

Updates to Prototype L0 and L1 Cabinet Assemblies



Item #: 16-100046 shown

Overview

There are three updates in this field bulletin which apply to both the 16-1000045 L0 Cabinet Assembly and 16-1000046 L1 Cabinet Assembly.

1. The firmware on the Communications Board was built incorrectly and needs replaced.
2. In the Inverter/Charger subassembly, a metering issue was discovered on the GEN IN. To correct this, the AC Input wires in each Inverter/Charger need moved from GEN IN to GRID IN.
3. To account for the moved AC Input wires, the Magnetherreal firmware needs upgraded from 1.1.0 to 1.1.1.

Update the Communications Board Firmware

Required Items

- Windows laptop
- 93-0000020 Remote Client, V1.7.0 or later
- USBTiny Programmer
- USB Type A to USB Type Mini B cable
- AVRDUDESS programming software
- #2 cross-tip screwdriver

Step 1. Download and Install AVRDUDESS Programming Software

Note: If you already have AVRDUDESS installed on your Laptop, skip to Step 2.

1) With the browser on your laptop, browse to the following webpage:

<https://solarstik.com/atsc-hpgs/>



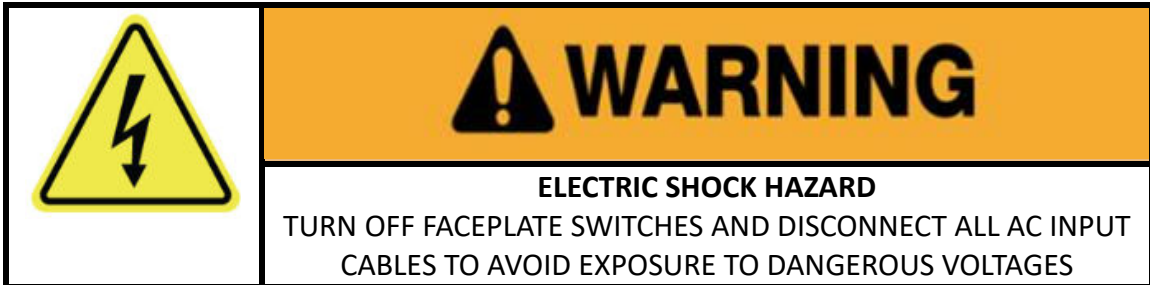
2) Download the following files, noting the folder you download them to.

- AVRDUDESS-2.14-setup.exe
- 05-1000170 USBtiny presets.xml
- 990002002.ino.hex

- 3) Launch AVRDUDESS-2.14-setup.exe and follow the prompts to install the AVRDUDESS software.
- 4) After installation is complete, launch AVRDUDESS from the Windows Start Menu.
- 5) In AVRDUDESS, under *Presets*, press the **Manager** button.
- 6) In the *Preset Manager* window, press the **Import** button.
- 7) Browse to and **Open** the 05-1000170 USBtiny presets.xml file you downloaded in step 2).
- 8) Press **Close** in the *Preset Manager* then press the “X” control to close AVRDUDESS.

Step 2. Prepare the Cabinet Assembly

- At the faceplate, turn off all switches.
- Disconnect all AC Input Cables from the connector panel.



- Using a #2 cross-tip screwdriver, remove all faceplate screws.
- Carefully tip the top of the faceplate away from the cabinet to expose the rear of the faceplate.

Step 2. Connect the USBTiny Programmer

- Locate the communications board on the bottom left corner on the back of the faceplate. See Figure 1 and Figure 2 below to help locate the communications board, indicated by the red arrow.
- Connect the USBTiny programmer to the laptop using the USB Type A to USB Type Mini B cable.

Updating the Communication Board Firmware in the L1 Cabinet Assembly

- Going through the rear access of the Cabinet Assembly, connect the ISP (in-system Programming) ribbon cable from USBTiny Programmer and plug the 2x3 connector into the communications board's 2x3-pin header with the notch on the cable connector facing toward the inside of the board. See Figure 2.

