

GPS LCD Display Board V 1.1

PRODUCT DATA

It's a small size, low cost solution for displaying Latitude, Longitude UTC date and time, speed and heading coming out of a GPS receiver using the NMEA protocol.

Features

- Accepts \$GPRMC and \$GPGGA sentences
- Recognizes and correctly initializes Tripmate GPS
- Position data is displayed on 2 line x 16 character LCD display with optional backlit

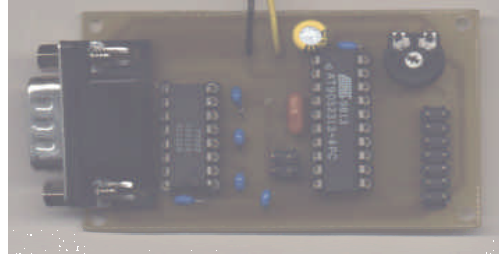


Photo 1 - Actual size GPS LCD board
68 mm (L) x 40 mm (W)

Based around the AVR 90s2313 RISC micro-controller, the GPS lcd display board, process NMEA data stream coming out of a GPS receiver and displays on the LCD position data.

It accepts both \$GPRMC and \$GPGGA sentences and displays Latitude and Longitude on a 2 line x 16 characters LCD.

The board is also equipped with 2 button inputs which when pressed, display additional info, like UTC date and time, speed and heading .

Other components include the LCD module, a serial receiver chip, on-board power regulator and LCD bias voltage generator. The unit consumes 5 mA with backlit off and around 50 mA with backlit on.

Display output

Normal display

The main output display format is

A **I**°**I**'**III**" **R1** **Q**
LLL°**LL**'**LLLL**" **R2**

Where:

A is a moving indicator showing serial line activity.

I is the latitude

R1 is the latitude reference (North/South)

L is the longitude

R2 is the longitude reference (East/Wesst)

Q is an fix "quality" indicator. (**V** for valid fix and **I** for no fix.)

Speed and heading display

A **SPD** **ssssss** **Q**
HDG **hhhhhh**

Where

A is a moving indicator showing serial line

activity.

s is a seven digit speed indicator

h is a 7 digit heading indicator

Q is an fix "quality" indicator. (**V** for valid fix and **I** for no fix.)

The digits of the course and speed are the first 7 digits that your receiver outputs for those fields.

The speed is displayed in whatever mode you have set in your GPS receiver are presented without change.

For example, if you can set your receiver to calculate and present MPH, Knots, or KPH in the RMC output, the display will show that information.

Similarly, the bearing can often be represented with or without declination adjustments.

The GPS lcd controller display is showing the results of calculations in the GPS receiver. However, some receivers may have different output

For example, the speed may always be in knots, or the course may not have leading zeroes.

UTC date and time

A dd/mm/yy **Q**
hh/mn/ss

Where

A is a moving indicator showing serial line activity.

dd is the UTC date

mm is the UTC month

yy is the UTC year

hh is the UTC hour

mn is the UTC minute

ss is the UTC seconds

Q is an fix "quality" indicator. (**V** for valid fix and **I** for no fix.)

Technical Characteristics

GPS LCD Board Size.....	68 mm (L) x 40 mm (W)
LCD Size.....	85 mm (L) x 30 mm (W)
Power Requirements	4.8 – 5.5 Vdc
Power Consumption.....	5 mA (backlit Off) 50 mA (backlit On)
Operating Temperature.....	0° to 50° C
Storage Temperature.....	-10° to 60° C
Connector.....	9 pin SubD Female
Serial Input.....	4800,N,8,1
Protocol.....	GPS NMEA with either RMC or GGA sentences