

## ***Appendix V***

### ***TSL UMD Setup Guide***

The TSL Under Monitor Display panels are manufactured by Television Systems Limited (<http://www.televisionssystemsltd.uk>), and can be controlled via RS-422 serial connection with VM/SI 3000 control boards running Jupiter 7.2 or newer software.

The TSL UMD panels have RS-422 serial data and 24 V power on the same connector, so custom-built cables will be necessary to connect the TSL UMD panels with Jupiter. Some TSL UMD panels use DB-15 connectors, and some use RJ-45 connectors, so great care should be taken in their construction. Also, the ground pins (“0V” in the TSL manuals) on the TSL UMD connectors should be connected to the ground pins on the Jupiter VM/SI-3000 control boards to ensure proper communications. Please refer to the TSL UMD manual for the exact connector pinouts.

Figure V-1 is an illustration of a cable for a TSL “UMD-QD8” quad display panel (DB-15) and an “UMD-D8C” single display panel (RJ-45), connected to a VM 3000 (DB-9).

There are some setup issues that need to be addressed. The TSL UMD-QD8 panel needs to be set in “Error Mode 3” using the recessed front panel switches. Please refer to the TSL manual for more information on how to set that mode. All panels need to be set in “Mode 1” to communicate with Jupiter via the serial connection.

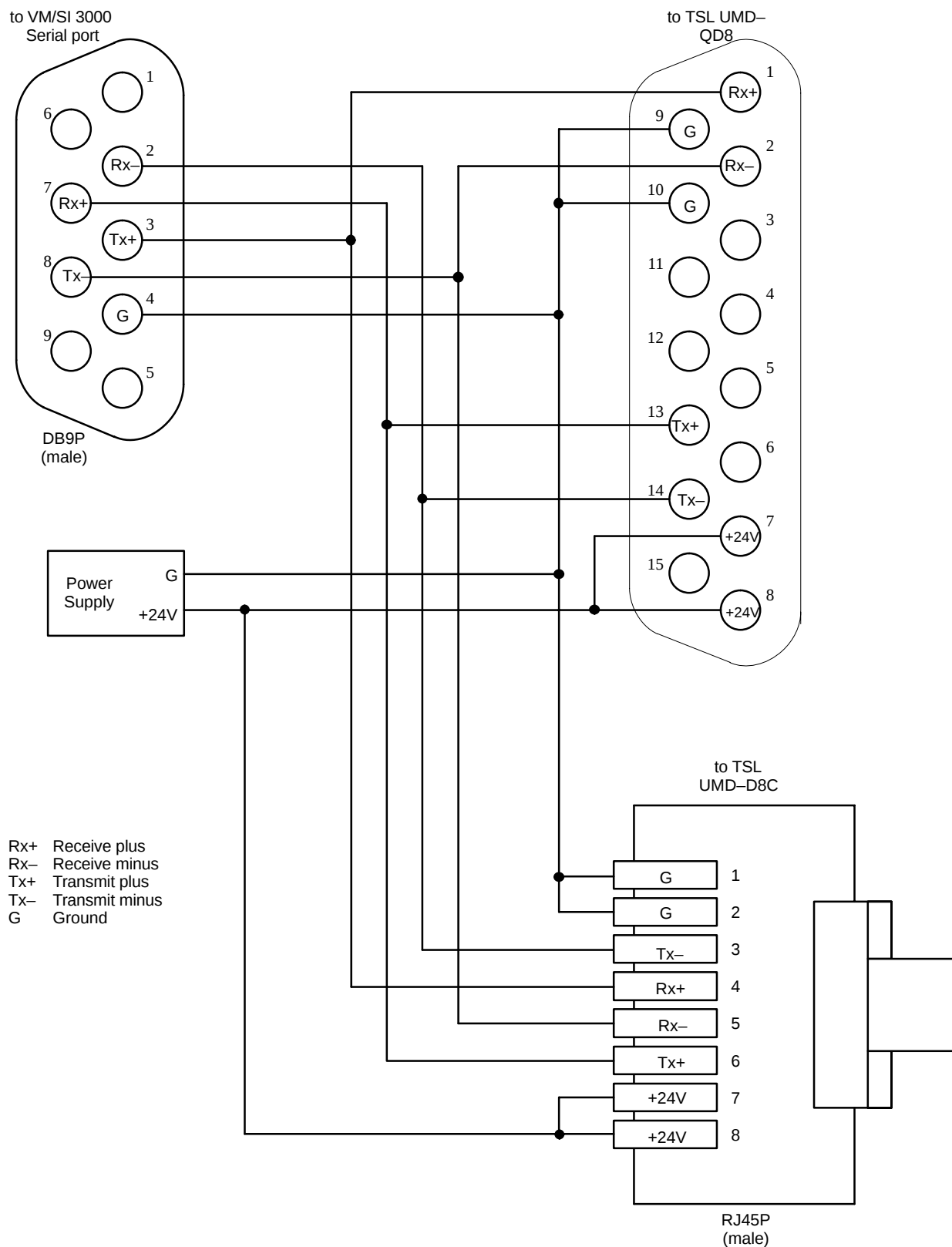
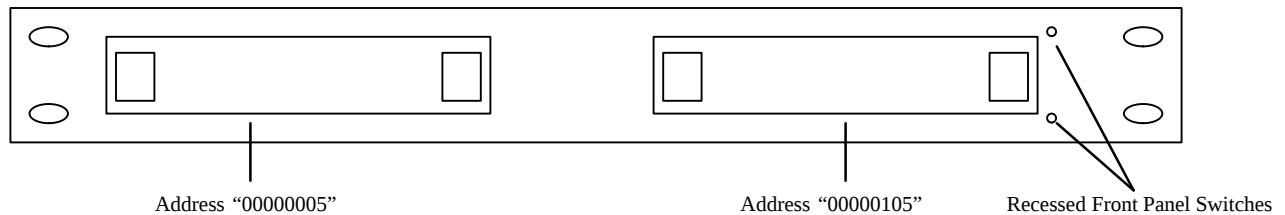


