DIGITAL TRANSMISSION SYSTEMS
D3 CHANNEL BANK
UNITIZED BAY DESCRIPTION

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1. GENERAL

1.01 This section describes the D3 channel bank unitized bay which is basically a D3 channel bank bay with unitized terminal equipment (UTE) that adds maintenance features for toll applications.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 Each D3 channel bank is a digital transmission network voice-frequency multiplexing terminal. The channel bank multiplexes the transmission and signaling information of 24 voice channels using pulse code modulation (PCM) as described in Section 365-010-100. The information is transmitted over a 1.544-Mb/s digital facility such as the T1 line described in Section 365-200-100. For more detailed information than this section provides, see Section 365-150-100, D3 Channel Bank Description.

1.04 The unitized portion of the bay is a new approach in toll equipment design to enhance convenience and standardization. For example, the channel accessing function eliminates the need for a VF patch bay and the 4-wire pads reduce intraoffice cabling.

1.05 There are two types of unitized bay equipment which provide access to the transmission and signaling leads of any D3 channel. One type allows access either from the office test board by means of the Switched Maintenance Access System (SMAS) or at the bay by means of switches on the manual access panel. The other type is not associated with SMAS, but it has a retractable cord on the manual access panel for connections. To allow field changes, the J98715B bay is connectorized to accept connectorized equipment panels for either

type. The J98715A bay is available only as a shop-wired item with equipment panels for SMAS.

1.06 The SMAS is used in connection with testing intertoll trunks, toll connecting trunks, switched or nonswitched private lines, and similar type circuits in a toll office. SMAS provides for selectively gaining access, through a switching concentrator or from a manual access panel, to the transmission and signaling leads of circuits at the equivalent of the voice-frequency (VF) patch jacks (+7, −16 TLP). After the circuit has been accessed, it can be monitored and bridged measurements can be made. The transmission leads and/or E and M leads can be split so that transmission and/or signaling tests can be made toward the line or drop. For more detailed information see Section 667-301-100, Switched Maintenance Access System Description.

1.07 In this section the KS-20805 transmission and noise measuring set will be referred to as the TMS. Also, for lead designation purposes it is assumed that the D3 unitized bay is interfacing with a No. 4A crossbar office. While the D3 may be equipped with any channel unit type available, ***only 4W E&M trunks may be tested from the new intertoll manual test frame (IMTF) in No. 4A crossbar offices.*** Two-wire channel units may be used but the SMAS access can not be utilized. Two-wire channels may be tested at the bank location using portable test equipment. Test access is gained at the bank via jacks in the channel units or the manual access panel. Since SMAS capability is not possible with 2-wire channel units, only 4-wire channel units are discussed in this section.

2. EQUIPMENT DESCRIPTION

2.01 A complete 11-foot, 6-inch D3 unitized bay contains four D3 channel banks, eight attenuator panels, four maintenance connector panels, a manual access panel, and a communication panel. Figure 1 represents one of many independent bays in an installation or the center bay in a three-bay configuration. Only the center bay in this configuration is equipped with a manual access panel, a communication panel, and an auxiliary communication panel. For bays equipped for SMAS in this arrangement, some wiring from the maintenance connectors in each bay converges at the auxiliary communication panel in the center bay.

