

**RollSCAN-1 Application Note AN-002**

**Parallel Port Interface Cables**  
**for the RollSCAN-1**

*for "Rollscanners" discussion group*  
July 7, 2001

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Date: July 7, 2001  
Current Revision: A (preliminary)  
Revision Date: July 7, 2001

## ***Introduction***

The RollSCAN-1 scanner controller is designed to interface to either a personal computer parallel port or to a microcontroller. For connection to a parallel port, an interface cable is required. This application note describes how to make two different types of interface cable. The first is a "quick and dirty" ribbon cable with crimped on connectors. The second uses a ribbon cable and a small printed circuit board. The printed circuit board has ESD protection for each of the signals.

The simpler, ribbon-cable-only connector should only be used in a "benign" environment, where the equipment will not be repeatedly connected and disconnected. Otherwise, the cable with the ESD protection should be used.

## ***Simple Ribbon Cable Interface***

Figure 1 is a schematic diagram of a simple ribbon cable interface that you can make from parts available from Digi-Key Corporation, and other sources. Digi-Key numbers for these parts are:

<b><u>Description</u></b>	<b><u>Digi-Key P/N</u></b>
6 foot cable with DB25 Male connector	A7MXG-2506G-ND
2 row x 26 position socket connector (0.1")	ASC26G-ND

Note: if you want a DB25 Female connector instead of a DB25 male connector, substitute P/N A7FXG-2506G-ND.

To make the cable, simply crimp the socket connector onto the open end of the cable assembly. (This is best done in an arbor press so that the crimping forces are distributed evenly.) Make sure that pin 1 of the socket connector aligns with pin 1 of the cable. One of the outside conductors is identifiable as pin 1 by a color stripe (usually red).

Figure 2 is a photograph of the 6 foot cable assembly. Note the red color stripe on the conductor identifiable as "pin 1".

Figure 3 is a photograph of the 2 row x 26 position crimp-on socket. The top part of the connector comes off to expose the insulation-displacement conductors that push through the insulation to make contact with the conductors in the cable. A little triangle-shaped marker identifies pin 1 of the connector. Be sure that the color stripe of the ribbon cable is on the pin 1 side of the connector.

