Carmanah®

OWNER'S MANUAL
Solar LED School Zone Beacon – Model R829

The world's most advanced solar LED school zone beacon.
No external wiring or bulb replacement.
Maintenance-free for up to 5 years.

© November 7, 2006, Carmanah Technologies Corp.
www.carmanah.com

Technical Support: customerservice@carmanah.com
Toll Free in North America: 1 (877) 722-8877
International: + (250) 380-0052 | Fax: + (250) 389-0040

R829 – 37234

Table of Contents

1.0 Introduction

Thank you for purchasing the Carmanah Model R829 school zone warning beacon, "the world's most advanced solar-powered LED school zone beacon." Using LED illumination, the unit is designed to operate flawlessly with no scheduled maintenance (other than routine cleaning) for up to 5 years.

Combining advanced electronics and software with an innovative, patented combination of solar-power and LED technology, the Model R829 has been designed to operate under all environmental conditions at most locations throughout North America.

1.1 *How It Works*

Unlike programmable time clock systems, the R829 is programmed using an intuitive Windows-based graphical user interface. The settings can be easily transferred to multiple R829 units. Uploading the programmed settings occurs on site quickly and efficiently via a wireless link.

The R829 is completely power-autonomous - no wiring to an external power supply is required. This allows a simple, low-cost installation even in locations where external power is unavailable. It operates using solar-charged batteries that are maintenance free for up to five years when properly installed.

The R829 can be ordered with one or a pair of flashing lights for each unit. When there are two flashers, these can be mounted as a vertical dual flasher, a horizontal dual flasher, or a bi-directional flasher depending on location requirements. When activated, drivers will see the lights as a "bouncing-ball effect."

Refer to the *R829 School Zone Beacon Quick Start Guide* in Appendix A or the *School Zone Calendar Configuration* applications help files in Appendix B, and also included in the programming software, for detailed information on setting up and uploading a custom-programmed calendar to the R829.

2.0 Component Identification

1. **Head Module.**
2. **Solar Panel.**
3. **Radio Antenna.**
4. **Signal Head (one or two).**
5. **Signal Head Mounting Bracket.**
6. **Sign (not included).**
7. **Pole (not included).**

3.0 Tools and Materials Required

It is a good idea to begin the installation process in the shop. Take the time to read through this manual to determine what tasks can be completed in the shop prior to the field installation portion of the job.

Note: This product requires a concrete base that is designed for the pole to be used. Ensure that this base is prepared beforehand.

3.1 *Tools Required*

- Socket set
- Drill and drill bits
- Screwdrivers
- Fine-tip felt marker
- Tap and die set
- Fish tape
- 12-15 ft. ladder
- Level
- Knowledge of local latitude
- Compass (to measure direction)
- Compass (to measure angles)

4.0 Product Assembly and Installation

Installation time is approximately one hour in the shop and two hours in the field per R829 system. No trenching, external cabling, traffic disruption or site remediation required. Once installed, the R829 is designed to operate for up to 5 years with virtually no maintenance other than routine cleaning. After approximately 5 years, battery replacement will be required.

4.1 *Selecting a Pole*

Typically, a 10-foot "Type1" pedestrian pole is used for the installation. A "Type 9", with a mast arm for an over the road configuration or any other pole that has a 4" to 4.5" OD top cap, can also be used.

Note: If a 4" OD pole is being used, longer bolts will be required than those provided.

Figure 1

4.2 *Installing the R829 Switch Enclosure*

Drilling the holes for the switch enclosure hardware is typically much easier to do while the pole is in the shop. This should make the final installation in the field go quicker.

Ensure that the location of the switch enclosure will not interfere with the signal heads and signage when they are later installed (see Figure 2).

Figure 2

Drill and tap two holes for mounting the plate. Drill 5/8" hole for the wire, then de-burr the edges to avoid damaging the wires during installation.

4.3 *Creating a Concrete Base*

As shown in Figure 3, a concrete foundation with the necessary mounting hardware has been poured prior to pole installation. The procedure for doing this is outside the scope of this manual.

Figure 3

4.4 *Removing the Solar Panel and Battery Covers*

First remove the cover with the solar panels from the top of the head module, and then remove both covers from the two battery modules (see Figure 4).

Battery Cover

Figure 4

4.5 *Preparing the Solar Panel Module*

Turn the solar module upside down to prepare it for installation. Prop up the end of the R829 that has the radio antenna (see Figure 5) to ensure that this delicate component is not damaged during assembly. One of the battery covers can be used as a support.

Solar Module

Radio Antenna

Figure 5

4.6 *Locate the Signal Head(s) and Sign*

Before drilling any holes for mounting the signal head(s) or signs, do the layout for the locations of the signal head(s) and sign at this time. See the layout in Figure 6 as an example.
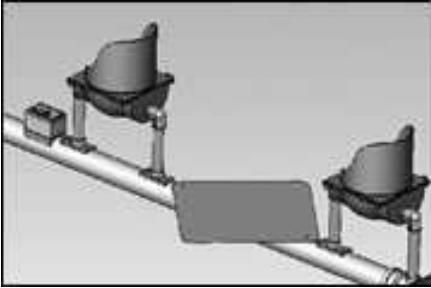

Figure 6

Once the location of the signal head(s) and sign are determined, drill a hole to allow the wiring to go from the lower signal head, through the pole, up to the solar module. The hole for the wiring should be large enough to allow the use of a fish tape during installation.

