

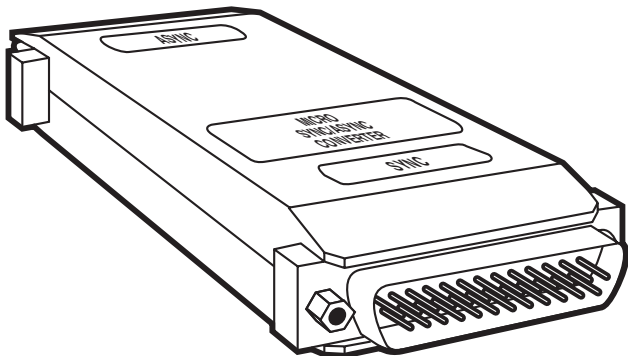


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Micro Sync/Async Interface Converter



CUSTOMER SUPPORT INFORMATION

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1. Specifications

Interface — EIA RS-232/ITU-T (CCITT) V.24, DCE on async side, DTE on sync side

Clock Source — From sync DCE

Data Format — 8, 9, 10, or 11 bits per character, including 1 start bit and 1 stop bit (user-selectable)

Flow Control — Transparent to flow control

Operation — Full- or half-duplex point-to-point

Data Rate — Automatic detection of and adjustment to data rates from 150 to 19,200 bps

Maximum Distance — 6.5 ft. (2 m, length of Converter's cable) only; attach Converter directly to sync or async device, do not use any additional cable

Internal Memory — 4-bit transmit buffer and 14-bit receive buffer

Connectors — Both models: (1) DB25 male on sync side;

IC942A-F: (1) DB25 female on async side;

IC942A-M: (1) DB25 male on async side

Leads Supported — Async: 1 through 8 and 20; Sync: 1 through 8, 15, 17, and 20

Power — No AC power required; unit uses +6 VDC, 20 mA power derived from data and control signals sent from either side of the sync/async setup (Pins 15 and 17 for sync, Pins 2 and 4 for async); at least 1 signal must be at minimum voltage level

MTBF — 560,000 hours

Temperature Tolerance — Operating: 32 to 113°F (0 to 45°C); Storage: -40 to 176°F (-40 to 80°C)

Humidity Tolerance — 0 to 95% noncondensing

Size — 0.9"H x 2.1"W x 4.3"D (2.2 x 5.2 x 11 cm)

Weight — Net: 0.2 lb. (0.1 kg);

Shipping: 0.5 lb. (0.2 kg)

2. Introduction

The Micro Sync/Async Interface Converter enables your asynchronous devices to communicate with each other over a synchronous communications line. The Converter simply aligns the timing of your async signals so that synchronous muxes, modems, or CSU/DSUs can pass them.

This is *not* a protocol converter in the normal sense of the phrase: It *will not* convert between data formats or translate from one to another protocol. It simply adds clocking to your signals.

The IC942A derives its power from signals it receives from your devices. It is completely transparent to those devices; it won't change the data you send in any way. Automatic data-rate detection lets you connect equipment running at any speed from 150 to 19,200 bps without worrying about setting the Converter to your speed.

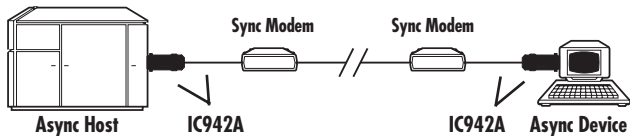


Fig. 2-1. Typical IC942A application.

Note: This converter must be used in pairs. You must install one on each side of your synchronous communications line.

You can set the character (word) length for 8, 9, 10, or 11 bits, including 1 start and 1 stop bit. The Converter operates with or without parity. There is no limit to block size, because the unit is transparent to both data and protocol. A 4-bit buffer on the transmit side and a 14-bit buffer on the receive side help to prevent transmission errors.

The Converter's async/sync conversion also complies with the V.22 bis standard, a CCITT standard for 2400-bps modems over dialup or 2-wire leased lines.

