88-UIO Notes

If a standard IDC-26 to DB-25 ribbon cable is used with the UIO board, then the DB-25 pins are connected as shown in the table below. This gives a non-standard (and pointless) mix of DCE and DTE on the DB-25 connector. This is the same non-standard wiring as recommended in the 88-2SIO manual.

The transmit and receive lines are wired to make the Altair look like DCE for connection to a standard video terminal (DTE). However, the CTS, RTS, DCD and DTR pins are wired as if the Altair was DTE. This means the RTS output driver from the Altair is shorted to the RTS and DTR output drivers from the terminal. Similarly, the CTS and DCD inputs into the Altair and into the terminal are connected to each other with nothing driving any of them. The connections in issue are highlighted in red.

DB-25 Pin	Signal (relative to Altair)	RS-232 Signal
2	Data into the Altair	Transmit (DTE out to DCE in)
3	Data out from the Altair	Receive (DCE out to DTE in)
4	RTS out from the Altair	**RTS (DTE out to DCE in)**
5	CTS into the Altair	**CTS (DCE out to DTE in)**
8	DCD into the Altair	**DCD (DCE out to DTE in)**
20	RTS out from the Altair (tied to pin 4)	**DTR (DTE out to DCE in)**

To configure for a three-wire interface (transmit, receive and ground only), cut the p7-p12 jumper on the SK-2 header (nothing driving pin DB-25 pin 4 or 20) and install the A-B and C-D jumpers (CTS in and DCD in not required).

To properly use CTS/RTS as handshake lines, you'll have to make a custom DB-25 cable (between the computer and the terminal) that swaps CTS/RTS but does NOT swap transmit and receive. The cable should also NOT connect pin 20 (DTR) between the two DB-25's. Finally, make sure the A-B jumper on the UIO board is NOT installed (enable CTS/RTS) and the C-D jumper is installed (DCD in not required).