

| SERVICE INFORMATION LETTER

Developed by Lee Craner WB6SSW (leecraner@aol.com)

KWM-380 TRANSCEIVER (622-5093-001, -101)
HF-380 TRANSCEIVER (622-3580-001, -101)

FABRICATE KEYPAD CONTROL INTERFACE

This service information letter describes the fabrication of an interface for connecting a frequency control keypad such as the AC-3805 and AC-3805A Collins keypads or similar Pipo Communications manufactured keypad to the transceiver.

Rockwell-Collins originally provided the AC-3803 Control Interface as an option for connecting a keypad to the transceiver. Later Kiron Corporation marketed the KPI-380 keypad interface kit to accomplish the same purpose. Neither of these items is currently marketed.

Note that the original AC-3803 Control Interface also provided the necessary control lines to interface the CU-380 Antenna Coupler to the transceiver as well. The interface described in this Service Information Letter does not replicate these control lines; it only provides the lines necessary for the frequency control keypad. No permanent changes are made to the transceiver.

Estimated time required is three man-hours.

The parts to fabricate the control interface are itemized in the material information paragraph.

No special tools or equipment are required.

FABRICATION PROCEDURES

- A. Refer to the schematic in Figure 7 when preparing the interface circuit board in the following steps.
 1. Prepare a perforated circuit board, 0.1" spacing, 10 holes by 25 holes (approximately 1 x 2 1/2" or 2.5 x 6.4 cm).
 2. Prepare the eight 10k resistors by cutting the leads 3/16" (0.45 cm) from one end of the each resistor body.

3. Solder the cut ends of each of the eight resistors to pins one through eight of the DB25 connector. Refer to Figure 1.
 4. Cut 5/8" (1.6 cm) of the lead off of each of the eight resistors.
 5. Solder the sixteen cut off leads to pins nine through twenty-four of the DB25 connector. Only one of these leads, number nine, will carry current. The remaining fifteen simply will help secure the connector to the perforated board.
 6. Solder the twenty-four leads from the DB25 connector to the center two rows of the perforated board. Refer to Figure 2.
 7. Solder one lead of the 18 uH choke to the lead previously soldered to pin nine of the DB25 connector.
 8. Solder a 0.01 uF capacitor to each of the eight 10K resistors where they are soldered to the perforated board.
 9. Solder the remaining 0.01 uF capacitor to the 18 uH choke end connection previously soldered to pin nine of the DB25 connector.
 10. Solder the free ends of the nine 0.01 uF capacitor together and to a three inch (7.6 cm) length of hook up wire.
 11. Take the 16 inch (41 cm) length of nine conductor ribbon cable and solder leads one through eight, in turn, to the eight 10K resistors soldered to pins 1 through 8 of the DB25 connector (i.e. so that lead one is connected to pin one through the 10K resistor, etc.).
 12. Solder the remaining lead of the nine conductor ribbon cable to the free end of the 18 uH choke. The completed board is illustrated in Figures 3 and 4.
- B. Install the completed circuit board as follows:
1. Turn off all power to the transceiver.
 2. Remove the dust cover by removing the four screws located adjacent to the four feet on the bottom of the transceiver.
 3. Place the transceiver on its side.
 4. On the rear apron of the transceiver, remove and discard the cover plate, exposing the hole for the DB25 connector.
 5. Install the connector on the rear of the transceiver. Refer to figure 5.
 6. Route the free end of the nine conductor ribbon cable between the heat sink assembly and the chassis, through to the top of the transceiver (If the 20 pin IDC connector has already been connected to the ribbon cable, loosen the heat sink screws to provide clearance for the connector).
 7. Solder the free end of the three inch hookup wire connected to the 0.01 uF capacitors to the ground lug of the AUD OUT jack.
 8. Connect the 20 pin IDC connector to the ribbon cable so that the lead connected to pin one of the DB25 connector (through a 10K resistor) is connected to pin one of the IDC connector.
 9. Place the transceiver flat on the bench, top side up..
 10. Remove the transceiver's card cage cover.
 11. Locate the control card and raise it until J4, on the right side of the card (when viewed from the front) is accessible. Figure 6, a picture of the to right corner of the control card, illustrates the location of J4. Note that it may be necessary to

