

# ULTRA DT670 Operators Manual

## by Dominik Gothe

DB37 PIN	FUNCTION	ADDRESS	DB37 PIN	FUNCTION	ADDRESS
PIN 1	NC	–	PIN 20	NC	–
PIN 2	NC	–	PIN 21	NC	–
PIN 3	NC	–	PIN 22	GND	–
<b>PIN 4</b>	<b>CH11</b>	<b>1 1 111</b>	<b>PIN 23</b>	<b>CH15</b>	<b>1 0 111</b>
PIN 5	GND	–	PIN 24	GND	–
<b>PIN 6</b>	<b>CH13</b>	<b>1 1 110</b>	<b>PIN 25</b>	<b>CH14</b>	<b>1 0 110</b>
PIN 7	GND	–	PIN 26	GND	–
<b>PIN 8</b>	<b>CH0</b>	<b>1 1 101</b>	<b>PIN 27</b>	<b>CH12</b>	<b>1 0 101</b>
PIN 9	GND	–	PIN 28	GND	–
<b>PIN 10</b>	<b>CH9</b>	<b>1 1 100</b>	<b>PIN 29</b>	<b>CH10</b>	<b>1 0 100</b>
PIN 11	GND	–	PIN 30	GND	–
<b>PIN 12</b>	<b>CH7</b>	<b>1 1 011</b>	<b>PIN 31</b>	<b>CH8</b>	<b>1 0 011</b>
PIN 13	GND	–	PIN 32	GND	–
<b>PIN 14</b>	<b>CH5</b>	<b>1 1 010</b>	<b>PIN 33</b>	<b>CH6</b>	<b>1 0 010</b>
PIN 15	GND	–	PIN 34	GND	–
<b>PIN 16</b>	<b>CH3</b>	<b>1 1 001</b>	<b>PIN 35</b>	<b>CH4</b>	<b>1 0 001</b>
PIN 17	GND	–	PIN 36	GND	–
<b>PIN 18</b>	<b>CH1</b>	<b>1 1 000</b>	<b>PIN 37</b>	<b>CH2</b>	<b>1 0 000</b>
PIN 19	GND	–	<b>Serial: <b>UDT670-J0001</b></b>		

### Power Supply

The device is to be supplied, through the external 3 Pin Bendix connector, with plus/minus five volt (+/- 5V). Alternatively, the negative rail can be tied to ground. Sacrificing dynamic range for near zero voltage inputs. Note that the device can no longer act as a general purpose bipolar ADC if the negative

BENDIX 3PIN		
A	B	C
+5V	GND	-5V

### Operation

Connect the device, via a USB A to B cable, to the host computer. Once connected, install the driver labeled “ULTRA DT670.inf”. When the board is properly connected to a USB host, the red LED next to the USB plug on the ULTRA DT670 should be illuminated.

Drivers: ULTRA DT670.inf

The drivers will install a virtual serial port, for example “COM3”. This serial port needs to be monitored for the data, where the ULTRA DT670 reports data in the following format:

### Connecting Diodes

A DB37 connector is needed to connect all of the sixteen (16) possible diodes to the ULTRA DT670. The pin out of the connector is shown in the table on the left. Each diode is biased with roughly ten micro-amps (10  $\mu$ A). All diode currents are returned to ground (note, ground is NOT connected to the case). The drawing below depicts a female DB37 connector as seen from the front face of the plug, which mates with the ULTRA DT670.