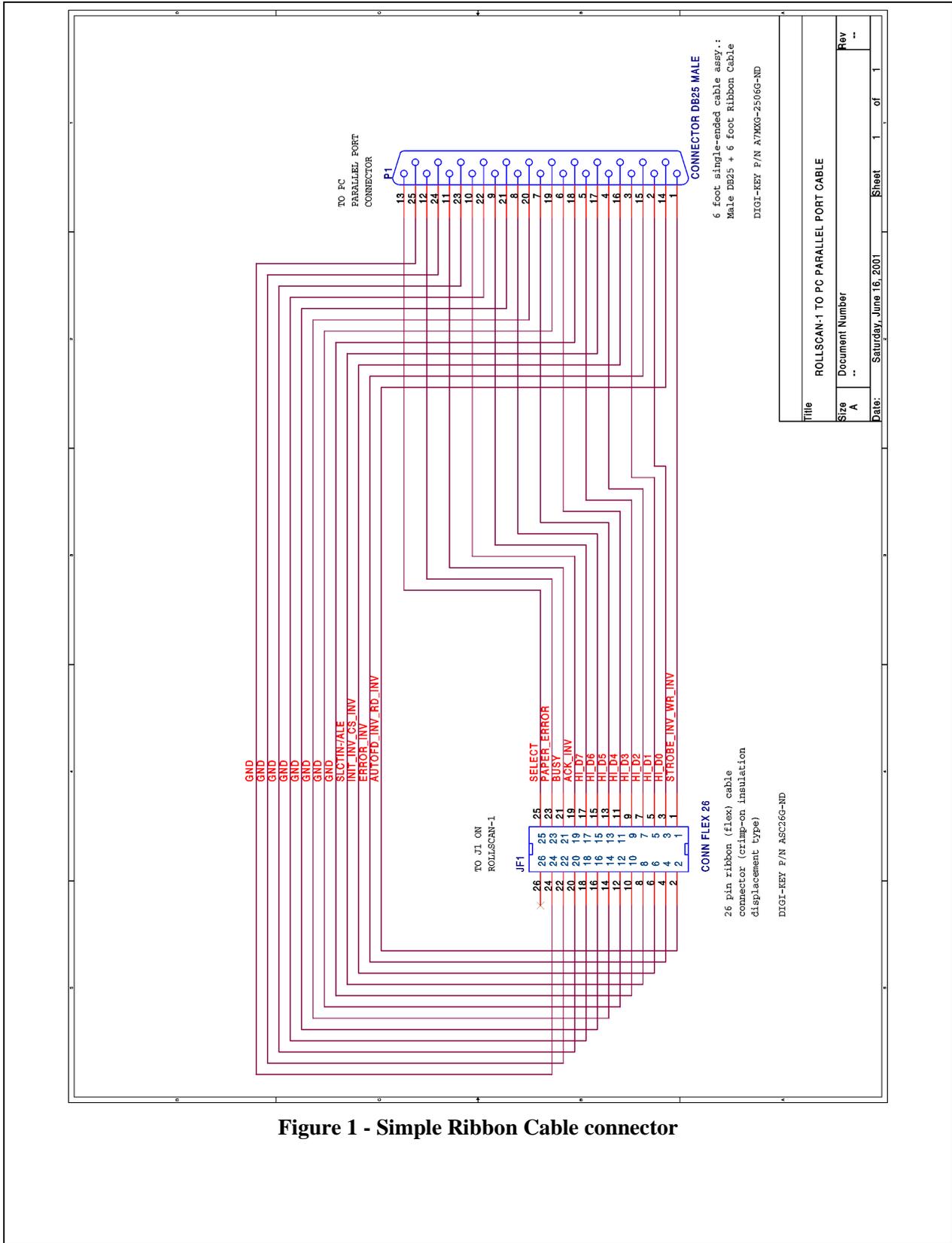


Figure 1 - Simple Ribbon Cable connector

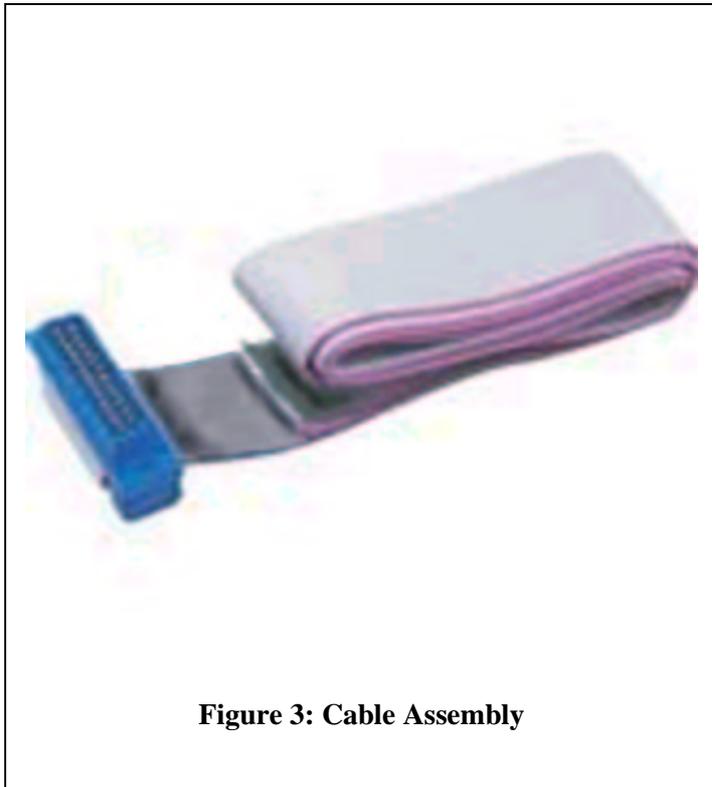


Figure 3: Cable Assembly



Figure 2: Socket Connector

**ESD Protected Ribbon Cable Interface**

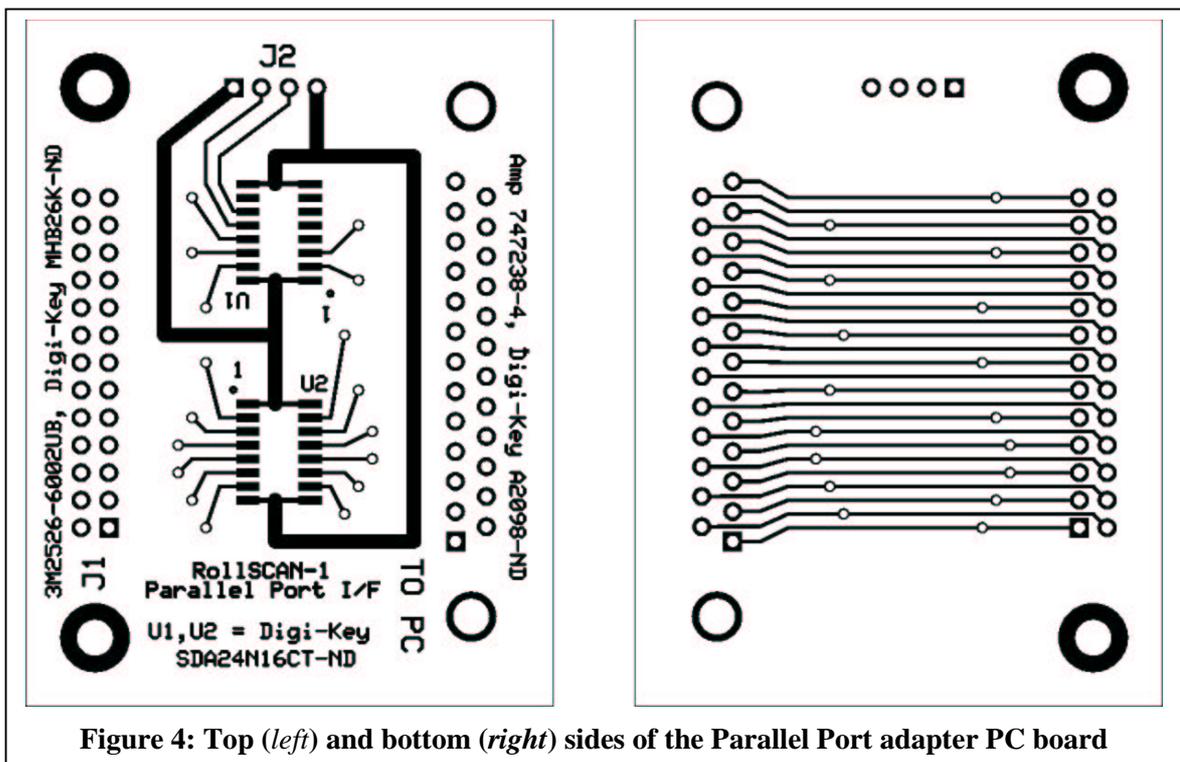
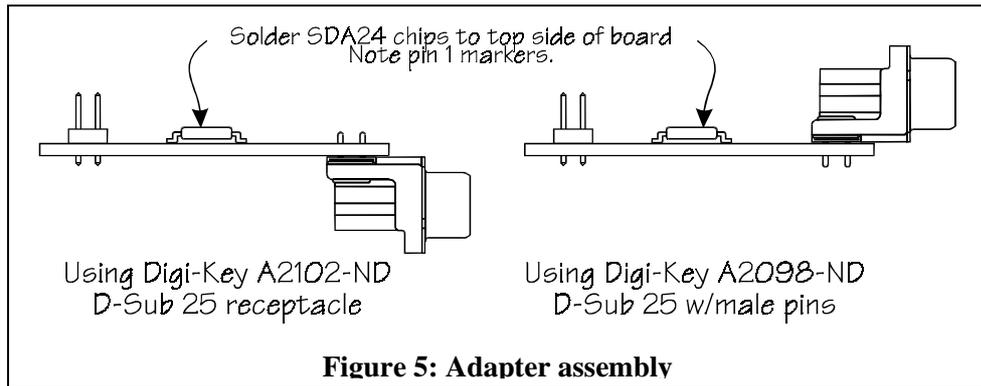
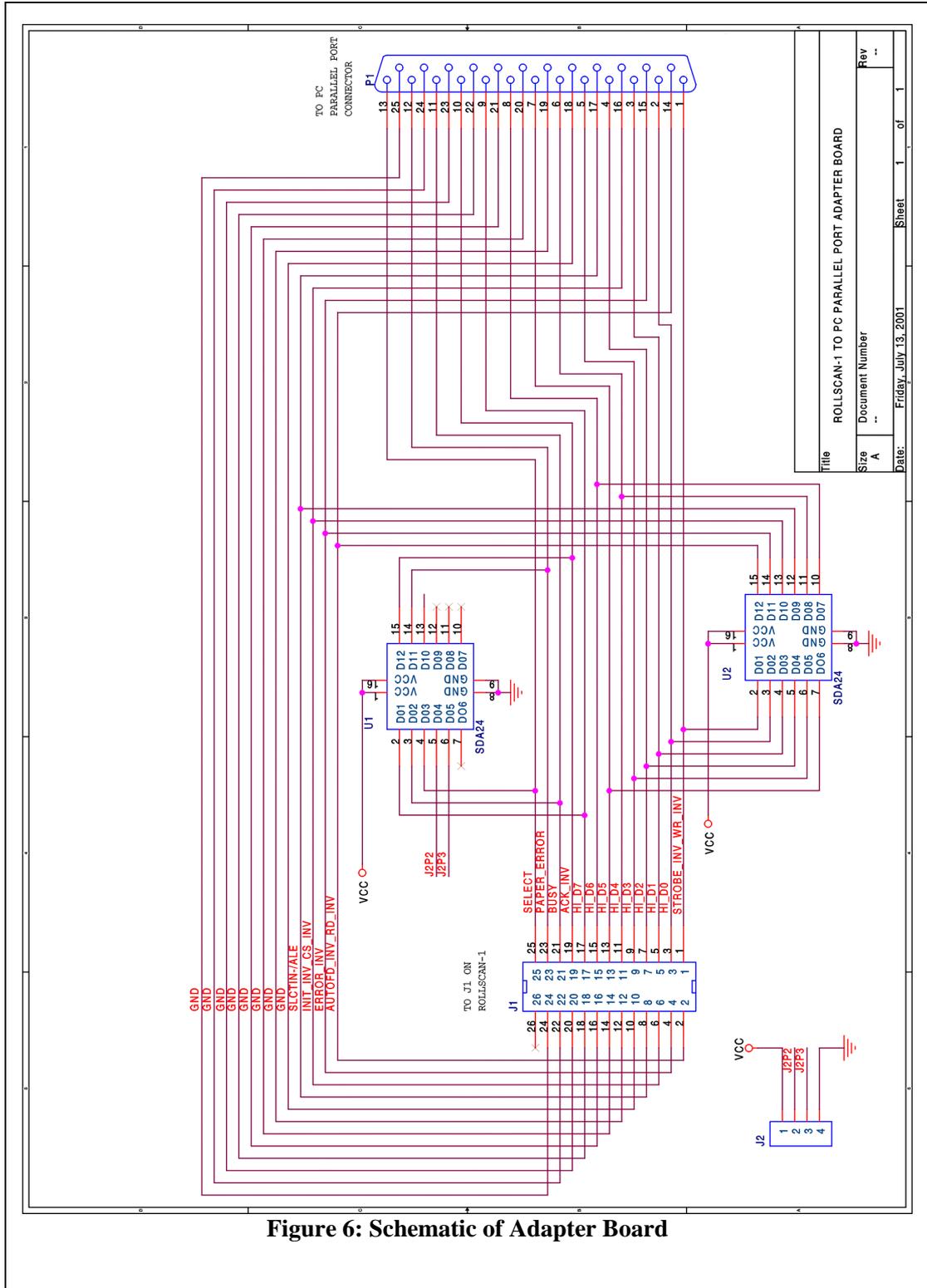


Figure 4: Top (left) and bottom (right) sides of the Parallel Port adapter PC board

Figure 4 is a drawing of the top and bottom of the blank PC board for the ESD Protected Parallel Port Interface. Note that the appropriate Digi-Key part numbers are right on the circuit board itself. The board gets assembled as shown in Figure 5. Once assembled, the board is connected to the RollSCAN-1 using a ribbon cable similar to Digi-Key Part # A3AAG-2606M-ND. The adapter can be either plugged directly into a PC parallel port, or connected via a 25-pin "straight through" serial/parallel cable.





**Figure 6: Schematic of Adapter Board**

Figure 6 is a schematic of the board.