Note: De-burr all wiring holes to eliminate any sharp edges that could damage the wires during installation.

4.7 *Wiring the Switch Enclosure*

Use a fish tape to run the longest wire from the solar module head to the switch enclosure.

Carefully connect the switch enclosure wire to the wire running down from the solar module head to the switch box through the mounting pole and then thread it into the pole so that it won't be pinched. Fasten the switch enclosure to the mounting pole.

Carefully thread the longest signal head wire through the mounting pole down to the location of the lower signal head. Leave the wire dangling outside the pole. It will be used later when installing the signal head.

Figure 7

4.8 *Mounting the Head Assembly*

Install the head assembly on the top of the pole before raising the pole into position (see Figure 8). Do this with caution so that the wiring is not pinched between the top cap and the pole.

Finger tighten the bolts that secure the top cap to the pole. Final tightening will happen at the end after the solar panels are correctly oriented for maximum solar charging.

Note: If a 4" OD pole is being used, longer bolts will be required than those provided.

8

Figure 8

4.9 *Erect the Pole*

Assuming that the pole base is already in place, stand the pole upright and bolt it to the base using the mounting hardware (see Figure 9).

Figure 9

4.10 *Install the Upper Signal Head*

Loosen the bolts, which hold the top cap to the pole so that the top cap can be rotated. Open the cover of the top signal head and install the unit onto the upper elbow as shown in Figure 10. Hand-tighten the nut for now.
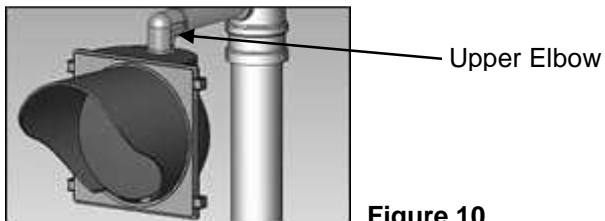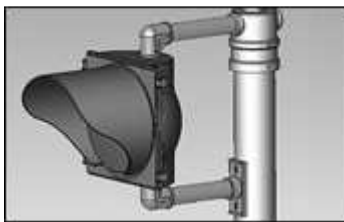

Upper Elbow
Figure 10

Figure 11

Locate the bottom bracket as shown in Figure 11 and, as with the top elbow, tighten the nut finger tight for now. The bottom bracket can be fastened to the pole with bolts or stainless steel straps.

Connect the signal wire from the head assembly to the signal head and close the cover.

4.11 *Installing the Lower Signal Head (if equipped)*

The wire for the lower signal head should already be hanging out of the hole in the pole. Feed the wire through one of the brackets and fasten the bracket to the pole with bolts or stainless steel straps.
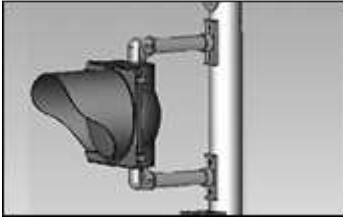
Figure 12

Open the cover of the signal head, and install the unit onto the elbow. Finger tighten the nut. Locate the bottom bracket and tighten the nut finger tight. The bottom bracket can then be fastened to the pole with bolts or stainless steel straps.

Connect the signal wire from the solar panel module to the signal head and close the cover.

4.12 *Connect the Batteries*

Remove the cover from the control module and rotate the head unit so that the connection points are facing the installer and the wiring label is visible.

Each battery has two connectors. With the harnesses facing the installer, connect the female terminal of the right battery to the male terminal of the left battery. Connect the male terminal of the right battery to the control module. A label inside the control module indicates the connector location.

Note: If the above procedure is followed correctly, the left battery will have an unused or "extra" harness.

Figure 13

4.13 *Install Bird Deterrents on the Module Housing*

The bird deterrents discourage birds from using the top edge of the R829 as a perch, thus ensuring that the solar panels remain as clean as possible.

Place the top cap with solar panels onto a stable work area. Attach the three bird deterrents with sheet metal screws, using the predrilled holes on the top cap as a means of identifying their location.

Figure 14

10

4.14 *Attach the Solar Panels to the R829 Electronics*

Place the cover with the solar panels onto the top of the unit so that the wiring can reach the control module. Note that the clearance notch will locate above the antenna. Connect the solar panel harness to the solar panel interface harness already connected on the card.

Replace the cover on the control module. Ensure that the wires come straight out of the connectors and are pinched by the foam. Fasten the solar panel top to the main body using the screws provided.

4.15 *Final Adjustments*

The Carmanah R829 is solar powered; therefore it is critical to properly position the unit in relation to the optimum angle of the sun in order to achieve maximum solar power generation. To do this, angle the solar panel towards the equator (use of a compass is recommended) and tip it upwards at an angle equal to the latitude of installation plus 5 degrees. For example, Vancouver B.C. would require that the solar panel point south at an angle of 54 degrees up from the horizon (49 degrees Latitude plus 5 degrees).

Next, tighten the setscrew on the cap. Position the lenses towards oncoming traffic and tighten the bolts inside the signal heads. Finally, attach the sign to the pole to complete the installation.

5.0 Maintenance and Product Care

Although the R829 is designed to be maintenance free, maximum performance can be maintained with clean solar panels and lenses. Clean the unit on a regular basis, especially if it is installed in a dusty environment. Use water and a soft sponge or cloth for cleaning and a mild, non-abrasive cleaning agent for more stubborn residue. Rinse well.

