Byonics TinyTrak4 Display and Keyboard Wiring

This document contains information to aid in wiring a Byonics TinyTrak4 to an external LCD display and keyboard. The Byonics TinyTrak4 is a device which can transmit and receive packet and APRS data. When it is wired to a display, it can show decoded data. When also wired to a keyboard, it can be used to send and receive text messages over the radio, with the Alpha firmware.

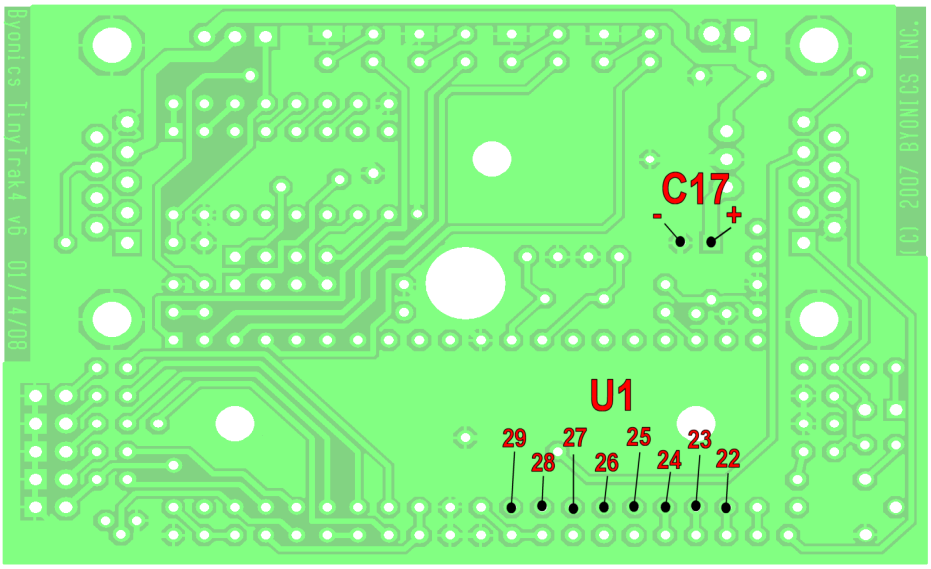
The TinyTrak4 is available as a kit (with a printed circuit board labeled “TinyTrak4 v6”), as a built unit with surface mount parts (with a printed circuit board labeled “TinyTrak4 v5”), and as the Micro-Trak TinyTrak4 with a built in transceiver.

Display pin 15 should not be connected directly to +5V, but instead through a current limiting resistor.

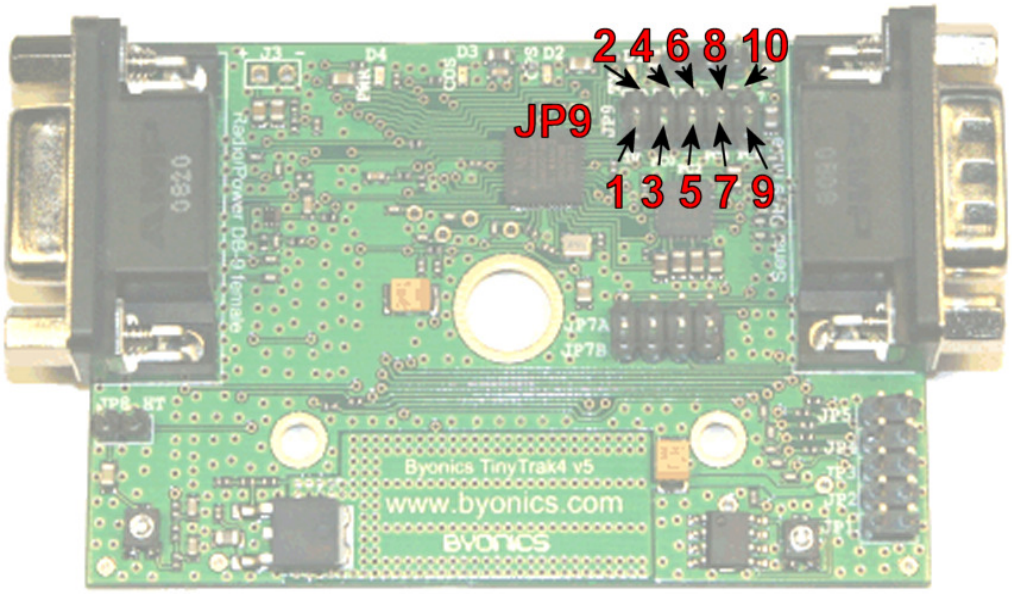
Through hole / Kit version (PCB v6)	**Surface mount / Built version (PCB v5)**	**Micro-Trak-TT4**	**Display Pin**	**Keyboard Pin**	**Function**
C17 + *	JP9 pin 1	LCD port pin 8 PS/2 port pin 4	2, 15*	PS/2 Pin 4	+5 Volts
C17 - *	JP9 pin 2	LCD port pin 1 PS/2 port pin 3	1, 3*, 5, 16	PS/2 Pin 3	Ground
U1 pin 22	JP9 pin 3	LCD port pin 2	11		Display Data4, PORTC0
U1 pin 23	JP9 pin 4	LCD port pin 3	12		Display Data5, PORTC1
U1 pin 24	JP9 pin 5	LCD port pin 4	13		Display Data6, PORTC2
U1 pin 25	JP9 pin 6	LCD port pin 5	14		Display Data7, PORTC3
U1 pin 26	JP9 pin 7	LCD port pin 6	4		Display RS, PORTC4
U1 pin 27	JP9 pin 8	LCD port pin 7	6		Display E, PORTC5
U1 pin 28	JP9 pin 9	PS/2 port pin 5		PS/2 Pin 5	Keyboard Clock, PORTC6
U1 pin 29	JP9 pin 10	PS/2 port pin 1		PS/2 Pin 1	Keyboard Data, PORTC7

