COMMON SYSTEMS
3B20D MODEL 3 PROCESSOR
SCSI GROWTH OR CONVERSION
UNIT CIRCUIT

CHANGES

D. Description of Changes

Add 4 wires to the backplane to provide an optional alarm connection for the 4ESS™ applications. The four wires are being added to EQL 04-112. The wires to be added are:

- From terminal 321 to 318 (MJ)
- From terminal 221 to 218 (MJR)
- From terminal 319 to 316 (PA)
- From terminal 219 to 216 (PAR).

In addition, a cable ED3T073-20 Group 16J is attached to the SCSI DFC at EQL 061-024-319 and 061-112-319. The other end is connected to the DUP-157-OUT on the SCSI unit.

E. Reason for Changes

A missing cable in the 3B20D Model 3 Computer Systems for SCSI retrofit and SCSI new ship systems for 4ESS™ applications, makes connecting the SCSI DFC unit to the office alarm grid impossible. This change will correct this problem.

AT&T BELL LABORATORIES

DEPT 55854-MCS-JPF

COMMON SYSTEMS
3B20D MODEL 3 PROCESSOR
SCSI GROWTH OR CONVERSION
UNIT CIRCUIT

CHANGES

1. Description of Changes

A. Added four (4) wires on backplane to energize "fan start" signal. Nets added are "INITDO" and "STA20" - two (2) wires each.

2. Reason for Change

A. The fans did not have a cable from the DFC backplane to turn them on. These wires being added plus the cable will now do this.

AT&T BELL LABORATORIES

DEPT 55427-DLG-PCF

COMMON SYSTEMS
3B20D MODEL 3 PROCESSOR
SCSI GROWTH OR CONVERSION UNIT
CIRCUIT

TABLE OF CONTENTS PAGE

SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 The SCSI-Disk File Controller (DFC) Growth/Conversion Unit contains two independent SCSI-DFCs. It is used to add up to two SCSI-DFCs to existing 3B20D systems. The two DFCs, circuit 0 and circuit 1, are identical. The SCSI-DFC provides firmware control of a fixed media disk system.

2. GENERAL DESCRIPTION OF OPERATION OF SCSI-DFC

2.01 The SCSI-DFC interfaces to the 3B20D processor via the DMAC/DSCH. Each DFC supports two independent differential SCSI busses. Each SCSI bus can logically support seven disk drives. The 3B20D SCSI disk driver software supports a maximum of four disk drives per bus.

2.02 The 3B20D SCSI-DFC consists of a Duplex Dual Serial Bus Selector, or DDSBS (TN69B), which interfaces to the DSCH, a SCSI Host Adapter (UN294 and TN2116), a power supply (495FA), and a power switch (TN6B). The Host Adapter (HA) provides an interface to the DDSBS, an interface to two SCSI busses, and intelligent control logic.

2.03 The DDSBS communicates with the 3B20D via the dual serial bit stream of the DSCH. The DDSBS converts the serial data and commands from the DSCH to 36-bit parallel words. The DDSBS also communicates to the 3B20D processor through a service request line used to transmit setup, transfer, and interrupt requests to the 3B20D DMAC. The DDSBS communicates with the UN294 through a 36-bit bus for data,

commands, status, and ten control and response signals used for handshaking during transfers.

2.04 The Bus Interface Circuit (BIC) on the UN294 provides the interface between the HA and the DDSBS. The BIC contains the registers and first-in-first-out memories (FIFOs) used to buffer commands, status, and data between the 3B20D and the HA.

2.05 The UN294 also contains the SCSI bus interface circuitry. Each SCSI bus is controlled by a SCSI Protocol Controller (SPC), which provides much of the low-level control of the SCSI bus protocol. Each differential SCSI bus consists of 50 signals that are brought out to the UN294 backplane. The disk drives on each bus connect to the backplane through a 50-conductor twisted-pair ribbon cable. SCSI bus termination is provided by resistor networks that plug into each end of the SCSI cable.

2.06 The HA control logic on the TN2116 provides the intelligent control necessary to process commands from the 3B20D and manage the two SCSI busses. It contains a CPU, a DMA controller which performs high-speed data transfers between the SCSI busses and HA RAM or BIC FIFOs, 256 kbytes of EPROM, 1 Mbyte of RAM, address decoding logic, interrupt control logic, and a serial port for debugging support.

2.07 The 495FA power unit supplies +5 volt power to each of the circuit packs within the DFC.

2.08 The TN6B power switch directs th sequencing of power within the DFC, and is controlled by the operator from pushbutton switches mounted at the faceplate of the pack. During power up/power down sequencing, the powe switch provides an initialization signal that initializes the TN69B, UN294, and TN2116. In addition, the power switch automatically removes all power when +5 volt power is absent or when any fuse is blown.

SECTION II - DETAILED DESCRIPTION

1.01 More detailed circuit descriptions can be found in the individual circuit pack schematics.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 NOMINAL LIMITS
+5-volt power +5.00 volts± 10 percent

2. CONNECTING CIRCUITS

2.01 When this circuit is listed on a keysheet, the connecting information thereon is to be followed.

(a) Power Distribution Circuit SD-4C053-01.

(b) 3B20D Model 3 Processor System Circuit SD-4C122-02.

(c) Moving Head Disk Drive Interface KS-23484, list 11B and list 13.

(d) Circuit Packs and Power Converters per SD-3T003-01.

3. MANUFACTURING TESTING REQUIREMENTS

3.01 The manufacturing testing requirements are specified in the X-79516 3B20D Models 1, 2, and 3 test specification.

4. TAKING EQUIPMENT OUT OF SERVICE

4.01 This information is contained in the task-oriented practice for 3B20D Models 2 and 3 BSP 254-302-811.

AT&T BELL LABORATORIES

DEPT 55427-JMS-MAM