5ESS™ SWITCHING EQUIPMENT
TIME MULTIPLEXED SWITCH CABINET
CIRCUIT

CHANGES

D. Description of Changes

D.1 Information is provided for the TN1575 circuit pack, which is required when the O.R.M. feature is provided on CM1.

D.2 Note 304 is expanded to show new micro-code MC5D121.

D.3 Note 310 is expanded to show new circuit pack TN1575.

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AT&T-T DEPT 11NW527280-REG-DFH

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CHANGES

D. Description of Changes

D.1 Information is provided for Fiber Optic connectors required when TRM (TRANSMISSIONLESS REMOTE MODULE) is furnished. Note 317 is added.

D.2 In CADs 13, 14 and FS 3, reference is added to a new connecting circuit for O.R.M. - Transmission Rate Converter Unit, SD-5D086-01.

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SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 The time multiplexed switch (TMS) is a time-shared space division switch which provides connections between the switching modules (SM) and connects these modules to the administrative module (AM) complex via the message switch frame (MSG). The medium office TMS can be used to interconnect a maximum of 60 data links, covering a range of 1 to 30 switching modules.

2. GENERAL DESCRIPTION OF OPERATION

2.01 The TMS is a time-multiplexed-space switch which provides the physical paths for the digital signals carrying data and control between the SM's and the AM. NCT links carry the multiplexed signals in a 32.768 mHz serial bit stream. There are a total of 256 contiguous time-slot intervals, each containing 16-bits.

2.02 The TMS connects to both the MSG and the SM by means of the NCT links. These links terminate on the link interface boards (LI) at the TMS. The LI provides synchronization and formatting for transmission through the fabric.

2.03 The network clock provides the TMS with an 8kHz reference clock. The TMS acts as a hub for clock distribution and synchronization to the SM and MSG. The TMS clock board generates and distributes the 32.768mHz for the LI which in turn is used to generate the data bit streams transmitted to the SM and MSG.

2.04 The TMS control coordinates and implements external interfaces, internal TMS communication, and overall maintenance activity. The TMS uses microprocessor-based control to interface to the AM via the foundation peripheral control (FPC) of the MSG. The TMS control receives control messages from the MSG, translates them into fabric memory address and data, routes the message to the appropriate fabric board. TMS control also provides error reporting, error filtering, and execution of diagnostic messages sent by the AM.

SECTION II - DETAILED DESCRIPTION

1.01 CONTROL FUNCTION (FS 1)

The TMS is controlled by the Foundation Peripheral Controller (FPC) circuit pack located in the Message Interface/Clock Unit Models 1 or 2 (MI/CU or MICU2) which is located in the Message Switch Cabinet. Control information is sent to the TMS which in turn transfers the control information to high speed memories located in the TMS. This control information is used to set up the interconnection of Time Slots on the NCT links.

1.02 CLOCK FUNCTION (FS 2)

The TMS connects to the Network Clock (NCLK) of the MI/CU. This provides the means by which the TMS can synchronize 5ESS Switching equipment with other switching systems. This NCLK reference is also used to provide

clock syncronization within a office via the NCT links.

1.03 DATA FUNCTION (FS 3)

At each IM, the Time Slot Interchangers (TSI) the output from lines and trunks is converted into 16 bit channels (time slots). These bits are used for signaling control, parity and voice or data. The time slots are switched through the TSI and time multiplexed into NCT links to the TMS.

The TMS provides digital paths for switched voice or data connections. The TMS also provides paths for control messages from the Message Switch to the SMs.

1.04 POWER (FS 4)

-48V power and RTN is fed to the TMS via 2 "A" bus leads and 2 "B" Bus leads. These bus leads connect to the Fuse Panel and then to the Filter Panel and then are distributed to the units as required.

1.05 TMS CONFIGURATION

The TMS is equipped according to the number of SMs it supports. See Note 302 of SD-5D117-01, J-5D001C-1, SD-5D043-01 and SD-5D037-01 for details or equipage of TMS per SMs.

The TMS can support up to 30 SMs with NCT links. Although there are 32 NCT links, 2 must be reserved for Message Switch Access. The TMS grows in 4-SM increments by the addition of NCT links and circuits. This NCT growth is best represented in SD-5D043-01.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 None

2. CONNECTING CIRCUITS

2.01 The circuits that are directly connected to the TMS are as follows:

SM (NCT Links)	Connected to Switch Unit (TMS), Link interface boards
FPC	Connected to Control Unit (TMS), TMS interface board
Network Clock	Connected to Control Unit (TMS), Clock interface board
MSG-MICU	Connected to Control Unit (TMS), Message link interface

SECTION IV - REASONS FOR REISSUE

D. DESCRIPTION OF CHANGES

D.01 SD-5D117-01 LDI 1A for DWG ISS 2AC removed -48RTN mult cables from fuse panels.

D.02 SD-5D117-01 LDI 1B for DWG ISS 3D changed lead names on Network CLK cables in CAD 012.

D.03 SD-5D117-01 LDI 1B for DWG ISS 3D changed control lead names in CAD003.

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