

48230 LOCAL AREA DATA SET INSTALLATION AND CONNECTIONS

1. GENERAL

- 1.01 This section covers the 48230 Local Area Data Set manufactured by Codex Corporation.
- 1.02 Whenever this section is reissued, the reason(s) for reissue will appear in this paragraph.
- 1.03 Installation and connection procedures for the Local Area Data Set are contained in the attached reprint of the practice prepared by Codex Corporation.
- 1.04 Descriptive information and maintenance and test procedures are covered in Sections 592-035-100 and 592-035-300, respectively.

LOCAL AREA DATA SET
(48230)
INSTALLATION AND CONNECTIONS

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1.0 GENERAL

1.01 This chapter provides the information required to plan and accomplish the mechanical and electrical installation of the Codex 48230 Local Area Data Set.

SITE PREPARATION

1.02 The LADS must be located near the terminal since the interface cord supplied by the customer should not exceed 50 feet in length (to reduce stray capacitance and to conform to Electronic Industries Association (EIA) standards). To minimize inductive interference to data signals on the telephone (data) line, the line should not be carried in the same run as cable between the data set and business machine or lines connected to teletypewriter services. If this condition cannot be met, it will be necessary to run the telephone (data) line in type SK (shielded) station wire between the data set and the cable distribution terminal or building entrance. Ground the shield at one end only, preferably at the distribution terminal end.

1.03 The installation area should be clean and well-lighted, and must be free from extremes of temperature, humidity, appreciable shock, and vibration. Allow at least 36 inches of frontal clearance for operating and maintenance accessibility. Ensure that there is at least 4 inches clearance at the rear of the LADS for signal lines

and interface cables. Figure 1-1 provides the LADS cabinet dimensions and clearance requirements.

INSTALLATION PROCEDURE

CAUTION

LADS cards contain CMOS logic circuits. Follow proper static electricity control procedures to avoid damaging these circuits. These procedures must include the following handling cautions: Do not touch gold contact points; do not place the card on electrically conductive surfaces; handle cards by nonconducting edges only.

1.04 Service personnel should be acquainted with the complete installation procedure before attempting the installation of the LADS.

CHANNEL REQUIREMENTS

1.05 Refer to B.S.P. 314-410-311 and 314-410-312.

TOOLS/EQUIPMENT/MATERIAL REQUIRED

1.06 A standard field service tool kit is all that is required for installation. No special tools, equipment, or material is required.

UNPACKING

1.07 After unpacking the equipment shipping crate, check the contents against the packing list. Inspect the equipment carefully for any damage that may have occurred in shipment. It is suggested that the shipping crate and packing material be retained for use in future repackaging and shipment.

MECHANICAL ASSEMBLY

1.08 The 48230 Local Area Data Set is designed to be placed on a tabletop or bench. This model arrives at the site completely assembled. Provisions are not made for bolting the LADS to the tabletop.

