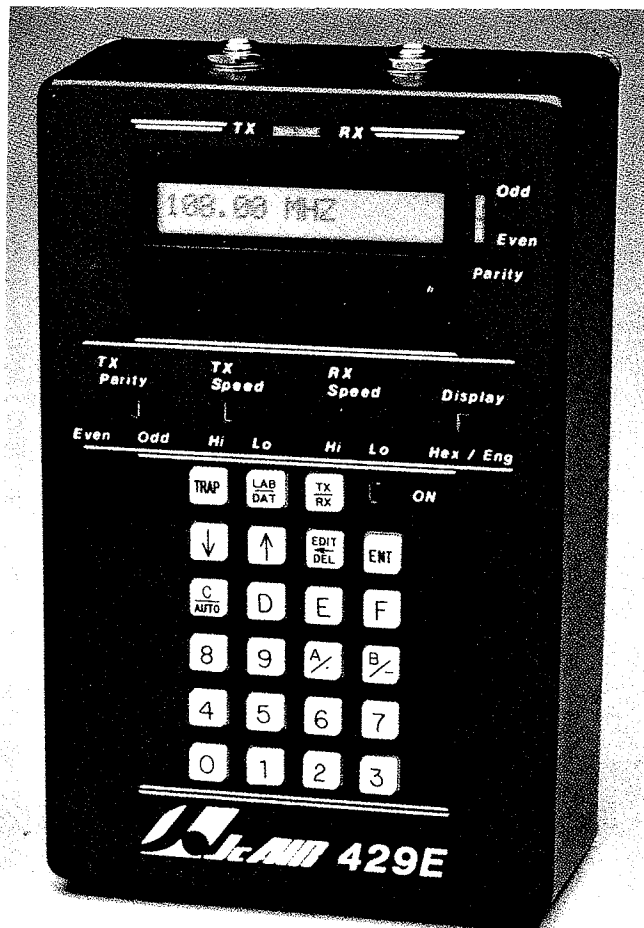# JcAIR 429E

ARINC 429 TRANSMITTER / RECEIVER
and
DATA BUS ANALYZER

- Receives & Stores
  up to 255 Words

- Transmits 10 Labels
  Simultaneously

- Data displayed in
  easy-to-understand
  engineering units

- Provides easy access
  to radio system frequency
  screens (ADF, DME, HF,
  VHF, VOR/ILS and ATC)

HEXADECIMAL OR ENGINEERING FORMAT LCD DATA DISPLAY

The Model 429 Transmitter/Receiver provides avionics technicians and line maintenance personnel with an easy, low-cost method for troubleshooting ARINC 429 avionics systems. The unit features capability for transmitting up to 10 independent ARINC 429 labels plus the ability to receive and store up to 255 labels. Display of transmitted or received data is via liquid crystal display. Selection of data to be transmitted or display of received data is by hexadecimal or engineering format.

The 429E is housed in a rugged, compact case with internal, rechargeable Ni Cad batteries. It comes with either a 115V or 220V plug-in battery charger. An optional carrying case is available for convenience and protection of the unit.

JcAIR 429E Simplifies ARINC 429 Testing

TRANSMITTER/RECEIVER DISPLAYS

`10 TX LABELS`	`035 DME FREQ`	`0368 KHZ`
TRANSMITS 10 WORDS	**TX LABEL SCREEN**	**DATA MODE**
Operator uses scrolling keys to access individual transmitter slots.	After selecting TX slot, operator uses EDIT/ENT key to enter octal number of label to be transmitted.	LAB/DAT key allows operator to view or change data of label that is being transmitted or received.

`SDI = 00`	`SSM = 00`	`RATE = 100 MS`
SDI SCREEN	**SSM SCREEN**	**WORD RATE SCREEN**
Allows operator to view or change SDI.	Allows operator to view or change the SSM and annunciates 4 possible designations of bits 30 & 31, i.e., NORM, FAIL, etc.	Allows operator to view or change word rate.

RECEIVER TRAP/STORAGE DISPLAY

`SDI?`	`TRAPPED WORD 13`
SDI SELECT	**VIEWING TRAPPED LABELS**

Trap Function allows operator to trap and store 255 occurences of a received label. TRAP key allows operator to enter Label/SDI combination to be received. Scrolling keys then allow operator to manually scan stored information (label number or data). Selection of AUTO key allows continual scrolling of stored data.

RADIO SYSTEMS MANAGEMENT DISPLAYS

`ILS MODE`	`X5 MHZ`	`BIT 13 OFF`
ILS	**FREQUENCY**	**BIT POSITION**

Specialized screens provide user interface menus for accessing bits which have Radio System Frequency Selection and function switching applications. Individual functions for ADF, DME, HF, VHF, VOR/ILS, and ATC are controlled through individual menus by entering a "1" or a "0".

