DATA SET 602A1
TRANSMITTER-RECEIVER
IDENTIFICATION AND OPERATION

1. GENERAL

1.01 This section is reissued to:

- Change Figs. 1, 2, and 3.
- Show the D6AA-61 line cord furnished with data set.

1.02 Data set 602A1 is designed to provide analog transmission on switched network or private line facilities (See Figs. 1 and 2). ←

Fig. 1 — Data Set 602A1

Fig. 2 — Data Set 602A1 — Rear View

1.03 A simplified block diagram of the Data Set → 602A1 is shown in Fig. 3.

2. IDENTIFICATION

2.01 Data Set 602A1 is an integrated unit combining the transmitter, receiver, control circuitry, telephone set, and a 6-button key, all in one housing.

2.02 The 6-button key controls the following functions:

- SPARE — Keys 1, 2, and 3 are spare pickup keys for additional lines (telephone, not data). They are also convertible to signal keys if desired.
- TEST — Key 4, nonlocking, is used to place the data set in the test mode for testing with a data test center.
- TALK — Key 5, locking, is used for voice communication on data line.
- DATA — Key 6, nonlocking, is used for data communication on the data line. The operation of this key will release any depressed key.

2.03 Two cords are supplied with the data set:

- → D6AA-61 connects data set to telephone line.
- KS-14532, List 16 (10 feet) 3-conductor power cord.

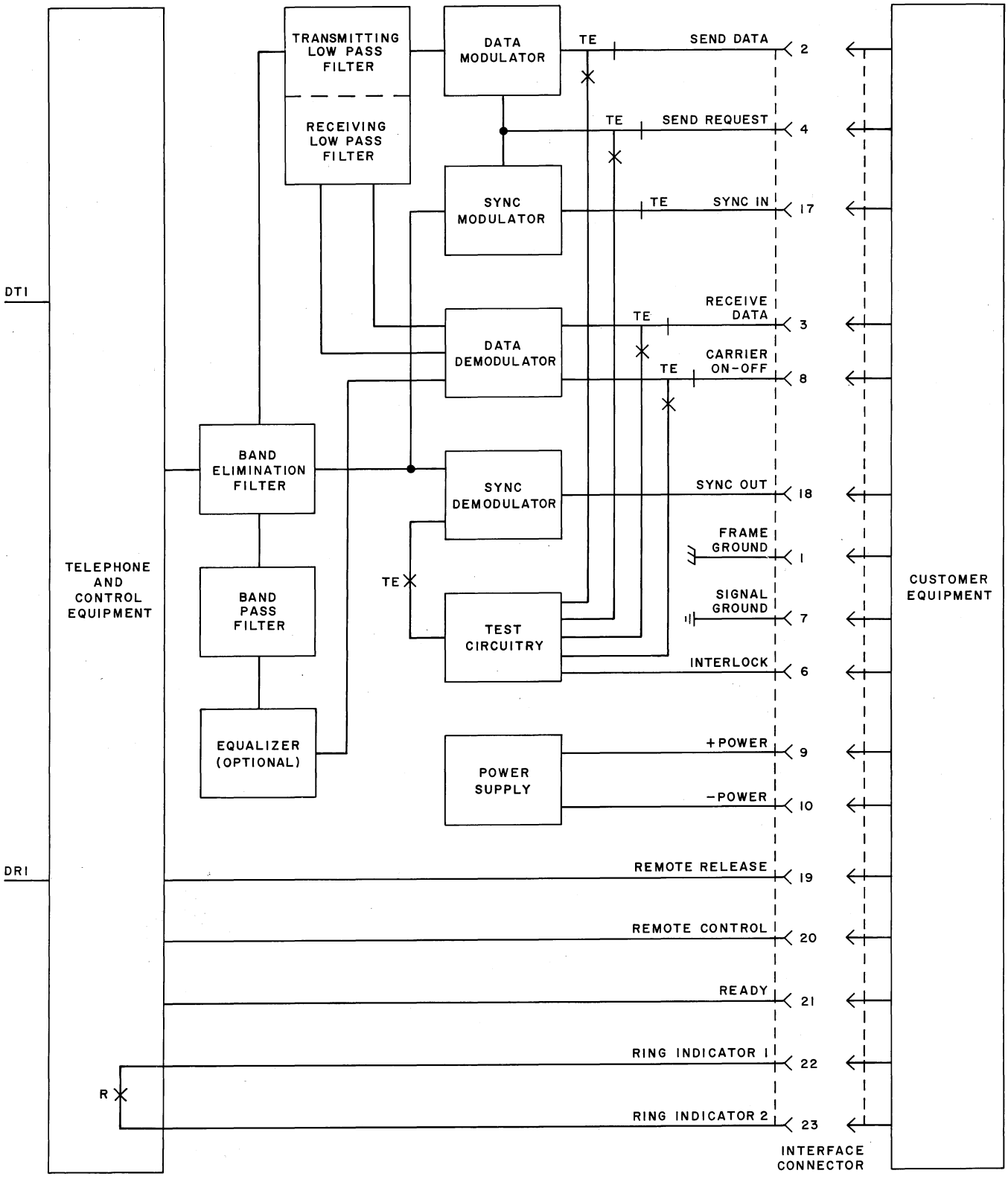

Fig. 3 — Data Set 602A1 — Block Diagram

Note: When additional telephone lines or an automatic calling unit are to be provided, a D30B-61 or D34B-61 mounting cord must be → installed in place of the D6AA-61. This cord is provided locally.

