

DATA SET 603D

DESCRIPTION AND OPERATION

1. GENERAL

- 1.01** This section contains descriptive and operational information for the Data Set 603D. This section does not include information regarding the business machine used with the transmitter.
- 1.02** This section is reissued to include the following:
- Table A (provides interface lead connections)
 - Additional operating information
 - Make minor structural changes in the section
- 1.03** Due to extensive changes, arrows have been omitted.
- 1.04** For the purpose of this practice, reference to a business machine should be interpreted to mean any medical electronic equipment capable of providing electrocardiogram (ECG) or similar analog voltage signals at an acceptable input level for the data set.
- 1.05** The Data Set 603D is designed to accept an analog voltage signal (varying between +2.0 and -2.0 volts) from the business machine in the frequency range between dc and 100 Hz. The data set input impedance is 100,000 ohms. Input signals are used to frequency modulate a 1988 Hz carrier. The transmitted signal has a peak frequency deviation of ± 262 Hz from the carrier frequency.
- 1.06** Data Set 603D is a battery powered portable transmitter. This set provides the electronic circuits necessary to convert the business machine analog voltage signal to a frequency modulated (FM) signal suitable for transmission over telephone lines. The audible FM signal is acoustically coupled from the data set into a telephone handset for transmission. The acoustic coupling is designed to accept 1 300 type, 500 type, or TRIMLINE® handset.
- 1.07** The data set requires an operator during the time required for transmitting data. A reverse channel receiver provides either an audible or visible alarm indication to alert the operator if the receiving station signals, or if an interruption in the telephone circuit occurs.
- 1.08** Operation and test features of the data set are controlled by pushbutton switches.
- 1.09** A 25-pin interface connector is used to connect the data set to the business machine. Table A shows the lead assignments. Pins not shown on Table A are not used.

TABLE A

INTERFACE LEAD ASSIGNMENTS

PIN NO.	DESIG	LEAD ASSIGNMENT
1	FG	Frame Ground
2	SD 1	Send Data 1
7	SG	Signal Ground
17	SD 2	Send Data 2

2. DESCRIPTION

- 2.01** The Data set 603D is housed in a two-tone gray plastic case. The data set weighs six pounds when equipped with batteries. Dimensions of the data set are shown in Fig. 1. Business machine signals are applied to the data set through interface connector J1. The connector is accessible when the protective hinged cover is pulled down (see Fig. 2). When access to the batteries is required, a probe is inserted and pressed into the lock release hole and the battery compartment