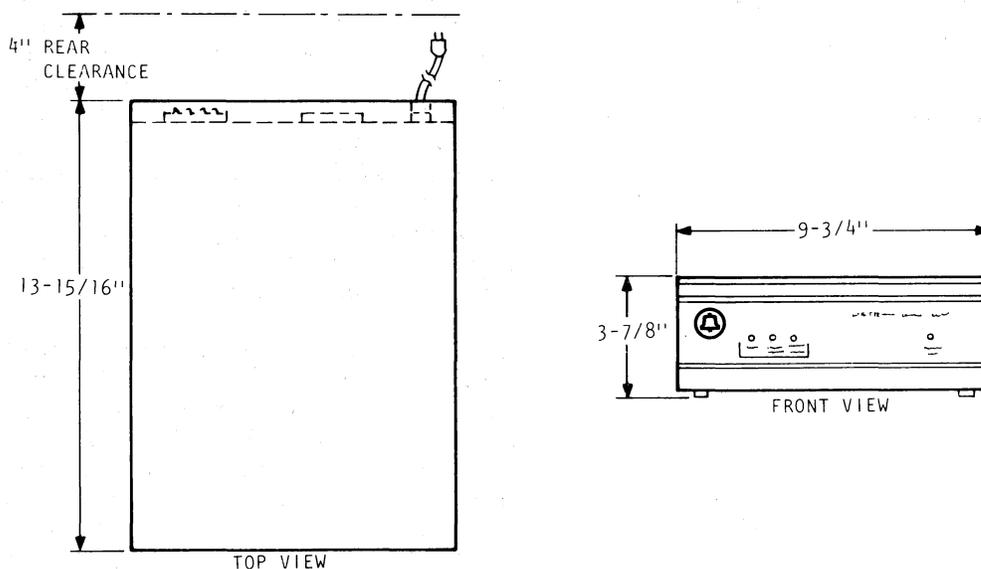


Figure 1-1A. Tabletop Installation Drawing

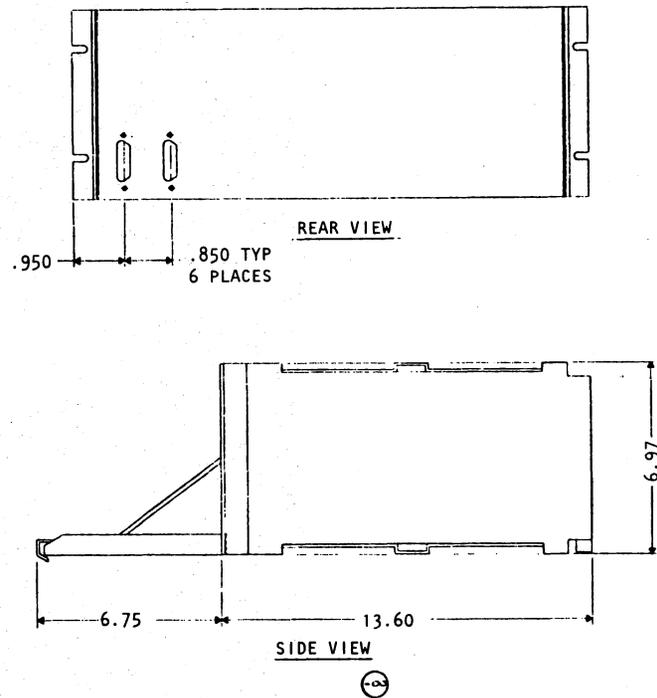
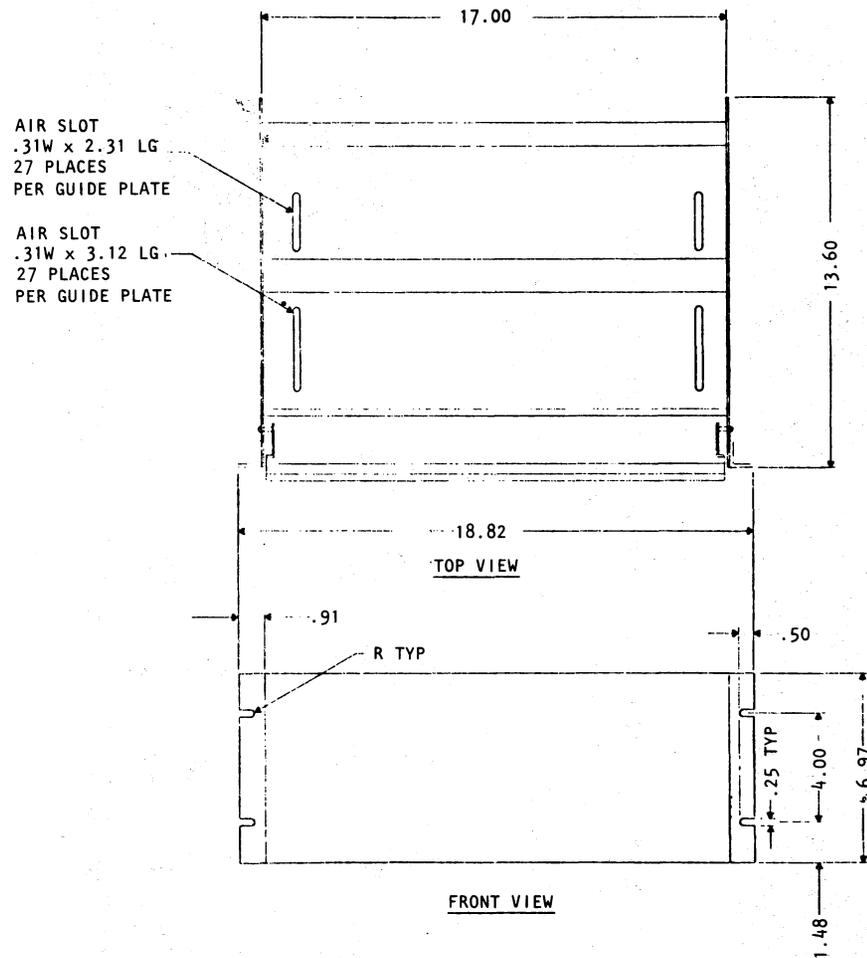


