

Upgrading Einstein Using the Einstein Upgrade Kit

This bulletin explains how to use the components of the CPC Upgrade Kit to upgrade a pre-1.5 version Einstein unit to the latest (post-1.5) Einstein release.

Components of the Upgrade Kit

The CPC Upgrade Kit contains the following components:

- An EAB board with Production Einstein Software EEPROM Chips.
- The correct version of Boot\BIOS and Manufacturing Loader ROM Chips.
- The production UltraSite32 release CD.
- A direct connect cable for making the computer-to-Einstein connection.
- Instructions for performing the Legacy to Einstein 1.5-or-above Upgrade (this document)
- Checklist to be used during the upgrade.

Before You Begin

Install or Upgrade UltraSite32

The Einstein EAB upgrade process requires that you have a laptop or desktop PC with the latest version of UltraSite32 installed. Use the UltraSite32 CD and the instructions supplied with the kit to install or upgrade to your PC.

Set Up Site Communications With UltraSite32

If you don't already have UltraSite32 set up to communicate with the site controllers, you will need to set up the site in UltraSite32.

1. Using the supplied direct connection cable, connect the 9-pin male end to the serial port on the left-hand side of the Einstein box. Connect the other end to a serial port on your laptop or desktop PC.
2. Follow the instructions in the UltraSite32 User's Guide for creating a directory and creating a site. In the "site communications" box, set the Device type to "Einstein" and the Connection type to "Direct Connect." In the Modem/Direct Settings box, set the Baud Rate to 9600, and from the "Port" pull-down menu, choose the COM port to which the direct connect cable is attached. (See Figure 1).

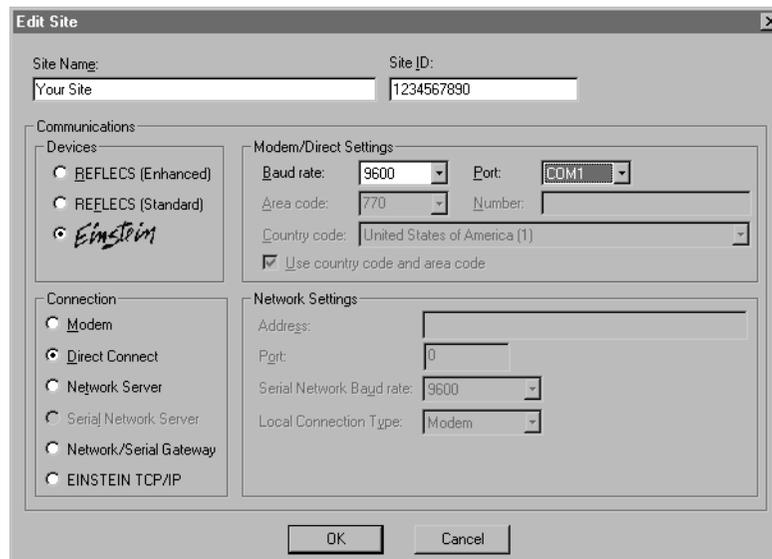


Figure 1 - Site Communications Dialog Box

3. Right-click the site name in the UltraSite32 Tree View, and select “Connect” from the Action Menu. Allow UltraSite32 to perform a site synchronization with the site controllers (this might take a few minutes).

Prepare Upgrade Checklist(s)

An Einstein EAB upgrade checklist form has been included in the upgrade kit. Make a photocopy of this checklist for each Einstein you will be upgrading. Fill out each checklist with the make (RX or BX), model (300, 400, or 500), subnet number, unit name, name of person upgrading, and the date of upgrade.

Use this checklist during the Einstein upgrade process to make sure no necessary steps are skipped. After completing a step, put a check in the box and move on to the next step. Write any comments or descriptions of issues encountered in the Comments section of the checklist.

Upgrading Einstein Using a Loaded EAB

After doing all the steps in the “Before You Begin” section of this document, you are ready to begin the Einstein upgrade process.

Step 1: Back up the unit using UltraSite32

This step is VERY IMPORTANT. Backing up your unit configuration in UltraSite32 saves a copy of the set points that will be restored to the Einstein later in the process.

1. In UltraSite32, locate the name of unit you are backing up in the Tree View. Right-click the name when you find it.
2. From the Action Menu that appears, select “Backup.”

Wait for the backup to finish before proceeding to Step 2.

