1 Introduction

This document provides instruction to replace the program ROM (firmware) in the Model 1092A/B/C and Model 1093A/B/C series GPS Satellite Controlled Clocks. Basic understanding of electrical safety and static protection is expected.

2 Required Equipment

1. Torx T-25 or large flat-blade screw driver
2. IC Removal Tool, curved tweezers or small blade screwdriver

3 Saving Original Configuration

Updating the firmware will erase the clock's configuration. Document the existing settings for reference.

1. 1092B and 1093B/C: press SETUP and sequentially scroll through the various menus.
2. Press ENTER on any menu to sequence through that menu's settings.
3. 1092A and 1093A: unfortunately, many settings cannot be queried. Use the Operation Manual for a list of serial commands to set local offset, Daylight Saving Time, broadcast modes, IRIG-B time and control functions, etc.

4 Disassembly

1. Disconnect power.
2. Remove from service.
3. Remove the four screws securing the cover with a T-25 driver (or flat-blade screwdriver).
4. Lift off the cover.

5 Installing the Program ROM

1. The program ROM is located at U2 (see Figure 1 on page 4).
2. Remove the old program ROM using the appropriate IC removal tool.
3. Install the new ROM. *Observe the correct IC orientation and make sure the IC pins line up well on both sides of the socket. If necessary, use a pin-bending tool to line up the pins.*
4. Option 28: If present, the Power System Time, Frequency, and Phase Monitor may also require an update ROM. Follow the separate instructions for the update steps.

6 Reassembly

1. Replace the cover.
2. Install the four screws securing the cover with a T-25 driver (or flat-blade screwdriver).
3. Place into service.
4. Connect the power.
5. Set to factory defaults.

7 Configuration

7.1 Factory Defaults

7.1.1 Front Panel (B and C Models)

1. Press and release SETUP at startup and during the first two splash screens.
   If not displayed then start over.
2. Display will show SET FACTORY DEFAULTS?
3. Press ENTER and follow the on-screen prompts.

7.1.2 Serial

1. Connect a null-modem cable between a computer and the main serial port on the clock.
2. Open a terminal program (e.g. PuTTY) with port settings of 9600, 8, N, 1.
3. Type into terminal: 1092XX

7.2 Model Select

1. Type in the serial command listed below according to your clock model.

Model	Serial Command	Model	Serial Command
1092A	0,1,1092XZ	1093A	3,1,1093XZ
1092B	1,1,1092XZ	1093B	4,1,1093XZ
1092C	2,1,1092XZ	1093C	5,1,1093XZ

2. Verify model configuration by cycling power and watching LCD display. If Model is incorrect then retype the Model Select command.

7.3 Option Setup

7.3.1 Front Panel

1. Press SETUP to enter the configuration menus.
2. Press UP, DOWN, and ENTER to navigate the menus and configuration selections.
3. Press any top row button to exit the configuration menus.
4. *NOTE: Cycle power to make sure the main processor and the option are communicating.*

7.3.2 Serial

<table>
<tr><th>Command</th><th>Description</th></tr>
<tr><td>M,N,K,LXI</td><td>Where:
M = Option Location (0 = Main Board, 1 = Aux Board)
N = Option Number

<table>
<tr><td>Option Code (N =)</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr>
<tr><td>Main Board Option (M = 0)</td><td>none</td><td>19</td><td>–</td><td>–</td><td>–</td><td>–</td><td>–</td><td>–</td><td>–</td><td>–</td></tr>
<tr><td>Aux. Board Option (M = 1)</td><td>none</td><td>03</td><td>20A</td><td>27</td><td>28</td><td>29</td><td>32</td><td>33</td><td>34</td><td>35</td></tr>
</table>
K = security tree (model number, e.g. 1092 or 1093)
L = (use only if N selects Option 28) L = 0 for 60 Hz; L = 1 for 50 Hz
Example: 1,8,1093XI Model 1093A/B/C with Option 34
Example: 1,4,1093,0XI Model 1093A/B/C with Option 28 and 60 Hz reference</td></tr>
</table>

NOTE: Cycle power to make sure the main processor and the option are communicating.

