How to Use the ALTIMETERONE

Getting Acquainted

A visual tour of your new altimeter.

Tether Point
Clip the altimeter to a line, or give it its own streamer.

Display
Shows up to four digits.

Above 9,999 feet, a decimal appears, and altitudes are shown in thousands of feet.

Push Button
Quick press: ON/OFF
Long press: Reset to "0" for next flight

Charging Connector
Plugs into any USB port.

The back side of the case will glow red or green to indicate charging status.

How Do I Work This Thing?

It's easy.

❶ **Turn It On**

Press the button once to turn the display on before every flight. It will display the last altitude measured.

❷ **Clear the Display**

Clear the display by holding down the red button until you see "OOOO," then release it. The display should now say "O," and it is ready for the next flight.

❸ **Turn It Off**

Press the red button once to turn the display off.
The system will automatically turn itself off 60 minutes after the last flight peak was recorded.

TIP

Although the button looks quite small, you do NOT need a sharp object to press it. Just put your entire finger tip over it and press until you feel a "click."

Reading the Display

Peak altitudes higher than 9,999 feet are shown in *thousands of feet*, and are indicated with a decimal point in the altitude.

= 1,215 feet

= 12,420 feet

Installation Tips

Your altimeter can ride in a payload bay or in the main fuselage of a rocket, inside a plane, or clipped to your kite. In any case, follow these guidelines for best results.

❶ Let It Breathe

The altimeter needs to sense outside atmospheric pressure at all times. For rockets, we advise that you punch at least three 1/8" diameter holes evenly spaced around the rocket as close to the nosecone as possible, but low enough not to be blocked by the nosecone once it is inserted. The holes can be quite small (the diameter of a pencil lead), but make sure that they are not blocked when you launch.

❷ Altimeter on Top

For rockets, placing the altimeter as close to the nose as possible protects it from exhaust gases, allows it to be as near as possible to your vent holes, and assists in keeping the center of gravity of your rocket above its center of pressure so that it remains stable in flight.

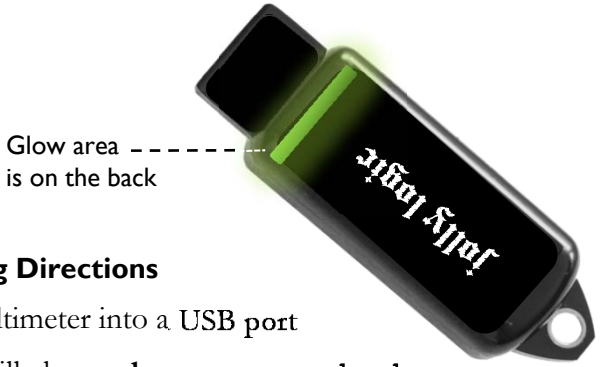
❸ Option to Consider: Streamer Recovery

On a windy day when you're worried that you might lose your rocket—or when you're worried your payload bay or plane may come apart—consider adding a streamer to the altimeter. It's okay to wrap the streamer around the body of the altimeter, since the altimeter "breathes" through a hole near its attachment loop on the end.

Recharging

Your altimeter has an advanced Lithium Polymer battery, the same type of battery used in the latest laptops and cell phones (only much, much smaller).

It can be recharged in any standard USB port, including those on computers, printers, and other devices.



Recharging Directions

1. Insert the altimeter into a USB port
2. The back will glow **red** or **green** near the plug if inserted properly
3. If unit does **not** glow when inserted:
   a. Make sure computer is turned on
   b. Flip the altimeter over and try again
4. **Red glow** indicates that altimeter is charging
5. **Green glow** indicates that charging is 100% complete

Fully charging the altimeter usually takes about two hours if the battery is completely discharged. It does not hurt the battery to leave it in the charger, and it's fine to "top it off" whenever you can.

The battery holds enough charge to power the altimeter for at least 14 hours of continuous use.

Technical Notes

We thought you might be interested to learn a little more about the technical design of the Altimeter One. You can learn even more by visiting www.jollylogic.com.

Logic

The "brain" of the altimeter is a microcontroller which is fast enough to evaluate the local atmospheric pressure more than 20 times each second, while simultaneously updating the LCD display 64 times a second.

Sensors

The pressure and temperature sensing system is state of the art. While overall system accuracy is a function of many factors (sensor precision, analog to digital conversion, manufacturing variation of individual chips, battery voltage run down, sample rate, the weather), the Altimeter One—in its factory test mode—can sense the pressure change of less than a foot and show how high you are holding it to the nearest foot in real time. Amazing!

Power

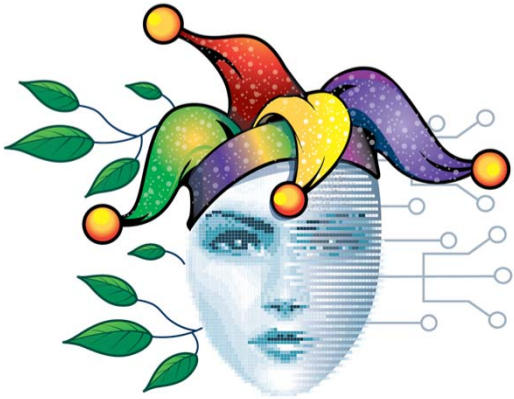
The Lithium Polymer battery looks like a piece of aluminum foil the size of a postage stamp folded in half twice. It weighs only 1.5 grams. Lithium batteries provide cutting edge performance, but they also require very careful management to ensure safety and long life. Two independent circuits ensure that the battery stays cool and always operates within its design limits. The result: no more batteries for you to worry about!

Plastic Case

The black outside case of the Altimeter One is a unique type of ABS plastic chosen for its toughness as well as its translucence—so that the charging LEDs can shine through it. Having a tough protective case allows the Altimeter One to go where other altimeters can't.

Specifications

Size	0.47 in x 0.64 in x 1.93 in 12mm x 16.3mm x 49mm (Fits in a 0.71" diameter BT-20 tube)
Weight	0.24 ounces 6.7 grams
Useful range	Up to 29,500 feet above sea level
Launch threshold	Ignores launches (or wind gust pressures) below 50 feet
Sensor precision	Records 19 bits of pressure and 16 bits of temperature information that can resolve < 1 foot (0.25 m) RMS error (including noise from all components) at 25ºC.
Display precision	Nearest 1 foot below 10,000 feet Nearest 10 feet at or above 10,000 feet
Sampling rate	> 20 times per second
Battery life	14 hours (on and sampling at full speed)
Charging time	2 hours, from zero charge
Battery type	Permanently installed rechargeable Lithium Polymer battery (not user-replaceable), with separate recharge and safety circuits to prevent over-charging
Automatic sleep	Shuts down after one hour of inactivity
Operating temp	- 4ºF to120ºF - 25ºC to 49ºC
USB current	~25ma



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