* Display pin 15 is run to +5V through a 62 ohm resistor
* Display pin 3 can alternately be run to the wiper of a 10K pot between ground and +5V to adjust display contrast
* TT4 PCB v6 +5V and Grounds connections can be made in several different locations, and not all grounds need to run to the same point..

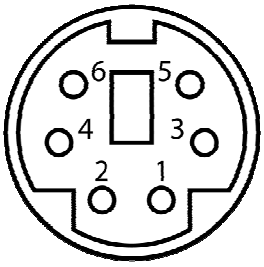
Through Hole / Kit TinyTrak4 – PCB v6 Pin Out Diagram (bottom view)



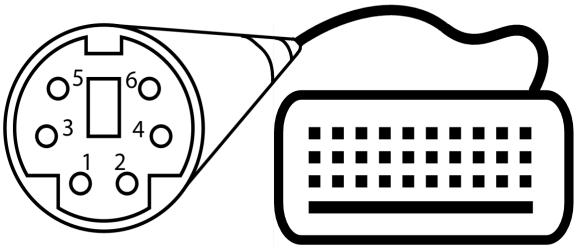
Surface Mount / Built TinyTrak4 – PCB v5 Pin Out Diagram



PS/2 Pin Out Diagram

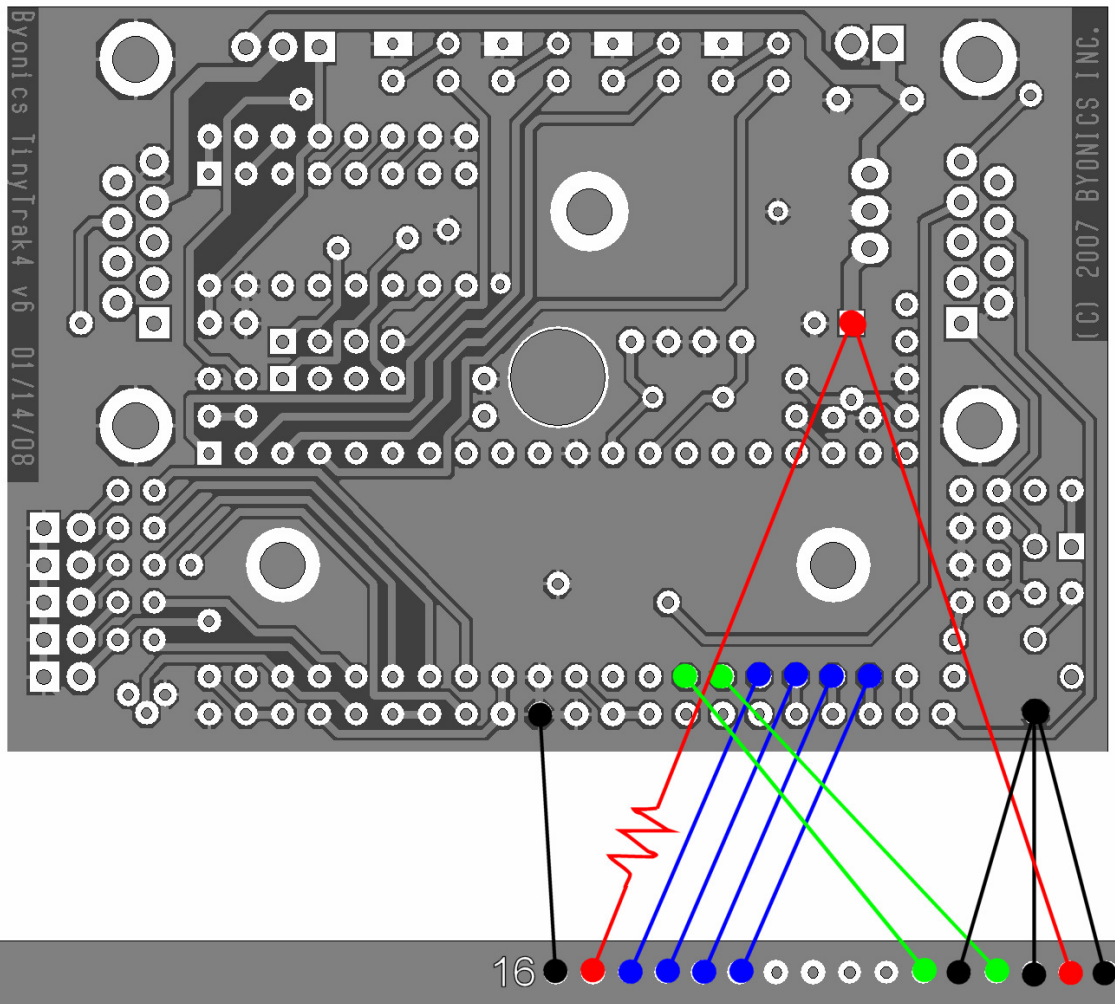