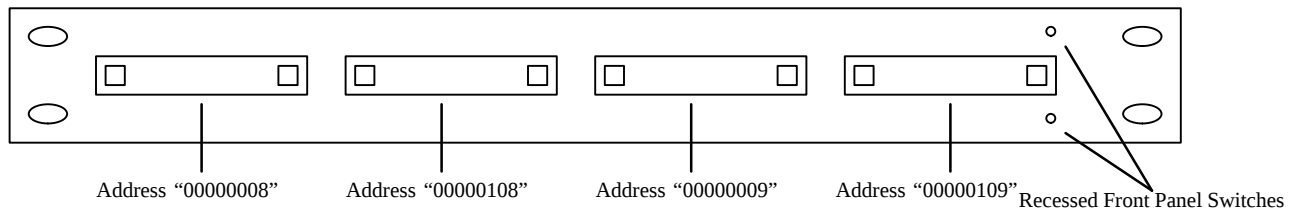
Figure V-1

The recessed front panel switches are also used to select a serial address for the TSL UMD panel. The valid addresses are 0 – 125. This address is entered in the Jupiter MPK Devices Table in the “Address” field. If the TSL UMD has two displays, then the left-hand display has the TSL serial address entered in the address field, and the right-hand display has that address plus 100. For example, in a two display TSL panel, with the address “5” chosen, the left-hand display is address “00000005” in the MPK Devices Table, and the right-hand display is address “00000105”. Please see the drawing below.



**Figure V-2**

Also, if there are more than two displays in a single TSL UMD chassis, the left-most two displays use the address that is set by the front panel switches (again, please refer to the TSL manual for more information on how to set panel addresses). The right-most one or two displays use the next sequential address. For instance, on the UMD-QD8 panel with four displays, if the front panel switches are used to choose an address of “8”, then the left two displays are addresses “00000008” and “00000108” in the Jupiter MPK Description Table, and the right two displays are addresses “00000009” and “00000109”. Please see the drawing below.



**Figure V-3**

In all other respects, the TSL UMD panels behave exactly like the UMD3A UMD panels, including being able to be defined as Saturn UMD panels, and controlling the tally lamps (Output Tally).