After LED connectors have been created in all gray LED wires, make the following connections using the connectors from the Guardian board J3 wiring harness:

- J3 wiring harness: (/> symbol = connect to)
  - LED1 (male) > LED 1 (female) coming from white Carmanah unit
  - LED2 (male) > LED 2 (female) coming from white Carmanah unit
  - LED3* (male) > LED 3 (female) coming from white Carmanah unit
  *Some installations only feature two LEDs. If this is the case, disregard steps mentioning LED3.
  - LED1 (female) > LED 1 (male) coming from white Carmanah unit
  - LED2 (female) > LED 2 (male) coming from white Carmanah unit
  - LED3* (female) > LED 3 (male) coming from white Carmanah unit

Step 7 – Install Door Switch (optional)

Please Note: In order for the Guardian door-monitoring feature to work, a door switch must be ordered and correctly installed. Door switches do not come standard with Guardian Series Products, but can be purchased separately from RTC and shipped along with your order.

The door switch needs to be installed in a position and location that allows the cabinet door to press in the switch “lever” when the cabinet door is closed and let off “lever” when the cabinet is open. This will vary from cabinet to cabinet, but typically the side of the inside lip of the cabinet works well.

Choose a location that follows the above guidelines and mount the door switch using a drill and the provided mounting screws. The door switch for the GCR comes prewired to J4 of the Guardian board, so no additional wiring is required.

Step 8 – Reconnect Power

After all components have been connected, restore power to the system by connecting the male connectors from the wires on each battery to the female connectors on the wires coming from the white Carmanah unit.

Step 9 - Setup Guardian Series Product in RTC Connect™

After the hardware installation is complete, the Guardian-Carmanah system must be set up in RTC Connect. Detailed steps can be found in the Quick Start Guide in RTC Connect. To access the guide, follow these steps:

1. Download and Open RTC Connect Software
2. Log In
3. Click on “Utilities” on the Left Toolbar
4. Select “Quick Start Guide”
5. Click on the “Adding A Guardian-Carmanah” title and follow directions

Guardian-Carmanah Connection Guide

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<td>J3 AP22</td>
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<td>J2 12v DC</td>
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<tr>
<td>J3 J3 AP22</td>
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</tr>
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<td></td>
<td>Gray LED Wire</td>
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</tr>
<tr>
<td>J3 LED3* (female)</td>
<td></td>
<td>Gray LED Wire</td>
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<tr>
<td>J4 Door Switch</td>
<td></td>
<td>N/A</td>
<td>Power Connector</td>
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</tbody>
</table>

For both male and female wires, strip the wire insulation 3/16" and crimp the pin connector on the wire. For both male and female wires, strip the wire insulation 3/16" and crimp the pin connector on the insulation ONLY.

Female Pins Insert Into Male Molex Connector
Male Pins Insert Into Female Molex Connector
GUARDIAN SERIES
Installation Guide for Guardian-Carmanah

Please Note: This Installation Guide is for the Guardian-Carmanah (GCR) of the Guardian Series Product Line. Please take the time to verify that this is the correct guide for your installation. Installation Guides for other RTC products can be found at RTC.Traffic.com/software.html.

Step 1 – Shipment Inventory and Supplies:
The Guardian-Carmanah (GCR) is shipped as a metal enclosure that contains a mounted Guardian circuit board. Already connected to the mounted Guardian circuit board should be a modem harness (connected to J1), an 8-pin Carmanah wiring harness (connected to J2) and a 10-pin Carmanah wiring harness (connected to J3). An optional addition to the GCR is a door switch that if purchased, comes prewired to J4 of the Guardian board.

Step 2 – Disconnect Power and Components
To prevent harm to product and safety disconnect the battery connections and power to the system before touching any other components. After the batteries have been disconnected, locate the wires coming from the white Carmanah unit (connected to J3) and the AP22 wires that are coming from the gray LED wire that goes down into the pole. See visual reference on back panel.

Please Note: Step 3 must be followed only if you are using existing AP22 and cell modem equipment. If you are installing a GCR with new AP22 and cell modem hardware, the connections below should already be made. Read the following step to confirm the connections before proceeding.

Disconnect and remove all existing AP22 and cell modem hardware, wiring, and mounting materials from the cabinet.

Step 3 – Mount and Connect AP22 and M2M

Please Note: Step 3 must be followed only if you are using existing AP22 and cell modem equipment. If you are installing a GCR with new AP22 and cell modem hardware, the connections below should already be made. Read the following step to confirm the connections before proceeding.

Connect the round end of the new AP22 wiring harness (shipped with your GCR order) to the base of the AP22.

