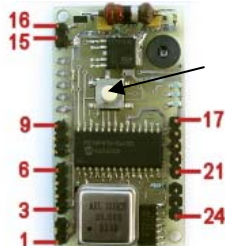




altiOSD User Manual

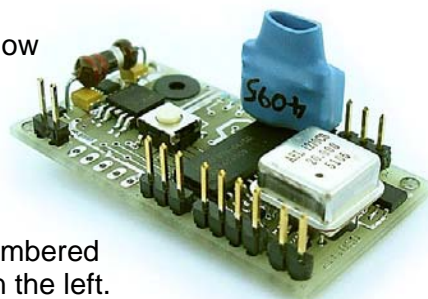
miniature altitude & telemetry collection & display

The altiOSD Quick Start Manual shows how to get your system working, this manual shows you how to get the most out of altiOSD!



PIN-OUT

altiOSD has 24 pins numbered clockwise as shown on the left. Note that pins 1, 3, 7, 15, 17, 18, and 24 are connected together inside the module.



pin	Name	Function
1	VIDEO -	Ground of video output = Module ground
2	VIDEO+	Video output
3	GND	Module ground
4	VIN1	Voltage input 1
5	VIN2	Voltage input 2
6	ANEMO	Anemometer input
7	GND	Module ground
8	CTR	Event counter input - pull up 27kohms
9	SW	External push-button input - pull up 27kohms
10	GND	Module ground
11	SPR	Reserved for future extension
12	THV	Reserved - do not connect
13,14	PGC, PGD	Reserved - do not connect
15	- or GND	Negative power input = Module ground
16	+	Positive power input (5.5 to 12Volts)
17,18	GND	Module ground
19	+5V	+5Volts power output
20,21	SDA,SCL	Data input/output for Logger and Compass
22	SDO	reserved for future extension
23	DQ	DS18(B)20 temperature sensor input
24	GND	DS18(B)20 ground = Module ground

CONFIGURATION

A short push on the white button (marked with an arrow opposite) resets the altitude and the event counter. Altitude reference and counter value are saved during power off. A long push of duration more than 5s resets the Logger and enters the configuration mode, used to modify the programmable parameters of ALTI-OSD.

Once in configuration the menu moves through 12 settings every 5s, pressing the button in each setting allows it to be changed. see www.gentles.ltd.uk/gentvu/contact.htm for a flow chart of the menus.

Parameter	Setting	Configuration options
Video standard	Menu 1	CCIR (PAL) or EIA (NTSC) compatible. In OSD the standard is automatically selected, this menu defines the standard used in <i>generation</i> mode
Text position	Menus 2, 3 and 5	4 options for line position and 8 options for data position
Units	Menu 4	SI data display (m, °C, km/h) or US data display (ft, °F, mph)
V0 voltage	Menu 6	Display selection of ALTI-OSD power supply voltage
Event Counter	Menu 7	Display selection of Event Counter data
Atmospheric pressure	Menu 8	Permanent display of atmospheric pressure. When this option is not selected, atmospheric pressure is displayed during 5 s when push-button is pressed
Temperature	Menu 9	Selects whether DS1820 or DS18B20 is connected. If no device is connected the display is blank
Auto Reset	Menu 10	Selection of automatic reset of altitude and event counter at ALTI-OSD power-up
Anemo Gain	Menu 11	Calibration for anemometer/frequency input.
Auto Log	Menu 12	Set the time in seconds for data to be saved to the Logger. 0=not saved. Set between 1s and 1hour.

After the 12 setting menus the user has to press and hold the button to save the changes. The modified parameters are stored, and saved during power off. Note that the Logger reset at the start of the configuration sequence and is not dependant on the "save" routine. For a quick Logger reset enter configuration then cycle the power.

Warning: The pressure sensor (silver circle, top right of module) is light sensitive, for maximum accuracy do not expose to direct sunlight.

ACCESSORIES

Logger

The logger simply plug into the module as shown right. Messages on screen tell you if the logger is connected and how full it is. Data in the logger is never erased but “the pointer” where new data is written can be reset by pressing the button on the module for more than 5 seconds, or by using the PC interface module which is used to read the Loggers into a computer for data analysis.



Voltage

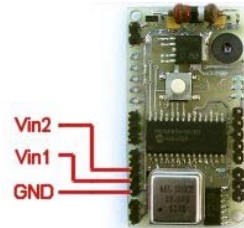
3 voltages can be displayed:

V0 : ALTI-OSD supply voltage - pin 16

V1 : pin 4 voltage

V2 : pin 5 voltage

The voltage range is 0 to 18V DC. Input impedance is 37kohms. Display of V0 voltage is programmable through the configuration menu 5. V1 and V2 voltage are automatically displayed when they exceed 50mV.



Event Counter

The event counter is incremented at every connection of the CTR pin to GND. CTR pin is pulled up to +5V by a 27kohms resistor. The maximum value is 255. This counter can be used to display the number of pictures shot by a camera triggered by a remote control. The counter value is set to zero by pressing the push-button (which is also available at SW). The display of the event counter is programmable through the configuration menu 7.



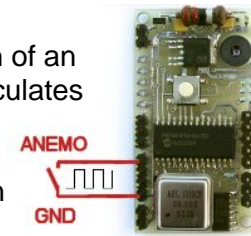
Temperature

Pin 23, DQ, is dedicated to the connection of an external temperature sensor DS1820 or DS18B20. Pin 21 is not used. Temperature is displayed in °Fahrenheit or °Celsius depending on the selected unit (menu 4). Sensor type (1820 or 18B20) is selected through menu 9.



Wind speed

Pin 6 ANEMO is dedicated to the connection of an external rotary anemometer. ALTI-OSD calculates the product of the pin 6 frequency by the GAIN ANEMO ratio. The ratio is adjustable from 0 to 4km/h/Hz through the configuration menu 11. The frequency is measured over a 1/2 second gating period. The frequency must be lower than 500Hz.



ANEMO pin is pulled up to +5V by a 27kohms resistor. This input is a Schmitt trigger type with a low threshold of 1.5V and a high threshold of 2.75V. This input can be connected for example to a magnetic switch or to the TTL signal provided by a logic comparator. Wind speed is displayed in km/h or mph depending on the selected unit (menu 4).

Compass Bearing

Pin 17 to 20 are dedicated to the connection of the compass module CMPS03 developed by Devanted Ltd (<http://www.robot-electronics.co.uk/>).



CMPS03 is powered by the altiOSD internal +5V. altiOSD reads the bearing angle via I2C bus. Recognition of CMPS03 is automatic. Compass bearing value is displayed in degrees.

SPECIFICATION

Pressure	Maximum altitude 4000m
Temperature	-55 to +63 °Celsius
Input voltage	5.5 to 12V.
Input current (including Logger)	32mA at 4.8V and 20mA at 7.2V (these are OSD, for generate mode add ~4mA)
Size	2" x 1.1" x .45" 51x28x11 mm (l x w x h) (connectors will increase the height)
Weight	0.36oz 10.5 grams