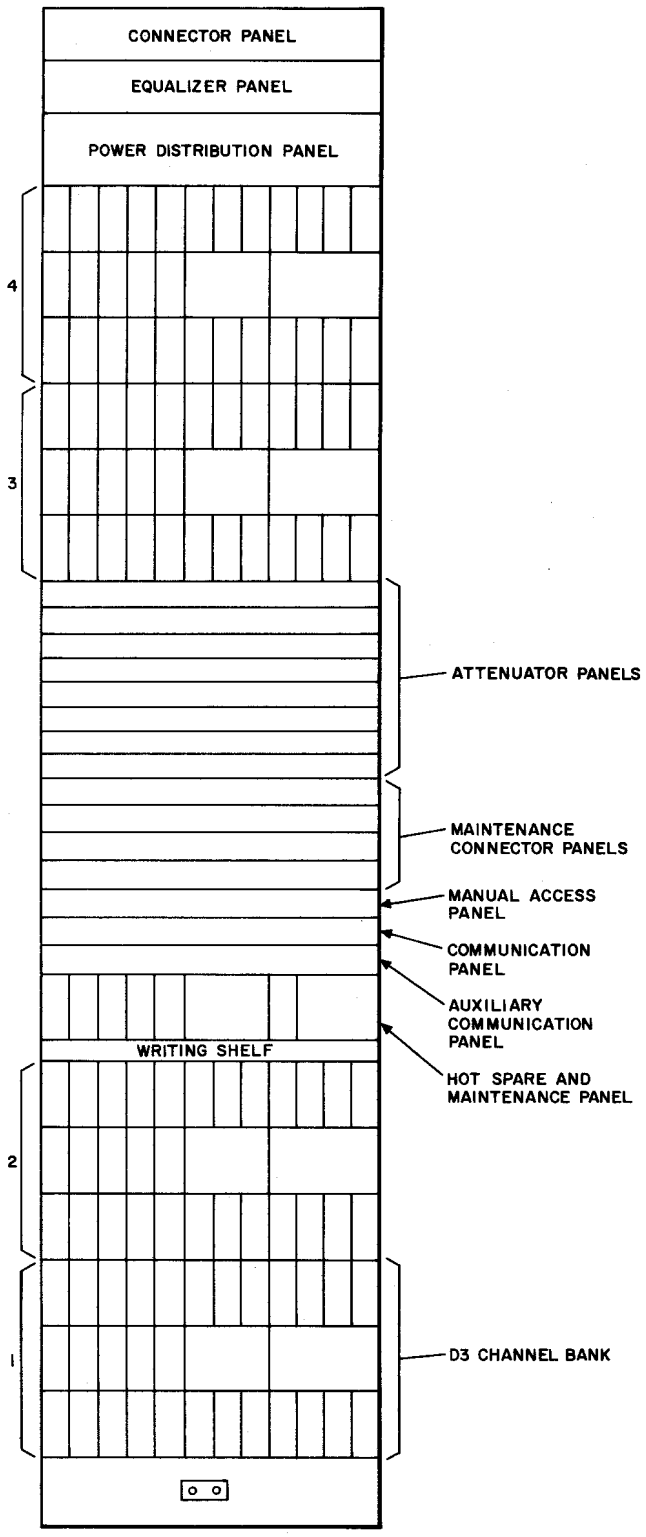

Fig. 1—Typical D3 Unitized Bay

A. D3 Channel Banks

2.02 Essentially the D3 bank portion of the unitized bay is unchanged. The bay is available only in the 11-foot, 6-inch size. Unlike the regular D3 bay, the equipment panels are front mounted rather than flush mounted. Each D3 channel bank consists of three shelves. There are two rows of twelve channel units each between which is located a common equipment panel. As in regular D3 bays, a hot spare and maintenance (HS&M) panel and a writing shelf are optional.

Equalizer Panel

2.03 The equalizer panel is located near the top of the unitized bay. It equalizes cable losses between the D3 bank outputs and the cross-connection point to the T1 digital line or multiplexing terminal.

Power Distribution Panel

2.04 The power distribution panel has been altered to accommodate six additional fuses to protect the unitized equipment. The power dissipation of a D3 unitized bay equipped with 96 4W E&M channels is 320 watts excluding the HS&M panel. When the bay is equipped with an HS&M panel, the power dissipation is 370 watts. The following is a listing of all the fuses for the panel.

DESIGNATION	FUSE AMP.	ONE PER
MAIN	30	Bay
FLT MAIN	15	Bay
−48 ABS	3	Bay
−48V	3	Bank
−48F	3	Bank
−48S	2	Bank
20 HZ	1/4	Bank
MC1 - MC4	3/4	Maintenance Connector Panel
MA	1/4	Manual Access Panel
CPT	1/2	Communication Panel
Shunt Indicator Fuse	1 1/3	MAIN and FLT MAIN Fuse

Channel Units

2.05 The channel units may be of any type; however, 4W E&M channel units are preferred for the following reason. Testing of any type channel unit is possible locally at the HS&M panel, ***but only 4W E&M trunks may be tested from the intertoll manual test frame (IMTF).*** The following channel unit test points are available: 600-ohm unbalanced transmit (XMT) and receive (RCV) jacks. Each channel unit consists of a transmitting and receiving section. The transmitting section accepts outgoing voice and signaling information from an associated trunk and passes samples of this information on to the common equipment. The receiving section demultiplexes the message and signaling pulses from the common equipment, converts message pulses to VF information which is applied to the trunk, and produces signaling conditions from the signaling pulses.

Common Equipment Panel

2.06 The common equipment panel like the channel units is housed in a die-cast aluminum shelf, 6 inches high and 12 inches deep. Each common equipment panel consists of the following plug-in units:

(a) Transmit Unit (TU)

(b) Alarm Control Unit (ACU)

(c) Receive Unit (RU)

(d) Transmission Monitor Unit (TMU) (optional)

(e) Interface Unit (IU)

(f) Power Converter Unit (PCU)

(g) Trunk Processing Unit (TPU)

Hot Spare and Maintenance Panel

2.07 The hot spare and maintenance panel contains a complete set of spare common equipment plug-ins that are powered, operated in a looped condition, and alarmed. This arrangement ensures that the spare plug-ins are workable units. The equipment of the panel greatly facilitates the restoral of service in the event of channel bank equipment failures. The HS&M panel has provision

for maintenance and testing of common equipment plug-in units. Each panel contains the following plug-in units.

(a) Transmit Unit (TU)

(b) Alarm Control Unit (ACU)

(c) Receive Unit (RU)

(d) Transmission Monitor Unit (TMU) (optional)

(e) Code Generator Unit (CGU)

(f) Power Converter Unit (PCU)

(g) Channel Unit (CU)

(h) Channel Access Unit (CAU)

2.08 The HS&M panel and the writing shelf directly below it are optional items in the unitized bay.

B. Unitized Equipment

2.09 The connector shelf at the top of the unitized bay contains 28 50-pin connectors for incoming cabling, a 180-pin terminal strip, two AK4 auxiliary relays operated by the trunk processing circuits of the D3 channel banks, and an AF type relay for the alarms from the maintenance connectors.

