Pacific Power Source

Application Note

UPC-12 / UPC-32 FIELD MODIFICATION INSTRUCTIONS

I. SCOPE

These instructions are intended to assist the Field Service/Repair technician in accomplishing simple maintenance on Pacific's UPC Series controllers. Before beginning any operation, the technician must read and understand all Warnings, Cautions, and Notes contained in the UPC-32 / UPC-12 Programmable Controller Operation Manual, PPSC P/N 133620. Unless otherwise noted, figure and section numbers refer to the above referenced manual.

This document is divided into two major sections:
- Section I - **SCOPE** describes the purpose and organization of this document
- Section II - **FIRMWARE UPGRADE** addresses the changing of EPROM's (Firmware) within a UPC system
- Section III – **UPC MANAGER SOFTWARE** demonstrates how to save and retrieve system settings using a host computer.
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NOTE: If using UPC Manager Software, *Perform Section III, steps 1 and 2 before making any changes to the power source.*

II. FIRMWARE UPGRADE

When required, factory supplied EPROMS are replaced in the following manner:

NOTE: When upgrading UPC firmware versions 2.53 and greater, UPC Manager software may be used to record system data. Refer to Section III. Earlier versions require the operator to manually save the data as noted below.

A) Record system data.

System re-calibration can often be avoided if the original configuration is recorded prior to removing old firmware. Refer to the following manual sections and record:

(1) UPC Status – Section 4.5.3.3

Write down all data displayed. Transformer ratio, number of PA's, Amps to Volts Ratio, and Remote Interface Data will all need to be verified and input after the EPROM is changed.

(2) Externally Referenced Calibration – Section 8.2

After selecting the 'Calibration ' Menu, press '3' for K-factor DISPLAY and record all data. This information will have to be input from this same menu after the firmware is changed. If this information is not saved, Externally Referenced Calibration will be required in accordance with section 8.2

(3) Programmable Impedance Calibration – Section 4.5.3.1 (Optional)

Following the instructions in this section, record the stored Programmable Impedance Calibration Values. Note: The factory shipping configuration may be written on the front cover of the UPC Manual issued with this system.

B) Determine Hardware System Configuration

Refer to figure 3.5 of the UPC Manual. This diagram represents a UPC-32 Programmable controller with the IEEE-488 Option as it would be seen in an SCU with all the top covers removed. The EPROM sets are installed on the UPC CPU assembly, P/N 133170. The UPC CPU assembly is always installed in the 2nd card slot of card cage closest to the front of the power source.

C) EPROM change

Before beginning this step, record the part number and version number printed on the labels of the new EPROM's. This information will be used to verify the installation at a later step.

After ensuring all power is removed from the Power Source and UPC, remove the CPU assembly and then remove and replace the two devices in sockets "U09" and "U10" on the CPU PCB assembly. These devices should be labeled "LO" and "HI" with part number, Version Number and Check Sum data printed on the label, as shown below.