This is the pin out diagram of the female PS/2 socket, as found on the MT-TT4, or a computer motherboard.

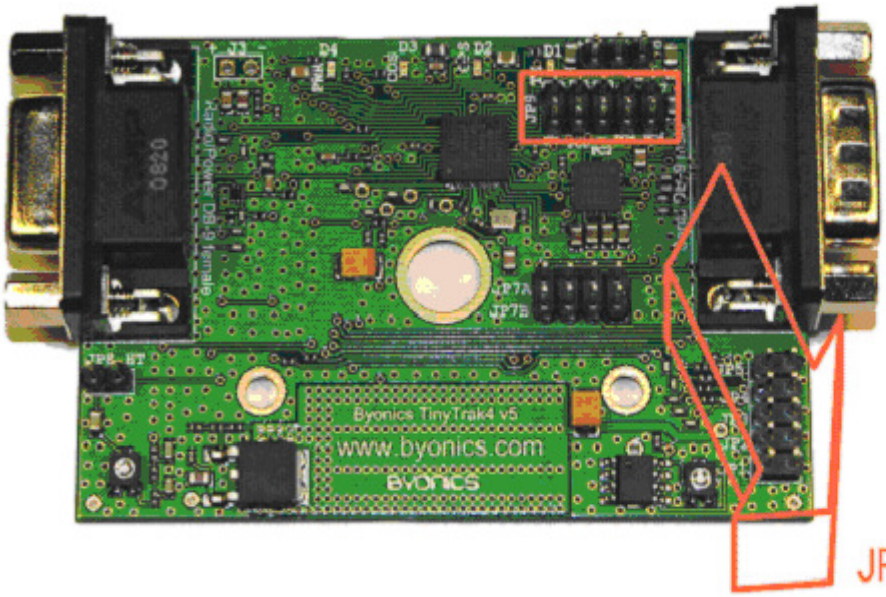


This is the pin out diagram of the male PS/2 plug, as found on a PS/2 style keyboard. Note it is mirrored from the female socket.

TinyTrak4D Display Wiring

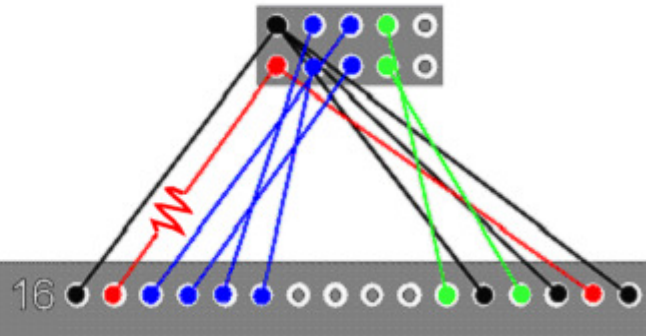


TinyTrak4D SMT Display Wiring



Display	JP9
1	GND
2	5V
3	GND
4	PC4
5	GND
6	PC5
7	NC
8	NC
9	NC
10	NC
11	PC0
12	PC1
13	PC2
14	PC3
15	5V (via resistor)
16	GND

JP9 - viewed from top



20x4 LCD Display
Hitachi 44780 compatible
Shown from back