G109-00001   CODE: D   CS: F   ETCH: E
AUG-72 - PROBLEM: Update G109 etch board to new revision "E ".
CORRECTION: Make necessary etch changes as was done on the G110 board by ECO G110-00006.
In-plant effectivity -02 phase-in

G109-00002   CODE: D   CS: H
NOV-72 - PROBLEM: Standoffs that have been glued on sometimes fall off.
CORRECTION: Drill printed circuit boards in four places with #31, 0.120 drill and mount four 1/4 X 7/16 inch long, 4-40 standoffs with a binder head nylon screw #4-40 3/8 inch long.

NOTE: See continuation supplement ECO G109-0002A.
In-plant effectivity -02; all printed circuit boards shipped from Board Fabrication area after october 1, 1972 must have these four holes; earlier phase-in allowed.

G109-0002A   CODE: D   CS: E1
DEC-72 - PROBLEM: Field Service objects to going from CS revision "E " to CS revision "H " on etch revision "C " modules.
CORRECTION 1: On ECO G109-00002, change Item #1, new revision from "H " to "E1 ".
CORRECTION 2: Change revision letters on handle; delete "H ", add "E1 ".

NOTE: This ECO affects etch revision "C " modules only.
In-plant effectivity -Unchanged

G109-00003   CODE: D   CS: J
NOV-72 - PROBLEM 1: A high percentage of DEC stacks would fail threshold margin specifications in MM15-B and M11-SP systems.
CORRECTION 1: Optimize threshold circuit on G110 for DEC stacks by changing four resistors and decouple threshold circuit better by changing twelve capacitors.
PROBLEM 2: SNEAKY MASTER SYNC pull-up resistor not correct.
CORRECTION 2: Change value of SNEAKY MSYN pull-up resistor, R123, from 4.7K ohms to 390 ohms.
PROBLEM 3: Ground jumpers on #2 side of module short out sometimes.
CORRECTION 3: Wire should lie as flat as possible. Top of wire should never be more than 1/4 inch from module. Install wire before installing 13 ohm resistors. Resistors should be a minimum of 5/64 inch from top of module. Top of resistor should be less than 11/32 inch from top of module.

NOTE: See continuation supplement ECO G109-0003A.
In-plant effectivity -03 * rework all G109's in memories shipped from Memory Test areas after 10/30/72.

G109-0003A   CODE: D   CS: E2
DEC-72 - PROBLEM: Field Service objects to using regular revision Circuit Schematics on etch revision "C " modules.
CORRECTION: On ECO G109-00003, change Item #1 to read: 1) E-CS-G109-0-1, E1, E2, 06; See final prints. 2) Change revision letters on handle; delete "J ", add "E2 ". 3) Delete Item #12 from ECO G109-00003.
In-plant effectivity -03 * 1) Puerto Rico will be notified to change stamp on handles. 2) Memory Test will ensure that handles are marked "E2 " as of 12-7-72. 3) Field Service Acceptance will ensure that handles are marked "E2 " in all acceptance areas as of 12-7-72 4) No memories will be returned to Memory Test because the handle is marked "J " and not "E2 ".

G109-C0004   CODE: F   CS: E3
DEC-72 - PROBLEM 1: The G109 Circuit Schematic does not properly reflect the G109-YA version.
CORRECTION 1: Update the Circuit Schematic to show differences between G109 and the G109-YA version.
PROBLEM 2: The STROBE one shot flip-flop does not get cleared by INIT .
CORRECTION 2: Remove +3V from reset side of STROBE one shot flip-flop and replace with INIT L .
CORRECTION 3: Redraw prints to DEC standards.

NOTE: The rework, for G109-YA only, is as follows: Remove E28; cut etch between E28-13 and E28-2; add wire from E28-13 to E15-10; replace E28.
In-plant effectivity -03 rework
Field effectivity -Rework all G109's in MF11-LP, MM11-LP, and ME15.
(Time To Install And Test 2.0 Hours.) (Documentation $ 5.00 , Parts None ,   (Kit Contents -FCO/Prints)

G109-00005   CODE: D   CS: K   ETCH: F
JAN-73 - PROBLEM 1: G109 asserts SLAVE SYNC too early on first memory cycle after power-up on some modules; if first memory cycle after power-up is DATI or DATIP , data errors may occur only on this first cycle, then memory will function normally.
CORRECTION 1: Remove IC E28, cut etch from E28 pin 13 to E28 pin 2, and jumper E28 pin 13 to E15 pin 10.
PROBLEM 2: Write switches turn on too soon after read switches turn off.
CORRECTION 2: Cut etch going to E14 pin 3, install jumper from DL1-P5 to E14 pin 13.
PROBLEM 3: IC DEC 7408 turn on is too slow.
CORRECTION 3: Replace E6, DEC 7408, with a DEC 3001-P.
PROBLEM 4: IC's E15 and E35 should be DEC 74H04's.
CORRECTION 4: Change E15 and E35 from DEC 7404's to DEC 74H04's.

NOTE: This ECO is for CS revision "F ", etch revision "E " G109's only.
In-plant effectivity -02 phase-in

G109-0005A   CODE: D
MAR-73 - PROBLEM 1: Cycle time of the memory system is too short.
CORRECTION 1: Change the value of delay line DL3 from 100 nsec to 125 nsec, new part #16-11327 to lengthen the cycle time.
PROBLEM 2: Potential parts shortages.
CORRECTION 2: Allow component substitution.

NOTE: This ECO affects etch revisions "E " and "F " G109's only.
In-plant effectivity -Phase-in

G109-C0006   CODE: F   CS: E4
MAR-73 - PROBLEM 1: Potential parts shortage.
CORRECTION 1: Allow component substitution.
PROBLEM 2: Some memories have too short a cycle time. Symptoms are: Bits are picked-up during very fast back-to-back memory cycles, such as those performed by DMA devices. The problem is that memory may operate too fast, causing margins to decrease. This FCO adds 25 nsec to the cycle time and, as a result, the fastest a cycle can be is approximately 885 nsec which still meets our specification of 900 nsec.
CORRECTION 2: Replace delay line DL3, 100 nsec delay, with a 125 nsec delay, #16-11327.

NOTE 1: See correction supplement FCO G109-A0008.

NOTE 2: This FCO affects etch revision "C " G109's only.
In-plant effectivity -BREAK-IN for allowable substitution, immediate. For DL3, the following BREAK-IN applies: Work in process in Module Production as of 5/14/73. All memories shipped from Memory Test as of 6/30/73, or as of 3/1/73, when MSEL L DELAY is less than 875 nsec and module fails margins. All memories shipped from all product lines as of 7/31/73.
Field effectivity -Rework all etch revision "C " G109's and G109-YA's
(Time To Install And Test 1.0 Hour.) (Kit Contents -PF756 -FCO/Prints And Parts)