Figure 1-1B. Multiple Nest Dimensions

2.0 CONNECTIONS

A. AC POWER CORD

2.01 Ac power is furnished to the LADS by means of a 5-foot line cord with a grounded 3-wire plug. The ac line is fused at the rear panel of the unit.

B. REAR PANEL

2.02 Electrical connectors are located on the rear panel of the 48230 Local Area Data Set (LADS), as shown in Figure 2-1. These

connectors consist of a 25-pin interface connector (J1) and a 5-screw terminal board (TB1). The female 25-pin interface connector carries input/output data, data rate clocks, and status and control signals between the LADS and data processing equipment. Terminal board TB1 has five screws for connecting the transmit and receive telephone lines, transmit pair to terminals 4 and 5, receive pair to terminals 1 and 2, and ground to terminal 3. Detailed information on the 25-pin interface connector J1 is given in Table 2-1, and illustrated in Figure 2-2.

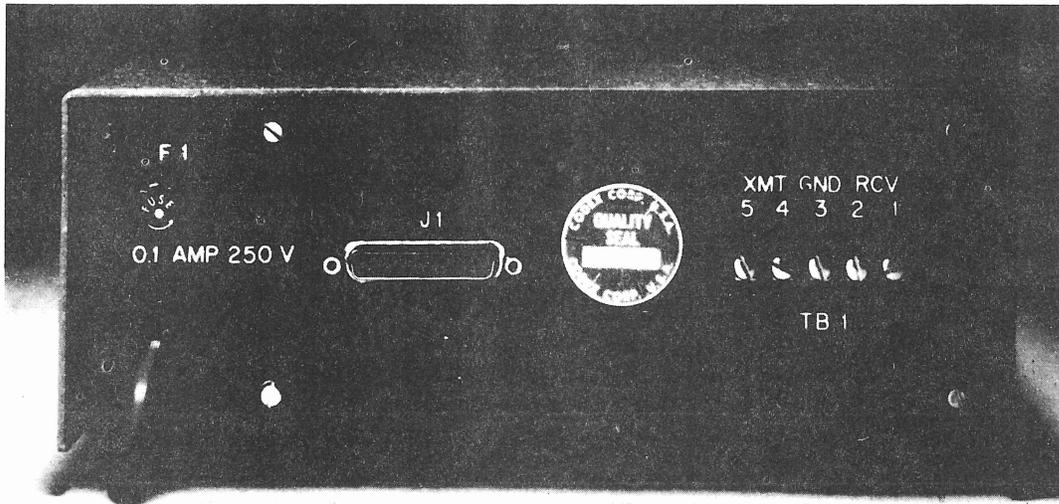


Figure 2-1A. Rear Panel Connections of 48230

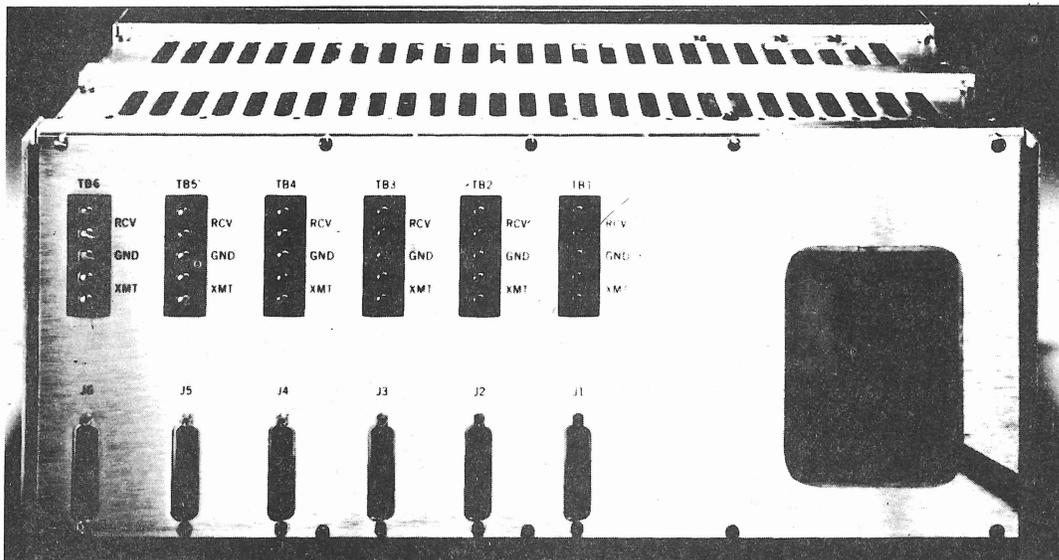


Figure 2-1B. Rear Panel Connections of 48234

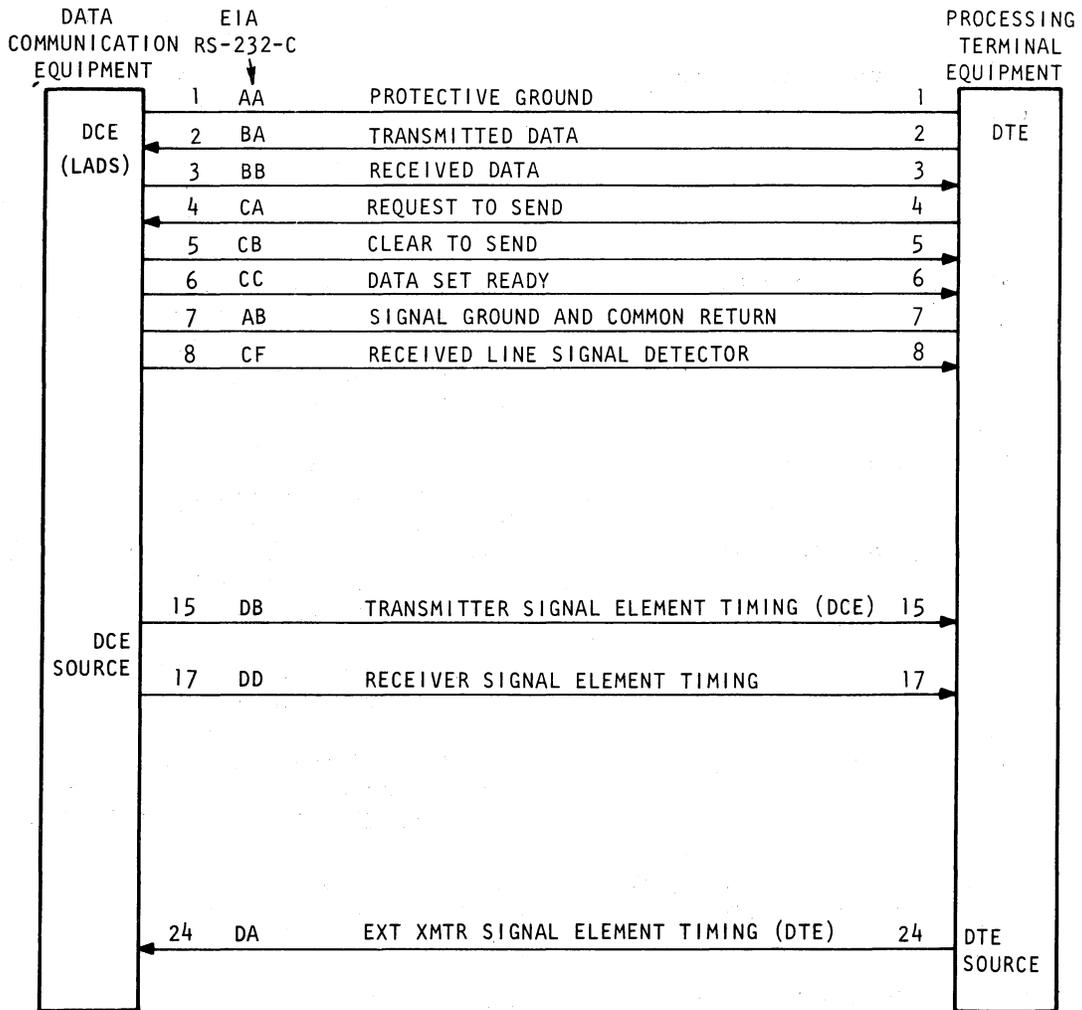


Figure 2-2. Interface Signals

TABLE 2-1. J1 INTERFACE SIGNAL LIST

<u>EIA</u> <u>RS-232-C</u>	<u>J1</u>	<u>Name</u>	<u>Description</u>
AA	1	Protective Ground	Chassis ground. May be isolated from Signal Ground (AB) (strap-selectable on power supply card).
AB	7	Signal Ground	Common signal and dc power supply ground. May be isolated from Protective Ground (AA) (strap-selectable on power supply card).