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7.4 Typical Configuration List

Function	Command	Description
Local Offset	**±hh:[mm]L**	Where: hh = Hour mm = Minute (15 minute increments) *Example: -8L Pacific Time Zone*
Out-of-Lock Delay	**[-]nK**	Where: - = disabled n = delay in minutes (0 to 99) *Example: -1K Disabled* *Example: 10K 10 Minute Delay*
IRIG-B Data - Time Offset	**IL** **IU**	Set to local time code reference. Set to UTC time code reference.
IRIG-B Data - IEEE 1344	**I0** **I1**	Set IEEE 1344 extension Off. Set IEEE 1344 extension On.
Daylight Saving Time Mode	**1,mDT**	Set how Daylight Saving Time operates. Where: m = mode (0 = Off, 1 = On, 2 = Auto) *Example: 1,2DT Automatically adjust for DST per configuration.*
Daylight Saving Time Start	**2,w,x,y,zDT**	Set Daylight Saving Time start time. Where: w = month (0 = JAN, 11 = DEC) x = week of month (0 = First, 1 = Second, 2 = Third, 3 = Last, 4 = Second from Last, 5 = 3rd from Last) y = day of week (0 = SUN, 6 = SAT) z = minutes after midnight (0 to 1440) *Example: 2,2,1,0,120DT DST begins at 2:00 am on the second Sunday of March.*
Daylight Saving Time Stop	**2,w,x,y,zDT**	Set Daylight Saving Time stop time. Where: w = month (0 = JAN, 11 = DEC) x = week of month (0 = First, 1 = Second, 2 = Third, 3 = Last, 4 = Second from Last, 5 = 3rd from Last) y = day of week (0 = SUN, 6 = SAT) z = minutes after midnight (0 to 1440) *Example: 3,10,0,0,120DT DST ends at 2:00 am on the first Sunday of November.*
Daylight Saving Time Review	**0DT**	Return Daylight Saving Time Configuration.

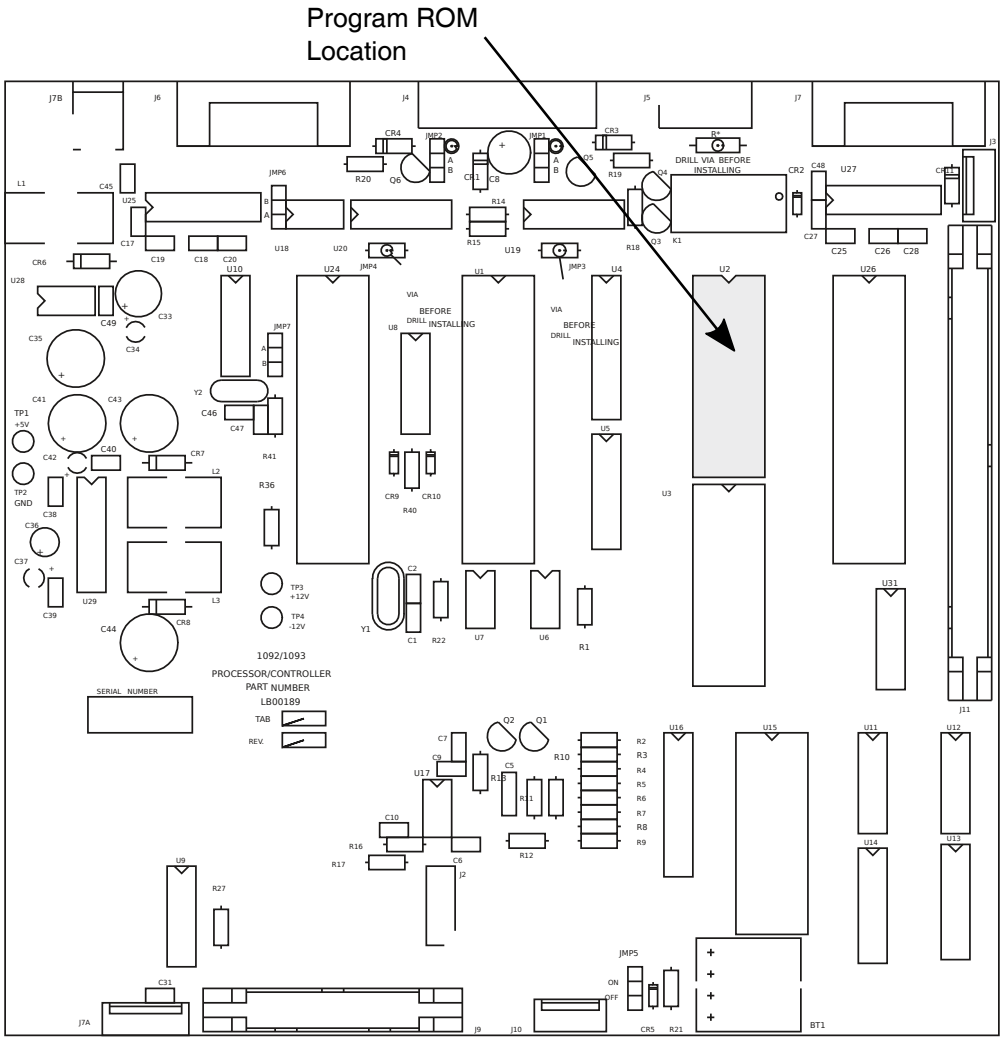

Figure 1: Model 1092/1093 Main Board ROM Location

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