

# C26 - OUTPUT BUFFER BOARD

## User Manual. Rev. 1.

### 1. Overview.

This board buffers signals coming out of the parallel port and into the breakout board. This prevents problems caused by new parallel ports that deliver low amperage signals. This board could fix problems with older CNC4PC boards, or other systems.

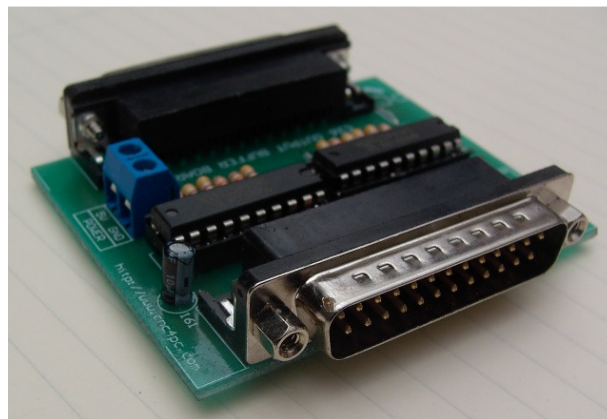


Fig. 1. C26 Output Buffer Board

### 2. Features

- **Buffered outputs.** Outputs are buffered, allowing the card to output the signals without using the power from the parallel port. It can take the +3.3 or +5vdc at less than 1.5 milliamps from the parallel port and deliver solid +5vdc at 24 milliamps.
- **Un-buffered inputs.** Inputs are directly routed to the Parallel Port input pins.
- **Output pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 14, 16 and 17.**
- **Input pins 10, 11, 12, 13 and 15.**
- **Easy upgrade for existing setups.** Upgrade the system just by plugging in the board and not touching the rest of the wiring.
- **All TTL +5VDC or +3.3VDC Signals.** Works with newer computers and laptops that have low voltage parallel ports.
- **DB25 Male output connector.** This connector allow this board be directly connected to the Breakout Board.

### 3. Specifications

INPUTS SPECIFICATIONS	
Number of inputs	5 *
Input Impedance (nominal)	$\approx 0 \Omega$
Typical signal delay	$\approx 0 S$

\* All the inputs are directly routed to the Parallel port input pins

OUTPUTS SPECIFICATIONS	
Number of outputs	12
Maximum output voltage	(5V power supply voltage) + 0.5V
Maximum on-state output current	50mA
Typical output current	24mA
Maximum off-state output voltage	0.44 V
Input Impedance (nominal)	4.6 K $\Omega$
Maximum operation frequency	5 MHz
Typical signal delay	10nS
On-state input voltage range	2 to 5V DC
Minimum on-state input current	1.1 mA
Maximum off-state input voltage	0.8V

### 4. Outputs simplified schematic

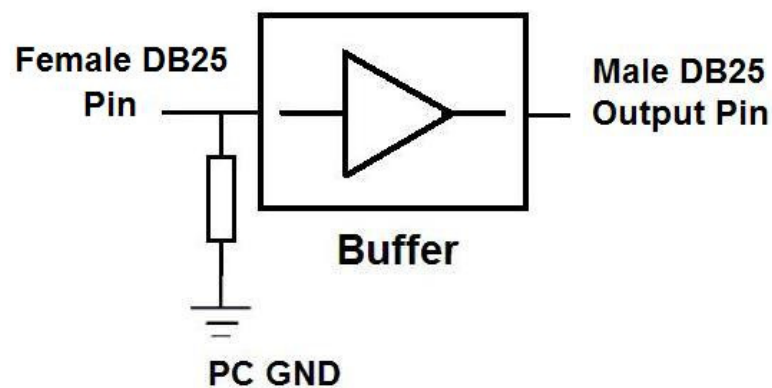
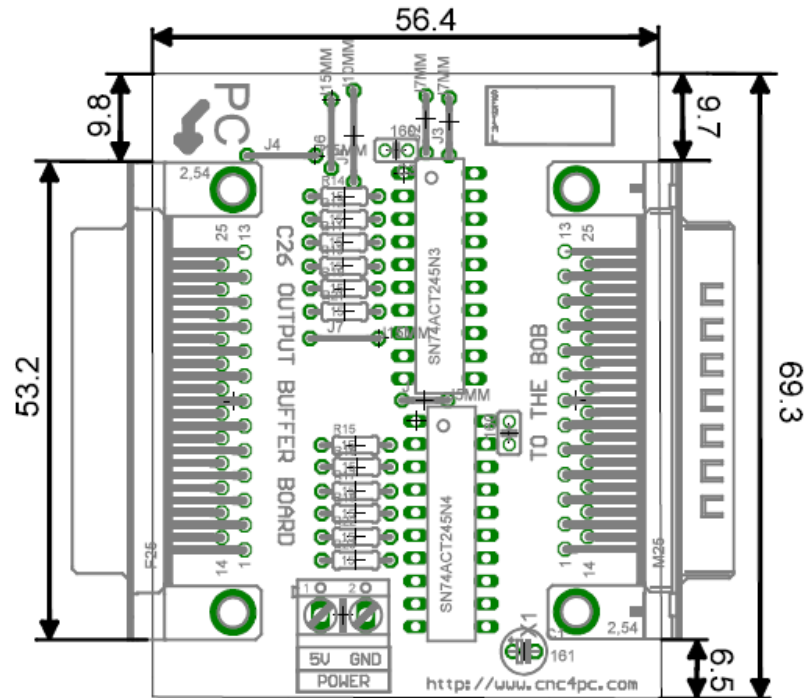


