OPtima and Lite
Operator Station Firmware Update CPU V3.2/Comm V1.6
(for use with Kit Number 71-999-J)

Version 3.2 CPU firmware (Jan06) adds support for the 512k memory cartridge. Refer to 1640-MF-135-0-xx for complete information on the 512k cartridge.

Versions 3.0 (Mar05) and 3.1 (Jun05) were pre-release field test versions for 512k cartridge support. These versions would not reset after a screen set download (this condition was resolved in V3.2).

Version 2.A CPU firmware (Nov04) corrects a screen drawing problem which can cause the screen background to change to white. It also corrects an anomaly that could cause a timeout (viewed from the PC) when downloading User screens. In addition, Vector Screen setpoints 8-12 are now examined for a non-zero entry before vectoring is allowed.

(Version 2.9 CPU firmware was a limited release.)

Version 2.8 CPU firmware (Feb04) corrects a powerup issue in which the display would not show messages.

Version 2.7 CPU firmware (Jan04) was a limited release that corrected a problem in which the display would not reset after screens were downloaded.

Version 2.6 CPU firmware (Oct03) corrects an anomaly in MACO DS systems that may prevent profiles from being sent from a floppy disk to the system. Also corrects files stored on a floppy disk so that they can be copied to a PC (some files would previously show a 'File Access Error' when this was attempted).
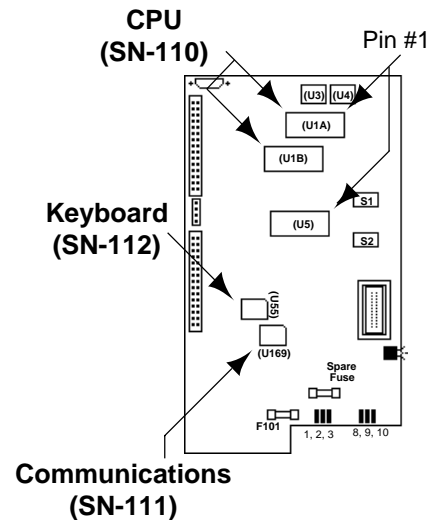
Version 2.5 CPU firmware (Sep03) expanded the CR logging capability for Alpha Multirack systems; provides for faster screen download from a floppy disk (for Alpha & DS); and allows DS system screens to be copied to or from a floppy disk.

Version 2.4 CPU firmware (Jul03) adds 5 more priority alarm setpoints to Alpha systems (Priority alarm screen 8 through Priority alarm screen12). V2.4 CPU also corrects the display of large Kanji characters in both the Alpha and DS/RS systems.

A new feature was also added that (in some cases) prevents the operator station from coming out of screen blanking: if S2, Position 2 is placed in the "closed" position, then pressing any of the machine function keys will NOT "unblank" the screen.

In addition, any action that would cause the following messages to appear would normally (without S2, Position 2 being closed) cause the screen to "unblank." With S2, Position 2 in the closed position, these messages will display but will NOT "unblank" the screen.

278	Setpoints Limit Error
336	Setpoints Restored
515	Reading Setpoints
516	Saving Setpoints
517	Setpoints Saved

**CPU
(SN-110)**

Pin #1

**Keyboard
(SN-112)**

**Communications
(SN-111)**
A-60021 Operator Station Board

Note that for 128K of memory, U3 is installed. For 256K of memory, U4 is added. For 384K of memory, U5 is added.

Also in V2.4 CPU, if a screen file is downloaded which contains the same header information as previously loaded, the security file will be rewritten (previously it was not). This allows for easier recovery from a corrupted security file.

Version 2.3 CPU firmware (Oct02) was a "limited release" with an improved method of turning off the backlight during screen blanking.

(Note that Version 2.2 CPU firmware and Version 1.6 communications firmware are the last versions compatible with 41AE operator stations.)

Version 2.2 CPU firmware (Oct02) - in combination with communications firmware V1.5 or later - increases the speed of a "parison profile write" in DS/RS systems equiped with Data Handler firmware V3.7 or later. Note that although this firmware is compatible with MACO 4k, 5k and 6k systems, as well as DS/RS systems, this feature will have no effect on MACO 4k, 5k or 6k systems.

Version 2.1 CPU firmware (Sep02) corrects an anomaly with the automatic printing of screens in an Alpha system. The display will now transfer to a print screen and display the print mode (for the 41AC, black screen with white characters) properly.