2.04 The cord connecting the customer's business machine to the data set is furnished by the customer. It is equipped with a Cinch DB19604-432 plug or equivalent. A KS-19087, List 6 receptacle for this connection is located at rear of data set.

2.05 A G1B ringer (M1A ringer in later models) mounted in the data set provides an audible signal on the data line. Access to the ringer volume control is through a hole in the base of the set.

2.06 Data Set 602A1 is available in two-tone gray only.

2.07 Four types of operating arrangements are provided, all of which operate on a 2-wire basis:

- Switched telephone network data service with alternate voice communication.
- Switched telephone network data service with alternate voice communication and unattended automatic answering.
- Private line half duplex data service with alternate voice communication.
- Private line half duplex data service with alternate voice communication and unattended automatic answering.

→**2.08** Provisions are included in the Data Set → 602A1 for use with 801-series automatic calling units.

2.09 A complete data set, coded 602A1, consists of a housing, all printed board assemblies, control unit, and necessary cords. Individual printed boards and control apparatus are coded as shown in Table A.

3. OPERATION

3.01 For detailed operation, see CD- and SD-1D025-01.

3.02 Data Set 602A1 can transmit or receive data, but not simultaneously. The operation of the business machine determines whether the set is in the transmit or receive condition. When the data set is used as a transmitter, the receiver portion monitors outgoing data.

TABLE A

PRINTED BOARDS AND APPARATUS

DESIGNATION	FUNCTION	PRINTED BOARD ASSEMBLY
CPS1	Data and sync modulator	ED-1D129
CPS2	Data demodulator	ED-1D130
CPS3	Sync demodulator	ED-1D131
CPS4	Remote test and interlock circuitry	ED-1D132
CPS5	Circuit protection, level matching, and limiter for line control	P-30H472
Control Unit 58A	Line control and automatic answer	58A Control Unit

3.03 To originate a data call:

(1) Depress the TALK key and establish connection with the distant terminal in the normal telephone manner.

(2) After distant terminal has answered:

- Manually

  After verbal agreement is reached to transmit data, depress the DATA key until its associated lamp lights.

- Automatically

  A 2025-cps tone will be heard for a few seconds, indicating distant set is ready to receive data. Depress DATA key until its associated lamp lights.

(3) Releasing the DATA key restores the TALK key to normal. The set is now in DATA mode and transmission can begin. The handset can be placed on its cradle.

Remote Control and Remote Release leads must be connected together in the customer's equipment or the data set will not lock in the DATA mode.

3.04 A call can be terminated in two ways:

- Manually

  Depress the TALK key and lift the handset, than hang up.

- Automatically

  Transmitting and receiving business machines can be arranged to open the connection between the ***Remote Control*** and ***Remote Release*** leads automatically.

3.05 The data set may be conditioned to receive a data call either manually or automatically.

- Manually

  Call is answered in the normal manner. When verbal agreement is reached as to when data transmission is to begin, depress DATA key until its associated lamp lights. Release of the DATA key restores the TALK key. The set is now in the DATA mode and transmission can begin. Handset may be placed on its cradle.

- Automatically

  Sets conditioned for automatic answer require no manual operation by the attendant (Y option).

3.06 Five leads, for automatic answer features, are supplied to the business machine. ***Ring Indicator*** leads 1 and 2 are connected together in the data set during ringing and may be used by the customer to prepare his equipment to accept data, at which time his machine closes the ***Ready*** lead. The ***Remote Control, Ready,*** and ***Remote Release*** leads are connected together in the business machine by the customer for any automatic answer feature.

- The ***Remote Control*** lead: Common for the ***Remote Release*** lead and ***Ready*** lead.

- The ***Remote Release*** lead: When connected to ***Remote Control*** lead, provides a locking path for the holding circuit on an incoming call. It also provides a locking path for the holding circuit when shifting from TALK to DATA on an outgoing or manually answered call. Normally the ***Remote Control*** and ***Remote Release*** leads are connected together. Opening of this connection by the business machine terminates the call.

- The ***Ready*** lead: When connected to ***Remote Control*** lead, provides an operate path for the automatic answer circuit (provided that ***Remote Release*** is also connected to ***Remote Control).*** When this connection is open, the automatic answer circuit cannot operate.

The Remote Control, Ready, and Remote Release leads must be connected together in the business machine for automatic answer.

3.07 The automatic answer circuit operates as follows:

(1) Ringing current is received at DT1 and DR1 terminals in the regular manner.

(2) Whenever the circuit responds to ringing current, ***Ring Indicator*** leads 1 and 2 close. If the ***Ready*** lead is closed to the ***Remote Control*** lead, the circuit picks up the line, trips the ringing, places holding circuit across the line, and starts the timing of the answer-back tone.

Note: If the ***Ready*** leads is not closed, the bell will continue to ring until:

- The ***Ready*** lead subsequently closes or
- The call is answered manually or
- The calling party hangs up.

(3) Approximately 2 seconds after ringing is tripped, a 2025-cps tone will be transmitted for 2 to 5 seconds to the calling station, indicating the business machine is ready to receive data.

(4) At the end of answer-back tone, the set is automatically placed in the DATA mode, indicated by the lighting of the lamp associated with the DATA key.

(5) After data transmission is completed, customer's equipment should open the connection between ***Remote Control*** common and ***Remote Release*** leads. This puts the station in the on-hook condition.