- temporarily remove several ribbon cables in order to raise the control card sufficiently to gain access to J4.
12. Route the nine connector ribbon cable from the DB25 connector between the card cage and the power supply components and through the slot in the card cage next to the right edge of the control card (as viewed from the front).
 13. Plug the IDC connector into J4 of the control card so that the number one lead of the ribbon cable is up. Refer to figure 6.
 14. Lower the control card back into the card cage.
 15. Reconnect any ribbon or other cable that was disconnected in Step 8, above.
 16. Connect the keypad to the DB25 connector.
 17. Plug transceiver in, turn on, and confirm that all 16 keys of the key pad function correctly.
 18. Reinstall the card cage cover.
 19. Reinstall the dust cover and secure it with the four screws.

MATERIAL INFORMATION

The parts listed below are required to modify one KWM-380 or one HF-380.

<u>QTY</u>	<u>DESCRIPTION</u>
1	Connector, DB-25F w/solder connectors and mounting hardware
8	10K 1/4 W resistors
9	0.01 uF 50v capacitors
1	18 uH choke (an 18uH choke can be made by removing all but 21 turns from a Radio Shack 273-102 100 uH choke)
1	2x10 pin IDC ribbon cable connector
16 inches (41 cm)	Cable, 26 ga 9 conductor ribbon
1	Perforated circuit card 1 x 2 1/2" (2.5 x 6.4 cm)

NOTE: I would like to keep track of those who have constructed the interface as described above. So, if you build this interface, please let me know by sending an email to me at lee Craner@aol.com.

73

Lee Craner WB6SSW

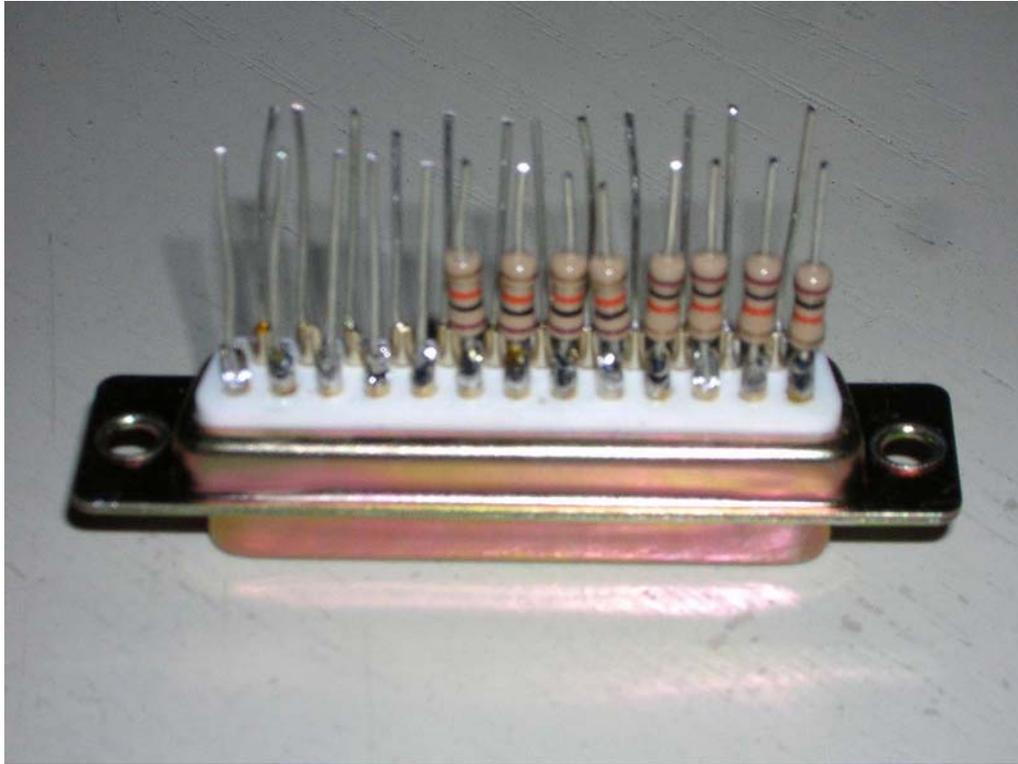


Figure 1. Resistor mounting.

