TELEDYNE
INSTRUMENTS
Advanced Pollution Instrumentation
A Teledyne Technologies Company
9480 Carroll Park Dr., San Diego, CA 92121-5201
Phone (858) 657-9800 Fax: (858) 657-9818 Toll Free 1800 324-5190
E-mail: api-customerservice@teledyne.com http://www.teledyne-api.com

Service Note

10-003A
20-APR-2010

Reseating CPU RAM Chip on A Series Instruments

I. PURPOSE:
This procedure covers how to reseat the CPU RAM chip in order to erase the RAM and any CPU abnormalities.

II. TOOLS:
Chip remover or a small flat tip screwdriver
Large slot head screwdriver
ESD Wrist Strap
ESD Static protected work surface (mat).

III. PARTS / MATERIALS:

IV. REFERENCES:
06-005B - Extracting Parameters Readings Settings and Data using HyperTerminal

V. PROCEDURE:

NOTE: Use ESD precautions when handling static sensitive electronic devices

The electronics used in T-API analyzers are sensitive to Electrostatic Discharge (ESD). When working on any T-API device, please ensure that you are properly grounded prior to handling or touching any electronic circuitry in the analyzers! For more information on how to protect sensitive components from ESD during handling, please contact T-API customer service and ask for the ESD Service note number 03-022A.

1. Although not required, it is strongly recommended to capture machine settings and data by interfacing a laptop computer and capturing these parameters (pre-upgrade). Follow instructions in Service Note 06-005; or at minimum, manually record values for the Slope, Offset, and Dark Offset, and Factory Options by going into the VARS menu (using the password 929).

2. You can first try to recover from the CPU resetting the instrument by going to SETUP – MORE – DIAG – enter 929 for the password – ENTR – NEXT – until you get to RESET MEMORY – ENTR – RAM – ENTR. If this doesn't fix your resetting problem, the CPU RAM chip will have to be reseated or replaced if reseating doesn't work. There is also the possibility that the entire CPU will have to be replaced.
3. Power down instrument, unplug power cord, and remove cover.
4. Connect your ESD wrist strap to the chassis and / or static work surface for the following steps.
5. Remove V/F board with attached CPU board, set on static protected work surface.
    a. Loosen the slot head captive screw that holds down the V/F backplane board to the motherboard on the bottom.
    b. Unplug the power cable J9 on the motherboard.
    c. Loosen the top hold down bracket and swing away.
    d. Unplug the ribbon cables from the motherboard that lead to the I2C Submux board (if present).
    e. Unplug the V/F board, lift out and route the ribbon cables on the side of the CPU board around where they can be unplugged.
    f. Unplug the ribbon cables from the side of the CPU board and remove board from the instrument to a static protected surface.

NOTE: Take notice of the alignment of the notch on the IC chips before removing. If the chip is installed with the notch pointing the wrong direction, the chip will be DESTROYED.

NOTE: Some IC chips used by TAPI have a different number of pins (legs) than the number of holes in the sockets where they are installed. Take careful notice of what position the particular IC chip is installed into BEFORE removing, so that it can be reinstalled properly.

6. Refer to Figure 1. (Slot U9) The Dallas Smartwatch battery backup tower IC chip has another IC chip installed into the top of it. Both IC'c together are installed into U9 slot. Some older CPU's have it installed into U10 (slot 10). Erase memory and configuration by removing top chip ONLY (RAM chip) on the Dallas Smartwatch battery backup tower with a chip puller or small screwdriver, inspect for bent pins, wait 10 seconds, and plug chip back in. Inspect again for bent pins after plugging chip back in.
7. Re-install the V/F board (with CPU) and associated cables and connectors.
8. Re-install power cord, cover and power analyzer on.
9. Allow to warm up and re-calibrate.

CPU Board

STEP 7
USE ESD WRIST STRAP
Remove top chip only.
Inspect for bent pins.
Wait 10 seconds.
Plug chip back in.
Inspect again for bent pins after plugging chip back in.

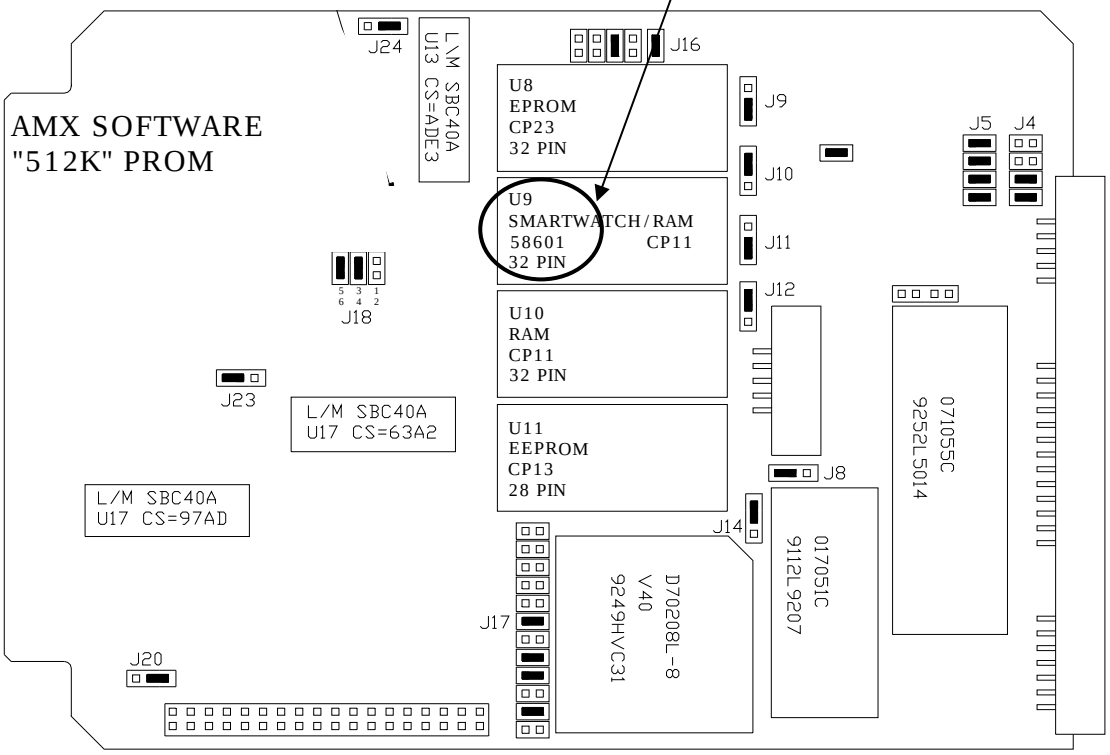

Figure 1