Note: Pressure washers should **not** be used. Water forced up into the louvers may soak internal components.

- Clean solar panels more frequently during drier months, as they may become soiled more quickly.
- Check all electrical and mechanical connectors yearly to ensure they are clean, secure and undamaged.
- The main battery housing has several vents and drain holes. Ensure that they are free of debris.
- Visual inspect exterior assembly for cracks, missing or broken hardware or other potential problems.

Note: Exercise extreme caution when handling the battery packs. They are capable of generating enormous short-circuit currents. Remove all jewelry (bracelets, metal-strap watches, rings) before attempting to handle or disassemble the battery packs.

Note: The batteries are comprised of four sealed lead-acid cells each. Consult your local municipal by-laws for information on recycling the cells.

Do not discard batteries in the garbage. Please recycle!

6.0 Troubleshooting

The most obvious fault that may occur with the R829 is that the light will not flash. If this is the case, there are two things that can be checked correct this problem:

1. Check the battery connection and the LED signal head connection to ensure that the connectors are fully inserted. As the light is designed to function as soon as the battery is plugged in, this should be fairly simple to diagnose.

2. Certain units have batteries that utilize inline fuses. In the case of system malfunction, open the inline fuseholder (pictured left), and check the state of the fuse. If the interior filament is intact, the fuse itself is functional, otherwise replace the fuse with **Cooper-Bussman** model **ABC-4** (4-amp fuse).

If your R829 light still will not operate correctly, contact Carmanah's Customer Service Department at 1-877-722-8877 or contact your distributor.

7.0 Service and Additional Products

7.1 *Customer Service and Warranty*

Before contacting Carmanah's customer service department, please have the serial number of the Model R829 available, a brief description of the problem, as well as all details of the installation.

Carmanah products are covered by a standard 3-year pro-rated warranty. A warranty card is supplied with each unit. The warranty can also be viewed online at:

http://www.carmanah.com/content/products/warranty/

To contact Carmanah's Customer Service Department:

Mail: Carmanah Technologies Corp.
Building 4, 203 Harbour Rd.
Victoria, BC Canada V9A 3S2

Phone: (250) 380-0052
1 877-722-8877 (Toll Free Canada & U.S.)

Fax: (250) 380-0062

Email: customerservice@carmanah.com

Website: www.carmanah.com

7.2 *Additional Products*

Carmanah offers a variety of solar-powered and energy efficient LED lighting products. For roadway applications, Carmanah also manufactures solar 24 hour flashing beacons and pedestrian crosswalk flashers, as well as LED internally illuminated street-name signs and traffic signs. For more information, please visit our website at: www.roadlights.com.

8.0 Product Specifications

Light Output

Daytime Effective Intensity, Flashing	570 Cd
Daytime Peak Intensity	800 Cd
Nighttime Effective Intensity, Flashing	285 Cd
Nighttime Peak Intensity	400 Cd
Average Day Range	0.5 mi/0.75km

Operation

Daily Operational Profile	2 hrs. Continuous or intermittent
(Example: 240 activations daily at 30 sec. per activation)	
Required Solar Isolation for Daily Operational Profile	2 hrs.
Continuous Operation Without Sun	30 Days minimum
Lifespan of LEDs	Up to 100,000 hrs.
Color Output	Yellow
Dominant Wave Length	590 nm
Flash Pattern/On Time/Off Time "Bouncing Ball")	0.55s/0.55s(MUTCD Compliant
Battery Capacity	400 Watt-hour

Lens

Colors	Yellow (ITE compliant)
Material	8" or 12" polycarbonate is hard coated for abrasion

Communications

RF Transmission	900 MHz (Frequency hopping spread spectrum)
Transmit Output Power	Less than 100 mW
Effective Range	165 ft./50 m/line of site operation
Antenna Type	Omni-directional dipole
Maximum Number of Independent Systems	64

Operating Temperatures

Optimal Ambient Range	-4°to 77°F (-20°to +25° C)
Maximum Ambient Temperature Range	-40°to 176°F (-40°to +80°C)
Storage Temperature	68°+/- 5°F (20°+/- 5°C)

Housing

Head and Support Structure	Powder coated aluminum
Signal Housing	Injection Molded UV stabilized polycarbonate
Switch Housing	Powder Coated Steel

Patents

Trademark and Patents	Patents Pending

9.0 Appendix A – R829 Quick Start Guide

This Quick Start Guide is intended to provide basic information on installing the software on your computer and uploading your first calendar.

For more detailed information on configuring your School Zone Beacon, please refer to *Appendix B* or the *Help Folder* on your CD.

System Requirements

Minimum 266MHz, 32MB RAM
Windows 98, 2000, XP supported

Note to XP users: The drivers are not certified by Microsoft and a warning message will appear during installation. This simply means that the chip manufacturers have not paid to have the drivers certified for Windows XP. Ignore the messages and continue with the driver installations – they are fully compatible and will perform correctly.

Interface Installation and Configuration

USB Driver Installation

1. Plug the Interface Box into your computer using the supplied USB cable.
2. The "Found New Hardware Wizard" will appear – this may take some time depending on your system.
3. Click "Next."
4. Follow the default for the drivers search. Click on "Next."
5. Select "Specify a Location" only! Click on "Next."
6. Insert the CD into your CDROM drive.
7. Click "Browse."
8. Navigate to the CDROM drive and double-click on "*Interface Box Drivers.*"
9. Click "Open" (the default that is already selected).
10. You will be returned to the Wizard. Click "OK."
11. Confirm that the driver found is ftdibus.inf. Click "Next" to install the driver.
12. Click "Finish."