Step 2: Disconnect from the site in UltraSite32

Right-click the site from the Tree View, and select “Disconnect” from the Action Menu.

Step 3: Open the Einstein enclosure

Use a screwdriver to unlatch the Einstein’s door and *carefully* open the door.

Step 4: Remove the metal shield from the doorplate

There should be a metal shield protecting the processor board on the doorplate. Remove the two screws that attach the shield to the doorplate, and remove the metal shield to expose the processor board.

Step 5: Disconnect power to the Einstein

On the Einstein processor board, locate the 24VAC power connection, located at the top right corner of the board. Unplug the power connector from the processor board to power down the Einstein.

Step 6: Remove all Echelon and RS485 Network connections and wait 60 seconds

Unplug all Echelon and RS485 wires from their respective ports on the motherboard. After doing this, wait 60 seconds to allow the Einstein board to completely reset.

Step 7: Plug the EAB board into the EAB slot on the processor board

The EAB slot on the Einstein processor board is a 50-pin (25x2) port located on the upper left corner of the Einstein processor board (see Figure 2). **Carefully** plug the EAB board into the EAB slot, with the chips on the board facing away from the processor board.

Make sure all pins are correctly aligned with the port on the EAB board before applying pressure, or else one or more pins might bend or break.

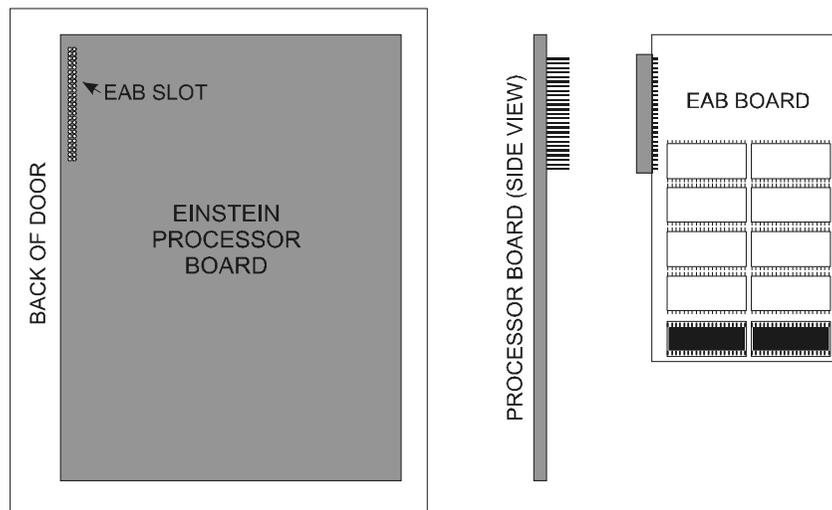


Figure 2 - Plugging the EAB Board into the EAB Slot

Step 8: Reconnect power to the Einstein and allow upgrade to occur

Plug the power connector back into the Einstein processor board. Einstein will automatically detect the EAB board and initiate upgrade.

If the screen remains blank after powering up the Einstein, or if Einstein boots as normal without detecting the EAB, check to make sure the EAB is seated firmly on the EAB slot pins AND that all pins are seated in the EAB port with no overlapping.

When the screen says “LOADED,” the upgrade is complete. Proceed to Step 9.

Step 9: Disconnect power to the Einstein

Unplug the power connector from the processor board to power down the Einstein.

Step 10: Remove the EAB from the processor board and wait 60 seconds

Carefully remove the EAB from the processor board, being careful not to bend or break any pins. Allow the Einstein motherboard to sit untouched for 60 seconds to allow the board to completely reset.

Step 11: Reconnect power to the Einstein and allow Einstein to boot

Plug the power connector back into the Einstein processor board. Allow the Einstein to boot completely. When finished, the Main Status Screen should appear.

In some rare cases, Einstein might notify you that Flash 1 must be formatted. If you get this message, press “Y” followed by ENTER to begin the reformatting process. When finished, the Einstein will boot up and the Main Status Screen should appear.

Step 12: Replace the Echelon and RS485 Network Connections

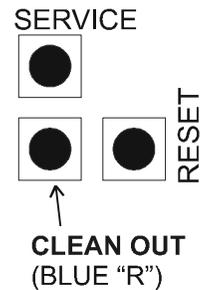
Plug the Echelon and RS485 wires back into their respective slots on the motherboard.

