

## Introduction

The 001 CPU uses removable EPROM chips to store the operating firmware. These chips must be replaced when updating the firmware on the 001 CPU. Replacement of these chips can be easily done in the field by inexperienced personnel.

## Materials

- Phillips screwdriver
- Large flat blade screwdriver (if the enclosure cover uses slotted screws)
- Small flat blade screwdriver (the Ockam LGS is ideal)

## Procedure

1. Turn power off to the instrument system at the breaker panel. Disconnect the RG58 bus cable and the power cable from the 001 CPU. (Optional) Remove the 001 CPU from its mounting point and bring it to an easier place to work.
2. Open the top lid of the 001 CPU by loosening the four captive screws in the corners of the lid. Place the lid aside.
3. Inside the enclosure, there are two boards: the memory board and the logic/power board. The memory board is the upper board, and contains the firmware chips. Remove the four Phillips screws holding this board in place and remove the board from the enclosure.
4. With the battery at the top and the connectors on the left, the EPROM chips are mounted in sockets on the lower right corner of the board. The even-numbered identifications may be marked on the right edge of the board (e.g., U2, U4, U6). Note the orientation of these chips: the pin 1 reference is to the left. Also note the designations of the chips (U1, U2, U3, etc.). Carefully remove these chips by prying out of the sockets with the small flat-bladed screwdriver and place aside.
5. Insert the new EPROM chips in the sockets. Each chip is marked with its location (i.e., U1, U2, U3...). The chip must be mounted in the correct location for the 001 CPU to operate. Be careful not to bend the pins when inserting them into the socket. Also be sure to place the chips in the correct orientation in the sockets – the pin 1 mark goes to the left. If in doubt, all the chips on the board are orientated in the same direction, with a small notch, dimple, and/or stripe designating the pin 1 reference.
6. Re-assemble the 001 CPU by reversing steps 1-3. When placing the memory board back in the enclosure, be sure that the inter-board connectors are seated properly. It is possible to splay the connector pins so that they are not all seated, or to insert the connector at an angle so that only half the pins are seated.
7. Check operation of the instrument system. If the system does not turn on, recheck that all cables are connected, the power switch on the 001 CPU is in the ON position, and the system breaker is on. If the system turns on but does not start, check that the memory board is properly inserted and all the firmware EPROM chips are correctly installed.