DATA SET 202T
TRANSMITTER-RECEIVER
SUMMARIZING SPECIFICATION
DATA SYSTEMS

1. GENERAL

SCOPE

1.01 This specification, together with the supplementary information listed herein, summarizes for ordering purposes the product design requirements for the data set 202T type and its associated data mountings.

FEATURES, USE

1.02 Data set 202T is designed for use on 2-wire or 4-wire private line circuits only. It is a nonsynchronous, binary, FSK transceiver intended for half- or full-duplex operation at speeds up to 1800 b/s. When used for 2-wire service, the data set can be equipped with an optional reverse channel unit that allows a simultaneous signal at speeds up to 5 b/s in the opposite direction from the primary channel transmission. Maximum recommended bit rates are as follows:

(a) 2-wire (no reverse channel): 1400 b/s on basic 3002 channel

(b) 4-wire (no reverse channel): 1400 b/s on basic 3002 channel

(c) 4-wire (no reverse channel): up to 1800 b/s on 3002 channel with C2 conditioning

(d) 2-wire (with reverse channel): 1200 b/s on basic 3002 channel

(e) 2-wire (with reverse channel): up to 1800 b/s on 3002 channel with C2 conditioning.

The set has provisions for both local and remote testing. The local tests consist of a self-test and an analog loop-back test. The remote test allows a data test center to access and test the data set.

1.03 Multiple arrangements of the data set 202T type are facilitated through the use of 39A1 and 40B1 data mountings. The 39A1 and 40B1 mountings are intended for cabinet or rack mounted data sets 202T-L1 in multiples of up to 16 per mounting or in multiples of up to eight per mounting when data sets 202T-L1/3 (with reverse channel) are used. A mixture of the two types can also be used in the same data mounting. The 39A1 data mountings are intended to be used when it is desired to hard wire directly to the data set connector, whereas the 40B1 data mounting is intended for use in plug-together applications where separate customer connectors and line connectors are used, as is usually the case.

1.04 The data set can be used with 828- or 829-type data auxiliary sets (channel interface units) which provide standard terminations for 4-wire private line voiceband data channels. Stand-alone data sets are provided with M8K cords that can plug directly into single 828 or 829 sets. For multiple arrangements, the 829 sets are the preferred units to be used since they require much less space and when combined with 46-type data mountings, can be plugged directly together with 40B1 data mountings on a two for one basis (eg, each 40B1 data mounting with 16 data sets requires two 46A1 data mountings with eight 829A data auxiliary sets each). All are plugged together with two B25A connector cables. When 828A sets are used, more mounting space (shelf type) is required in addition to KS-21253, L1 adapters to compress each group of eight 828A sets into a single A25D connector cable.

1.05 Installer options are located on the stand-alone data set printed wiring board and are activated by miniature switches or plugs. These options include the following:

(a) Soft turnoff and squelch intervals 8 or 24 ms and 9 or 156 ms (options Z through R)

(b) Clear-to-send intervals 8, 30, 60, or 180 ms (options M through G)

(c) Reverse channel in or out (options ZC and ZD)

(d) Local copy on reverse channel in or out (options ZE and ZF)

(e) Fast carrier detection in or out (options Q and N)

(f) Local copy on primary channel (2-wire) in or out (options ZA and ZB)

(g) Clamp in or out (options F and E)

(h) Control by data auxiliary set 828 or 829 type in or out (options B and A)

(i) 2-wire, 4-wire operation (options ZD and ZK)

(j) Carrier detector reset in or out (options ZL and ZM)

(k) Continuous carrier in or out (options ZN and ZO)

A screw switch on the interface assembly of the stand-alone set (options ZG and ZH), and a strapping option on the rear of the power supply of the 40B1 data mounting in multiple arrangements (options ZI and ZJ), permit the frame ground to be disconnected from the signal ground. These are normally connected.

POWER

1.06 Low voltage ac power is supplied to the data set by a wall transformer, KS-21239, L1 for stand-alone applications. It is shipped loose with each data set 202T-L1/2 or L1/2/3 or with each 47B1 data mounting (202T housing assembly). The wall transformer must be plugged into a commercial source of power, 105 through 129 Vac at a frequency of 60 $\pm$3 Hz. A 3-wire, U-blade ground pin, ac receptacle is required. The power required per set is approximately 6.3 watts. Approximately 1.7 watts of this is dissipated in the wall transformer.