Fig. 2. C26 Simplified Schematic for the Output Pins

## 5. Dimensions



**Fig. 3. C26 Dimensions**

All dimensions are in Millimeters.

## 6. Connection instructions

### Precautions

Check the polarity and voltage of the external power source and connect the 5V and GND. Overvoltage or reverse-polarity power applied to these terminals can cause damage to the board, and/or the power source.

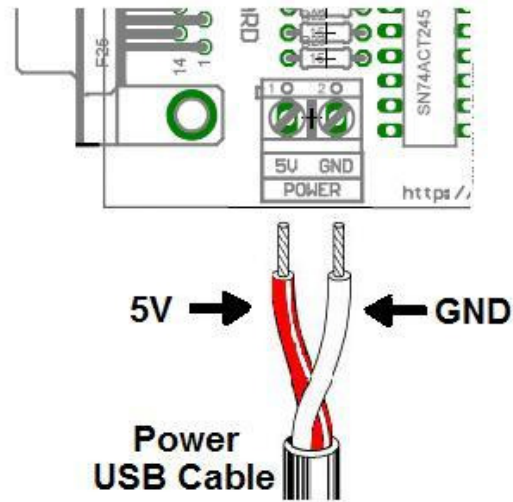


Fig. 4. C26 Power connection.

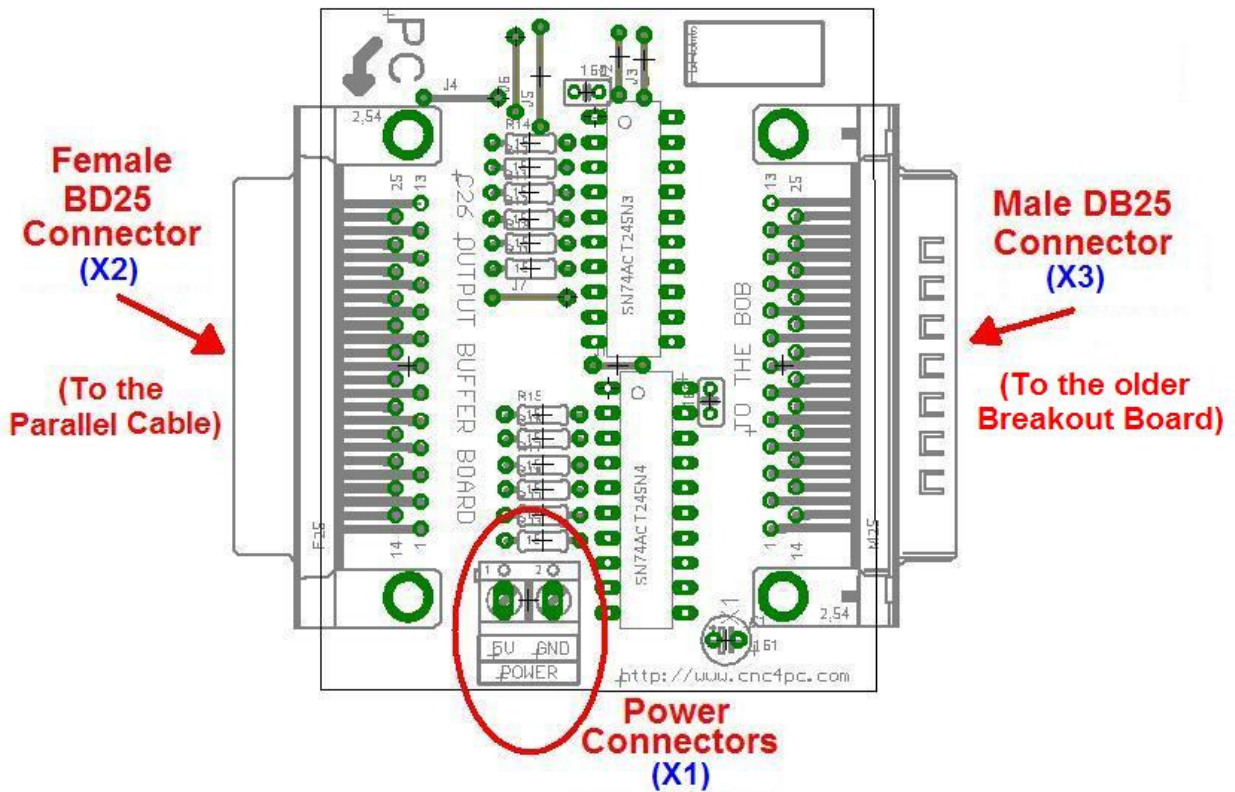


Fig. 5. C26 Interface Components

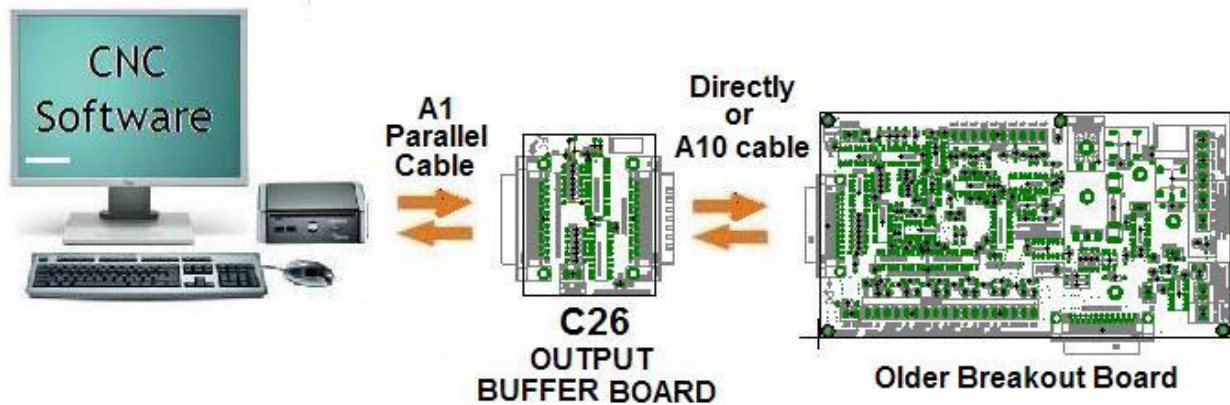


Fig. 5. C26 Connection Scheme.

**Step 1.** Connect the supplied Male Type A end of the Power USB Cable to the PC USB port.

**Step 2.** Connect the other end of the Power USB Cable to the Power Terminals (X1) how is shown in the figure 4.

**Step 3.** Connect the parallel cable coming from the PC to the Female DB25 Connector (X2).

**Step 4.** Connect the Male DB25 Connector (X3) to the main Female DB25 Connector of the Breakout Board. You may use an A10- DB25 Male to Female Ribbon Cable (optional)

[http://www.cnc4pc.com/Store/osc/product\\_info.php?cPath=29&products\\_id=154](http://www.cnc4pc.com/Store/osc/product_info.php?cPath=29&products_id=154) to make this connection.

**Disclaimer:**

Use caution. CNC machines are dangerous machines. DUNCAN USA, LLC or Arturo Duncan are not liable for any accidents resulting from the improper use of these devices.