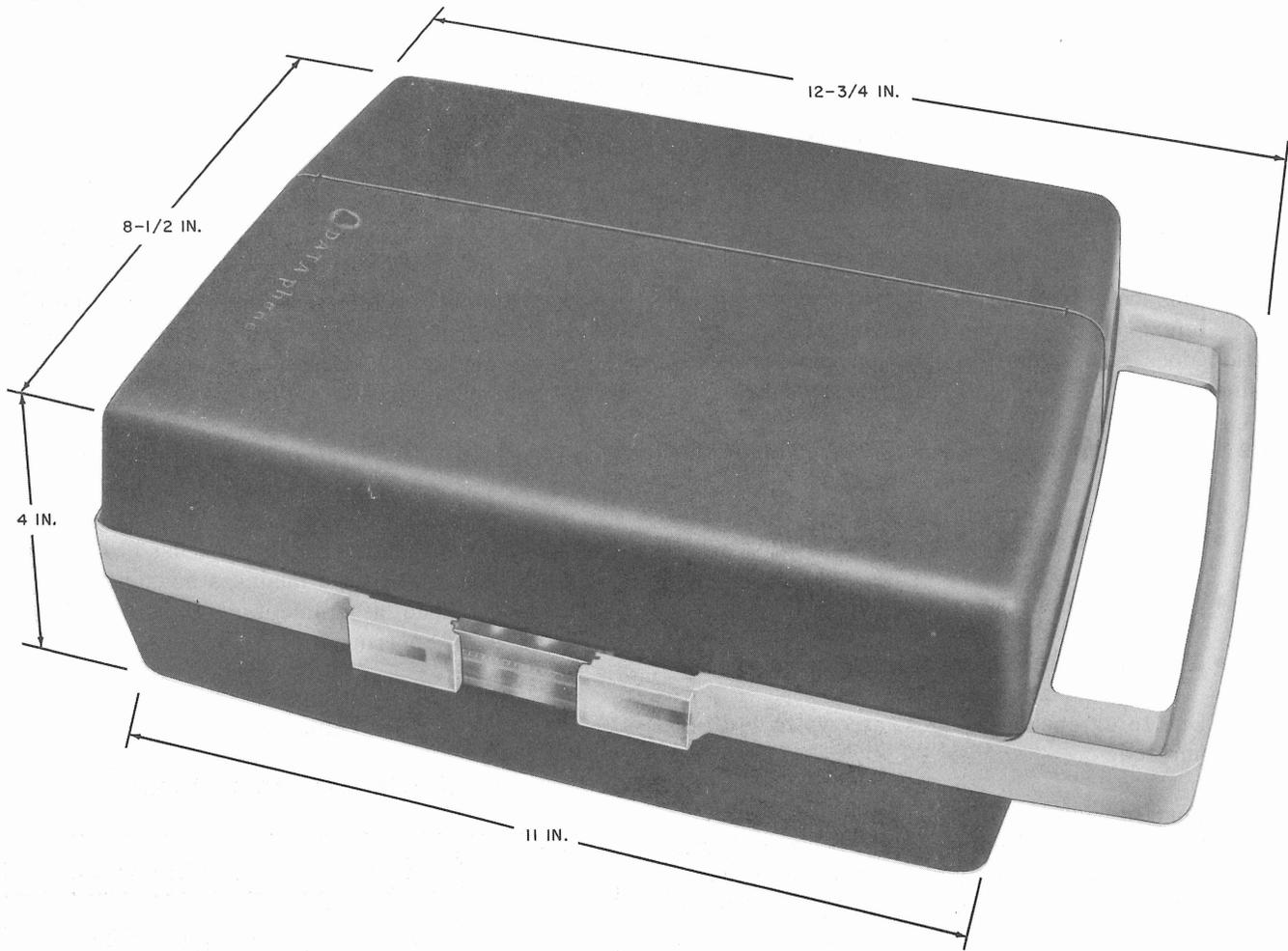


Fig. 1—Data Set 603D

cover can be lifted. Eight standard flashlight batteries, size "D", are installed according to the instructions within the compartment, to provide the required operating voltage.

2.02 Fig. 3 shows the manner of opening the front cover of the data set. The two sliding latch retainers are squeezed together to permit the cover to release and open. Fig. 4 illustrates the data set prepared to accept a telephone handset. The power switch is mounted under the pivoted receiver platform. When a telephone handset is placed in the data set the weight of the handset on the platform pivots to close the power switch and put the data set into operation. Care must be taken to insure that the handset rests firmly on the acoustic coupling pads. Closing the front cover over the handset is not normally required;

however, such action will provide a small amount of acoustic shielding and is recommended for use in noisy areas.

2.03 Pushbutton switches mounted above the telephone handset can be operated to select either visible or audible reverse channel alarm indication, and to control the test circuit of the data set. Table B lists the functions associated with each pushbutton switch.

2.04 A block diagram illustrating the operation of the Data Set 603D is shown in Fig. 5. The business machine is connected to the data set through interface connector J1. The analog voltage signal from the business machine is applied to the transmitter section. Components within the transmitter use the input signal to generate a