Attenuator Panels

2.10 There are eight attenuator panels mounted in the unitized bay. Each 4-wire panel serves 12 two-way voice circuits; therefore, two panels are required for each D3 bank, utilizing 24 4-wire channel units. The attenuators are provided to adjust the signal levels for the voice circuit to the proper value at the switch appearance. Each VF circuit has four attenuators, two 49A and two 49B variable step-type. The attenuators replace the P pads in the balanced portion of the trunk circuit. Attenuation is adjusted by means of slide switches. Attenuation is removed when the white mark to the left of the slide is completely exposed. The 49A attenuator has a maximum attenuation of 1.5 dB in 0.1-dB steps. The 49B attenuator has a maximum attenuation of 15 dB in 1.0-dB steps. Maximum loss in any transmission path is 16.5 dB, the sum of all exposed digits. If 2-wire channel units are used, all attenuators are set to zero.

Maintenance Connector Panels

2.11 The J98622AN (Fig. 2) or the connectorized J98622BL maintenance connector is required in a bay equipped for SMAS. These panels contain relays to access D3 channel leads from a remote location or locally. There are 24 multipin access connectors (macs) on each panel, one for each channel of a D3 bank. The ED-2C002 patch cord per SD-1C492 is available for long-term testing or restoration patching at these macs. A field of markers on the panel is used to identify special circuits which should be tested as infrequently as possible.

2.12 The connectorized J98622BK cord access maintenance connector (Fig. 3) is used in a bay which is not equipped for SMAS. This panel does not contain relays and the D3 channel leads are accessed strictly by patching to any of 24 macs.

Manual Access Panel

2.13 The J98622AR (Fig. 4) or the connectorized J98622AT manual access panel is used in a bay for SMAS to provide local access to the desired D3 channel for testing, which is equivalent to that done at a 6-wire VF patch bay. The functions of the switches, jacks, and keys are described in Part 3 of this section.

2.14 The connectorized J98622AU manual access panel (Fig. 5) is used in a bay not equipped for SMAS. The distinguishing feature of this panel is the retractable patch cord used to access the D3 channels.

Communication Panel

2.15 The J98626AA communication panel (Fig. 6) has macs for patched connections to 6 lines going to an external tandem patch bay. Two order-wire circuits and 2-wire circuits (trunk tie lines, local station lines, or test trunk circuits) with dial-out capabilities are also available at the panel.

Auxiliary Communication Panel

2.16 The J98626AD-2 auxiliary communication panel (Fig. 7) provides 6 more tandem patch lines and must be used in the center bay of a three-bay configuration for SMAS to connect any of the three bays through the MTCE CONN GROUP switch to the common manual access panel.

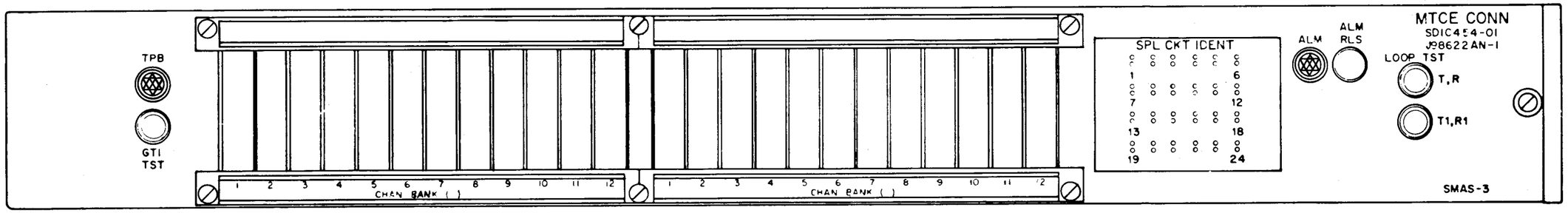

Fig. 2—Maintenance Connector Panel

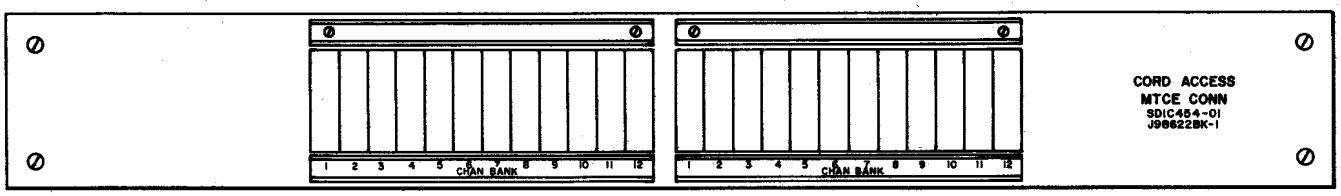

Fig. 3—Cord Access Maintenance Connector Panel

3. FUNCTIONAL DESCRIPTION

3.01 Descriptions are given first for the D3 channel banks and then for the unitized equipment with SMAS capability. Only unitized equipment with SMAS capability is described because it contains the additional circuitry for switched access. However, the functions of switches and jacks common to equipment with or without SMAS capability are identical. The required access for all testing and communications on equipment without SMAS capability is obtained by means of the retractable cord on the manual access panel. The operation of any D3 unitized bay is covered in Section 365-150-310.

A. D3 Channel Banks

3.02 A block diagram of a D3 unitized bank is shown in Fig. 8. The VF signals enter the channel units where they are sampled at an 8-kHz rate. These are sent to the transmit unit via the transmit pulse amplitude modulation (TPAM) bus where they are encoded by the nonlinear $\mu = 255$ 15-segment coder. All digitally coded voice signals plus signaling and framing are combined to form the 1.544-Mb/s bit stream. The bit stream is sent to the T1 line via the alarm control unit and the line equalizer as a bipolar signal. At the distant end the bipolar signal enters the bank via the interface unit and is fed to the receive unit which frames on the incoming bit stream and decodes the VF bits into time division multiplexed analog samples. These in turn are fed to the respective channels on the receive pulse amplitude modulation (RPAM) bus for demultiplexing and reconstruction by the channel unit filters.