BA	2	Transmitted Data	Serial digital data from a data terminal or other digital data source. If accompanied by an external data rate clock (DA), data transitions must occur on positive-going transitions of the external transmit input clock.
BB	3	Received Data	Serial digital data at the output of the modern receiver. The data is accompanied by an internal data rate clock (DD) whose positive-going transitions occur on the data transitions.
CA	4	Request to Send	A positive level to the LADS when data transmission is desired.
CB	5	Clear to Send	A positive level from the LADS with a selectable delay, after receipt of Request to Send (CA) and when the LADS is ready to transmit; i.e., not in the Test mode. CB is low when CA is low if LADS is strapped for Carrier Off operation.
CC	6	Data Set Ready	A positive level from the LADS when the power is on and the LADS is not in the DATA CLAMP, DC BUSBACK, or REMOTE LOOPBACK mode.
CF	8	Received Line Signal Detector (Carrier Detect)	A positive level from the LADS except when a loss of the received input signal is detected.
DA	24	External Transmit Serial Clock	A serial data rate clock input from the data source. Positive clock transitions correspond to data transitions.
DB	15	Transmitter Signal Element Timing	A transmit data rate clock output for use by an external data source. Positive clock transitions correspond to data transitions with normal strap setting.
DD	17	Receiver Signal Element Timing	A receive data rate clock output for use by the external data sink. Positive clock transitions correspond to data transitions with normal strap setting.