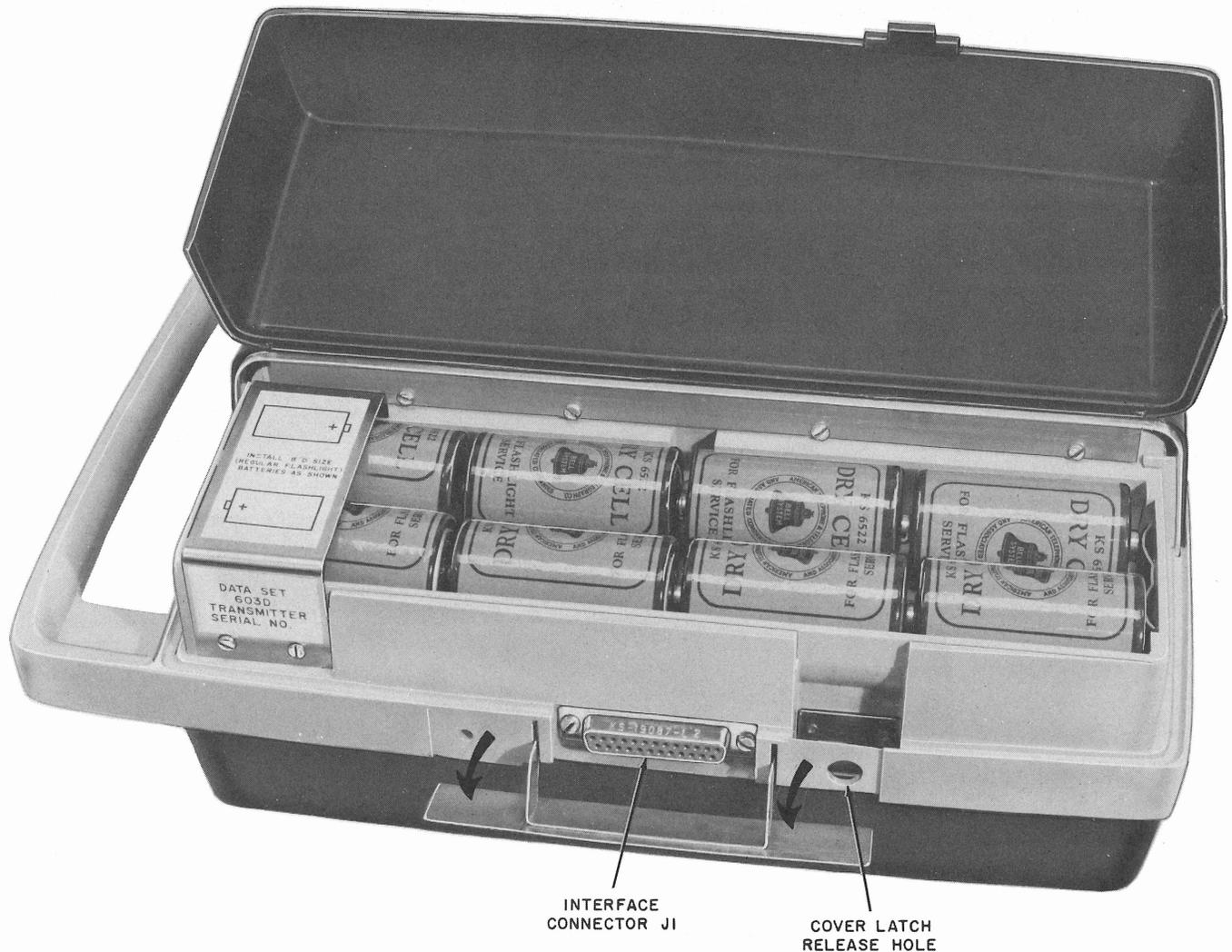


Fig. 2—Data Set 603D, Rear View

frequency modulated audio signal that is suitable for transmission through telephone lines. A Data Set 603B analog data receiver at the other end of the telephone line can demodulate the telephone line signal, and reproduce a replica of the original signal to drive a business machine.

2.05 The receiving terminal continuously sends back a 387 Hz Reverse Channel frequency which is acoustically coupled from the handset receiver to a microphone in the Data Set 603D transmitter. This frequency, detected by the microphone, is applied to the reverse channel receiver in the data set to keep the alarm circuit inhibited. If the reverse channel frequency is interrupted due to signaling from the receiving

terminal or due to a facility failure, the alarm circuit operates to alert the transmitting attendant. The alarm mode, either high frequency tone or flashing lamp, can be selected by pressing either TONE or LAMP pushbutton on the data set.

Note: Dial tone will also inhibit the alarm circuit.

2.06 A battery test circuit is available to the attendant of the data set to check that battery voltage is sufficient for normal operation. Pressing the BATTERY pushbutton, transfers the battery voltage to the test circuit. When sufficient battery voltage is measured by the test circuit, the alarm lamp lights to provide a visual indication of normal operation capability.



Fig. 3—Method of Opening Data Set 603D

3. OPERATION

3.01 The Data Set 603D is first prepared for operation by placing it on a flat surface that is convenient to both the telephone and the business machine. Open the top cover by squeezing the front latches together. The cover lid will release and raise slightly to permit the attendant to swing the cover completely open.

Note: The Data Set 603D should be located where noise and vibration are at a minimum.

3.02 The attendant should press the BATTERY pushbutton and observe that the alarm lamp (positioned between the cover release latches) glows. If the lamp does not glow the batteries are too weak for normal operation and should be replaced.

3.03 Press either the TONE or LAMP pushbutton to select the alarm desired.



To determine that excessive acoustic noise or vibration is not present, place the handset in the data set and press down switch hook of the telephone. If the acoustic noise level is low enough for normal operation, the selected alarm will operate. Excessive noise should be reduced in order not to completely inhibit the reverse channel, although it is satisfactory if some remaining noise causes the alarm to waver. Closing the data set cover during normal operation will provide a small amount of acoustic isolation from noisy areas.



