OSD-GPS

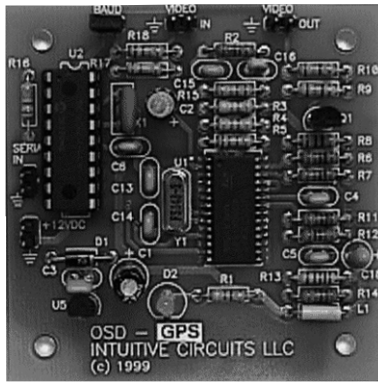## On-screen display GPS board

Altitude Version

Description

OSD-GPS is a 2-1/2" x 2-1/2" circuit board that takes NMEA 0813 serial output from your favorite GPS receiver and displays latitude, longitude, speed, heading, altitude, and very accurate time onto any NTSC or optional PAL baseband (video in) monitor. The text can be displayed on a self generated blue screen or overlaid with an incoming video source.
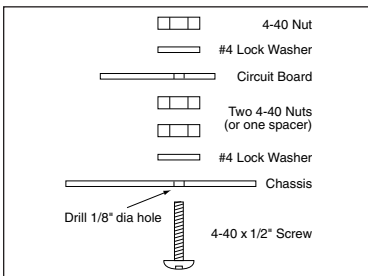
Specifications

Dimensions:	2 1/2" x 2 1/2" x 1/2"
Weight:	0.8 oz.
Input voltage:	8.0 to 14.0 volts DC (60 ma max.)
Operating temperature:	-10° C to +70° C
GPS input:	NMEA 0183 with GPRMC and GPGGA sentence, 4800 baud
Video levels:	1 volt peak to peak nominal composite video
Video impedance:	input 75 ohm, output 75 ohm resistively terminated

Installation

The following is the list of OSD-GPS circuit board pads (places to solder wires to). Please follow common electronic safety precautions when soldering.

Pad	Attach To
+12 VDC	Regulated +8 to +14 volt supply
GND	Ground from power supply
VIDEO IN and GND	Incoming NTSC video source (optional)
VIDEO OUT and GND	Outgoing NTSC video source with overlaid text
SERIAL IN	GPS receiver serial out
SERIAL IN GND	GPS receiver serial ground

4-40 Nut
#4 Lock Washer
Circuit Board
Two 4-40 Nuts (or one spacer)
#4 Lock Washer
Chassis
Drill 1/8" dia hole
4-40 x 1/2" Screw

Board Mounting Details

Mount the OSD-GPS board into a shielded enclosure to protect it from RF. For each of the four mounting holes be sure to use two 4-40 nuts or one 1/4" spacer between the OSD-GPS board and chassis to prevent the bottom of the OSD-GPS board from shorting to the chassis.

Operation

OSD-GPS will update all on-screen GPS information each time a complete GPRMC and GPGGA sentence is received from the GPS receiver. Please verify the GPS receiver is configured to output a NMEA 0183 stream at 4800 baud, 8-bit, and one stop bit.

Screen Configuration

OSD-GPS comes with a BAUD jumper. Install the jumper to have OSD-GPS overlay the GPS screen data with an incoming video (VIDEO IN) source. Remove the jumper for the GPS screen data to be drawn on a self generated blue screen. It is important to note that the OSD-GPS only looks at the jumper when power is first applied. If the jumper is added or removed while OSD-GPS is powered then the power must be turned off and back on before the new screen configuration will be recognized.

Trouble Shooting Tips

Problem	Solution
Green LED off (won't power up)	• Check power supply output (8 to 14 VDC). • Check polarity of supply to OSD-GPS board
Screen is unreadable	• Check that the OSD-GPS "VIDEO IN" has a valid video signal.
No GPS information on-screen	• Verify GPS receiver has been configured to send NMEA 0183 data

Warranty & Service

If the product fails to perform as described in our product description or specification, within 90 days from the date of shipment to the buyer, we will repair or replace the product and/or accessories originally supplied. Failure due to improper installation, misuse, abuse or accident is not covered by this warranty. Incidental and consequential damages are not covered by this warranty. The buyer must obtain a Return Material Authorization by calling (248) 524-1918, and shipping the defective product to Intuitive Circuits, 2275 Brinston, Troy, MI 48083, freight prepaid. After the warranty expires, we will promptly supply an estimate for the repair cost.

Fig 1.0 - Screen shot of OSD-GPS on a rocket.