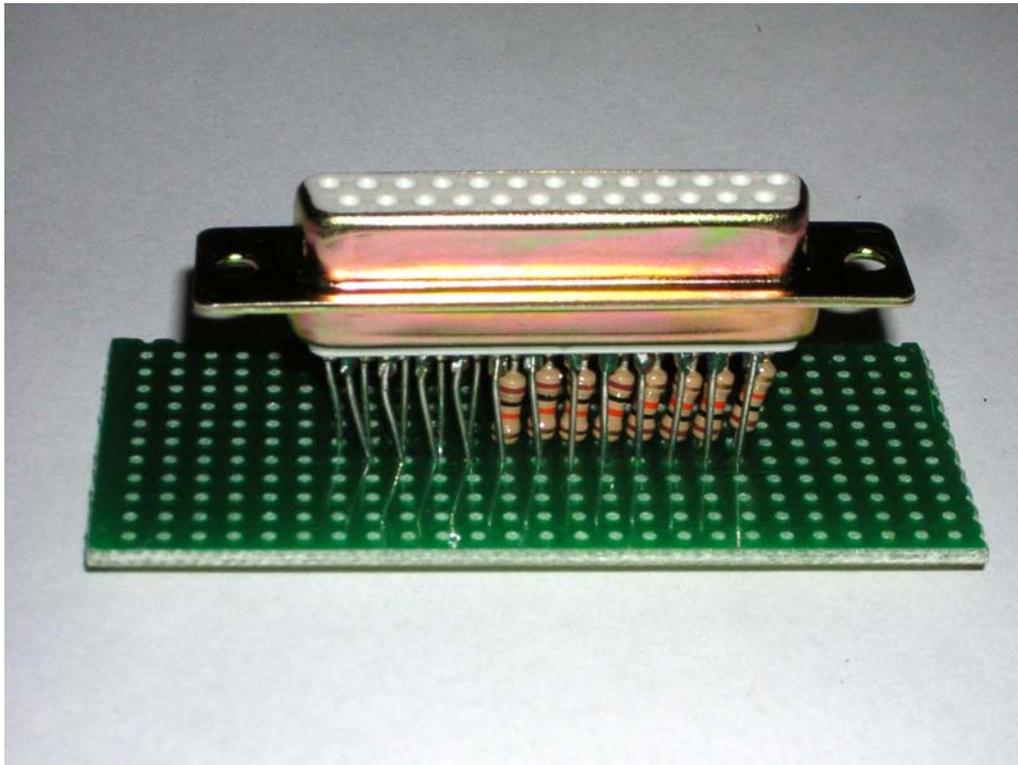


Figure 2. Mounting DB25 to the board.