Fig. 4—Typical Connection Between Data Set 603D and Standard Telephone Equipment

3.04 Pull down the protective cover over the interface connector jack. Connect the business machine connector plug to the data set jack.

3.05 Dial the desired station from the telephone to be used with the data set. After agreeing on procedure or receiving a tone from the receiving station, carefully place the handset in the data set as shown in Fig. 4, to activate the data set and transmit.

3.06 If the other station with the Reverse Channel, or if the telephone circuit is interrupted, the data set produces the selected alarm. The attendant should take any predetermined action,

or lift the telephone handset and listen to the handset receiver to determine the cause of alarm. An alarm may be caused by the receiving station attendant signaling for a telephone conversation.

Note: During periods when the Reverse Channel Lamp alarm is operating, the transmitted data will be unreliable if the batteries are not fresh. The large lamp current pulses reduce the battery supply voltage causing periodic square waves to be superimposed over the analog data. If it is undesirable to ignore those sections of data, the tone alarm should be selected to prevent occurrence of the pulses.

TABLE B

PUSHBUTTON SWITCH FUNCTION

Unlabeled	Spare
BATTERY	Removes power from data set and tests condition of battery. If battery voltage is within operating requirements, enables the battery test circuit to energize the alarm lamp in the data set cover.
TEST 1	Disconnects business machine input and connects proper components to the transmitter section to generate a 1726-Hz tone.
TEST 2	Disconnects business machine input and connects proper components to the transmitter section to generate a 2250-Hz tone.
TEST 1 and TEST 2*	Disconnects business machine and effectively grounds input to generate a 1988-Hz test tone.
LAMP	Connects alarm circuit to lamp in the data set cover.
TONE	Connects alarm circuit to alarm loudspeaker.

*Pressing TEST 1 and TEST 2 buttons simultaneously disconnects business machine and effectively grounds input to generate a 1988-Hz test tone.

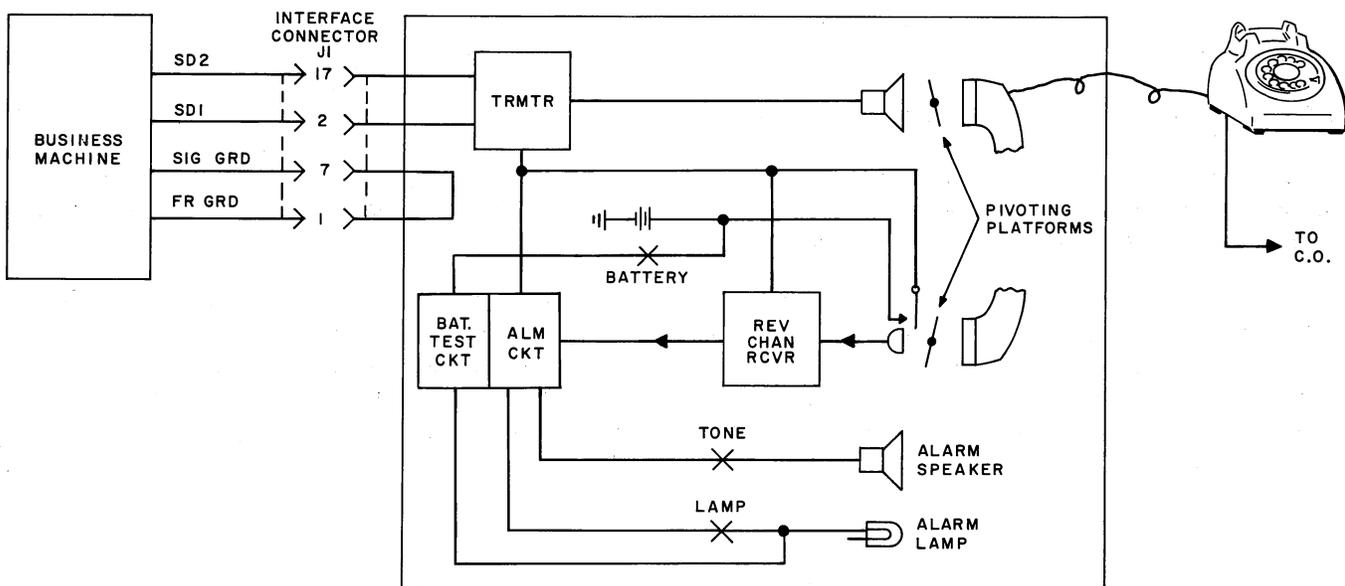


Fig. 5—Data Set 603D, Block Diagram