

ZLOG Recording Altimeter

Economical in-flight data by Thayer Syme

Have you ever been curious about the climb performance of your model or how high you have really flown? With the ZLog Recording Altimeter from Hexpert Systems you can find out without breaking the bank or staying up all night installing endless wires and air lines.

The ZLog was designed by Matt Woolsey simply for logging time, altitude and exposure points for his aerial photography. Matt wanted to know how high his camera was for each image. Passing the trigger signal through the ZLog places a marker in the data stream at each image. Coupling these points with a graph of altitude over time allows you to easily find specific areas of interest when reviewing the data.



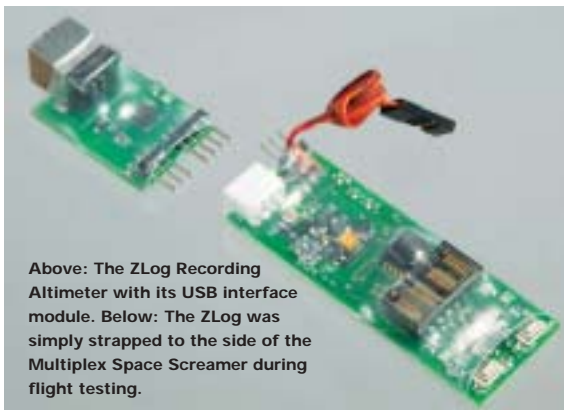
The ZLog altimeter provided invaluable feedback while test flying the NSP Renny sailplane.

USING THE ZLOG

The user-friendly ZLog is very easy to operate. The manual is well-detailed and clearly written. You can download it from the Hexpert Systems website for review.

I have found a lot to like about the ZLog, but the first thing you will notice is the price. The ZLog is much less expensive than altimeter watches or other more complex data recorders available today, and the three parameters it logs will give you a surprising amount of interesting information.

Before you can go fly, you will want to set a few basic parameters. The ZLog displays altitude with a resolution of one foot, yard or meter. You need to tell it which units you prefer. You also need to set a sample rate. The ZLog can sample at a max resolution interval of 0.1 seconds (100ms) and can log 16,380 data points. This equates to over 27 hours of data. The sample rate is adjustable up to one sample per hour.



Above: The ZLog Recording Altimeter with its USB interface module. Below: The ZLog was simply strapped to the side of the Multiplex Space Screamer during flight testing.



FEATURES

- Onboard real-time altitude display
- Maximum altitude recall at field
- Display and record altitude in feet or meters
- Altitude resolution of 1 foot/meter
- Record altitude data for later review
- Configurable data recording rate as fast as 10 samples per second
- PC Interface for configuration and data download, plot, and analysis
- Onboard controls allow configuration in the field
- Includes PC software
- Marks altitude data when triggered from an external signal
- Exports data in Excel .csv format or as bitmap or JPEG images
- Accepts wide range of input power: 4-15 volts
- Power from your aircraft receiver or separate battery
- Firmware upgradeable
- Third-party Palm Pilot application available

SPECS

PRODUCT: ZLog Recording Altimeter

MANUFACTURER: Hexpert Systems

DISTRIBUTOR: Hexpert Systems

FOR: Anyone interested in monitoring performance

WEIGHT: .42 oz. (12 grams)

DIMENSIONS: 2.6 x 1.0 x 0.3 in.

CURRENT DRAW: 140mA (display active), 30mA (display idle)

INPUT VOLTAGE RANGE: 4-15 volts

MAXIMUM ALTITUDE RECORDED: 32,767 feet (9,987 meters)

MAXIMUM ALTITUDE DISPLAYED: 9,999 feet/yards/meters

PRICE: \$75, ZLog Recording Altimeter, \$18 (USB interface adapter & cable); \$12 (Serial Interface Adapter), \$24.50 (PRISM IR switch)

SUMMARY

The ZLog is a lightweight and affordable recording altimeter that will work with any model from small park flyers to the largest giant scale model. It is perfect for anyone looking to track performance data or simply expand their hobby fun.

ZLOG RECORDING ALTIMETER

Installation is a snap. Just plug it into a spare channel of your receiver and secure it to the model with Velcro, tape, or a rubber band, etc. You can also use a y-harness, or connect it between the receiver and a servo or the ESC. This lets you insert markers by triggering the landing gear switch or low throttle, for example. The ZLog only weighs 12 grams, so weight is not a concern for nearly any outdoor model. The ZLog can be mounted anywhere as long as the pressure transducer can see changes in air pressure. The ZLog powers up with the rest of the radio, calibrates itself, and can be set to start recording when pushing a button or with an initial change of altitude. You are ready for takeoff.

REVIEWING DATA

Once your flight is done, you can immediately check the max altitude. I used this feedback extensively when first flying the Northeast Sailplane Products Renny. By checking the max launch height, I was able to fine tune my high-start tension and technique. With just a few short launches, I confirmed an increase of 125 feet in launch height.

The ZLog connects with a laptop or other PC through either a serial or USB interface module. These are sold separately since you may want multiple ZLogs and will only need one interface module. The included ZLog software allows you to download and review the flight data as well as save it for future use. If you want to do a more complex analysis of the data, you can easily export it to Excel.

On page 58 we take a look at the Multiplex Space Scooter and a new prototype for the new brushless Space Screamer. I installed the ZLog on the Space Screamer to generate the graphs for this review and was startled by the results. As you can see, we gained 1,000 feet with a single 30-second climb. Not bad for a stubby-winged foam park flyer!

Need to know which prop gives the best climb? Now you don't need to guess. Comparing



Here is the ZLog graph of an entire flight with the Space Screamer. Many of the display parameters are adjustable to suit your preferences.



The mouse's 'zoom' function lets you expand and rescale the graph to view just a section of the flight track as shown in the two graphs above.



Setting the mouse function to 'climb' lets you easily calculate the average rate of climb across a section of the flight profile. The rate of climb across the bracketed section averaged 33.09 feet/sec. (1985 fpm) with a peak of 55 fps (3300 fpm) at the point indicated with the red circle.



The Multiplex Space Screamer easily will climb vertically out of your hand. The ZLog tracked a 1,000-foot, 30-second climb in the midst of one flight as shown in the graphs.

the rate of climb will tell you how to get to altitude the fastest.

Hexpert Systems also offers the PRISM switch for aerial photography. This switch creates the infrared signal needed to trigger Pentax and Olympus cameras.

CONCLUSION

It has been said that the best applications for computers arise from personal projects of the programmers. This is an excellent example. The ZLog is a simple-to-use, yet very sophisticated device that solves a unique need. Its genius is that it also provides enough information to be quite valuable to any tech-minded modeler without costing an arm and a leg. The ZLog will easily earn its keep, whether documenting aerial photography, setting up new models, or simply having fun while flying with your friends. ☺

Links

Hexpert Systems
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www.hitecrd.com, (858) 748-6948

Northeast Sailplane Products
www.nesail.com, (802) 655-7700

For more information, please see our source guide on pg. 161.