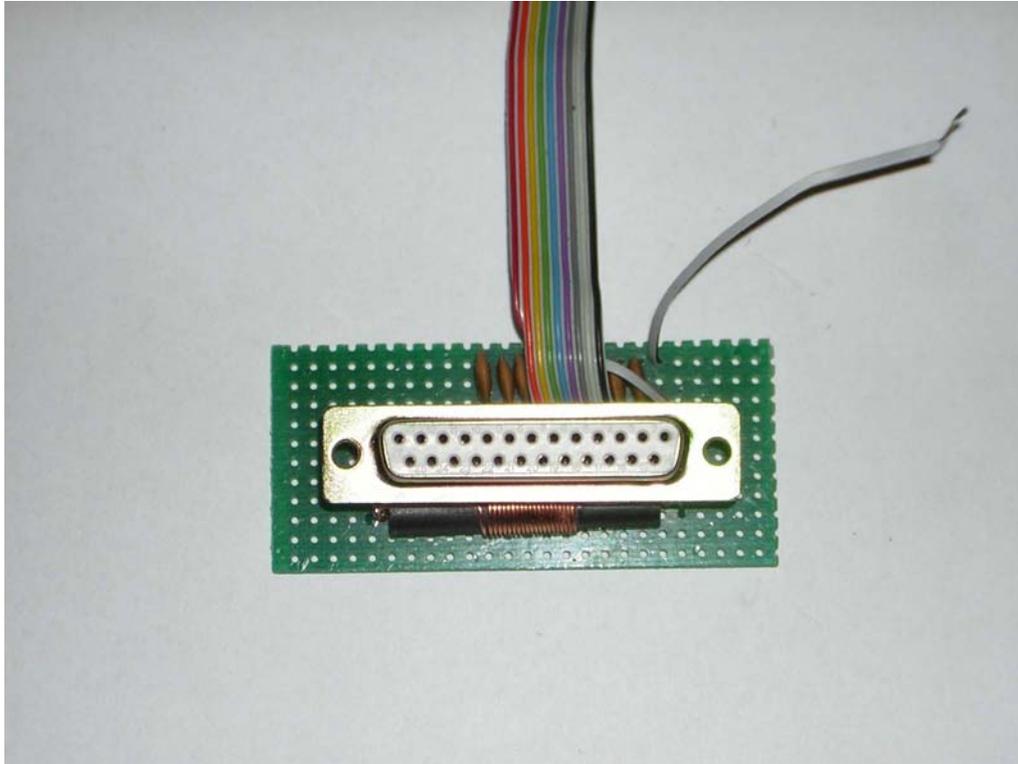


Figure 3. Finished board, top.

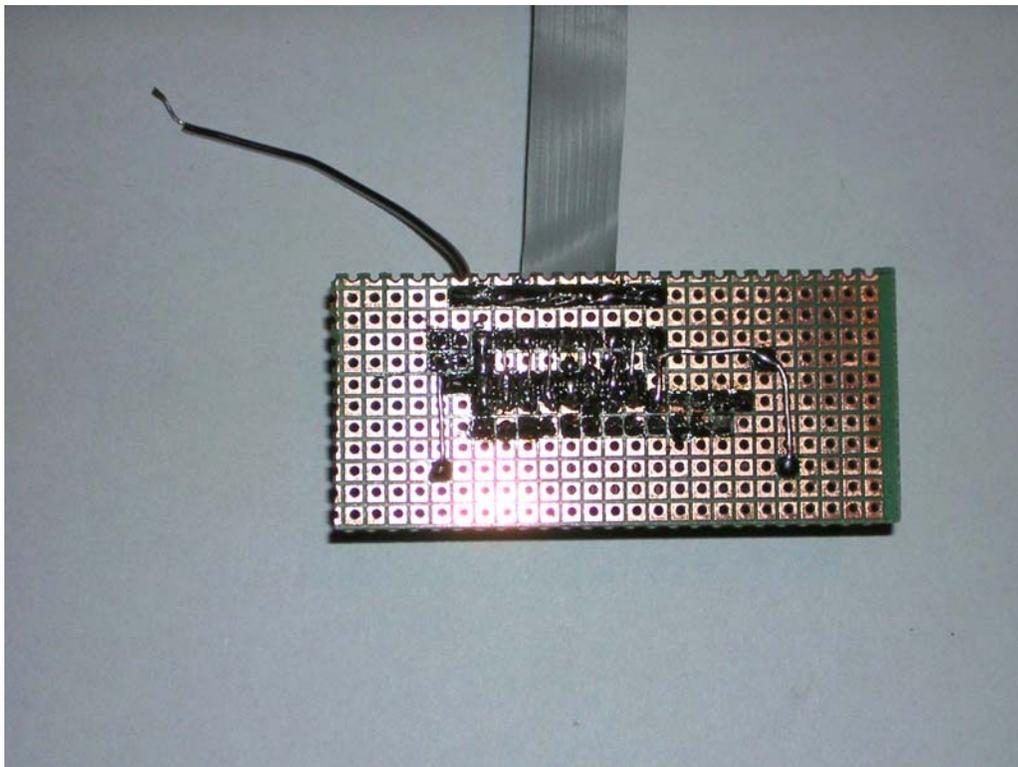


Figure 4. Finished board bottom.

