CCIS TERMINAL UNIT
EQUIPMENT DESIGN REQUIREMENTS
COMMON SYSTEMS

1. GENERAL

SCOPE

1.01 This specification, together with the supplementary information listed herein, gives the equipment requirements for the engineering, manufacture, and installation of the CCIS Terminal Unit.

1.02 This specification is reissued to:

(a) Add the J99360C CCIS terminal unit

(b) Add J99360A, L2.

(c) Revise Note 5.01.

(d) Remove Note 5.02 and Note 5.03.

CAPACITY

1.03 A CCIS terminal unit serves one end of a CCIS voice frequency data link and interfaces the peripheral bus and central processor of the switching system via the Terminal Access Circuit (TAC).

DESCRIPTION OF OPERATION

1.04 The CCIS terminal unit is a Common Systems unit (hereafter referred to as the terminal unit) which performs all those functions related to the operation of the 2-way synchronous signaling link.

1.05 The terminal unit is composed of two parts, the terminal and the data set or modem. (See Fig. 1.)

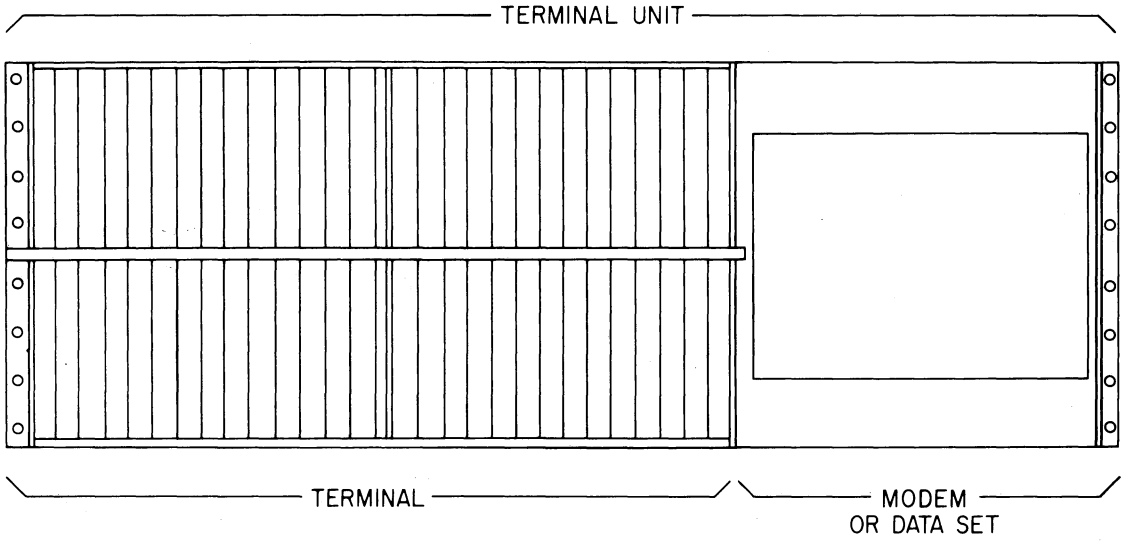
1.06 The terminal is a small, high speed, stored program processor. All signaling link related functions in the terminal are controlled by this internal stored program. The flexibility of this approach assures compatibility of the unit with future refinements of overseas and domestic signaling formats using modems with higher bit rates than the currently standard 2400 bits per second. The stored program includes maintenance and self-test features for primary fault detection in the terminal and modem.

1.07 The primary function of the modem is to change digital data received from the terminal to analog for transmission over the voice frequency link (since the transmission facilities are currently designed for analog signals). Also the modem receives analog data from the voice frequency link (VFL) and changes the analog signal to digital for presentation to the terminal.

1.08 A more detailed description of the modem operation is as follows: The modem receives binary data from the terminal at the near end; groups the received binary data into bit pairs or dibits; decodes the dibit to determine the carrier phase shift that represents the dibit; generates and presents to the voice frequency link this serial train of phase-shifted carrier pulses. From the far end, the modem receives the phase shifted carrier pulses; determines the phase shift between the previous signaling element and the present signaling element to determine the dibit represented; generates the dibit; presents the received data to the terminal in binary form one bit at a time; detects the loss of a carrier; and maintains synchronism for a period of one second during the loss of a carrier.