3.0 OPTION SELECTION

3.01 When the electrical installation has been accomplished and checked, determine the configuration of the LADS in the data system and position the straps as required.

Straps are located on cards A1 and A2, as shown in Figures 3-1 through 3-3. Table 3-1 lists the strap locations, identities, and functions. Figures 3-1 through 3-3 also show test point locations for the cards.

TABLE 3-1. OPTIONS
LOCAL AREA DATA SET, CODEX 48230/48231

Option	Function	Normal Factory Setting	Location
<u>TELEPHONE COMPANY SELECTABLE OPTIONS</u>			
A. RANGE 1. NORMAL 2. SHORT 3. LONG	Selects appropriate range, depending upon line length and data rate. Use SHORT range for distances less than 500 feet. Use LONG range for distances greater than 95% of the maximum range specified. Otherwise, the strap should be in the NORM position.	NORMAL	Card A1
B. OUTPUT LEVEL dBm Bit Rate 1. +3* 2. 0 2400 3. -3* 4. -6 4800 5. -12 7200 6. -16 9600 7. -20 19200	Selects the transmit output level in dBm to the telephone line. The output is calibrated to between +0.5 and -0.1 dBm when driving a 150-ohm load with the XMT IMPD strap in the LOW position.	0	Card A2
C. TRANSMIT IMPEDANCE 1. LOW 2. 150	Transmit line impedance-matching strap. Strap to LOW position for normal operation.	150	Card A2
D. 4- OR 2*-WIRE 1. FOUR 2. TWO*	Selects between 2*- and 4-wire operation. Strap for 4-wire operation.	FOUR	Card A2

TABLE 3-1. OPTIONS
LOCAL AREA DATA SET, CODEX 48230/48231 (Cont)