Serial to USB Interface Installation
1. The "Found New Hardware Wizard" will appear – this may take some time depending on your system.
2. Click "Next."
3. Use the default selection, click "Next."
4. Select "Specify a Location" only! Click "Next."
5. Confirm that the location YourCDROMDrive:\Interface Box Drivers is selected. Click "OK."

15

6. Confirm that ftdiport.inf is found.
7. Click "Next."
8. You will be returned to the Wizard. Click "Finish."

Installing the Software

1. Access the CDROM and run Setup.exe
2. The Wizard will appear – follow the prompts using the default selections.

Installation is now complete.

Configuring the Interface Box

1. Open the application using the icon created on your desktop. When the calendar configuration window opens, pull down the Configure menu. Select "Interface Box."
2. Select which port the Interface Box is connected to. Keep the Baud Rate set to the value of 115200.
3. Ensure the Select Mode is set to Secondary.
4. Ensure the Channel selected is 0.
5. Click on Configure. The Interface Box is now being set up in preparation for communicating with your School Zone Beacon.
6. If setup is successful, you will see "SUCCESS!". Your Interface Box is now ready for use with your Beacon.

Creating a Calendar

This is best performed prior to going to the location of your School Zone Beacon. Information on advanced features such as selecting "Schedules and Events" for your entire year, saving your new calendar and determining which calendar is currently loaded in the Beacon can also be found in the *Help Folder* on the software CD*.*

Note: When naming and saving your newly created calendar, it is important to note that the file name you choose cannot have any blank spaces in it.

Figure 1. Pole mounted box with manual override switch.

Uploading your New Calendar

1. Open the Switch Box and flip the switch to the "Manual Override" position. You will notice that the lights begin flashing immediately. This is normal because it tells you the School Zone Beacon is functional. The lights will always flash when the switch is in the OVERRIDE position.
2. Have a look at the LED on the end of the Interface Box – it should be glowing green. This tells you that the Interface Box and School Zone Beacon recognize each other and are ready to communicate. If the LED is not on, check the configuration of the Interface Box using the Interface Installation and Configuration instructions.
3. Navigate to the Communicate Menu and click on the Send Calendar menu item. Wait for the calendar to be sent.
4. Flip the switch in the pole-mounted box back to the "Auto" position.

Note: Don't forget to do this, or your Beacon will flash continuously until the batteries are dead – it will NOT follow the times loaded in the calendar.

Your School Zone Beacon is now in service.

Note: If you have any problems or questions during the set-up of your new School Zone Beacon, visit the *FAQ and Troubleshooting* section of the *Help File* located on the CD.

10.0 Appendix B – Calendar Configuration Instructions

Table of Contents

School Zone Calendar Configuration Help

The school zone calendar configuration program is used to create and modify calendars that will be programmed into a school zone beacon.

1.0 Getting Started

1.1 System Requirements and Program Installation
Minimum 266MHz, 32MB RAM
Windows 98, 2000, XP supported

Note to XP users: The drivers are not certified by Microsoft and a warning message will appear during installation. This simply means that the chip manufacturers have not paid to have the drivers certified for Windows XP. Ignore the messages and continue with the driver installations – they are fully compatible and will perform correctly.

Place the CD that Carmanah has supplied you into the CD ROM drive of your computer. The installation program will automatically launch. Follow the prompts to install the program correctly.

1.2 Configuring the Interface Box
To set up the Interface Box, follow these steps:

7. Open the application using the icon created on your desktop. When the calendar configuration window opens, pull down the Configure menu. Select "Interface Box."
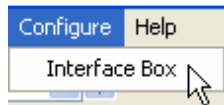
8. Select which port the Interface Box is connected to. Keep the Baud Rate set to the value of 115200.
9. Ensure the Select Mode is set to Secondary.
10. Ensure the Channel selected is 0.
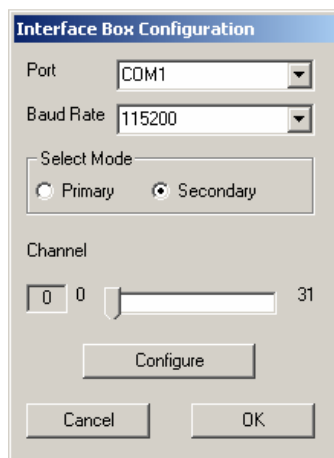
11. Click on Configure. The Interface Box is now being set up in preparation for communicating with your School Zone Beacon. Once you are satisfied with the settings, click on the button labeled Configure. A progress bar will appear.
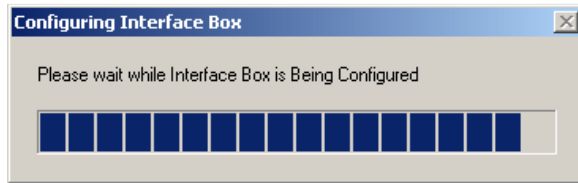
12. If setup is successful, you will see "SUCCESS!" Your Interface Box is now ready for use with your Beacon. After the Interface Box is configured, the following message will be shown:

13. Click on OK to continue.
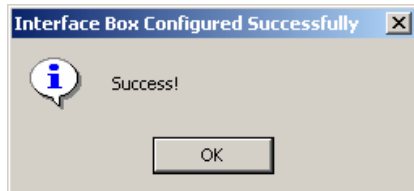
1.3 Creating a Calendar
This section is intended as a step by step guide to creating a calendar. We will cover calendar creation, setting the start day of the calendar, making the lights flash at different times on a different day, and modifying the times when the light flashes on this day.