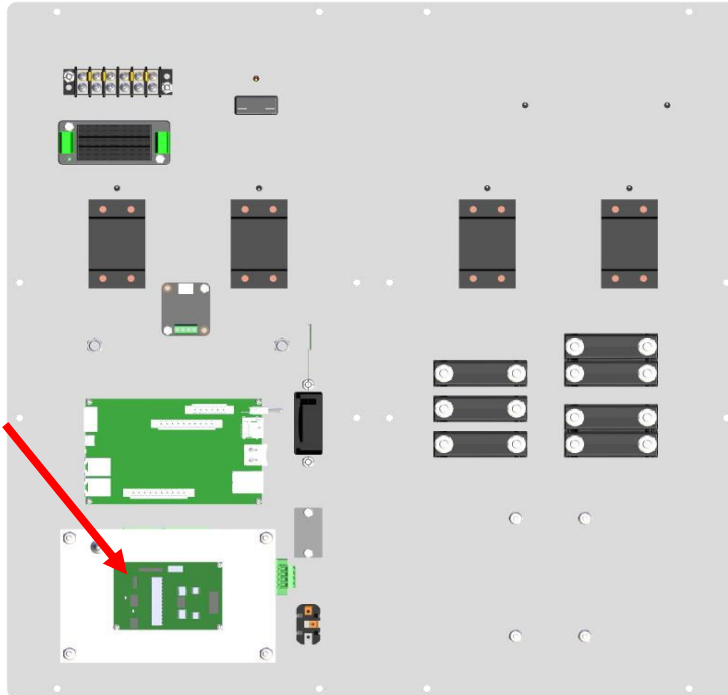


Figure 1 - Back view of L1 faceplate 16-100048



Figure 2 - view of open faceplate from the right side of the faceplate, arrow indicates 2x3 header

Step 3. Install the Communications Board Firmware

- 1) Open AVRDUDESS.
- 2) In the AVRDUDESS window, under *Presets*, select **05-1000170 USBtiny**.
- 3) Under *Flash* select the 990002002.ino.hex file downloaded earlier.
- 4) Click **Program!** and ensure no error is reported in the black status window.
- 5) Disconnect USBTiny and close AVRDUDESS.

Relocate the AC Input Wires on Inverter/Charger Assembly

Required Items

- 11/64in or equivalent Flat Head Screwdriver

Step 1. Locate Inverter/Charger Terminal Block

- 1) Open both rear cabinet doors and locate the Inverter/Charger Trays
 - a. For L0 Systems there will be (1) Inverter/Charger Tray
 - b. For L1 Systems there will be (2) Inverter/Charger Trays