UPC CPU PCB ASSY
(P/N 133170)
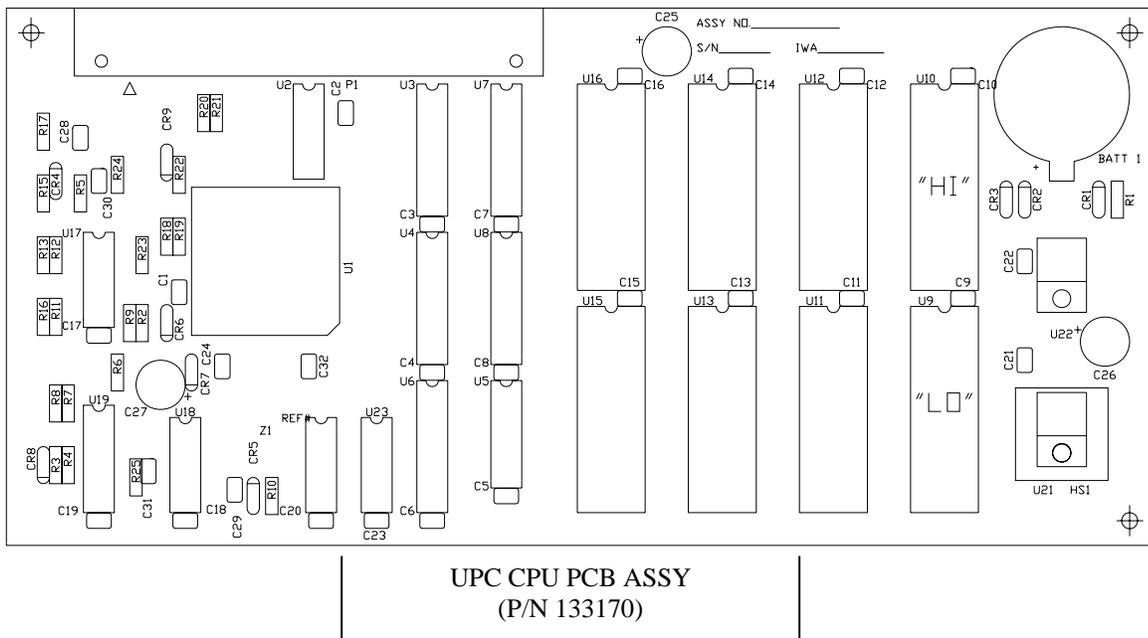
D) System Set Up

After the New EPROM's have been installed, re-apply input power and proceed as follows:

Note: If the system fails to initialize, check: a) the "LO" and "HI" EPROM's are in the proper sockets, b) no bent pins on the EPROM's, c) the part numbers on the devices are the same, d) all interconnect cabling is properly seated. If problems still persist, contact the factory for further assistance.

(1) Reset the CPU

After the new EPROMs are installed, the CPU may or may not automatically reset. To erase all the old data from the system press "Fn","1","3","Execute".

(2) UPC Status - Section 4.5.3.3

Verify part number and version match the information recorded from the label. Using the "Edit" key, re-enter the data recorded in step II.A). (1).

(3) Externally Referenced Calibration - Section 8.2

From the "K-factor Display" menu use the "Edit" key to enter the K-factors recorded in step II.A). (2). When all the values have been entered press the "Execute" key to store these values.

(4) Programmable Impedance Calibration - Section 4.5.3.1

If provided, input the impedance calibration values recorded in step II.A). (3).

III. UPC MANAGER

Using UPC Manager software, data saved prior to changing the EPROMS can be easily restored to the new firmware set.

Perform steps 1 and 2 before making any changes to the power source.