Step 13: Replace the metal shield on the doorplate

Put the protective metal shield back on the rear face of the Einstein doorplate. Reattach it to the processor board using the two mounting screws.

Step 14: Run a clean-out procedure on the Einstein

After changing the model type, it is a good idea to perform a clean out to remove any excess configuration from the old model type. Open your Einstein unit and locate the three buttons below the Echelon connection slots on your Einstein processor board (see illustration at right). The bottom two of these buttons are the CLEAN OUT button and the RESET button. You will need to use both of these buttons to clean out the unit.



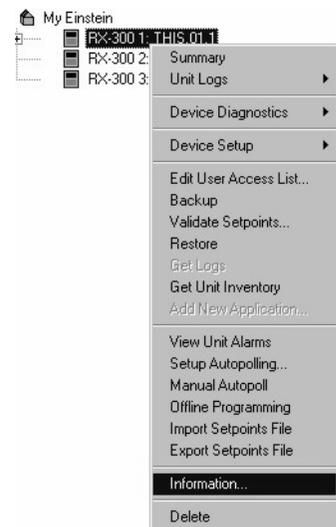
	<ol style="list-style-type: none"> 1. Press and hold down both the Reset Button and the Clean Out button. 2. When the screen clears, release the Reset Button, but CONTINUE TO HOLD DOWN THE CLEAN OUT BUTTON. 3. When the screen displays the message “***CLEAN OUT PROCESS INITIATED***” release the Clean Out button. <p><i>Note: During clean out, the Einstein will reboot several times. This is normal.</i></p>
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Step 15: Restore configuration to Einstein from UltraSite32

To restore set points to an Einstein unit after an upgrade and clean out:

1. Before restoring, you must run a site synchronization in UltraSite32 to update the database with the new revision information.
 - If you are already connected to the site, right-click the site in the Tree View, and select “Site Synchronization.”
 - If you are not already connected to the site to which the Einstein belongs, right-click the site on the Tree View and select “Connect” from the action menu. Connecting to the site will automatically run a site synchronization.

2. Verify that UltraSite32 has updated revision information for each controller you have upgraded. To do this, right-click each unit you have upgraded, and select “Information” from the action menu. This action will show you a dialog box, which contains the firmware revision number UltraSite32 received during the last site synchronization. If this revision number does not match the version you upgraded the Einstein to, wait 10 minutes and repeat the site synchronization process. Also, verify no one is logged in to any of the Einsteins’ front panels during site synchronization.
3. In the UltraSite Tree View, right-click the unit you wish to restore set points to, and select “Restore” from the menu.
4. Wait until UltraSite32 tells you the restore was successful. Then, click OK.



Step 16: Close the Einstein enclosure door

Carefully close the Einstein enclosure door and latch it using a screwdriver.

Step 17: Restore communications with Echelon peripherals

Skip this step if Einsteins are the only devices on your Echelon network.

If your Einstein RX or BX unit has any connected CC-100s, RT-100s, TD3s, ESRs, or any other kind of Echelon peripheral, a unit upgrade will cause these devices to lose connection with the Einstein. In order to get Einstein and the peripherals to communicate again, you must follow the procedure below to recommission each Echelon peripheral in the Einstein’s subnet.

You may perform the procedure below at any time after restoring set points to the newly upgraded Einstein.

1. Log in to the Einstein you just upgraded.
2. Access the Controller Network Configuration screen by pressing the following key sequence: F8, Y, 4, 1. This screen should list all the Einstein’s Echelon and I/O devices. Echelon devices are marked with a “LON” in the Bus field, and should also have a 12-digit number in their Neuron ID fields.
3. Move the cursor to highlight the next Echelon device in the table that is NOT the first entry. The first entry in the table is the Einstein you are logged in to, which does not require commissioning.
4. Press F6: SET ADDRESS.
5. When Einstein prompts for the method you wish to use to set the Neuron ID address, select “2 = Entering Neuron ID from label on controller.”
6. Einstein will ask you to specify the Neuron ID of the selected controller. The default value is the Neuron ID number it backed up and restored to the Einstein after the upgrade. Press F1 to use this number.
7. Repeat steps 3 through 6 above for every Echelon device listed on the screen.
8. When finished, press “F10 - BACK” to return to the Network Setup/Status Menu screen. Einstein will now begin communicating with the Echelon peripherals.

