

## Parts List

- 1 PC board code xxxxxxxx, 140mm x 57mm
- 1 EM-408 GPS Module manufactured by GlobalSat Technology  
Available from [www.altronics.com.au](http://www.altronics.com.au) or on the Internet.
- 1 SG12232A 122 x 32 Dot Matrix LCD (Altronics Z7052)
- 1 20MHz Low Profile Crystal (X1)
- 1 Buzzer Sealed Mini PCB High Output (Altronics S6105)
- 1 Light Dependent Resistor (LDR) 10K to 1M (Altronics Z1621) OPTIONAL -  
See Text
- 3 Tactile Switch with 22mm actuating shaft (Altronics S1119)
- 3 Button Cap 7.5mm diameter (Altronics S1482)
- 1 Mini DIN Socket 6 pin PCB mounting
- 1 USB B Type Socket PCB mounting
- 1 2 Pin Header
- 1 20 Pin Header
- 1 20 Way Single Row Header Socket (8mm high socket base)
- 1 10K Trimpot Vertical Mount Front Adjust
- 1 Micro U Style Heatsink for TO-220 (19 x 19 x 9.5 mm)
- 1 UB3 Sized Jiffy Box
- 4 15mm Metal M3 Tapped Spacer
- 4 9mm Metal M3 Untapped Spacer
- 4 20mm M3 Bolt
- 5 10mm M3 Bolt
- 9 M3 Star Washer
- 4 M3 Flat Washer
- 5 M3 Nut

### Semiconductors

- 1 PIC16F4550-I/P microcontroller (IC1) (available from [www.futurlec.com](http://www.futurlec.com))
- 1 LM2940CT-5 or LM2938ET-5.0 Voltage Regulator T0-220 Package 5.0 Volts  
(IC2)
- 1 LP2950CZ-3.0 Voltage Regulator T0-92 Package 3.3 Volts (IC3)
- 1 BC338 transistor (Q1)
- 1 1N4148 diode (D1)
- 1 1N5819 Schottky diode (D2)

### Capacitors

- 2 22pF Ceramic
- 3 100nF Monolithic
- 2 220nF MKT

- 1 470nF MKT
- 1 10 $\mu$ F 16V Tantalum
- 1 100 $\mu$ F 16V Electrolytic (105°C rating)

**Resistors (0.25W 5%)**

- 1 10 $\Omega$
- 2 3.3K $\Omega$
- 1 6.8K $\Omega$
- 1 8.2K $\Omega$  (Optional - See Text)
- 1 10K $\Omega$
- 1 22K $\Omega$
- 2 47K $\Omega$  (Optional - See Text)
- 2 82K $\Omega$  (Optional - See Text)
- 1 100K $\Omega$