Mount the cell modem to the top of the AP22 using the modern mount.

Using the modem harness (connected to J1 on Guardian board), connect the round power cable to the power connector on the cell modem. Connect the DB9 connector labeled “modem” to the DB9 connection on the modem. Finally, connect the other DB9 connector labeled “time switch” to the DB9 connection at the top of the AP22.

Mount the AP22 to the GCR enclosure in the proper location using the screw on the enclosure and the slotted mounting hole on the back of the AP22.

Step 4 - Mount the Guardian-Carmanah Enclosure to the Cabinet
Unscrew the thumbscrews to the plexiglass cover. Using the Phillips-head screw driver and the provided screws, secure the GCR enclosure to the cabinet by turning the screws through the enclosure holes and into the two cabinet mounting holes above the left side battery. The GCR enclosure is designed to be installed with the AP22 on the left side of the cabinet and the Guardian board on the right, with the wiring harness protruding into the middle of the cabinet. Replace plexiglass cover once mounting is complete, with the white wire protector facing the top left corner.

Step 5 - Connect the Guardian Board to the White Carmanah Unit and the AP22 Time Switch
Locate the J2 and J3 wiring harnesses on the Guardian board. Both harnesses consist of wires that have been labeled and have a white male or female molex connector at the end. The labels and gender connectors correspond with component wiring (either new or disconnected in Step 2) that have labels and opposite-gender connectors.

Use the labels and gender connectors to make the following component connections:

- J2 wiring harness: (> symbol = connect to)
  - SOLAR LDL > unlabeled connector coming from lid of solar panel cabinet
  - SOLAR PNL 1 > SOLAR PNL 1 (coming from white Carmanah unit)
  - 12V DC > 12V DC (coming from white Carmanah unit)
  - 12V DC AP22 > 12V DC AP22 (coming from the AP22 wiring harness)

- J3 wiring harness: (> symbol = connect to)
  - J3 AP22 > J3 AP22 (coming from the AP22 wiring harness)
  - SWITCH 2 > SWITCH 2 (coming from white Carmanah unit)

Step 6 - Connect LEDs

Locate the grey wires that are coming from the white Carmanah unit. These wires connect directly to the LEDs.

In most Carmanah installations, you should find female molex connectors at the ends of the two or three grey wires coming from the white Carmanah unit and two or three male molex connectors at the ends of the grey wires coming from out of the pole. If this is the case, make the following connections using the connectors from the J3 wiring harness:

- J3 wiring harness: (> symbol = connect to)
  - LED1 (male) > LED 1 (female) coming from white Carmanah unit
  - LED2 (male) > LED 2 (female) coming from white Carmanah unit
  - LED3* (male) > LED 3 (female) coming from white Carmanah unit
*Some installations only feature two LEDs. If this is the case, disregard steps mentioning LED3.
  - LED1 (female) > LED 1 (male) coming from white Carmanah unit
  - LED2 (female) > LED 2 (male) coming from white Carmanah unit
  - LED3* (female) > LED 3 (male) coming from white Carmanah unit

Please Note: If you do not see component connectors for the LEDs and instead see solid grey wires going from the white Carmanah unit down into the pole, follow Step 6 B.

Step 6B – Creating LED Connectors
If the grey LED wires running from the white Carmanah unit down into the pole are solid and do not contain connectors, carefully follow these steps to create LED connectors:

1. Gently pull on grey wires to see if you can easily get the male connectors in the pole to come back into the cabinet. If you can, go back to Step 6 and follow the steps. If not, continue below.

2. Cut one grey LED wire approximately 6 inches from the end that terminates at the white Carmanah unit.

3. Step the grey insulation around the internal conductors approximately 1.5 inches back from both sides of the led wire.

4. Strip the black and red wires approximately 3/16” back on both sides of the cut LED wire.

5. Using pin crimpers, attach the provided male pins to the stripped ends of the black and red wires that are coming from the grey LED wire that ends at the white Carmanah unit. See visual reference on back panel.

6. Using pin crimpers, attach the provided female pins to the stripped ends of the black and red wires that are coming from the grey LED wire that goes down into the pole. See visual reference on back panel.

7. Place and push the male pins into a white female molex connector. The pin on the black wire should go into the hole on the side with the hinge on the end of the male connector and the pin on the red wire should go into the other hole. See visual reference on back panel.

8. Place and push the female pins into a white male molex connector. The pin on the black wire should go into the hole on the side with the connector clip and the pin on the red wire should go into the other hole. See visual reference on back panel.

9. Repeat Steps 1-8 for each solid grey LED wire in the cabinet.