**Universal
Switching
Corporation**

FIELD SERVICE
PROCEDURE

Firmware FLASH Update

C700 CPU Series

State-of-the-Art Switching Solutions

TECHNICAL ASSISTANCE

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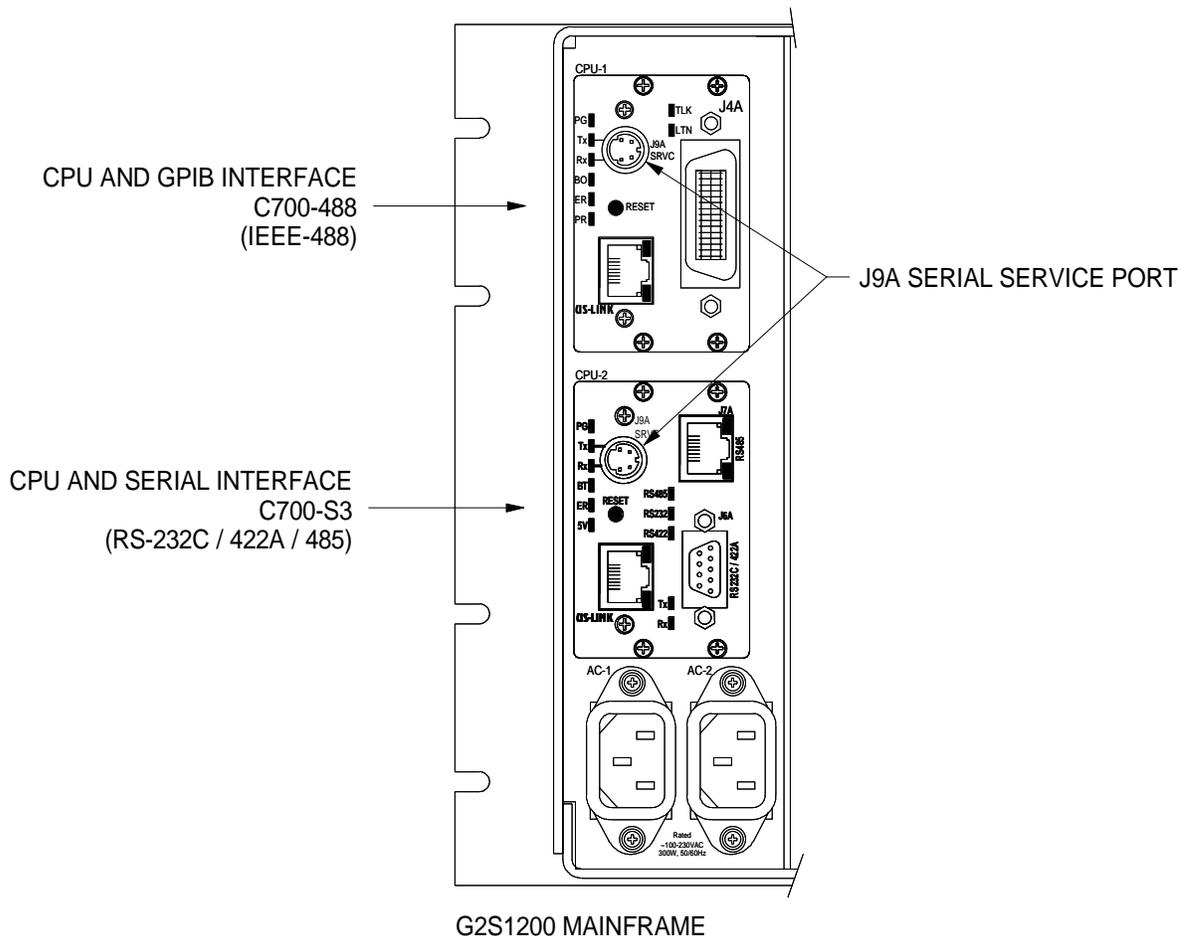Fax   +1 818-785-0680
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Installing New Firmware on CPU units
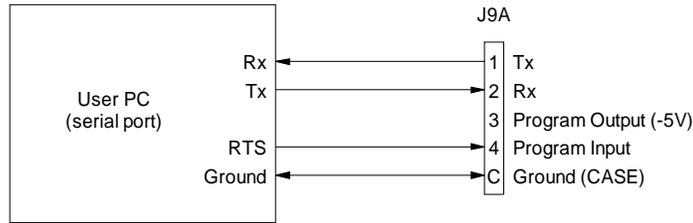# (C700-S3 and C700-488)