3.03 A more detailed description of the function of the common units and the maintenance features of the bank is given in Section 365-150-100. The channel units for the D3 bank are described in Section 365-150-101.

B. Unitized Equipment

3.04 Figure 9 shows the interconnections between one D3 channel and the UTE circuits of a bay with SMAS capability and the transmission and signaling leads of a single channel. Relay contacts and the associated macs are provided in the transmit, receive, and signaling leads. These relays in the maintenance connector for SMAS are controlled either by remote SMAS or local manual access switches. Patching to the macs breaks the normally closed connections in the transmission and signaling paths and provides access to the line or drop sides.

3.05 A control signal from the D3 TPU operates the trunk processing repeater relay in the unitized equipment during a carrier failure. This relay in turn closes contacts for telemetry indications.

Attenuator Panels

3.06 Each attenuator panel serves 12 two-way VF circuits and two panels are required per D3 bank. Four attenuator pads are required for a single channel. See Fig. 9. The TRMTG and RCVG loss-adjustment attenuators (AT1 through AT4) are variable step-type, 600-ohm balanced attenuators adjusted by means of slide switches. The loss set in these attenuators is the sum of the numbers exposed. Attenuation is removed when the white mark is completely exposed. AT1 and AT4 have a range from 0 to 1.5 dB with loss steps arranged in a binary sequence of 0.1, 0.2, 0.4, and 0.8 dB. AT2 and AT3 have a range from 0 to 15.0 dB with loss steps arranged in a binary sequence of 1.0, 2.0, 4.0, and 8.0 dB. AT1 and AT2 are used in series in the transmit direction of the channel units. AT3 and AT4 are used in series in the receive direction of the channel unit. The loss in both the TRMTG pad and RCVG pad, which can be set to any value between 0 and 16.5 dB in 0.1-dB steps, is the sum of the combined

loss of AT1 and AT2 (TRMTG pad) or AT3 and AT4 (RCVG pad).

3.07 The TRMTG and RCVG pads may be set by prescription if the office cabling loss is known. They are used to build out the line to the correct levels, −16 TLP transmitting and +7 TLP receiving, at the macs on the maintenance connector panel. With these levels established, the channel unit attenuators are set by prescription to 1.5 dB to establish the D3 bank requirements of −7.5 TLP transmitting and +2.5 TLP receiving.

Maintenance Connector Panels

3.08 The J98622AN (Fig. 2) or J98622BL maintenance connector for SMAS contains all the relay circuitry necessary to access and split any one of 24 circuits toward the line or drop for maintenance purposes. This circuitry consists of a trunk maintenance (TM) relay for each circuit, a matrix control circuit, and relays to control the splitting function.

3.09 Normally, the TM relays provide through connections for the transmission and signaling paths of the circuits. When it is necessary to perform maintenance on a specific circuit, that circuit can be accessed remotely by keying the assigned 6-digit number from the intertoll manual test frame or the manual test frame, or the circuit can be accessed manually by using switches in the manual access panel to select the circuit. In either case, the operation of an ACS key causes matrix control circuit to operate, which in turn operates the selected circuit TM relay. The operated TM relay accesses into the circuit and maintains the continuity of the transmission and signaling paths through its operated contacts and the contacts of various other unoperated relays, and at the same time prepares the circuit for the splitting function.

3.10 Code 525A plug-in diodes are provided as electrical and physical markers to identify any of 24 special-circuit VF channels that should be interrupted as infrequently as possible. These diodes are inserted in numbered pin jacks (designated SPL CKT IDENT 1, 2, 3 ...24) on the front panel. A lamp indication of these marked circuits is provided at the SMAS-3 testboard and at the manual access panel.

3.11 Two LOOP TST (loop test) jacks on the panel are used to loop the transmission path and the E&M leads in order to test the SMAS-3 test facilities at the maintenance line control panel. A GT1 TST (gating test) jack is provided for testing the gating circuits in the remote access circuit.

3.12 A TPB (test position busy) lamp is used to indicate that the test circuit is busy and cannot be further accessed until released. In addition, an ALM (alarm) lamp is provided on the panel to indicate failure of the access control circuit and an ALM RLS (alarm release) key is provided for releasing the alarm circuit.

3.13 The maintenance connector panel is described in detail in CD-1C454-01.

Manual Access Panel

3.14 The J98622AR (Fig. 4) or the J98622AT manual access panel provides for all tests and measurements normally performed at VF patch panels. Provided are jacks and switches for testing transmission and signaling toward the drop (toward the switching equipment) or toward the line (toward the facility) for four D3 channel banks.

3.15 The manual access panel has switches, jacks, and lamps for performing its various functions as follows.

(a) A rotary switch (designated CHAN BANK) is used to select any one of a maximum of four D3 channel banks. The switch has 14 labeled positions 1A, 1B through 7A, 7B. The number indicates the D3 bank accessed, and the A position selects channels 1 through 12 while the B position selects channels 13 through 24. Positions 5A through 7B are not used.