1 **Trap Mode key** - allows operator to enter any one of four label/SDI combinations for selection of received labels for display. A 255 word buffer is provided for receiving and storage of data for display. Access to trap mode is through selection of receiver mode via TX/RX key.

2 **Automatic mode key** - allows operator to scroll through labels that have been received by trap mode. Auto mode steps through word buffer and displays number of trapped words as well as the engineering name of label. Scrolling of the various data menus of the received labels is accessed by the LAB/DAT key.

3 **Transmit parity switch** - allows operator to select odd or even transmission parity.

4 **Transmit speed** - selects hi (100 kbps) or low (12.5 kbps) transmission rate.

5 **Transmitter output port** - allows access to transmitter port using standard 3-conductor, 1/4" phone plug.

6 **Receiver input port** - provides input to receiver port using standard 3-conductor, 1/4" phone plug.

7 **Scrolling keys** - allows operator to scroll through display menus (10 transmitter slots, 255 receiver slots, or data menus). Allows selection of the scanning direction in auto mode.

8 **Display indicator** - LED indicates TX or RX information is being displayed.

9 **Parity indicator** - in receive mode, LED indicates parity of word presently displayed. In transmit mode, LED indicates selected Tx parity.

10 **Display selector** - allows operator to select hexadecimal or engineering unit display of data.

11 **Transmitter/receiver display select switch** - selects LCD display or label being transmitted or received. After selection of TX/RX key, initial display indicates number of labels being transmitted or received. Scrolling keys should then be used for manually stepping through transmitter or receiver slots.

12 **Receiver speed select switch** - selects hi (100 kbps) or low (12.5 kbps).
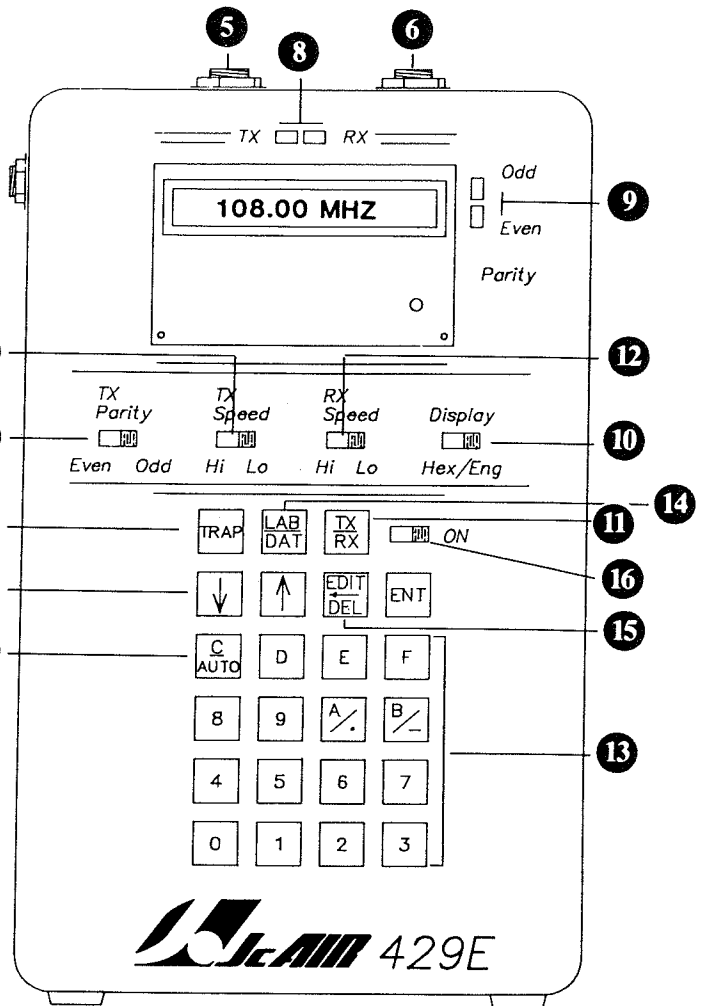
13 **Data entry keys** - allows operator to enter transmitted data in hexadecimal or engineering formats.

14 **Label/Data display key** - Label mode displays octal number and engineering definition of labels being transmitted or received. Data mode allows viewing of data being transmitted or received.

15 **Edit/delete key** - edit key allows operator access to the data entry mode. Delete key allows correction of errors during data entry.