1.09 The primary functions of the terminal are to change serial data from the modem to parallel data for the central processor; to serve as a data-storage or buffer function until the processor is ready to receive data from the particular terminal; and to determine priority of the data; to run self-tests and internal error checks.

1.10 A more detailed description of the terminal operation is as follows: The terminal receives serial data from the modem; converts the serial data to parallel for presentation to the central processor;



NOTES:

1. THE TERMINAL UNIT IS MOUNTED ON A 2'2" FRAME AND IS FRONT REMOVEABLE.
2. THE TERMINAL UNIT IS ENTIRELY CONNECTORIZED AT THE UNIT TO FRAME LEVEL.
3. THE CIRCUIT PACKS AND MODEM (WHICH COMPRISE THE TERMINAL UNIT) ARE CONNECTORIZED AT THE UNIT LEVEL.
4. THE VOLTAGE REQUIREMENTS ARE 3 VOLTS FOR LOGIC AND MEMORY AND 24 VOLTS FOR THE MODEM. IN ADDITION THE J99360A UNIT REQUIRES 9 VOLTS FOR MEMORY.

Fig. 1—Terminal Unit

groups the bits of the data stream into signal units; examines the code bits to determine whether or not the signal unit was received without error; processes any required retransmission; separates incoming data according to priority and indicates order of reception to the central processor; collects multiunit messages; files data received from the processor in the appropriate priority buffer; converts parallel data from the processor to serial data; presents binary data to the modem; and during nonsignaling time, maintains and checks synchronization between terminals.

1.11 Together, the modem and the terminal comprise the terminal unit.

1.12 The terminal unit operates as a simplex unit. That is, one link is connected to the terminal unit at any given time. This link has one and only one connection to the central processor which is through the terminal unit. The terminal unit function is not duplicated on a per link basis.

1.13 The terminal unit features minimize central processor real-time load on associated traffic. These features include, along with the functional assignments listed above, self-test diagnostic routines that are accessible for initialization by the central processor.

2. SUPPLEMENTARY INFORMATION

801-000-000—Numerical Index—Common Systems
800-600-000—Checking List—General Equipment Requirements
800-610-152—Wire Gauge and Insulation
800-612-163—Wiring and Cabling

818-000-000—No. 4 Toll Switching System Index
820-000-000—No. 4 ESS Toll Switching System Index
X-79139—Manufacturing Testing Requirements

3. DRAWINGS

Keysheets

SD-68400-01—No. 4A Toll Switching System
SD-4A001-01—No. 4 Electronic Switching System

Circuits

SD-94833-01—CCIS Terminal Unit

Equipment

J99360A-( )—CCIS Terminal Unit
J99360C-( )—CCIS Terminal Unit
ED-94931-31—CCIS Terminal Unit Multilayer Board Assembly
ED-5A000-10—Numbering and Lettering, 1A Technology Equipment
ED-5A004-11—Common Use Hardware Arrangement, 1A Technology Equipment

Wiring and Cabling

ED-5A005-10—Wiring and Cabling, 1A Technology Equipment

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4. EQUIPMENT

J99360A—AT&TCo Std—CCIS Terminal Unit

List 1—Assembly, wiring, and equipment required for one CCIS Terminal Unit per SD-94833-01, App Fig. 1 and Option Z. (See Note 5.01)
List 2—Plug-in circuit packs per SD-94833-01, App Fig. 2 required in addition to List 1 for each CCIS terminal unit that is provided in a gateway office and is assigned to an international CCIS link.

J99360C—AT&TCo Std—CCIS Terminal Unit

List 1—Assembly, wiring, and equipment required for one CCIS terminal unit per SD-94833-01, App Fig. 1 and Option Y. (See Note 5.01)
List 2—Plug-in circuit packs per SD-94833-01, App Fig. 3 required in addition to List 1 for each CCIS terminal unit that is provided in a gateway office and is assigned to an international CCIS link.

5. GENERAL NOTES AND INDEXES

5.01 The J99360A and J99360C units functionally differ only in the type of memory provided and the resulting power requirements. The J99360A unit is equipped with FA632 IGFET memory circuit packs. Each FA632 provides 128 12-bit words of memory. Both 3- and 9-volt power are required. The J99360C unit is equipped with FA646B bipolar memory circuit packs. Each FA646B provides 256 12-bit words of memory. Only 3-volt power is required.