Note: The switch has an unused position, to prevent bridging, between each pair of labeled positions. Care should be taken to set the switch at the exact positon desired.

(b) A rotary switch (designated VF CKT) is used to select any one of the 12 VF channels in the selected half of the D3 channel bank, a jack multiple (JK MULT) circuit, or a tandem line (TDM L) patch circuit.

(c) A pushbutton switch (designated ACS) is used to connect the selected VF channel to appropriate test jacks on the panel.

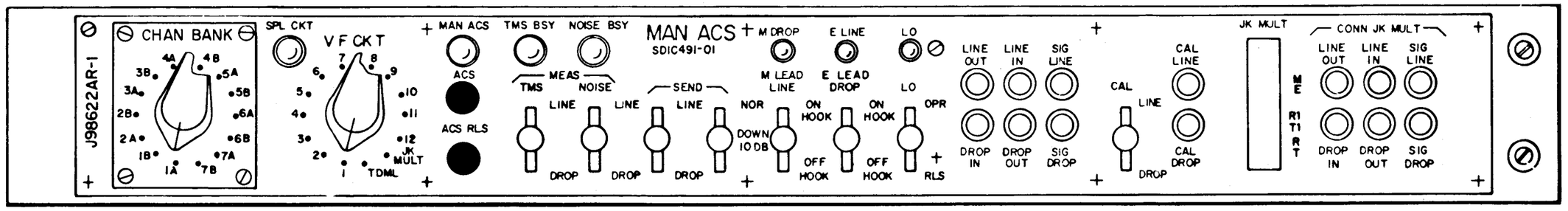

Fig. 4—Manual Access Panel

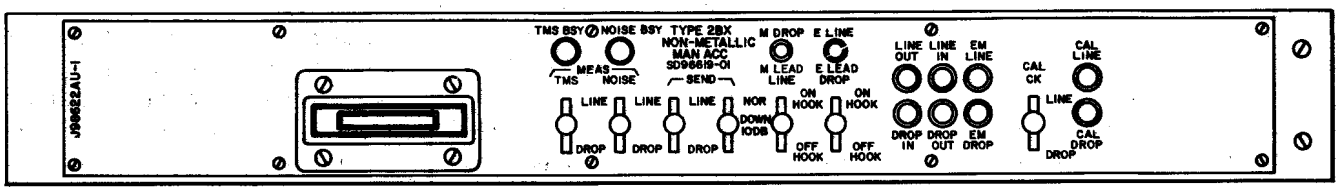

Fig. 5—Manual Access Panel With Retractable Cord

(d) A pushbutton switch (designated ACS RLS) is used to disconnect the selected VF channel from the test jacks on the panel.

(e) A white lamp (designated MAN ACS) lights when the ACS switch is operated and extinguishes when the ACS RLS switch is operated.

(f) A red lamp (designated SPL CKT) lights if the selected VF channel is a special circuit that has been marked at the associated maintenance connector panel.

(g) Two nonlocking lever switches (designated MEAS TMS LINE/DROP and MEAS NOISE LINE/DROP) are used to separate the connections between the line and drop jacks in the selected VF channel and to make connections between the selected VF channel and an associated TMS for making level, noise, and frequency tests toward either the line or the drop.

(h) Two white lamps (designated TMS BSY and NOISE BSY) light to indicate that the transmission and noise functions, respectively, of the associated TMS are in use at another test position.

(i) Two level switches [designated SEND LINE/DROP (locking) and SEND NOR/DOWN 10 DB (nonlocking)] are used to open the connections between the line and drop jacks in the selected VF channel and to make connections between that channel and an associated milliwatt distribution system (MDS). The MDS sends a 1-kHz test tone of either −16 or −26 dBm toward the line or +7 or −3 dBm toward the drop.

(j) Two locking lever switches (designated M LEAD LINE, ON HOOK/OFF HOOK and E LEAD DROP, ON HOOK/OFF HOOK) are used to simulate on-hook and off-hook signaling conditions on the line and drop circuits associated with the selected VF channel. When operated, these switches also open connections between the line and drop circuits to permit external test equipment to be connected to the signaling circuits via associated jacks.

(k) Two red lamps (designated M DROP and E LINE) are used to indicate the signaling conditions on the E and M leads associated with the selected VF channel. The M DROP lamp lights when the drop circuit is in the on-hook condition and is extinguished when it is in the off-hook condition. Similarily, the E LINE lamp lights when the line circuit is in the on-hook condition and is extinguished when it is in the off-hook condition. The state of these lamps is not affected by the positioning of their adjacent lever switches.

(l) A nonlocking lever switch (designated LO OPR/RLS) is used for locking the selected VF trunk out of service and for releasing it when required. An option is available to permit lockout release only when an assigned code is dialed from a maintenance-line control panel.

(m) A red lamp (designated LO) lights to indicate that the selected VF trunk is locked out of service. It is extinguished when the selected VF trunk is released.

(n) The accessed circuit is connected metallically to the equipment test jacks (LINE IN, DROP OUT, LINE OUT, DROP IN, SIG LINE, and SIG DROP)) in the manual access panel. Tests and measurements equivalent to those made at a 6-wire VF patch jack field can now be performed from the equipment test jacks in the manual access panel. Operation of the MEAS TMS/NOISE keys to the LINE or DROP position splits the transmission paths toward the line or drop.