This is best performed prior to going to the location of your School Zone Beacon. Information on advanced features such as selecting "Schedules and Events" for your entire year, saving your new calendar and determining which calendar is currently loaded in the Beacon can also be found in the *Help Folder* on the software CD.

Note: When naming and saving your newly created calendar, it is important to note that the file name you choose cannot have any blank spaces in it.

1.3.1 Creating a New Calendar

To create a new calendar, navigate to the File menu and click on the New menu item.
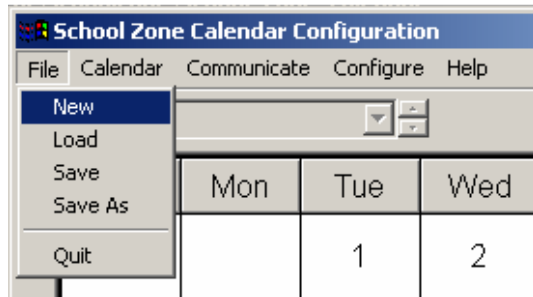
This creates a calendar that starts today with the weekends set to off and the weekdays set to a standard school day. Lets take a look at the calendar that was created:
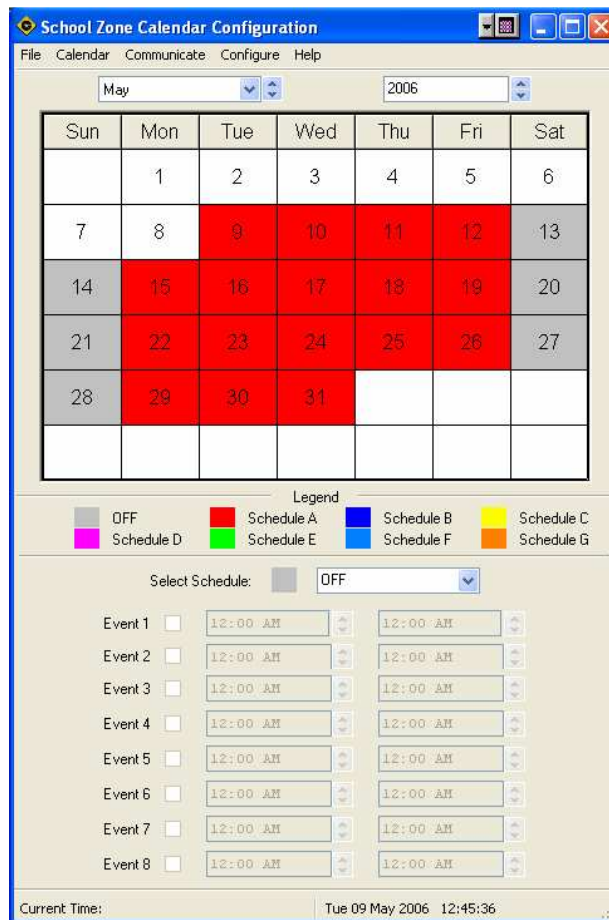

Your calendar will look similar to this one, the start date (in this case May 9th) will be different. Saturday and Sunday are coloured GRAY(OFF) and Monday through Friday are colored RED(Schedule A). This means that the lights will not flash on weekends and Monday through

Friday the lights will flash according to Schedule A. Lets take a look at Schedule A's events so that we know when the lights are going to flash. Navigate the mouse down to the combo box below the legend and click on the down arrow. Then select Schedule A and left click on it.
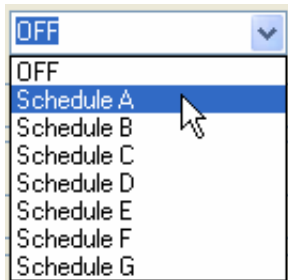
The whole lower half of the screen will change to reflect the events for Schedule A.
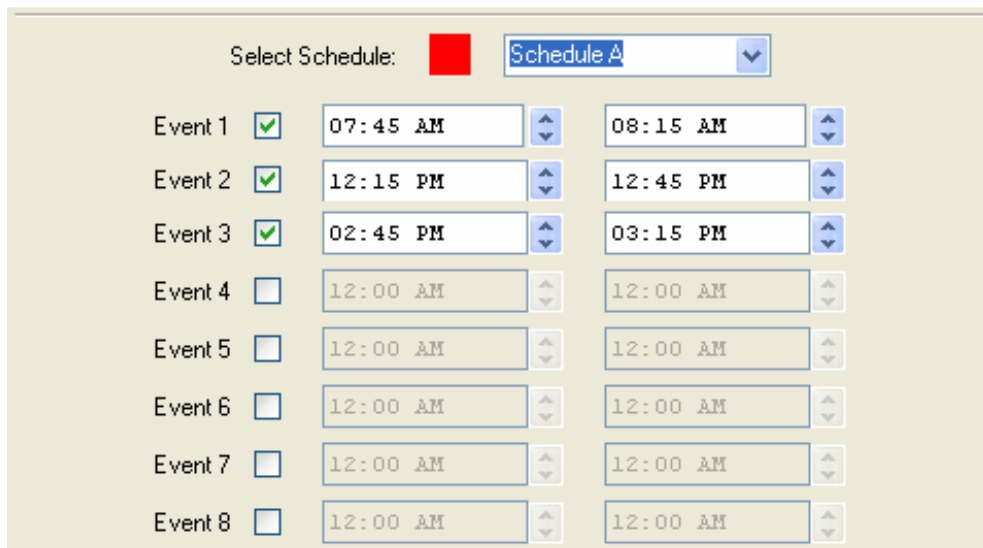
Here we can see that the lights will be flashing from 7:45 am to 8:15 am, 12:15 pm to 12:35 pm, and 2:45 pm to 3:15 pm for Schedule A. For the calendar that we just created, this will happen on all days that are coloured RED - in this case Monday through Friday.