Version 1.6 communications firmware (Nov02) resolves an anomaly with screen toggle control relays found in V1.4 and V1.5. It can be used to replace Version 1.3, Version 1.4 or Version 1.5 communications firmware ONLY. It CANNOT be used to replace communications firmware Version 1.2 or earlier.

Version 2.0 CPU firmware (Jul02) modifies the operation of a profile screen: a "read profile" will be performed when going to

the screen and also, a "read profile" will be performed before a "write profile" is performed. In addition, two-line messages were corrected to display properly.

Version 1.B CPU firmware (Nov01) resolves an issue with machine function key operation. Note that V1.B CPU firmware requires V1.3 or later Communications firmware.

Version 1.A CPU firmware was a field test version.

Version 1.9 CPU firmware (Sep01) corrects an anomaly with the password index and the associated message to which it points. In addition, five groups of security indexes have been added and support for DS/RS communications has been added. Beginning with this version, CR logging will start without having to go to the alarm log screen (previously, you had to go to a screen containing CR logging setpoints in order for logging to begin).

Version 1.8 CPU firmware (Aug01) was a limited release to support the upgrade of the operator station to communicate with a MACO DS control system (switch S2, Position 3 must be in the CLOSED position when used with a MACO DS/RS system).

Version 1.7 CPU firmware (Dec00) corrects an anomaly with how recipes are written to cartridges (instead of being written to the specified location, they would be written to the first free location) and also resolves a problem that would not allow downloading an RLD cartridge/floppy to a system containing 2 sequence boards.

Version 1.6 CPU firmware (Jun00) adds support for a floppy disk drive and corrects an anomaly with the upper limit of the security setpoint pointer.

Version 1.5 CPU firmware was not released.

NOTE: V1.4 and earlier CPU firmware required only 1 EPROM. Beginning with V1.5 firmware, 2 EPROMs are required. Consult the factory if an update for V1.4 or earlier is required.

Version 1.4 CPU firmware (Nov98) corrects an anomaly in previous versions whereby a "filled polyline" routine could cause the operator station either to have a sluggish response to a key entry or not allow a security code to be entered.

Version 1.3 firmware updated both the CPU and communications firmware to introduce the following features:

1. The "security change" function.
2. The "alarm logging" function.
3. The "setpoint change logging" function.
4. The "internal" screen set can now be loaded as described (in op station installation & wiring) in case of operator station "lockup."

Version 1.2 firmware was not released.

Version 1.1 firmware corrected two anomalies found in Version 1.0 of the 41AC/41AG/41AM/41AE CPU firmware:

1. In Version 1.0, a "stack overflow" may occur when a memory cartridge is inserted (causing the operator station to reset). More elements (like a miniscreen, for example) on a screen increases the likelyhood of an overflow.

2. In Version 1.0, if a screen print was cancelled, printing would be disabled (until the operator station was reset).

Observe proper ESD precautions
and follow this procedure:

1. Power down the system.

2. Remove the front cover from the operator station.

3. Remove the program EPROM from "U1A."

4. Install the new EPROM labeled "SN-110-032-0-01 U1A 3AE2H" into "U1A" being careful to follow the orientation indentation of the device.

5. Remove the program EPROM from "U1B."

6. Install the new EPROM labeled "SN-110-032-0-04 U1B C5F7H" into "U1B" being careful to follow the orientation indentation of the device.

7. Remove the program EPROM from "U169."

8. Install the new EPROM labeled "SN-111-016 5B00" into "U169" (near U54) being careful to follow the orientation indentation of the device.

9. Remove the program EPROM from "U55."

10. Install the new EPROM labeled "SN-112-010 B600H" into "U55" being careful to follow the orientation indentation of the device.

11. For units equipped with a floppy drive, S2 switch 5 must be in the OPEN position. For units without a floppy drive, S2 switch 5 MUST be in the CLOSED position for proper operation.

Note that for units used with a MACO DS/RS system (a system that communicates to the display through a separate RS-485 board), S2 switch 3 must be in the CLOSED position.

12. Replace the front cover.

13. Apply power to the system.

This kit contains Software Assembly SA-60021-00N-0-06, which consists of 4 chips:

SN-00110-032-0-01   (CPU U1A)
SN-00110-032-0-04   (CPU U1B)
SN-00111-016-0-02   (Communications)
SN-00112-010-0-03   (Keyboard)