(o) A nonlocking lever switch (designated CAL LINE/DROP) is used for connecting the −16 and +7 dBm test tones from the MDS to the TMS for checking the accuracy of these test tones. In addition, two associated jacks, designated CAL LINE and CAL DROP, can be used to check these test tones with external test equipment.

(p) There is a multiple jack (JK MULT) circuit consisting of a miniature 10-pin through mac (type 950A) and associated jacks (designated LINE OUT/DROP IN, LINE IN/DROP OUT, and SIG LINE/SIG DROP). Patching a circuit from a maintenance connector to the JK MULT jack permits access to these six jacks for long-term testing. Operation of the VF CKT switch to the JK MULT position enables use of the TMS and office milliwatt supply for testing.

3.14 The manual access panel is described in detail in CD-1C491-01.

Communication Panel

3.15 The J98626AA communication panel (Fig. 6) provides access for monitoring any VF channel selected at the manual access panel or patched to the TDM PATCH ( ) jacks on the panel. In addition, it provides for communication over any VF channel selected at the manual access panel, over either of two 4-wire order-wire circuits, or over any of five 2-wire circuits (trunk tie lines, local station lines, or a test trunk circuit). Data set operation over these 2-wire circuits and tandem patching for a maximum of six VF channels are also provided.

3.16 The features provided on the communication panel are as follows:

(a) There are six pairs of 10-pin miniature macs [designated TDM PATCH ( )]. One connector of each pair is designated DROP; the other, FAC. Each TDM PATCH pair provides a tandem line to an external tandem patch bay where a spare D3 channel or a spare drop circuit is available. The DROP connector is used when a D3 channel has failed and it is necessary to patch to a good D3 channel via a tandem line. The FAC connector is used when a drop circuit fails and it is necessary to patch to a good drop via a tandem line.

(b) The rotary switch (designated FAC ACCESS) selects any one of the seven switch positions for testing and communications. The numbered switch positions correspond to the six TDM PATCH pairs on the same panel and allow testing failed channels [patched per (a) above] from the manual access panel. When in the AUX position, the J98626AD-2 auxiliary communication panel is connected to the manual access panel.

Note: The VF CKT switch on the manual access panel must be in the TDM L position to access the macs selected by the FAC ACCESS switch.

(c) A 3-position locking lever switch (designated OW-1/MAN ACS/OW-2) is used to connect either of two order-wire circuits or the VF channel selected at the manual access panel to a local headset (via transmitting and receiving amplifiers) for communication over the selected 4-wire facility.

(d) A 3-position locking lever switch (designated FAC/NOR/EQPT) is used to connect the communication circuit to either the line, the drop, or both line and drop sides of the facility selected with the OW-1/MAN ACS/OW-2 switch at MAN ACS position.

(e) A 3-position locking lever switch (designated 4W TLK/MON/2W) is used to connect the 4-wire communication circuit to the 4-wire facility selected with the OW-1/MAN ACS/OW-2 and FAC/NOR/EQPT switches, to open the transmitting portion of the 4-wire communication circuit to permit monitoring via the receiving portion, or to disconnect the 4-wire communication circuit from the 4-wire facilities and connect the 2-wire communication circuit to 2-wire facilities.

(f) A 6-section pushbutton-type switch (designated HOLD, LINE 1, LINE 2, LINE 3, LINE 4, and LINE 5) is used to connect the 2-wire communication circuit to any of five trunk tie lines, local station line circuits, or test trunk circuits. Each of the LINE ( ) switches locks when operated and releases when another LINE ( ) switch is operated. An operated LINE ( ) switch is indicated by a lighted white lamp behind its plastic pushbutton. Operation of the red HOLD switch releases any operated LINE ( ) switch, but holds that line while communication is established on one of the four remaining lines.

(g) A rotary dial is used with the 2-wire communication circuit when suitable dial lines are available via the LINE ( ) switches.

(h) A jack (designated EXT DATA SET) is used to disconnect the 2-wire communication circuit from line 5 and connect an external data set in its place in order to permit data transmission on this line.

(i) A jack (designated EXT MF KEY) permits an external multifrequency key set to be connected for key pulsing on the 4-wire facility selected with the OW-1/MAN ACS/OW-2, FAC/NOR/EQPT, and 4W TKL/MON/2W switches.

(j) A pair of jacks (designated TEL T and R) is used to connect a headset to the 2- and 4-wire communication circuits for both VF communication and monitoring.

3.17 The communication panel is described in detail in CD-99555-01.

Auxiliary Communication Panel

3.18 The J98626AD-2 panel (Fig. 7) is required in a three-bay configuration for SMAS to allow testing and communications from common manual access and communication panels. The MTCE CONN GROUP switch selects one of the three bays (left, center, or right) which contains the equipment for the D3 channel to be tested. Six more tandem lines and the corresponding 6-position FAC ACCESS switch appear on the panel. The FAC ACCESS switch interacts with the same switch on the communication panel. See CD-99555-01 for a detailed description.