1.3.2 Setting the Start Day

The new calendar that we just created is a good start, but in order for your calendar to look similar to mine throughout this tutorial, we have to adjust where your calendar starts. Normally, you would adjust the start date to the start of the school year. Navigate to the Calendar->Set Start Day menu and left click.
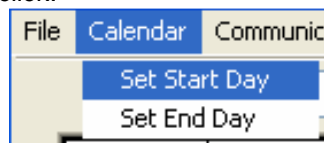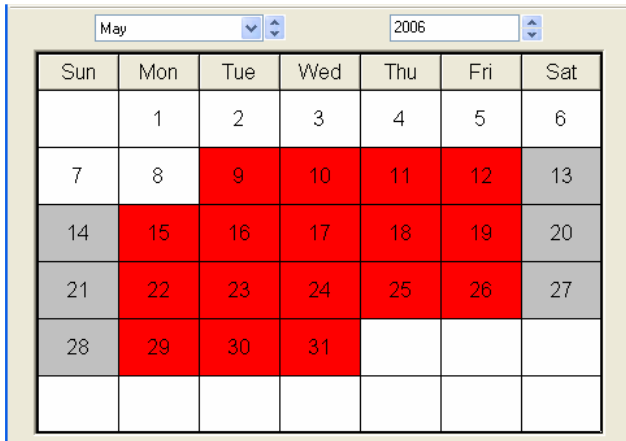
This will cause a calendar to pop up where you can select the start day from.
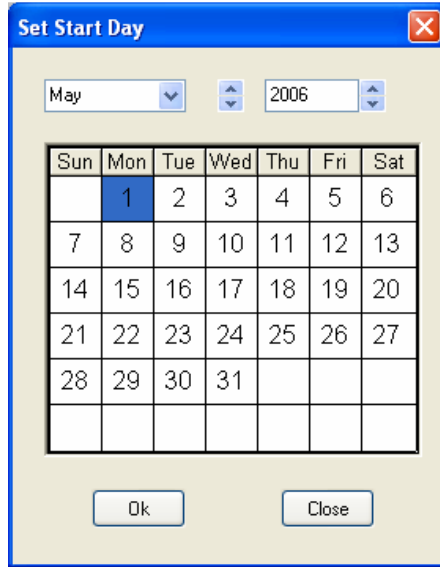
Navigate your way to May 2006 and highlight May 9th by clicking on it.
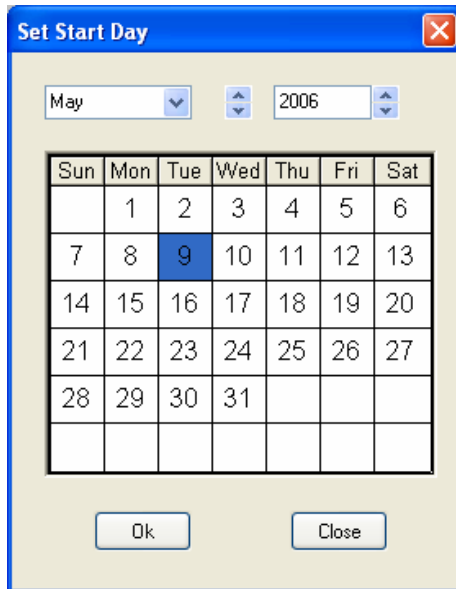
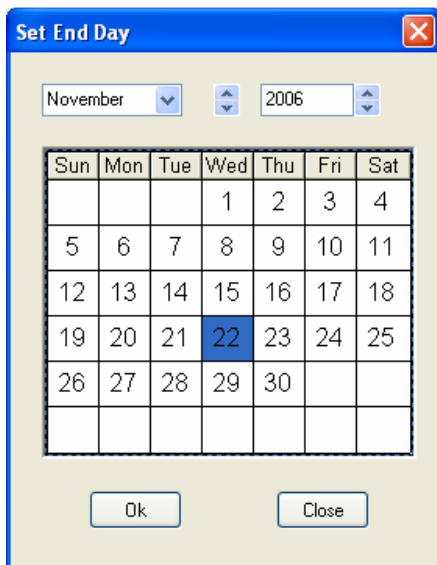Click on the OK button. The calendar should now look like the following:

1.3.3 Setting the End Day
This works similarly to the Set Start Day command, except that you set where your calendar should end. Navigate to the Calendar->Set End Day menu and left click.

This will cause a calendar to pop up where you can select the end day from.