General Location:

This portion of the procedure is to upgrade the main CPU's firmware. These assemblies are located at the rear of the unit. They are installed in positions CPU-1 and CPU-2, depending upon the system. Please review the complete firmware upgrade package which is included on the CD-ROM that accompanies this kit. Also included is a **readme.txt** file usually specifically written for the upgrade package.
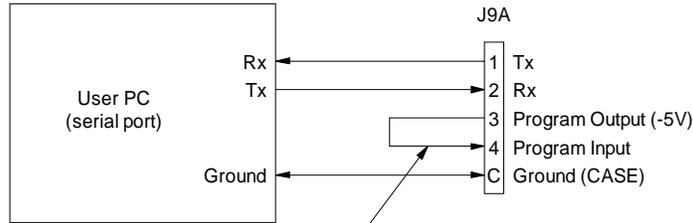
The J9A Serial Service Port:

The C700-S3 and C700-488 contain a serial service port for uploading new firmware to the CPU. The connector is a standard four position Mini-DIN circular identified as J9A. Upgraded firmware enhancements can easily be added to the system by uploading the new version via this port. A cable is provided with an upgrade package to connect your PC computer or other serial control device.

CPU AND GPIB INTERFACE
C700-488
(IEEE-488)

J9A SERIAL SERVICE PORT

CPU AND SERIAL INTERFACE
C700-S3
(RS-232C / 422A / 485)

G2S1200 MAINFRAME

METHOD 1

```
                                    J9A
┌─────────────┐         Rx ◄──────── 1 │ Tx
│             │         Tx ────────► 2 │ Rx
│  User PC    │                      3 │ Program Output (-5V)
│ (serial port)│       RTS ────────► 4 │ Program Input
│             │     Ground ◄───────► C │ Ground (CASE)
└─────────────┘
```

METHOD 2

```
                                    J9A
┌─────────────┐         Rx ◄──────── 1 │ Tx
│             │         Tx ────────► 2 │ Rx
│  User PC    │                      3 │ Program Output (-5V)
│ (serial port)│                     4 │ Program Input
│             │     Ground ◄───────► C │ Ground (CASE)
└─────────────┘
```

Connect when programming CPU

Pin	Signal Assignment (J9A)
1	Transmit Data (out)
2	Receive Data (in)
3	Program Output (connects to pin 4)
4	Program Input (connects to pin 3 or RTS)
CASE	Ground (shell of DIN connector)

Installing New Firmware:

Included in this package are the HEX files needed to FLASH your system CPUs. This operation requires the supplied flash cable (P/N C700-008), a PC with a serial port for operating the FLASH program, and the specific HEX files. The CPU is a Phillips processor and the FLASH program is supplied by them. This upgrade package contains this complete program, delivered on two virtual "disks", instructions in a **readme.txt** file, a tutorial, and a link to the Phillips web-site if you wish to go there directly in order to get these files or get updated versions of these files.

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Flash Procedure:

The C700 CPUs accept new firmware drivers via the J9A serial service port through the following procedure:

1. Connect the supplied FLASH cable to a free serial port on your PC computer.

2. Install the FLASH control software, **WINISP**, from the attachments provided on this email or CD-ROM (DISK1.EXE and DISK2.EXE, then SETUP.EXE) onto your PC computer. These are self-executing zipped files (DISK1.EXE and DISK2.EXE).

3. With the unit ON, connect the FLASH cable supplied to the service port (J9) on the rear of the unit (assuming that the cable is also connected to your PC).

4. Press the small RESET button on the CPU module. The unit will make tones during this whole process.

5. Start the program, **WINISP**.

6. Once the program has started, select a chip part number from the drop down box called CHIP in the Parameters section. Select the "P89C51RD+" entry from the pull-down box.

7. Next, select the COM port you connected the supplied FLASH cable to on your PC.

8. Do not change the RANGE input windows. This is automatic.

9. Next, enter the OSC(mhz) value of "22".

10. At the upper left area, select the "Load File" button.

11. When prompted, select the appropriate HEX file to be FLASHED.

12. When this is done, the "STATUS" box will say "file loaded OK".

13. Do not change the Vector, Status or Range fields.

14. Next, select the ERASE button. A window will pop up. Highlight the blocks "0, 8K and 16K," out-lined in blue. They will shade when selected. Press the ERASE button.

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FSP-C700

15. When each block is erased, it will turn pink in color. When all three blocks are erased, the window will disappear and the status display will indicate that the device is erased.