Option	Function	Normal Factory Setting	Location
E. RECEIVER IMPEDANCE 1. 150 2. HI	Receive line impedance-matching strap. Strap to 150 position for normal operation.	150	Card A2
F. CARRIER DETECT DELAY 1. 40 ms 2. 5 ms 3. 2 baud*	Selects turn-off delay for Received Line Signal Detector. 5 ms or 40 ms (Two Point Application). 2 baud: Multipoint configurations for Master Station only*.	40	Card A1
G. MODE 1. FULL-DUPLEX 2. HALF-DUPLEX*	Selects full-duplex or half-duplex <u>MODE</u> of transmission.	FULL	Card A2
H. CARRIER CONTROL 1. ON 2. OFF*	Selects ON or OFF condition of Carrier Control. ON = Continuous Carrier OFF = Switched Carrier	ON	Card A2
I. RECEIVER HOLD 1. MARK 2. SPACE	Selects a Space or Mark Hold signal to appear on Receive Data Lead when a loss of carrier is present.	MARK	Card A2
J. RECEIVE CLOCK 1. NORMAL 2. INVERTED	Selects a normal or inverted receive clock.	NORMAL	Card A2
K. TRANSMIT CLOCK 1. NORMAL 2. INVERTED	Selects a normal or inverted transmit clock.	NORMAL	Card A2

TABLE 3-1. OPTIONS
LOCAL AREA DATA SET, CODEX 48230/48231 (Cont)

Option	Function	Normal Factory Setting	Location
<u>CUSTOMER SELECTABLE OPTIONS</u>			
A. TRANSMIT TIMING 1. INTERNAL 2. EXTERNAL 3. LOOP	Selects the transmit timing signal from an internal oscillator, an External Transmit Clock, or a receiver derived (loopback) signal.	INT	Card A2
B. BIT RATE 1. 2.4 2. 4.8 3. 7.2 4. 9.6 5. 19.2 6. LF*	Selects the data rate of the transmitter.	4.8	Card A2
C. CLEAR TO SEND DELAY 1. 8 ms 2. 0 ms 3. 16 ms*	Selects 0, 8, or 16 ms delay between receipt of Request to Send and Clear to Send response.	8	Card A2
D. GROUNDING			
*Not offered by Bell.			