1.07 Power required for the 39A1 or 40B1 data mountings fully equipped with data sets is approximately 80 watts. A self-contained power supply replaces the wall transformer to supply the low voltage (24 Vac) to each data set. The supply is fused on the primary and secondary sides with 70A- and 70G- type fuses, respectively. Spare fuses are furnished with each 39A1 and 40B1 mounting.

DESCRIPTION

1.08 Data set 202T-L1 is the basic set which is a single plug-in printed wiring board assembly. In addition to an assortment of component apparatus, the board assembly contains a faceplate which aids in the alignment of light emitting diodes, used as function indicators, and test switches. A reverse channel circuit board assembly, JY1, may be plugged into the basic set in piggyback fashion, to form the data set 202T-L1/3. Either of these basic assemblies may be plugged into one of three different enclosures: a 47B1, a 39A1, or a 40B1 data mounting. The 47B1 data mounting is the housing assembly required to form the stand-alone data set 202T-L1/2 or 202T-L1/2/3. It consists of an aluminum extruded shell with card guides for the data set assembly, an interface assembly with connectors and power cord, snap-on plastic front and rear covers, a KS-21239, L1 transformer, and an M8K line cord. The 39A1 and the 40B1 data mountings consist of a black metal framework and power supply. The 40B1 also includes a printed wiring backplane assembly to consolidate the data set connections into connectors. The data sets are inserted vertically into the mountings through guides in the framework into 908-type connectors and held in place by a retaining bar designation strip assembly. Mounting brackets are attached to each end of the framework to allow the mounting to be attached to the tapped uprights in the apparatus cabinets or open frameworks designed for 19-inch or 23-inch mounting plates. Except for the 39A1 mounting, all connections to the data sets are made via the connectors at the rear of the mountings.

CONNECTORS

1.09 The customer interface signals are Electronic Industries Association (EIA) bipolar voltages per RS232-C. The interface connector on the 40B1 and 47B1 mountings is the standard 25-pin, KS-19087 type that is designed to mate with the customer supplied Cinch or Cannon DB19604-432 plug equipped with DB51226-1 hood or its equivalent KS-19088, L2 plug with a KS-19196, L2 hood which is also available from Cinch. KS-16672 type and KS-16690 type female, 50-pin connectors are furnished on

the 40B1 and the M8K cords, respectively, for line connection or connection to data auxiliary sets 828 or 829 types.

SIZE AND ENVIRONMENT

1.10 Data set 202T-L1 measures 5.55 inches wide, 10.4 inches long, and 0.8 inch high and weighs approximately 1.0 pound. The addition of the reverse channel, JY1, adds approximately 0.65 inch to the height and 0.25 pound to the weight. The 47B1 data mounting measures 5.75 inches wide, 11.0 inches long, and 2.22 inches high and weighs 3.2 pounds (less the KS-21239 wall transformer). The 39A1 data mounting measures approximately 19 inches wide, 11-1/2 inches deep, and 7.0 inches high. It weighs 14.3 pounds without data sets installed. The 40B1 data mounting measures 18.9 inches long, 13.5 inches deep, and 7.0 inches high and weighs 20.35 pounds without data sets installed.

1.11 The data set 202T type operates in an ambient temperature between 40 and 120° F. Relative humidity limits are: 20 to 95 percent at 75° F; 20 to 40 percent at 120° F. Under no condition shall there be condensation. The limits stated apply to the stand-alone sets and for the multiple arrangements using 39A1 and 40B1 data mountings mounted in KS-20018, L11A and L12A cabinets. The KS-20018, L7 cabinet may be substituted for the list 11A cabinet provided it is not required to see the light emitting diode display of the data sets and the ambient temperature does not exceed 100° F. Higher ambient temperatures will necessitate removing the rear cover of the list 7 cabinet. If more than three 39A1 or 40B1 data mountings are to be used in a single enclosure, forced air ventilation should be used.