1. **Record System Data**. Start UPC Studio and Connect to the power source via the remote interface.
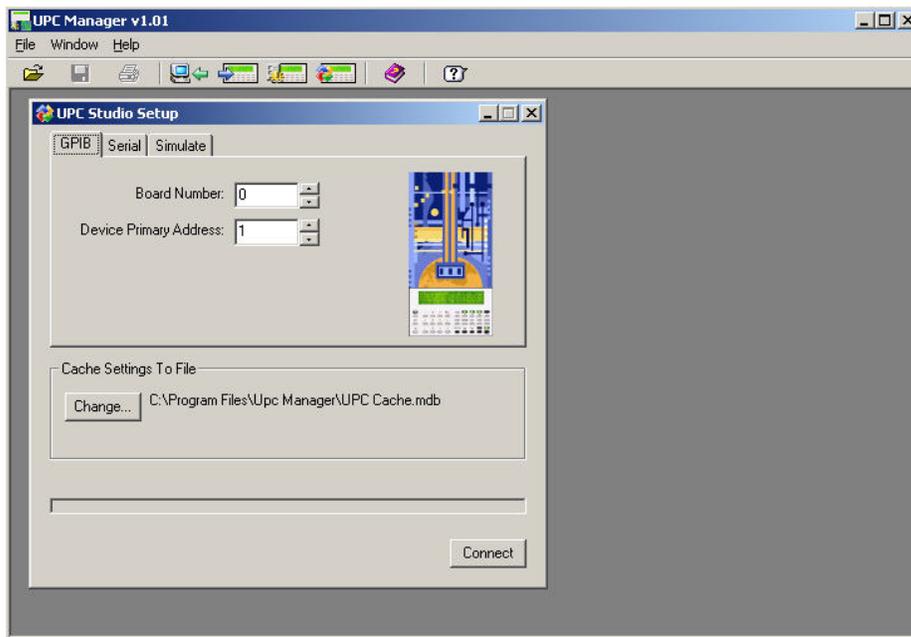
2. Read and save original settings from the UPC.
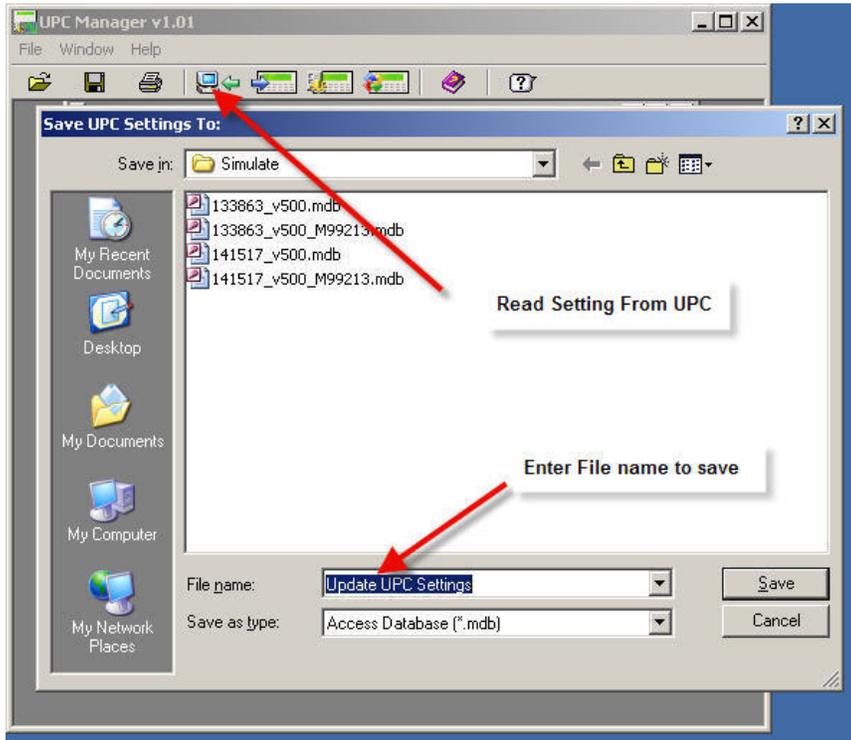
3. After EPROM Change (Section IIC) reconnect with Power Source and Write Settings to UPC.
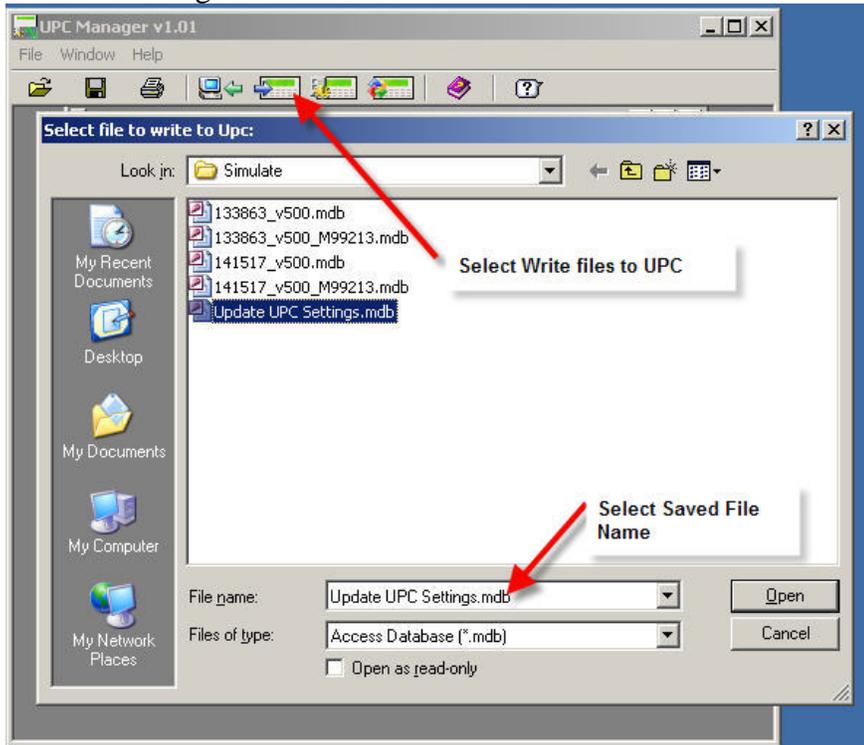
3. Note that when you write settings to UPC *after EPROM Change*, you must choose to update K-Factors and Hardware Settings