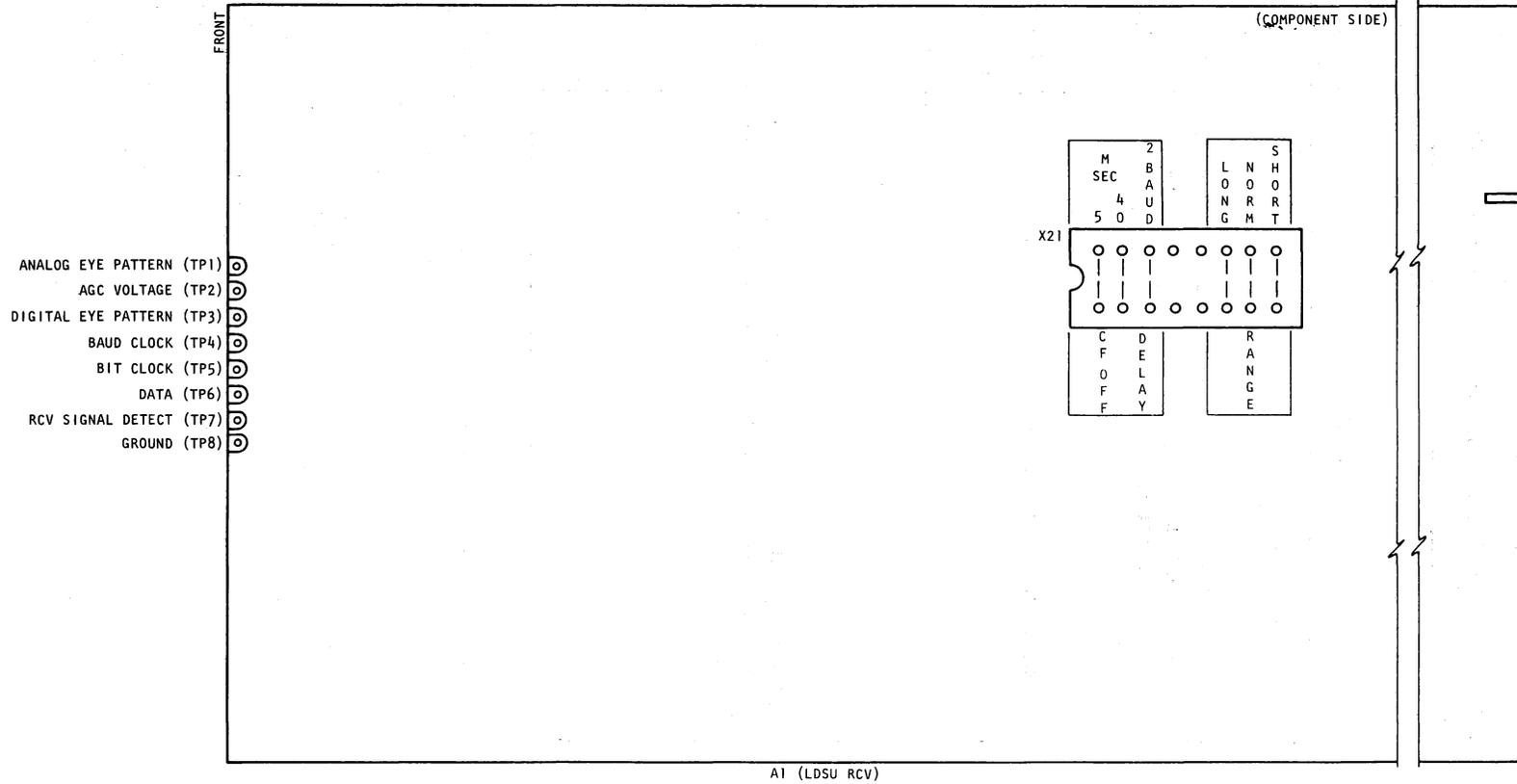


Figure 3-1. Receive Card A1, Strap and Test Point Locations and Identities

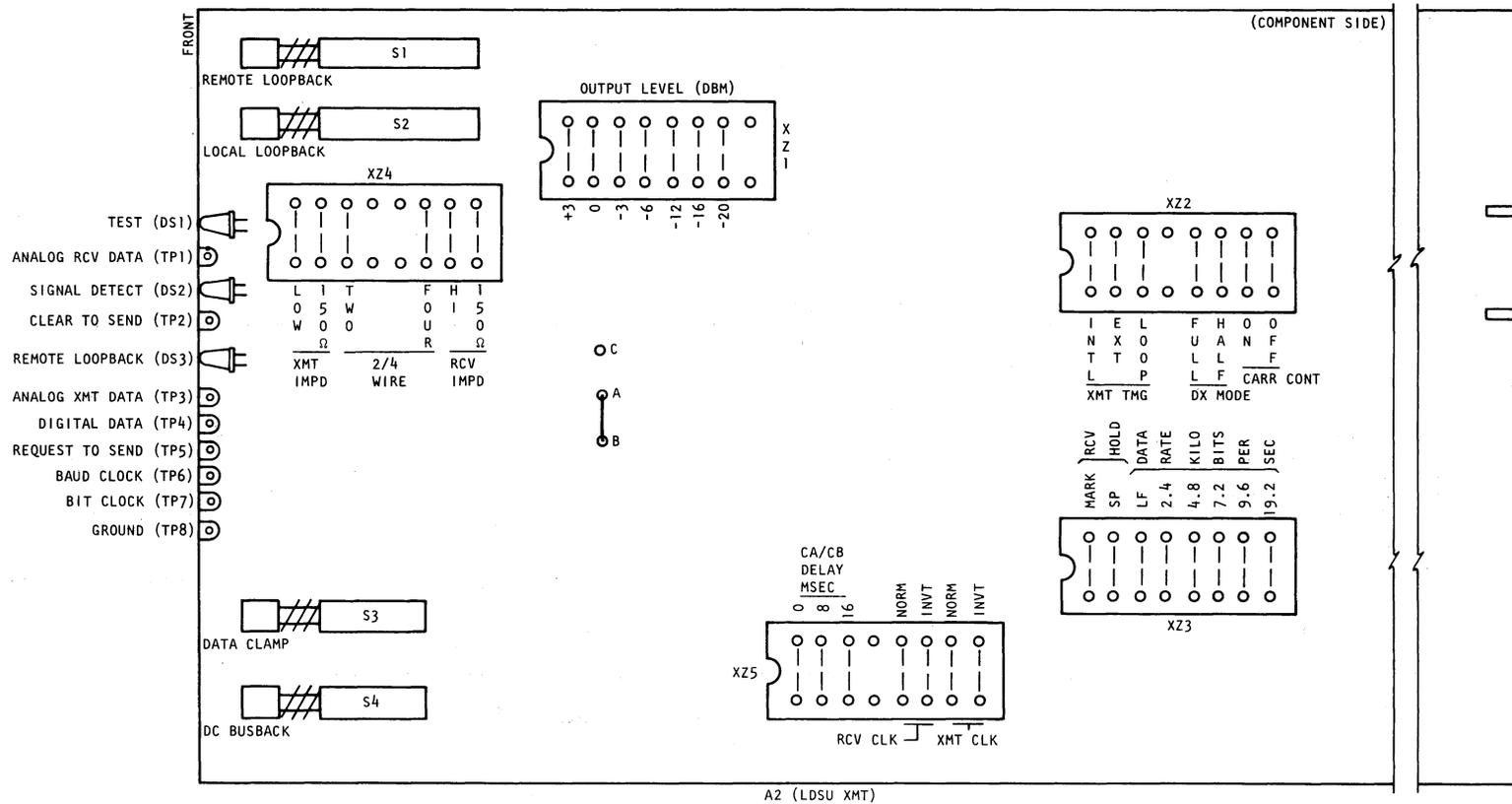


Figure 3-2. Transmit Card A2 (Codex Part Number 34506G1, Rev. A),