SUBSTITUTION

1.12 The data set 202T type is line compatible with all private line data sets 202 type: 202D (with or without reverse channel) or 202R (no reverse channel).

2. SUPPLEMETARY INFORMATION

592-000-000—200 Series Data Sets and Associated Services
590-010-201—Data Sets Multiple Installation Information
590-102-130—39-Type Data Mounting Identification
590-102-131—40-Type Data Mounting Identification
590-102-137—47-Type Data Mounting Identification
592-031-100, -200, -300, -500—Data Set 202T
592-861-100, -200, -400 — Data Station Using Data Set 202T
X-18012—Manufacturing Testing Requirements for 202T and 40B1 Data Mountings
KS-16672—Connector
KS-16690—Connector
KS-19087—Connector
KS-19088—Plug
KS-19196—Hood
KS-20018—Cabinet—DL Data Systems 107
KS-21239—Wall Transformer
KS-21253—Adapter
TI No. 384—Remote Testing of Data Set 202T

3. DRAWINGS

SD-1D243-01—Data Set 202T Type, 39A1 Data Mounting, and 40B1 Data Mounting

4. PRODUCTS

Data Set 202T Type

List 1—Assembly, wiring, and common apparatus for one basic plug-in data set assembly per SD-1D243-01, Fig. 1.

List 2—A 47B1 data mounting consisting of a housing assembly for list 1, two cords, and a power transformer per SD-1D243-01, Fig. 3.

List 3—A JY1 circuit pack assembly. It includes assembly, wiring, and common apparatus for the reverse channel function per SD-1D243-01, Fig. 2.

TABLE OF AUTHORIZED ORDERABLE CODE NUMBERS

DATA SET	RATING	REPLACED BY
202T-L1	AT&TCo Std	—
202T-L1/2	AT&TCo Std	—
202T-L1/3	AT&TCo Std	—
202T-L1/2/3	AT&TCo Std	—

Note: Ordering information for the above products should be listed in this form:

Set, Data, 202T-L1

5. GENERAL NOTES

5.01 The 39A1 or 40B1 data mounting may be mounted in a 7-inch high by 19- or 23-inch mounting plate space. The right-hand mounting bracket is reversible to allow for both spacings.

5.02 Machine screws, 12-24, 1/2-inch long are shipped loose with each 39- and 40-type data mounting for mounting them to the uprights in KS-20018 type cabinets. Screws, 12-24, 1-1/4 inches long are also shipped loose with the 39- and 40-type mountings for attaching backboards in the KS-20018 cabinets.

5.03 No. 79 backboards or equivalent may be mounted on the rear of the mounting uprights in the KS-20018 cabinets. These backboards are used to mount a power outlet strip (Waber 602-15, or equivalent) or to dress cables. One No. 79 backboard will fit in the KS-20018, L12A cabinet whereas two will fit in the L11A cabinet.

5.04 When data sets 202T include the reverse channel feature, two data set positions must be occupied in the 39- or 40-type data mountings. This is necessary due to the additional data set height.

5.05 Each fuse on the secondary side of the power supply is common to two data sets in the 39- and 40-type mountings. Both sides of the center-tapped secondary of the supply connected to the pairs of data sets are separately fused and labeled A and B. The A fuses and B fuses are in separate fuse blocks numbered with the corresponding data set position number they connect to in the mountings, for example, fuse 1-2A and fuse 1-2B are connected to AC1 and AC2 of data sets in positions 1 and 2.

5.06 Each data set is assigned a position in the 39- and 40-type mountings. These positions are numbered 1 through 16 beginning at the power supply end of the mounting. On the 40B1 mounting, the line connections for sets in positions 1 through 8 are included in the 50-pin connector (KS-16672) labeled J1; the line connections for sets in positions 9 through 16 are included in the 50-pin connector labled J2. Each customer connector (KS-19087) has a number designation corresponding to its data set position (1 through 16).

5.07 Connections to the data sets in the 39A1 mountings are made by wiring directly to the wire-wrap terminals of the 16 connectors that data sets plug into. Low voltage ac and ground connections to each data set from the power supply are furnished.

5.08 A card puller, 841-571-284, is shipped loose with each 39A1 and 40B1 mounting to aid in removal of the data set assembly 202T-L1.