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CAUTION

K-FACTORS AND HARDWARE SETTINGS SHOULD ONLY BE SENT TO THE UPC DURING FIRMWARE UPGRADE OR FOLLOWING A FULL RAM RESET.
SENDING THE WRONG K-FACTORS OR HARDWARE SETTINGS WILL CAUSE LOAD OR EQUIPMENT DAMAGE

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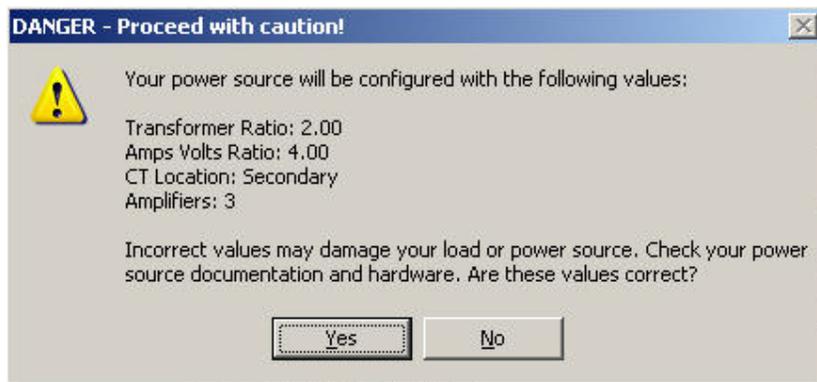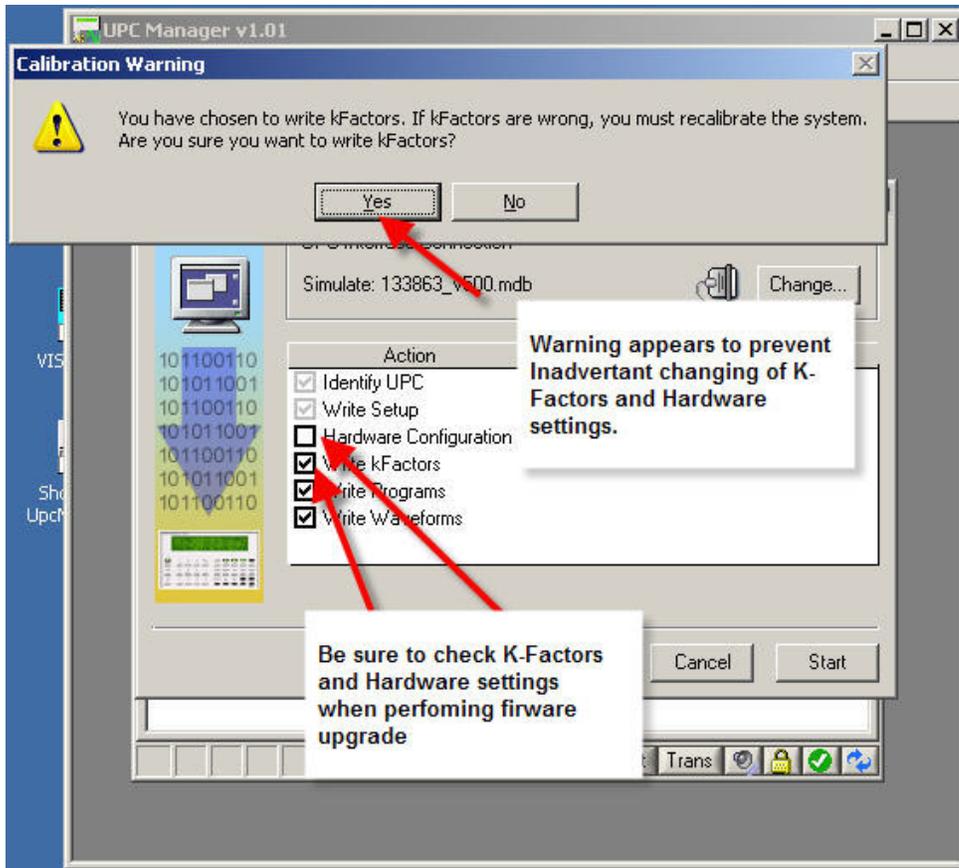
4. After the new settings have been written to the Power Source, It is recommended that step III.2 be repeated with all UPC values saved to a new (post upgrade) file name.
