digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

ECO DEC-O-LOG Engineering Change Order Log

A225

VR14/GT40 Deflection Amplifier

PROCESSOR TYPE All

A225-00001 CODE: D CS: B
JAN-71 - PROBLEM: Crossover resistor R23 is too large.
CORRECTION: Change R23 from 47 ohms, 1/2W, 5%. to 33 ohms, 1/2W, 5%.
In-plant effectivity -04 rework until new stock available

A225-C0002 CODE: F CS: C ETCH: C
APR-71 - PROBLEM 1: Heat sinks for Q2 and Q4 inadequate.
CORRECTION 1: Increase size of heat sinks for Q2 and Q4 and remove resistors R29 and R30.
PROBLEM 2: Gain potentiometer too sensitive for normal application.
CORRECTION 2: Change resistors R1 and R2 from 3.3 K to 12K 1/4W 5%.
PROBLEM 3: Module does not meet production layout standards.
CORRECTION 3: Make changes in current layout so it will meet production standards.
CORRECTION 4: Stamp reworked module handle revision "C ".

NOTE 1: As of 9-23-71, production is not using boards reworked to circuit schematic revision "C " because this ECO cannot be implemented as was expected. The board layout must be changed to provide adequate space for the mounting of the larger heat sink. Field service is to implement this ECO only to the extent of correction #2. Resistors R1 and R2 are to be changed from 3.3K to 12K.

NOTE 2: See correction supplement FCO's A225-E0003 and G225-B0004.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all A225's in VR14's.
(Time To Install And Test .3 Hour.) (Kit Contents -FCO/Prints And Parts)

A225-E0003 CODE: DF
JUL-71 - PROBLEM: Jumper not removed from print B-CS-A225-0-1.
CORRECTION: Remove jumper from print B-CS-A225-0-1. Replace with etch revision "C ".

NOTE: This FCO is supplemental to FCO A225-C0002.
In-plant effectivity -06 documentation change only
Field effectivity -None; the FCO was distributed to regional field offices for information purposes only.
(Kit Contents -FCO Only)

A225-B0004 CODE: DF
SEP-71 - PROBLEM 1: Input resistors R1 and R2 are 12K, should be 10K.
CORRECTION 1: Change R1 and R2 to 10K, 1/4W, 5%.
PROBLEM 2: A225 does not have provisions for small signal input.
CORRECTION 2: Make correction to drawings to include resistor values for small signal input.

NOTE: This FCO is supplemental to ECO A225-C0002.
In-plant effectivity -06 documentation change only
Field effectivity -All A225's with FCO A225-C0002 only.
(Time To Install And Test 1.5 Hours.) (Kit Contents -FCO/Prints And Parts)

A225-B0005 CODE: F CS: D
JAN-72 - PROBLEM: Compensation network not sufficient for proper operation using new ferrite yoke. Operational symptoms include dot skew in diplayed characters.
CORRECTION: Change capacitor C12 from 68 pfd to 100 pfd. This change has negligible effect on the old style yokes.

NOTE: Two parts kits are required for each VR14.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all A225's as required
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO And Parts)

A225-A0006 CODE: F CS: E
MAR-72 - PROBLEM: Latch-up of A225 occurs when VR14 is turned off and then turned on immediately, causing the output to go to 8 AMPS, thus blowing the negative fuse.
CORRECTION: Change 270 ohm 1W resistor in operational amplifier voltage supply to 200 ohms 1W.

NOTE: Two parts kits are required for each VR14/VR20.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all A225's in VR14's and VR20's
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints And Parts)

A225-C0007 CODE: F CS: F ETCH: D
DEC-72 - PROBLEM 1: A225 deflection amplifier has cross over distortion.
CORRECTION 1: Increase resistor R23 from 33 ohms to 47 ohms, 1/2 watt, 5%.
PROBLEM 2: Input resistors are too large.
CORRECTION 2: Change input resistors R1 and R2 from 10K ohms to 8.2K 1/4 watt 5%.
PROBLEM 3: Characters are distorted.
CORRECTION 3: Add 180 pfd capacitor C17 across feedback resistor R31 in the "YB " variation. Reference FCO A225-C0008.
CORRECTION 4: Create the variation, A225-YB.

NOTE 1: This FCO creates a "YB " variation of the A225. A225-YB amplifiers must not be used on systems other than GT40. Do not install this FCO on VR14's on PDP-12, LAB-8/E, LAB-11, or PDP-15's.

NOTE 2: Two parts kits are required for each VR14.
In-plant effectivity -03 -Rework immediately
Field effectivity -Rework all A225's in GT40's.
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints And Parts)

A225-C0008 CODE: F CS: H
MAR-73 - CORRECTION 1: Make capacitor C17 selectable from 180 pfd to 100 pfd. Varying C17 can reduce distortion of characters on the GT40. C17 on each A225-YB of the VR14-LC, -LD , must be the same value.
CORRECTION 2: Metal screws are replaced by nylon screws to eliminate the possibility of shorting against the adjacent W684 module.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all A225's and A225-YB's as required
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints And Parts)

A225-00009 CODE: D CS: J
JUN-73 - PROBLEM 1: Selective range of capacitor C17 is too small.
CORRECTION 1: Make C17 selectable from zero to 180 pfd.
PROBLEM 2: Circuit Schematic is too crowded.
CORRECTION 2: Redraw Circuit Schematic to have Parts List and Overlay on sheet 1, and Circuit Schematic on sheet 2.
In-plant effectivity -06 * -Documentation/design change

A225-C0010 CODE: F CS: K ETCH: E
SEP-73 - PROBLEM: Potential ringing in settling time of transient.
CORRECTION: Connect analog and signal grounds together as follows: Add a wire from the negative end of capacitor C9, which is connected to analog ground, to the end of resistor R13 which is connected to signal ground.
In-plant effectivity -03 * retrofit immediately. It is not necessary to retrofit metal screws and nuts.
Field effectivity -Rework all A225's when symptoms are present.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts None)
' the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. NOTE: For GT40 only, all DEC installation labor and material are to be reported under a "W " charge code. (Kit Contents -F1027 -FCO/Prints)

