digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

E C DEC-O-LOG
Engineering Change Order Log

M7700
Index, Photoamp and Sector Counter for RK05

PROCESSOR TYPE   PDP-8 Family, PDP-11 Family, PDP-15

M7700-00001   CODE: D   CS: E   ETCH: E
NOV-71 - PROBLEM: Power supply ripple noise in the sector sensor amplifier circuit results in false triggering of the subsequent sector pulse generating circuits.
CORRECTION: Addition of a capacitor, C30, to make the sector sensor amplifier less responsive to noise, and also rerouting of the amplified signal to the Schmitt Trigger input of the following one-shot, pin "E ".
In-plant effectivity -04 phase-in

M7700-00002   CODE: P   CS: F
JAN-72 - PROBLEM: The circuit schematic representation of the interface drivers is incorrect and reference information is missing from some circuit elements, thus making circuit functions hard to understand.
CORRECTION: Add the proper reference information to the Circuit Schematic drawing.
In-plant effectivity -06 documentation change only

M7700-00003   CODE: D   CS: H   ETCH: F
JAN-72 - PROBLEM 1: SEEK DONE and WRITE indicators light before drive is in READY status.
CORRECTION 1: Use READY H signal to gate SEEK DONE and WRITE indicators.
PROBLEM 2: Component tolerances cause possible marginal operation of index separator.
CORRECTION 2: Increase the value of resistor R8.
In-plant effectivity -03 rework immediately

M7700-00004   CODE: D   CS: J   ETCH: H
MAR-72 - PROBLEM: False triggering of one-shots occurs due to noise sensitivity of one-shot charging circuit caused by high impedance of capacitor protecting diodes.
CORRECTION: Remove diodes D1 and D2 which are not necessary because high voltage charging capacitors are able to withstand the reverse voltage without failure.
In-plant effectivity -03 rework immediately

M7700-00005   CODE: D   CS: K
JUN-72 - PROBLEM 1: The INDEX/SELECTOR generated within the M7700 module in the RK05, must be advanced by 40 usec to ensure cartridge interchangeability between RK05 and RK03. There may be insufficient range in potentiometer R6 to allow this adjustment.
CORRECTION 1: Change resistor R5 from 10K to 1K. This will ensure that the marker on track #100 of the CE pack can be set 70 usec from index rather than 30 usec.
CORRECTION 2: Change the Circuit Schematic to show the proper connection of the READ/WRITE/SEEK READY H signal line.
In-plant effectivity -02 phase-in

M7700-C0006   CODE: F   CS: L   ETCH: J
JUN-72 - PROBLEM: The RK05 is not compatible with the RK11-D. The RK11-D employs three line BCD drive selection while the M7700 module in the RK05 only accepts a four line linear signal.
CORRECTION: Change the M7700 to allow drive selection by either a four line linear signal or a three line BCD signal.

NOTE 1: Replace an etch revision "H " M7700 with an etch revision "J ", CS revision "L ", M7700 in an RK05 if the RK05 is to be used on a system with an RK11-D.

NOTE 2: If this replacement is made, it is mandatory that FCO RK05-C0014 also be implemented.
In-plant effectivity -02 phase-in
Field effectivity -Rework M7700's in any RK05 being used in conjunction with an RK11-D controller.
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

M7700-00007   CODE: P   CS: M
MAY-73 - CORRECTION: Add missing signal source designation and reference information to the Circuit Schematic.
In-plant effectivity -06 documentation change only

M7700-C0008   CODE: F   CS: N
JUL-73 - PROBLEM: After power-up, a power supply race condition may exist where the RK05 wins and the slower controller will not support its disk bus end. This causes the RK05 to recognize a false write protect signal and manifests itself as a write protected condition after power-up. This problem will most likely occur with an RK11-D controller and has not been known to occur with RK11-C or RK8-E controllers. This problem does not occur in some cases when there exists light controller power supply loading.
CORRECTION: On etch revision "J " and later only, gate the BUS WRITE PROTECT set signal with SELECT and READY rather than only with SELECT . The eight second spindle cycle time will allow adequate time for the controller power supply to power-up. The rework procedure is as follows: Cut the etch between E15 pin 5 and E14 pin 1, component side. Cut the etch entering E15 pin 5 on the etch side. The etch, cut in the previous step, comes from a feed-thru between E20 and E21 and is adjacent to R18, a 10K resistor next to the module edge. Connect a wire from that feed-thru to E14 pin 1. Find the feed-thru between E14 and E19 that connects to E14 pin 9. Connect a wire from that feed-thru to E15 pin 5. When these changes have been made, an ohmmeter should show continuity between the wiper of rotary switch S1 and E14 pin 1, and continuity between pin BH1 and E15 pin 5. There should be discontinuity between BH1 and S1 wiper.

NOTE: FCO M7700-C0006 is prerequisite to this FCO.
In-plant effectivity -03 * -Rework at systems level only as needed. Machine build and module build areas must install after September 3, 1973. Note: This FCO is only for M7700's at etch revision "J " and later.
Field effectivity -Rework all M7700's, etch revision "J " or later, when symptoms are present.
(Time To Install And Test .8 Hour.) (Kit Contents -FCO/Prints)