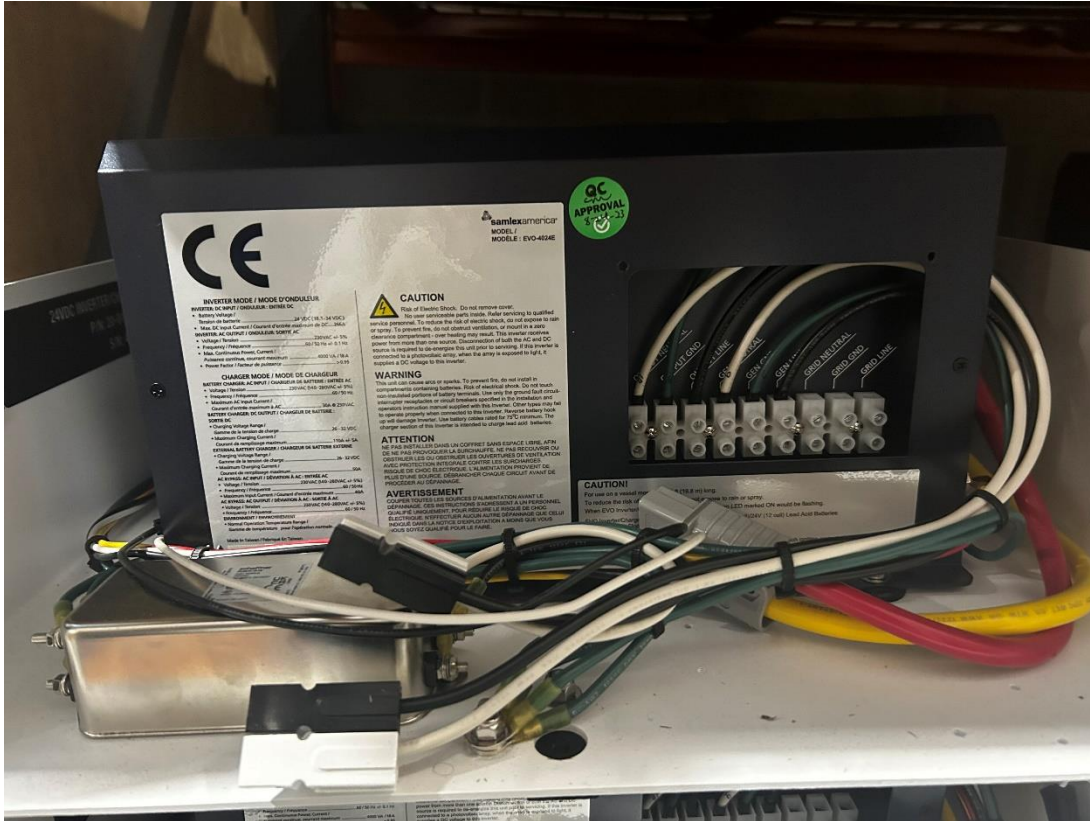


Figure 3 - view of Inverter/Charger Tray from the side facing the terminal block

- 2) The terminal block of the Inverter/Charger should be facing the rear cabinet doors

Step 2. Remove AC Input Wires

- 1) Take the correct flat head screwdriver and remove the wires running to the Gen Inputs – GEN NEUTRAL (white wire), GEN GND (green wire), GEN LINE (black wire). See Figure 4 for exact location.
- 2) Repeat step for the second Inverter/Charger Tray in L1 Systems.

Step 3. Reinstall AC Input Wires

- 1) Take the correct flat head screwdriver and reinstall the previously removed wires to the Grid Inputs – GRID NEUTRAL (white wire), GRID GND (green wire), GRID LINE (black wire). See Figure 5 for exact location.
- 2) Repeat step for the second Inverter/Charger Tray in L1 Systems.



Figure 4 - magnified view of Inverter/Charger Terminal Block with incorrect wiring.

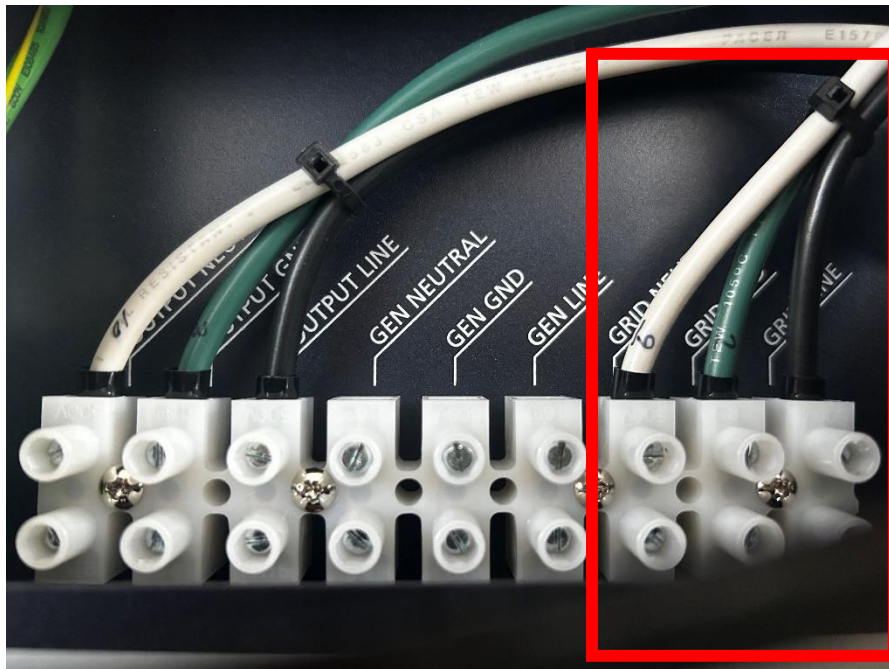


Figure 5 - magnified view of Inverter/Charger Terminal Block with correct wiring

Update the Magnethereal Firmware

Required Items

- Windows laptop
- Flash download tool 3.9.4.exe
- USB Type A to B cable

Download the Flash Tool and Firmware Files

1) With the browser on your laptop, browse to the following webpage:

<https://solarstik.com/atsc-hpgs/>



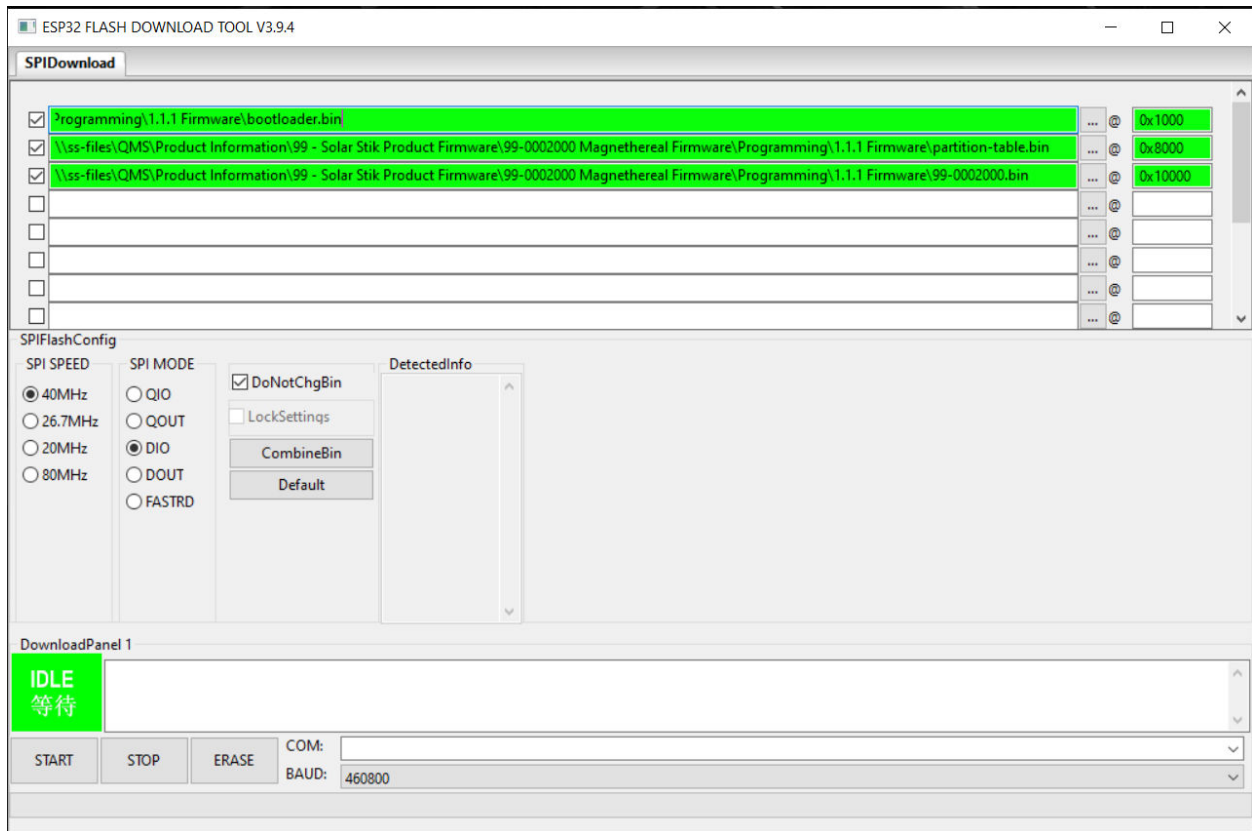
2) Download the following files, noting the folder you download them to.

- flash_download_tool_3.9.4.exe
- bootloader.bin
- partition-table.bin
- 990002000.bin

3) Start flash_download_tool_3.9.4

4) When prompted, select ESP32 and Developer, then OK. Note the COM ports (if any) listed in the drop-down list after COM:

5) Connect laptop to Tech Port on faceplate using USB Type A to B cable. Verify a new COM port appears in the COM: drop-down and select it.



- 6) Using the ... after each line, add bootloader.bin, partition-table.bin, and 990002000.bin from the folder you downloaded them to similar to the picture above.
- 7) Check each box in front of the .bin files.
- 8) After the @ signs, enter the numbers 0x1000, 0x8000, 0x10000 as pictured above.
- 9) Set all other settings as pictured above. (Actual window will be smaller, and some lines may not be green.)
- 10) Press START. A green bar at the bottom of the window will progress from left to right, then a blue FINISH graphic will appear.