This completes the Einstein upgrade process. Repeat these instructions for each Einstein you wish to upgrade.

Troubleshooting

PROBLEM: One or more Echelon devices are not communicating with their parent Einstein, even after recommissioning. The Controller Network Status screen says the device is on-line, but no data flow is occurring.

When a unit is upgraded and cleaned out, Einstein thinks it is still communicating with its Echelon peripherals, even though it isn't. As a result, the Controller Network Status screen will falsely show all these devices as on-line. Recommissioning will repair the communication links between Einstein and the Echelon peripherals.

If only one or two devices are not communicating after the recommission process, it is likely you accidentally skipped recommissioning these devices in the Controller Network Configuration screen. Follow the procedure listed in **Step 17** for each device that is not communicating. If the problem continues, notify CPC.

If a large number of devices are not communicating after recommissioning, there may be a problem with the Echelon network. Check the Echelon wire connections to the Einstein processor board to make sure they are secure. Try to recommission the boards again. If the problem continues, notify CPC.

PROBLEM: UltraSite32 will not restore User Status Group applications from my pre-1.50F01 Einstein BX or RX unit.

Due to a number of issues with User Status Group applications, support for User Status Groups in Einstein is discontinued as of version 1.50F01. If you are restoring set points from an older version of Einstein that included one or more User Status Groups, Einstein will not restore them.

PROBLEM: When I connect the EAB and restore power to the Einstein, it ignores the EAB and boots up as normal.

This will occur when you are upgrading from a 1.50 beta unit (1.50BXX) to a full release version of UltraSite. In order to make Einstein detect the EAB, you must make an adjustment to the Einstein's CMOS. Refer to *Technical Bulletin 026-4101, Upgrading a Einstein 1.5 Beta Unit to Version 1.50F01 or Above Using the Upgrade Kit*.

Service Checklist: Upgrading to Einstein 1.5 or Above Using a Loaded EAB

Model: Einstein [RX BX] [300 400 500] Subnet:_____ Unit Name:_____
Technician's Name:_____ Site:_____ Site Phone #:_____
Date of Upgrade:___/___/____ Version # of unit before upgrade:_.___ _ _

Refer to 026-4100-001, *Upgrading Einstein Using the Einstein Upgrade Kit*, for specific instructions. Use this checklist to verify all steps in the upgrade process have been performed. After completing a step, check the box.

- Step 1:** Backup the unit using UltraSite32.
- Step 2:** Disconnect from the site in UltraSite32.
- Step 3:** Open the Einstein enclosure.
- Step 4:** Remove the metal shield from the doorplate.
- Step 5:** Disconnect power to the Einstein.
- Step 6:** Remove all Echelon and RS485 Network connections and wait 60 seconds.

- Step 6a:** Hold down the SHIFT and F1 keys, and reconnect power to the Einstein.
- Step 6b:** Select "Advanced CMOS Configuration."
- Step 6c:** Change "Boot Sequence" field to "Mini-DOS."
- Step 6d:** Press Undo to return to the System BIOS screen.
- Step 6e:** Select "Write to CMOS and Exit" and press Enter.
- Step 6f:** Disconnect power from the Einstein and wait 60 seconds.

NOTE: Steps 6a-6f are only necessary if upgrading from a 1.50 beta version (1.50Bxx) to 1.50F01 or above.

- Step 7:** Plug the EAB board into the EAB slot on the processor board.
 - Step 8:** Reconnect power to the Einstein and allow upgrade to occur.
 - Step 9:** Disconnect power to the Einstein.
 - Step 10:** Remove the EAB from the Einstein's EAB slot and wait 60 seconds.
 - Step 11:** Reconnect power to the Einstein and allow Einstein to boot.
 - Step 12:** Replace the Echelon and RS485 Network connections.
 - Step 13:** Replace the metal shield on the doorplate.
 - Step 14:** Run a clean-out procedure on the Einstein.
 - Step 15:** Restore the set points to the Einstein using UltraSite32.
 - Step 16:** Close the Einstein enclosure door.
 - Step 17:** Restore communications with Echelon peripherals.
- Check here if all steps have been completed and the Einstein has been upgraded successfully.

Signature: _____ Date: _____

Comments:

After completion, please send to:
Computer Process Controls
c/o Service Department
1640 Airport Road Suite 104
Kennesaw, GA 30144
FAX: (770) 425-9319

