Rockwell

R6500 Microcomputer System
APPLICATION NOTE

RS-232C INTERFACE FOR AIM 65

PURPOSE

The display and printer on the AIM 65 are both twenty characters wide, which is sufficient for standard AIM 65 functions. However, there are occasions when a longer line length and greater number of lines is desired. Either of the two low-cost methods described herein will allow the AIM 65 to communicate to CRT or printer terminals having a standard RS-232C serial channel.

This application note can be applied only to AIM 65's that have a 3.3K resistor at location R24 (behind the printer). Earlier AIM 65 units have a 1K resistor at this location; if your microcomputer is one of these earlier versions, contact Rockwell Applications Engineering at the Anaheim address given on the back of this document.

DESCRIPTION

The TTY current loop circuitry on the AIM 65 may be converted to RS-232C by using one of the two circuits shown below. Figure 1 illustrates the use of a 1488 device and an inverter. Figure 2 illustrates the use of a 4N33 optical device. Both circuits provide the necessary output signal; however, the 4N33 design has some cost advantages over the 1488 device and inverter.

With both methods the voltage levels (+12 and −12 volts) of the serial input to the AIM 65 are converted to TTL logic levels by the AIM 65 circuit connected to Pin Y of the Application Connector. If your terminal has internal pull-up circuitry for the "Clear to Send", "Data Set Ready" and "Received Line Signal Detector" lines, the circuitry between the AIM 65 Application Connector Pin A and these lines may be omitted.

BAUD RATE CONSIDERATIONS

The software of the AIM 65 Monitor will determine the baud rate from the first start bit after reset, providing the terminal used generates a Rubout (ASCII $7F), and the baud rate is 2400 or less. If these conditions are met, switch the KB/TTY switch on the AIM 65 (S3) to the TTY position. After pushing the Reset button on the AIM 65, type a Rubout on the terminal.

If the terminal being used does not provide a Rubout character, or if a rate greater than 2400 baud is desired, then the correct baud rate value must be entered into AIM 65 RAM locations $A417 and $A418. (See Table 1. Also refer to the AIM 65 User's Guide, section 9.2.3). After these locations are set to the proper values, switch the KB/TTY switch on the AIM 65 to the TTY position and type a space on the AIM 65 keyboard. The terminal will now be in control. To return control to the AIM 65 keyboard, switch the KB/TTY switch to KB and type a space on the terminal keyboard.

Table 1. MANUAL BAUD RATE ENTRIES

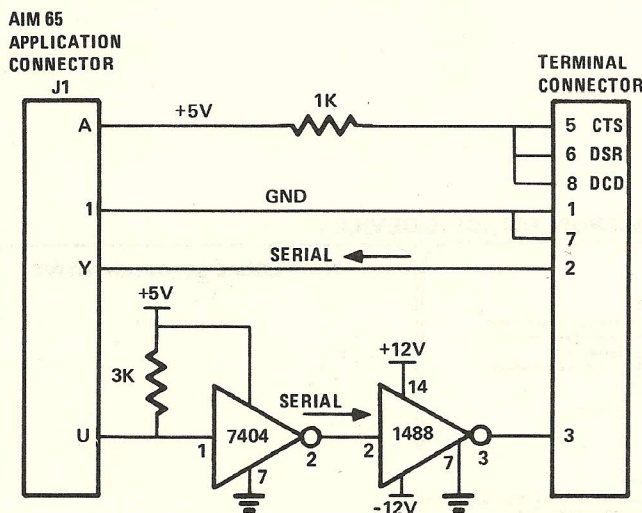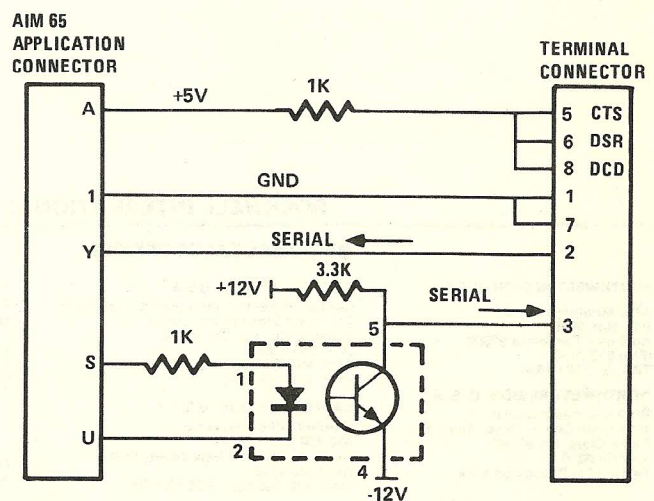| Baud Rate	$A417	$A418
110	23	3F
150	19	B7
300	0C	C2
600	06	3F
1200	02	FD
2400	01	5D
4800	00	8D
9600	00	25

Figure 1. RS-232C INTERFACE USING 1488 DEVICE

Figure 2. RS-232C INTERFACE USING AN OPTICAL DEVICE (4N33)

Specifications subject to change without notice

RS-232C INTERFACE FOR AIM 65