This day and all days after this day will be set to OFF.
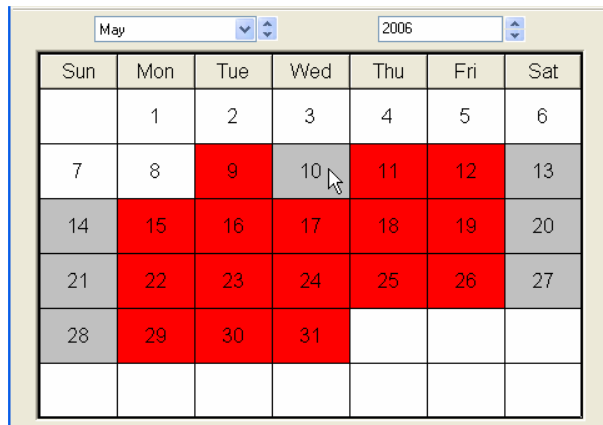
1.3.4 Turning the Lights OFF on a Specific Day
We need to take into account for holidays and may wish to have the lights OFF for these days.

Lets turn the lights off for a specific day. Navigate the mouse down to the combo box below the legend and click on the down arrow. Then select OFF and left click on it.
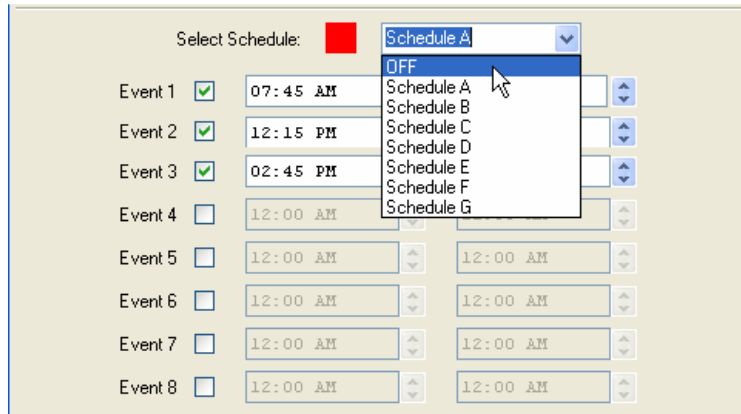
Now move the mouse over May 10th and left click. May 10th will change from RED to GRAY.

1.3.5 Turning the Lights ON for a Specific Day at Specific Times
We may wish to have the lights flash at different intervals for specific days.

What if we want the lights to flash from 8:30am to 8:45am then 12:00 pm to 12:15 pm on May 11th? Lets modify Schedule B to let us do this and add it to the calendar. Navigate the mouse down to the combo box below the legend and click on the down arrow. Then select Schedule B and left click on it.

Enable the Event 1 for Schedule B by clicking on the checkbox to the left of Event 1

Click on the up and down arrows to set Event 1 to start at 8:30am and end at 8:45am

Do the same for Event 2 but set it to start at 12:00pm and end at 12:15pm

Now left click the calendar on the 11th of May

Now that you're familiar with the steps that you have to go through in order to configure a calendar, you should set your calendar to reflect how you want the lights to flash throughout your school year. After you've done this, move on to the next step -> Sending a Calendar to the School Zone Beacon.

1.4 Adjusting the Brightness

Note: If the Brightness Level option does not appear in the Configure menu, click on the frame (grey area) and then press the **CTRL+ALT+b** keys simultaneously.

You can adjust the brightness of your school zone beacon from the Configure menu. Select Configure > Brightness Level.

Now the Brightness Configuration box will open. Select the Brightness Level by clicking the mouse onto the Brightness Level indicator and sliding it to the desired brightness level. Press OK when done.
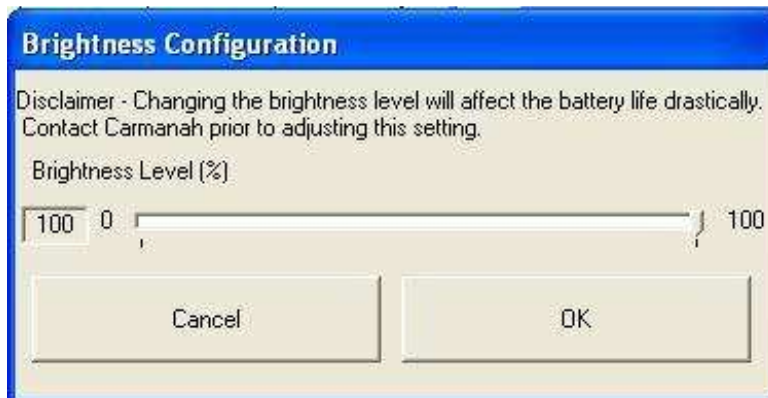
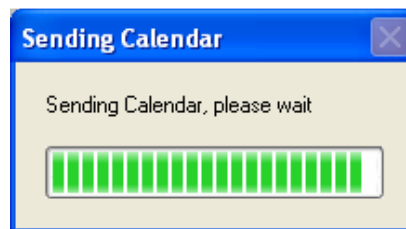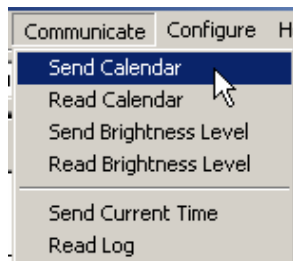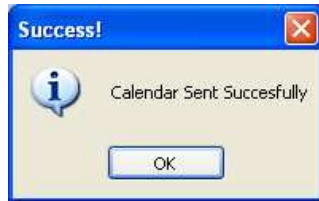**1.5 Sending a Calendar to the School Zone Beacon**
Once the calendar is setup as you wish, follow the instructions below to load the newly programmed calendar to the school zone beacon:

5. Open the Switch Box (see above) and flip the switch to the "Manual Override" position. You will notice that the lights begin flashing immediately. This is normal because it tells you the School Zone Beacon is functional. The lights will always flash when the switch is in the OVERRIDE position.
6. Have a look at the LED on the end of the Interface Box – it should be glowing green. This tells you that the Interface Box and School Zone Beacon recognize each other and are ready to communicate. If the LED is not on, check the configuration of the Interface Box using the Interface Installation and Configuration instructions.
7. Navigate to the Communicate Menu and click on the Send Calendar menu item. Wait for the calendar to be sent. Please be patient while the calendar is being sent. The amount of progress that has been made in sending the calendar is reflected by the progress bar.