4. REFERENCES AND ASSOCIATED DRAWINGS

4.01 The following sections may be helpful in obtaining additional information.

SECTION	TITLE
667-301-ZZZ	Switched Maintenance Access System, SMAS No. 3
365-150-ZZZ	Digital Transmission Systems, D3 Channel Bank

4.02 The following SDs, CDs, EDs, and J drawings (not attached) may be helpful in finding additional information.

UNITIZED TERMINAL EQUIPMENT	SD/CD	J DRAWING	E DRAWING
Frame	99480-01	98715A 98715B	
Equalizer Panel	3C104-01		3C366-30
Power Distribution Panel	3C115-01		3C365-30
D3 Channel Bank Shelf	3C104-01		3C364-30
Attenuator Panel	99740-02	98624AJ	1C755-30
Manual Access Panel	1C491-01	98622AR 98622AT	
(Non-Metallic)	96619-01	98622AU	
Communication Panel	99555-01	98626AA	
Auxiliary Communication Panel	99555-01	98626AD-2	
Maintenance Connector Panel	1C454-01	98622AN 98622BL	
Cord Access Maintenance Connector Panel	1C454-01	98622BK	

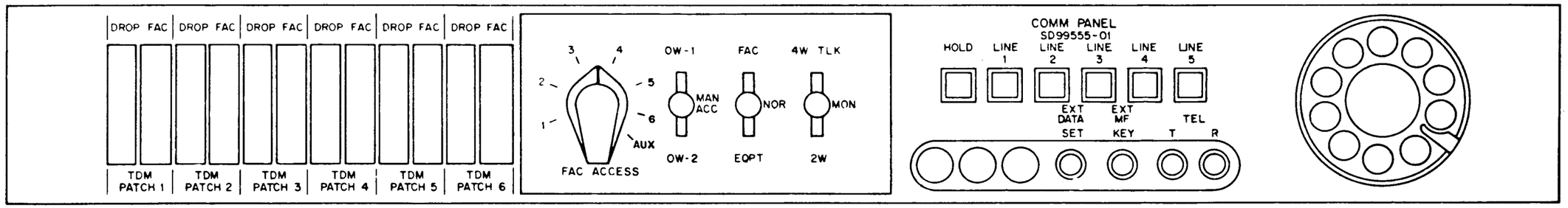

Fig. 6—Communication Panel

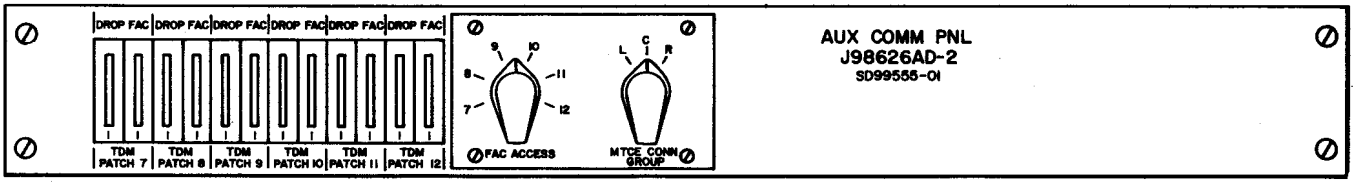

Fig. 7—Auxiliary Communication Panel

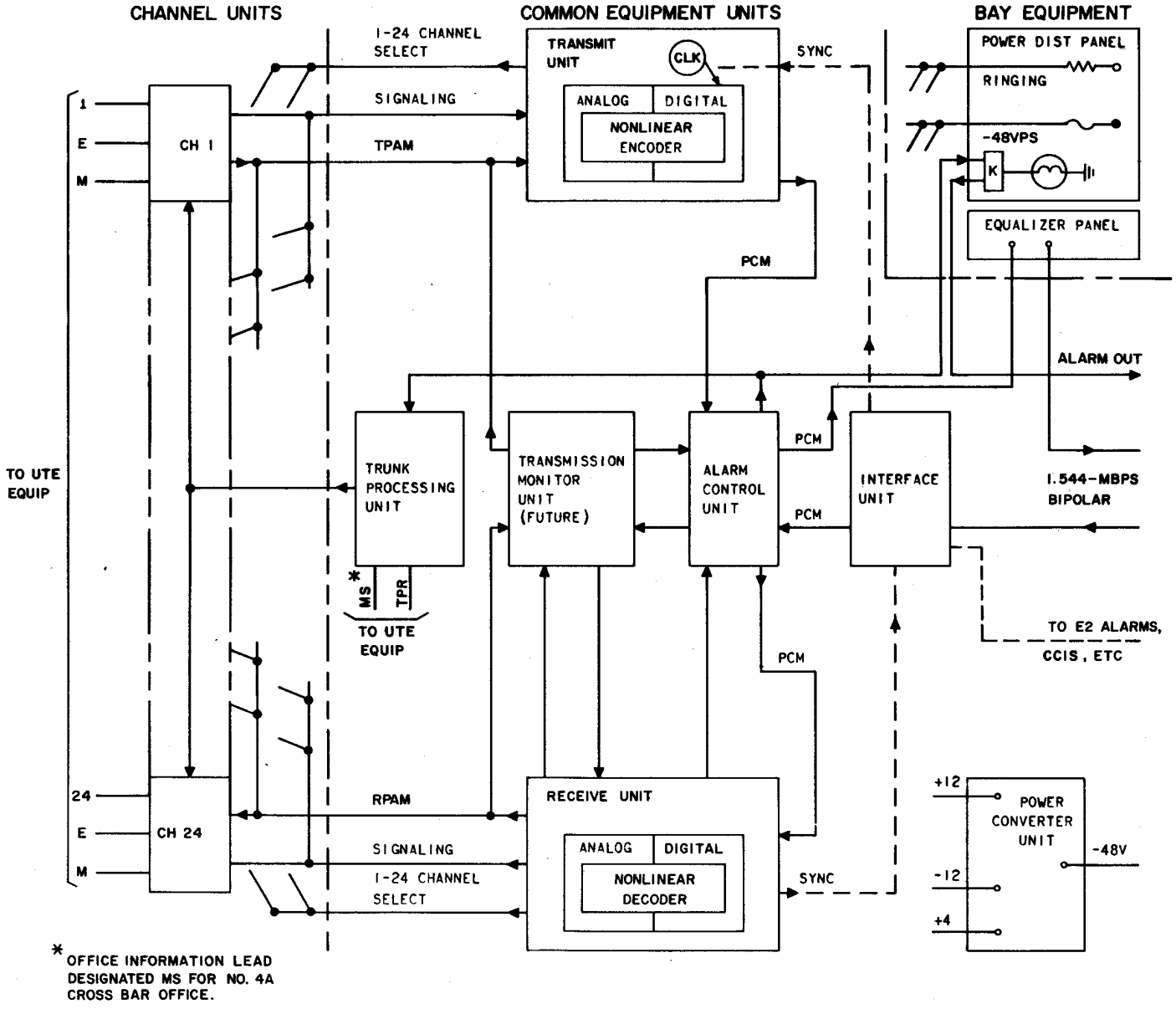

Fig. 8—D3 Block Diagram (Unitized)

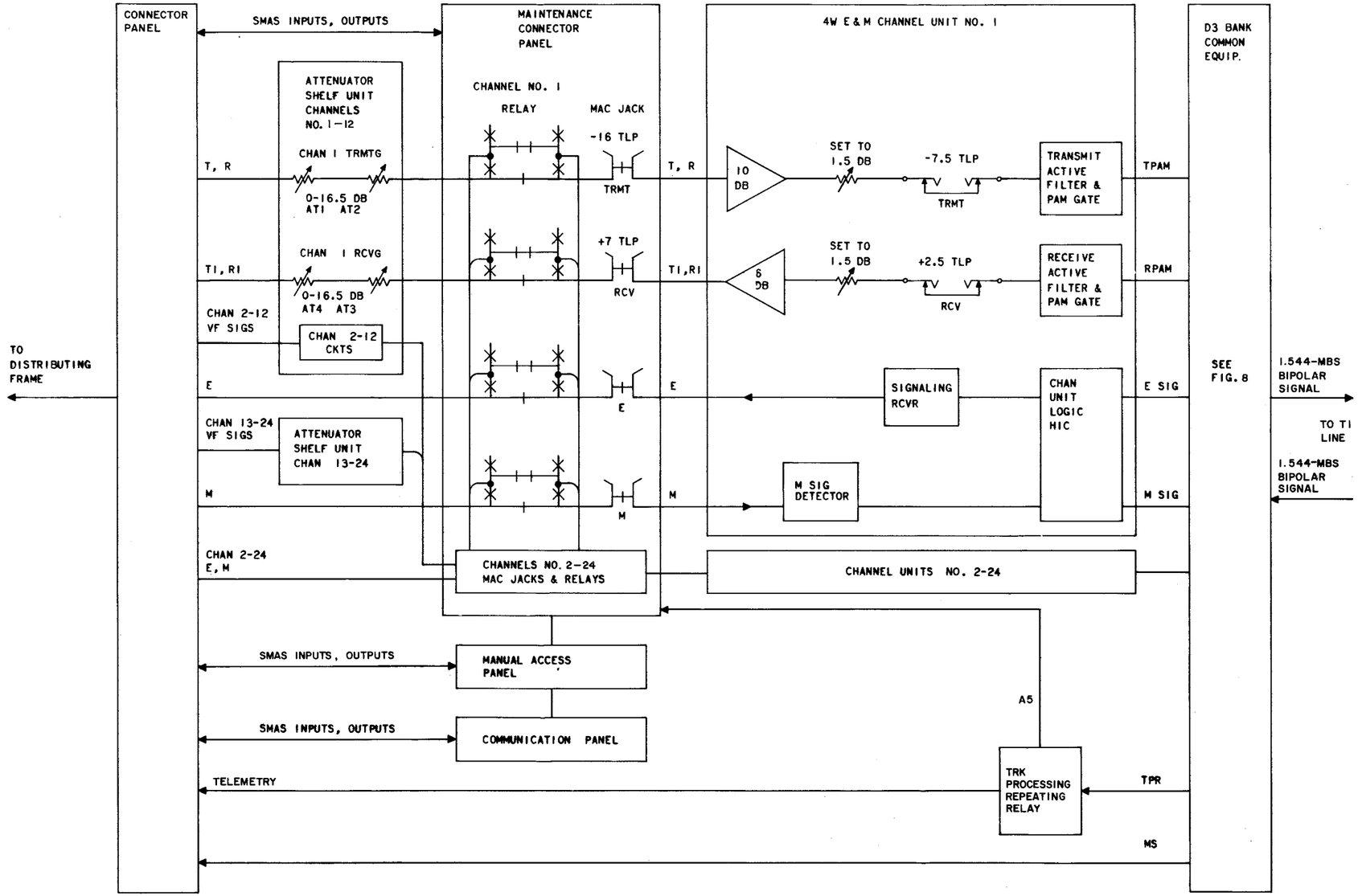

Fig. 9—D3 UTE Circuits for One Channel Bank