16 **On/Off Switch**

SPECIFICATIONS

Size: 4.5" x 7.25" x 2.5"   **Weight:** 3 lbs.   *Operating Temperature:* -10 to $+60$ C

429 TRANSMITTER:

Bit rate:	12.5 or 100 kbps $\pm$ .5% (selectable)
Rise time:	Low speed - 10 usec. $\pm$ 5 usec.
	High speed - 1.5 usec. $\pm$ .5 usec.
Output Impedance:	75 $\pm$ 5 ohms (Line A to B)
Amplitude Output:	$\pm$ 10 volts ($\pm$ 1.0 volt) between A and B terminals open circuit

429 RECEIVER:

|	
Impedance:	12 K ohms minimum (balanced)
Bit Range:	8 to 20 kbps (low speed)
	80 to 125 kbps (high speed)
Voltage Levels:	HI: $+6.5$ to $+13$ VDC; NULL: $+2.5$ to -2.5 VDC; LO: -6.5 to -13 VDC

Transmitter Operation:

The 429E provides capability for transmitting up to ten 32 bit words in ARINC 429 or 419 bipolar RZ format. The transmit bit rate can be set for high (100 kbps) or low (12.5 kbps) rate with selectable odd or even parity. The unit allows keypad entry of transmit label (octal) with data entry via hexadecimal (bits 32 thru 9) or by engineering equivalent values. Entry by engineering values allows individual entry of primary data (miles, knots, Mhz, etc.), SDI, SSM, word rate and individual bit switching functions. The transmitter operation is completely independent of the receiver, allowing simultaneous operation of both transmitter and receiver.

Receiver Operation:

The 429E is capable of receiving and trapping (storing) up to 255 high or low speed 32 bit words in 429 or 419 bipolar RZ format. Receiver bus speed is switch selectable. LCD display of received labels is provided with selection of hexadecimal or engineering formats. Initial receiver screen displays the number of labels that have been received with ability provided for stepping through each label for data display. Trap mode allows operator to select or trap which labels are to be received (up to four label/SDI combinations can be selected). Access to received or stored data is accomplished by single-step scrolling keys or by automatic scrolling mode.
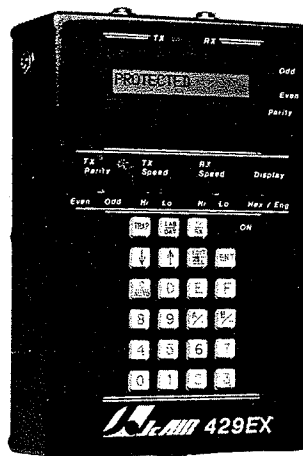
JcAIR ARINC 429 SOURCE

From Single-channel through multiple-channel transmitter/receivers, JcAIR provides total capability for testing ARINC 429 products.
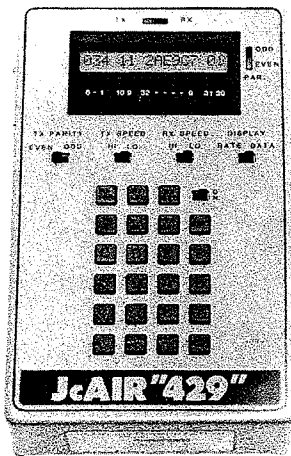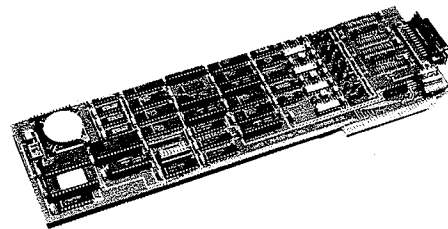
Model 429
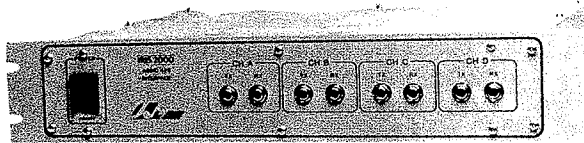Independent TX and RX ports. Battery-operated unit with LCD display of data in Hex format.

Model 429EX
Auto slewing of TX data. Non-volatile memory. Selective filtering of RX data. Displays in Hex, Binary or Engineering format.
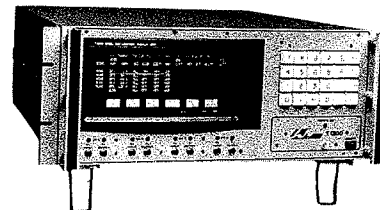
429AT TX/RX Card
IBM AT/XT compatible interface card contains 4 TX and 4 RX ports.

ART-429
IEEE-488 control of 4 TX/4 RX ports. Multiple modes, including non-standard TX data (32 bits) and selective receiving. Microprocessor based.

T1200
View or enter data through touch screen. Up to 4 TX/4 RX ports controllable through IEEE-488 option. Displays in Hex, Binary or Engineering format.

For further information, contact:

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