRIDE – An override is a Day Plan that can be scheduled as a result of short-notice changes to schedules like snow days. Overrides are scheduled by clicking the “Delay / Overrides” button on the RTC Connect Tool Bar. Select a Group or multiple Groups from the “Select Groups” panel. Use the check boxes to either Cancel Programming for the entire day or delay programming by the desired amount of hours and minutes. Choose to schedule the override for today, tomorrow, or both (by checking the respective boxes). Once the proper information has been entered, click the “Send Delays and Overrides” button. You can cancel scheduled Overrides by Selecting the Groups and clicking the “Cancel Delays and Overrides” button. Press “Finished” when you are through. You should see on the map on the Main Screen, gray and white snowflake location icons.