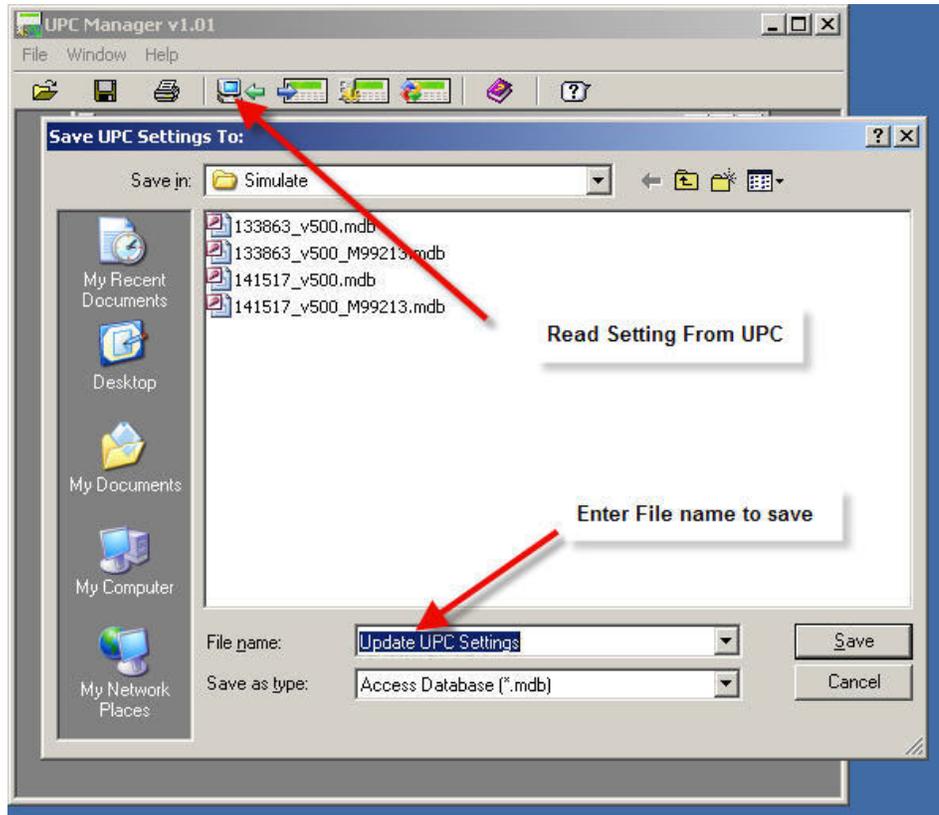
Following UPC Firmware upgrade, it will be necessary to register your UPC Studio Software.

Use UPC Manager INFO tab to cut and paste all of the Power Source data. Simply email this information to Pacific Power Source for your new Registration Code.

For further detail on Pacific's UPC Studio or upgrade information please write or call: 800-854-2433 (USA only) or +1-949-251-1800, or email support@pacificpower.com.