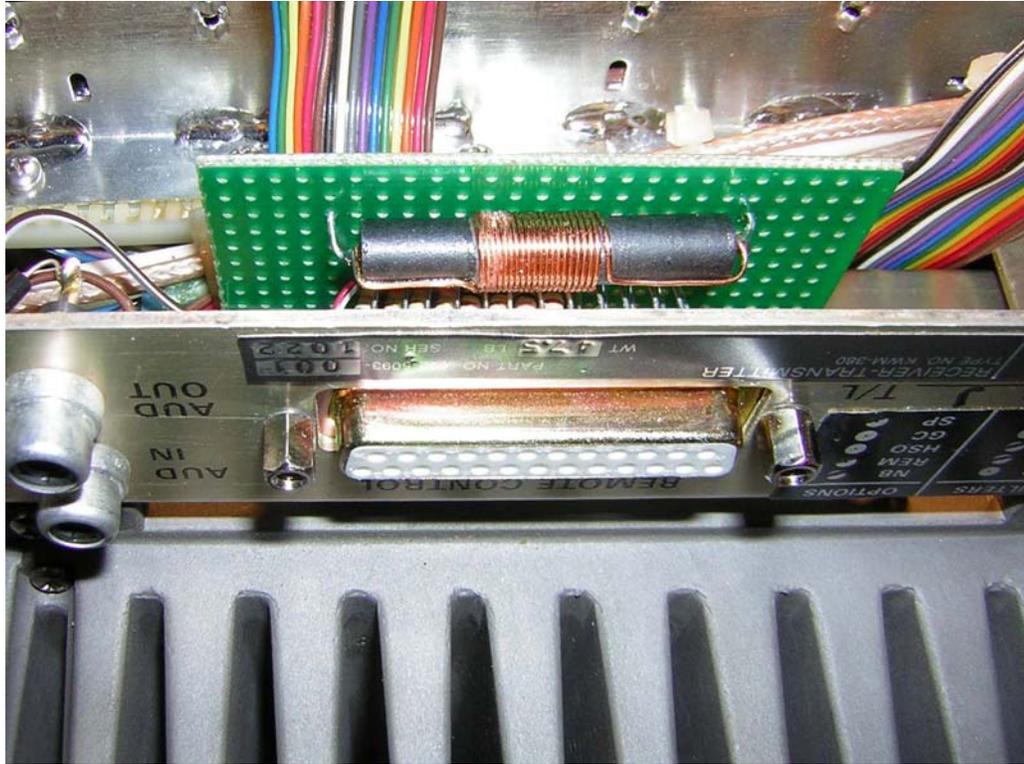


Figure 5. Mounted board.

