

DATA SET MODELS 3 AND 3A
(TRANSMITTER-RECEIVER)
DESCRIPTION AND OPERATION

1. INTRODUCTION

1.01 This section covers data set models 3 and 3A. It does not include any operating information concerning the business machine equipment associated with the data set.

1.02 Information contained in this section was formerly in Section 592-010-200, Issue 1.

2. GENERAL

2.01 Data set models 3 and 3A are designed for 2- or 4-wire private lines or 2-wire switched network (DATA-PHONE) service (Fig. 1 and 2).

2.02 All model 3 sets are to be modified to model 3A. Information for field modification of model 3 sets to model 3A is given in Section 592-010-200. This modification provides improved circuitry and more reliable operation.

2.03 Serial binary data is received from the customer business machine in the form of positive and negative dc voltage signals. The data set converts these signals into voice frequency tones and transmits the tones over voice grade facilities. At the distant end, the tones are converted back to original form and delivered to the customer business machine as received data.

2.04 The data set will operate at speeds up to 1200 bits per second.

3. DESCRIPTION

3.01 Data set model 3A consists of a modulator, demodulator, power supply, and control circuitry all enclosed in a gray metal housing. Fig. 3 shows a simplified block diagram of the data set model 3A.

3.02 Transmitted MARK and SPACE frequencies vary according to the transmitted bit rate. Table A shows the bit rate and associated frequencies.

TABLE A
BIT RATE AND DATA FREQUENCIES

Bit Rate	Signal	Frequency
bits/second		cps
Up to 600	Mark	1400 ±10
	Space	1900 ±10
601 to 1200	Mark	1200 ±10
	Space	2200 ±10

3.03 When used on the switched network, a 544BBR telephone set is required. The set must be modified as shown in Section 592-010-200. The modification utilizes two of the four keys. Key 1 is designated as the TALK key and is used to transfer the line back to the telephone set when the data set is in the data mode. Keys 2 and 3



Fig. 1 – Data Set 3A, Front View

SECTION 592-010-100

are blocked. Key 4 is converted to nonlocking and is designated the DATA key. This key is used to shift from the talk to the data mode of operation.

3.04 On private line circuits, a telephone set is not necessarily required.

3.05 In cases where a telephone set is required for 4-wire private lines, a locally engineered arrangement will be required.

3.06 On 4-wire lines, transmission and reception of data can be a simultaneous operation (full duplex).

3.07 Interface connections between the data set and the business machine are made as follows:

- The data set is equipped with K02-19-20SN Cannon receptacle.
- The customer will provide a connecting cord of not over 50 feet equipped with a Cannon K03-19-20PN barrel assembly and coupling unit with a K0-19-1/2 shell.

3.08 The specific pin terminations on the interface receptacle are as follows:

PIN

- A } Remote control of data and talk modes
- B } O option.
- C }
- D Signal ground
- E Send data
- F Receive data
- H Request send
- J Start send
- K Carrier detector
- L Interlock
- M Frame ground
- N, P, R, S, T, U, V, & W — Spare
- X Reserve for customer self test features. Not used in data set .

4. OPERATION

4.01 For detailed operation, see CD- and SD-1D000-01.

4.02 Installations without a telephone set require no manual control of the data set by

the customer. The business machine controls all data set functions.

4.03 When an associated telephone set is provided, it is used in the normal manner for establishing connection with the distant end. After verbal agreement is reached to start data transmission, the DATA key is depressed momentarily, switching the line over to the data set. Handset may be returned to its cradle. To return to the talk mode, momentarily depress the talk key with handset off-hook. To terminate the call after completion when return to talk is not desired, depress the TALK key momentarily, handset on-hook.

4.04 The above operations can also be accomplished in the business machine with B and C option. See Section 592-010-200 for customer applications.

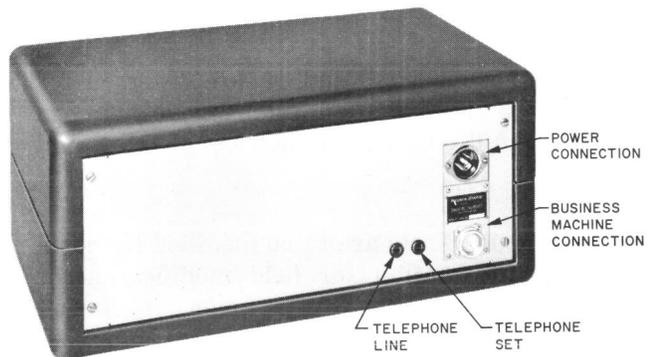


Fig. 2 — Data Set 3A, Rear View

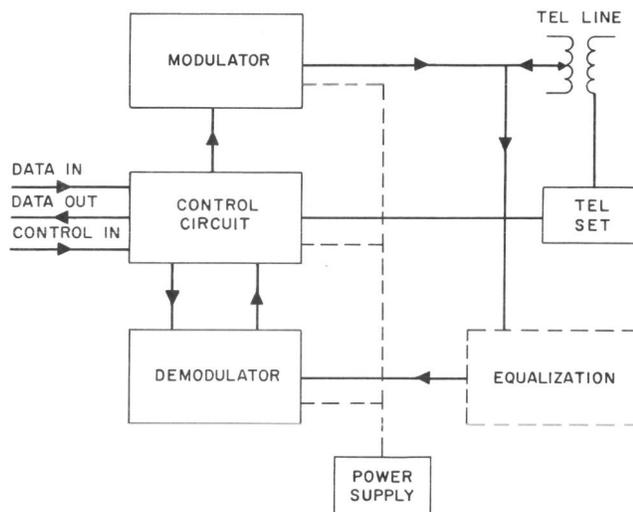


Fig. 3 — Data Set 3A, Block Diagram