Strap and Test Point Locations and Identities

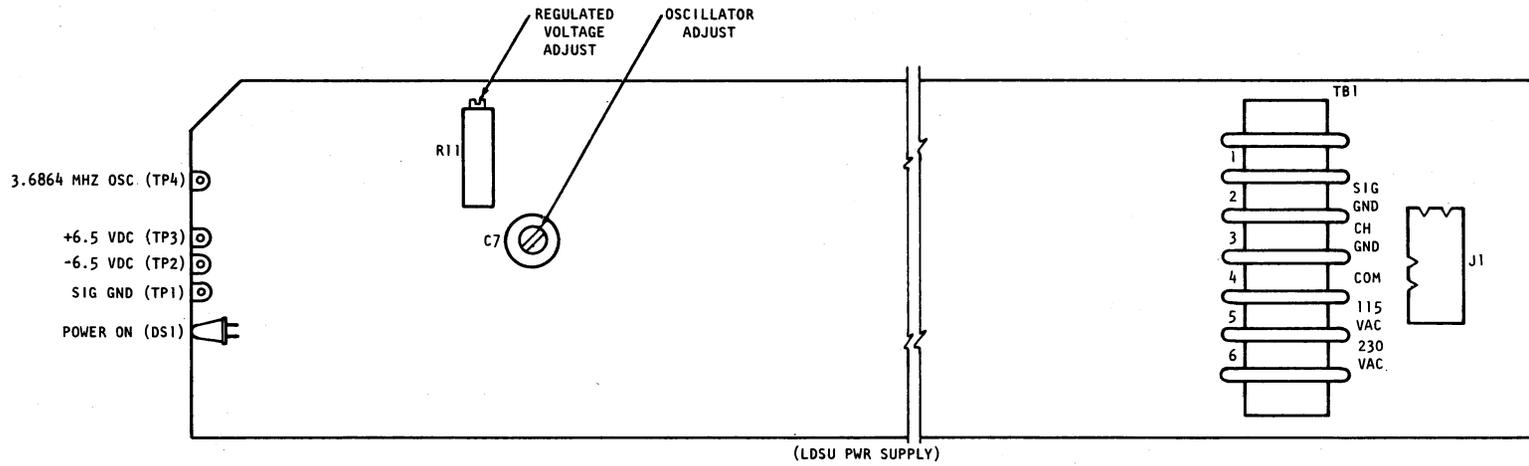


Figure 3-3. Power Supply Card, Test Point, and AC Input Terminal Board Locations and Identities