After the calendar has been sent successfully, a message will be shown as follows:


Your calendar is now programmed into the School Zone Beacon and the lights will flash at the times that you specified on your calendar.

8. Flip the switch in the pole-mounted box back to the "Auto" position.

1.5 Saving a Calendar to File
After you have downloaded the calendar to the School Zone Beacon, you may wish to save it to file so that you can reuse the same settings when you program it next year. Navigate to the File Menu and click on the Save As menu item.
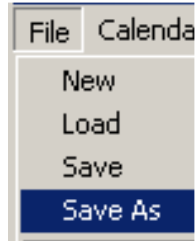
Enter a name for the file that you wish to save and click on the save button

2.0 File Operations
A Description of each operation on the File Menu

2.1 New
The File->New action creates a default calendar starting on the current day. Saturday and Sunday are set to a default value of OFF(gray), Monday through Friday are set to a default value of Day 1(red). Day 1 is set to flash from 7:45AM to 8:15AM, 12:15PM to 12:45PM and 2:45PM to 3:15PM.

2.2 Load
The File->Load action allows you to load a Calendar that you saved to file on a previous occasion. Click on this menu item, navigate to the file that you wish to open, select it and click the Open button. The calendar that you had saved is now loaded into the School Zone Configuration Program.

2.3 Save
The File->Save action allows you to save a calendar to file. Click on this menu item, navigate to the folder where you wish to save the file, enter a filename and click on the Save button.

2.4 Save As
The File->Save As action performs in much the same way as the File->Save action does.
2.5 Quit
The File->Quit action closes the School Zone Configuration Program.

3.0 Calendar Operations
Please refer to the Set Start Day and Set End Day section of the Getting Started portion of this document; it contains a detailed description on how to perform these actions.

4.0 Communicate Operations
This section describes the actions that send and receive information to the School Zone Beacon

4.1 Send Calendar
The Communicate->Send Calendar action sends a complete image of the calendar to the School Zone Beacon. Please refer to the Getting Started section entitled Sending a Calendar to the School Zone Beacon for more detailed information.

4.2 Read Calendar
The Communicate->Read Calendar action reads a complete image of the calendar from the School Zone Beacon. After performing this action, a progress bar will appear - once the calendar is read, the School Zone Configuration Software is updated with the calendar that is read from the School Zone Beacon. Now you know exactly what is contained in the calendar that was previously sent to the School Zone Beacon.

5.0 Configure Operations
This section describes how to configure the Interface Box.

5.1 Interface Box
Please refer to the Getting Started section entitled Configuring the Interface Box for more detailed information.

6.0 FAQs and Troubleshooting

6.1 Frequently Asked Questions

Do I have to worry about Daylight Saving Time?

No, this is automatically taken into account by the School Zone Software. The School Zone Beacon will operate correctly when Daylight Saving Time comes into effect.

How do I contact Carmanah?

The toll free number for North America is 1.877.722.8877, worldwide Carmanah can be reached at 1.250.380.0052.

Where can I find information about the R829 School Zone Beacon?

This information is available on the Carmanah website at http://www.carmanah.com/ or at http://www.roadlights.com/

Do I need an Interface Box to program my calendars into the R829 School Zone Beacon?

Yes you do - contact Carmanah or one of our distributors for further information.

32

6.2 Troubleshooting

I'm having trouble configuring the R829 Interface Box, what should I do?

Ensure that the drivers for the Interface Box are correctly installed. Check that the Interface Box is connected to your computer with the supplied USB cable. Unplug the Interface Box from the computer, plug it back in and try configuring it again. The baudrate should be set to 115200, the Mode should be secondary. The default channel of the School Zone Beacon is Channel 0, if you haven't changed the configuration of the R829 School Zone Beacon select Channel 0 (factory default is 0). The Interface Box and School Zone Beacon must be on the same channel in order for them to communicate properly.

I'm having trouble communicating with the School Zone Beacon from my computer, what should I do?

Are the beacons on the School Zone flashing? If they are not, the radio on the School Zone Beacon is not turned on! Flip the override switch on the School Zone Beacon to enable the radio. As soon as you flip the switch, the beacons will start flashing. If the Interface Box is configured properly, the green light on the side of the box will now turn on.

If the green light on the side of the Interface Box is not on, the interface box is either not configured properly or is not in range. If you are standing near the School Zone Beacon, and the green light is on, you are in range and the issue may be with the Interface Box configuration. It is possible to stand too close to the School Zone Beacon, if you are having communication problems, you may need to back up slightly. Run through the troubleshooting step for configuring the Interface Box as shown above. While configuring the Interface Box, ensure that you have selected the port on your computer or laptop that the Interface Box is connected to.