

Connectors & Uart Switch

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The diagram illustrates a circuit for a Row End Switching circuit, featuring three connectors (J1, J2, J3) and a 74LVC1G66 hex inverter (U2A).

Connectors:

- J1 (to prev top connector):** 16-pin connector. Pins 1-15 are numbered. Pin 16 is GND. Pin 1 is connected to +12V. Pin 2 is connected to +5V.
- J2 (to next top connector):** 16-pin connector. Pins 1-15 are numbered. Pin 16 is GND. Pin 1 is connected to +12V. Pin 2 is connected to +5V.
- J3 (to module):** 16-pin connector. Pins 1-15 are numbered. Pin 16 is GND. Pin 1 is connected to +12V. Pin 2 is connected to +5V.

Uart Switch Circuit:

- The 74LVC1G66 (U2A) is configured as a hex inverter.
- The input of the inverter (pin 1) is connected to the "Data Return Path".
- The output of the inverter (pin 2) is connected to the "TX To Module".
- The "RX From Module" is connected to the "Data Return Path".
- A 10K resistor (R1) is connected between the "Data Return Path" and the input of the inverter.
- A 100nF capacitor (C2) is connected between the "Data Return Path" and ground.

Row End Switching circuit:

- When this "Top Connector" board is the last board in the row: "Row End" Will be pulled HIGH. Tying "RX From Module" to "Data Return Path".
- When this "Top Connector" board is NOT the last board in the row: "Row End" Will be pulled LOW. Disconnecting "RX From Module" from "Data Return Path".

Power DC/DC

12V To 5V 2A Buck convertor.

The circuit diagram illustrates a 12V to 5V 2A Buck converter. The input is a +12V supply connected to the VIN pin (pin 1) of the XL1509-5.0 IC. A 22μF capacitor (C4) is connected in parallel with the input. The EN pin (pin 4) is connected to the input line, and a 100nF capacitor (C3) is connected between the EN pin and ground. The GND pin (pin 5) is connected to the common ground. The output of the converter is taken from the OUT pin (pin 2), which is connected to a 68μH inductor (L1). The other end of the inductor is connected to the +5V output line. A Schottky diode (D1, SS210) is connected in parallel with the output, with its cathode to the output line and its anode to ground. A 100μF capacitor (C1) is connected in parallel with the output. The feedback pin (FB, pin 3) is connected to the output line. The output is labeled +5V.