16. Next, select Program Part. The status display will show the FLASHing progress. When done, you will hear a "beep" and the status display will say the programming was successful.
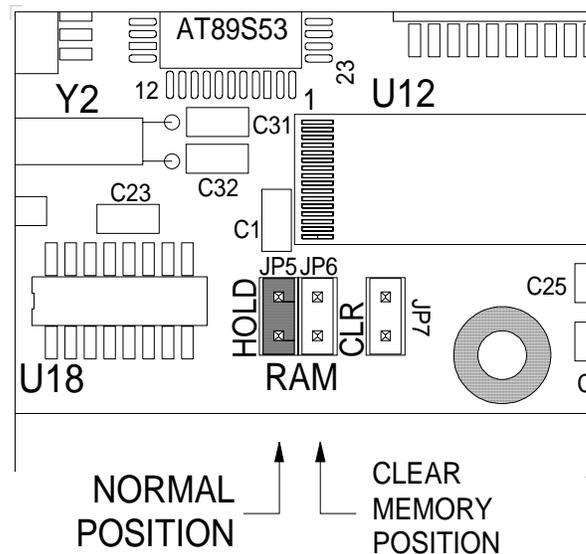
Dual CPU Configurations:

With dual CPU capability of some units, several unique issues are particular to this configuration. The dual CPU configuration allows for redundant fail-safe operation of the unit, with a minimization, or complete elimination of down time. Either of the two CPU units can fail without a loss of system functionality.

Each CPU remote control assembly unit is hot-swappable, in case of CPU unit failure or maintenance replacement. It is **very highly recommended** that the new CPU unit being introduced into the system be cleared of memory before being inserted into the chassis. This can be accomplished by resetting a jumper on the main board of the CPU assembly. Remove the four screws that retain the CPU and remove the assembly from the unit.

Normally there is a jumper permanently stationed in the JP5 position (note drawing below). In order to clear the CPU memory, this jumper needs to be removed and stationed on the adjacent JP6 position for a period of at least 10 seconds. This will serve to clear the memory of the CPU and ensure a smooth transition of the active "hot" memory from the live CPU unit into the incoming "cold" cleared CPU unit. After this 10-second period is complete, the jumper should then be repositioned to its original JP5 position.   This procedure is most easily accomplished using a pair of needle-nose pliers. See the diagram below for correct jumper positions. Install the CPU. **Skip the balance of this procedure.**

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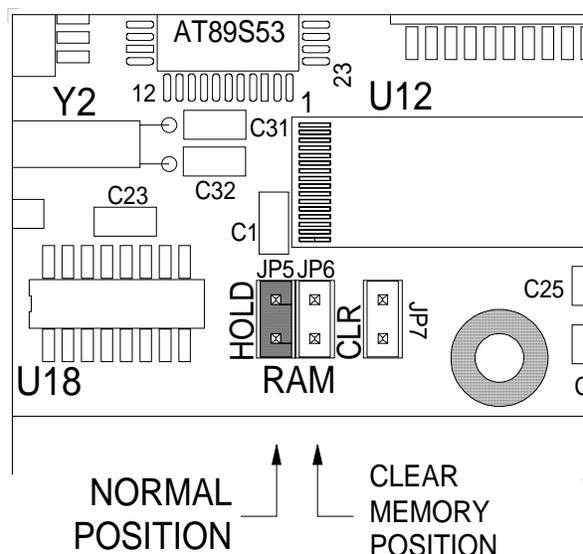
17. **IMPORTANT:** Remove the FLASH cable from the CPU and turn the unit OFF (non-dual CPU units only). The CPU unit should be cleared of memory before being used. This can be accomplished by resetting a jumper on the main board of the CPU assembly. Remove the four screws that retain the CPU and remove the assembly from the unit.

18. Normally there is a jumper permanently stationed in the JP5 position (note drawing below). In order to clear the CPU memory, this jumper needs to be removed and stationed on the adjacent JP6 position for a period of at least 10 seconds. This will serve to clear the memory of the CPU and ensure a smooth transition of the new firmware. After this 10-second period is complete, the jumper should then be repositioned to its original JP5 position. This procedure is most easily accomplished using a pair of needle-nose pliers. See the diagram below for correct jumper positions.

19. Install the CPU into the unit and secure with the four screws. Power the unit.

20. The CPU unit will reboot and indicate the new firmware version on the front panel display.

21. Continue this procedure on all CPU's in the system.

NOTE: It is extremely important that ALL units have the same version of firmware installed.

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