The Converter consists of two RS-232/CCITT V.24 connectors at either end of a 6.5-foot (2-m) cable. The connector on the async side can be either male or female, depending on which version of the Converter you ordered. The connector on the sync side is always male.

3. Installation

Follow the steps in this chapter to install the Converter.

1. Separate the two halves of the *larger* connector's plastic cover by pressing on the indented tabs. Open from the cable end first.
2. Select the character length by setting DIP switch (Switch 1) positions 1 and 2 according to Table A or B on the next page. (Table A will apply to the current version of the converter, shown in Fig. 3-1 below. If you have the earlier version, shown in Fig. 3-2 on the next page, you will have to use the settings in Table B.)

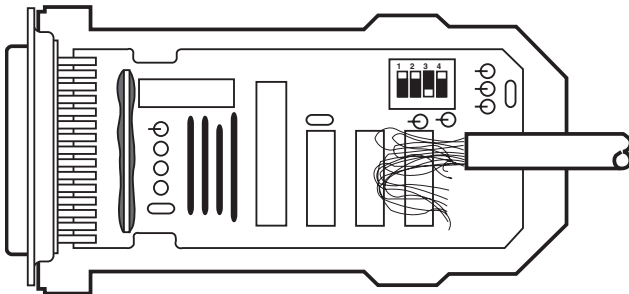


Fig. 3-1. Board layout of current Converter (DIP switch shown).

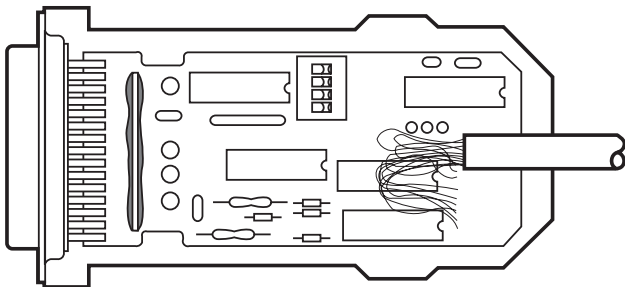


Fig. 3-2. Board layout of earlier Converter (DIP switch shown).

- Set DIP switch position 3 (see Fig. 3-1) to select the percentage for shortening the stop bit (see Table C on the next page). For an explanation of stop-bit shortening, see **Chapter 4**.

Table A. Current Settings			Table B. Earlier Settings		
DIP Switch		Character Length (Bits)	DIP Switch		Character Length (Bits)
1	2		1	2	
OFF	OFF	8	OFF	ON	8
OFF	ON	9	ON	ON	9
ON	OFF	10	OFF	OFF	10
ON	ON	11	ON	OFF	11

Table C. Stop-Bit Reduction

DIP Switch	Stop Bit Reduced
3	
OFF	12.5%
ON	25%

Note: DIP switch position 4 is not used. The default settings for positions 1, 2, and 3 are character length of 10, stop bit reduced by 12.5%.

4. Close the unit by snapping the halves of the connector back together again.
5. Make sure you have turned off the two devices you plan to connect with the Converter. Connect the larger connector to the synchronous device and the smaller connector to the asynchronous device. Finally, power up both devices. The Converter requires no further setup.

4. Operation

When the frequency of the transmitted async data is faster than that of the sync data, the Converter may delete as many as one in every four stop bits. (Likewise, the Converter will add extra stop bits if the sync frequency is slower.)

The Converter recognizes start and stop bits, and checks for missing bits. If it detects any missing bits, the Converter compensates for the disparity in speeds by shortening the stop bits by a user-selectable percentage (either 12.5 or 25%).

The Converter is transparent to break signals of any length. In terms of flow-control signals, RTS goes high directly from async to sync. When RTS drops on the async side, after eight more bits it will drop on the sync side.

The Converter operates without AC power, deriving ultra-low power from the standard EIA RS-232/CCITT V.24 data and control signals.