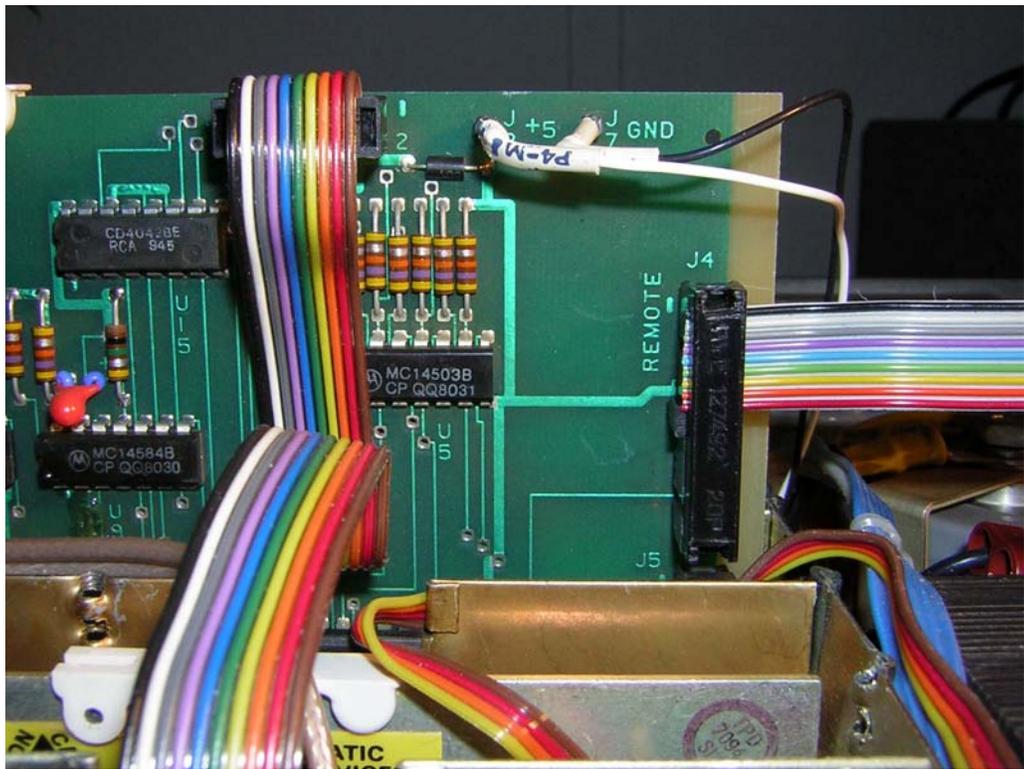
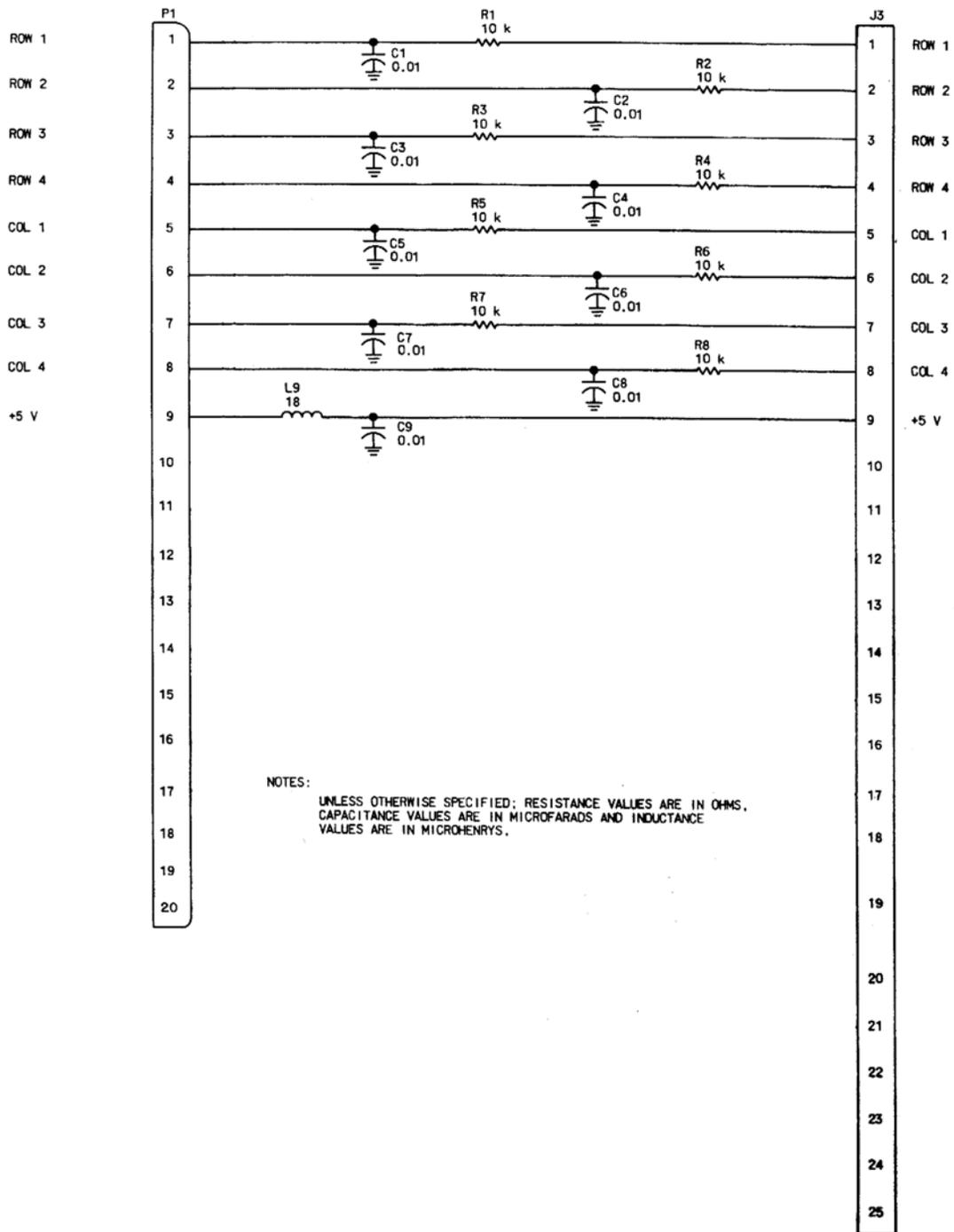


Figure 6. Connection to control card.

SERVICE INFORMATION LETTER Keypad Control Interface Fabrication



Control Interface, Schematic Diagram

Figure 7. Schematic