PerfectFlite Frequently Asked Questions

Q: What do I need to buy in order to use the microAlt?
A: If you just want to measure peak altitude reached, all you need is the altimeter and the MBSO main battery. You can always start with this option and add accessories later.

If you want to download an altitude vs. time curve to your PC laptop, also get the DTCP data transfer kit.

If you want to deploy ejection charges with the altimeter, you would need the following:

Qty 1 ECCG, green ejection charge cable to connect apogee charge
Qty 1 ECCW, white ejection charge cable to connect main charge

   and either

Qty 1 ECPC, ejection charge power cable for user-supplied ejection battery

   or

Qty 1 HCEB, high current ejection battery with cable, rechargeable, and
Qty 1 ECBC, battery charger for above

The HCEB and ECBC combination make up a very compact and reusable "plug and play" solution for firing charges. The ECPC lets you use/requires an additional battery of your own choosing.

Q: Should I get the microAlt 4600 or microAlt 9200?
A: The main thing to consider when deciding which version to buy is launch site elevation. The microAlt 4600 is suitable for flights to 4600 feet *above sea level* (MSL), and the microAlt 9200 can go to 9200 feet MSL. If your launch site is in Colorado at 5500 feet MSL, you clearly couldn't use the microAlt 4600, since you would be beyond its range before leaving the ground! In this particular case, the microAlt 9200 would be suitable for flights to 9200' - 5500', or 3700 feet above ground level (AGL). If you are launching from a field in Massachusetts that is at 300' MSL elevation, the microAlt 4600 could be flown to 4300' AGL and the microAlt 9200 could go to 8900' AGL. Bear in mind that most *model* rockets (G power or less) are hard pressed to exceed 4000' AGL, and 1000' to 2000' AGL altitudes are more typical.

Q: Who would want the microAlt 4600? Why not just get the microAlt 9200?
A: By virtue of its reduced range, the microAlt 4600 is able to provide more detailed data with finer resolution. This means that the altitude vs. time graph that is displayed with the companion software will be smoother and require less interpolation. Additionally, peak altitude will be reported to within +/- 20' instead of the +/-40' of the microAlt 9200. If you are evaluating the performance variation in a rocket vs. differing airframe/fin/launch lug styles, the microAlt 4600 will allow you to see the differences more clearly. If you're sure you're never going to exceed 4600' MSL, get the microAlt 4600.

Q: I want to use a microAlt in an "M" powered Level 3 rocket. Which model would you recommend?
A: Neither! The microAlts were designed to be small, accurate, data logging altimeters for smaller rockets. In order to keep the size down and get accurate and fine-resolution data, the upper altitude limits were set at 4600 ft and 9200 ft above sea level. This is sufficient for the type of rockets for

which they were intended (small!). If you're going to launch to 15,000 feet, break Mach, and invest thousands of dollars in a large rocket you should fit a larger (and probably more expensive) product into your airframe and budget. Check into our miniAlt series, available late Spring 2001.

Bear in mind that most of the other altimeters that go to 25,000 or 35,000 feet and use an 8 bit A/D (BlackSky, G Wiz, MissileWorks, etc) return very "coarse" data with a resolution of 100 feet or more. With the smaller, lower flying rockets the data they supply is much less valuable; for a 600 foot AGL flight the microAlt 4600 would report 600 +/- 20 feet. The others would call it 600 +/- 100 feet! Quite a difference. And the microAlt will fit (with battery) where the others won't.

Q: Is the microAlt capable of operation through Mach?

A: No provision is made for working around the pressure disruptions encountered as a rocket's airframe passes from subsonic to supersonic flight. Therefore the recovery/ejection features are not recommended for use in vehicles in this performance category, though the data logging feature would likely provide some interesting data. The microAlt is intended as a low-cost general use altimeter, and its tiny microprocessor simply doesn't have enough I/O pins to support additional features like mach holdoff delays. A slightly larger, more expensive unit will be available soon with many more features like mach-safe operation, accelerometer, larger data memory, etc.

Q: Why is a separate battery used for ejection charge ignition?

A: There are several reasons for this. In order to keep the overall size to a minimum, a tiny main battery was chosen. This battery provides plenty of power for the electronics, but does not supply enough current to operate ejection charge igniters. If you don't need the ejection features, you don't have to carry the heavy battery necessary for igniters. Even when you add the high-current NiCad ignition battery that we recommend, the altimeter with both batteries is lighter than just a standard 9V battery alone. Our altimeter/battery combination also fits in a 24mm body tube, something that even the 9V battery alone will not do! Our special NiCad battery has a lower internal resistance than common 9V batteries, allowing a greater current output for reliable ignition. You are not limited to flashbulbs with our system. Finally, separating the two power sources eliminates voltage glitches on the altimeter's power supply during ejection charge firing, which could cause corrupted data or premature secondary charge firing.

Q: Where are the mounting holes?

A: The microAlt series is intended to be mounted directly in small diameter body tubes via "friction fit". A single wrap of weatherstrip around the battery portion of the altimeter provides a snug fit in a 24mm tube, and common foam pipe insulation works well with larger sizes. This allows rapid removal and installation, facilitating swapping one altimeter among a number of rockets (for club contests, etc). More elaborate mounting schemes are covered in the manual, including remote power and arming switches.

Q: Why isn't the microTimer field adjustable?

A: In order to minimize size, the delay time for the microTimer is set by cutting or resoldering a set of jumper pads, rather than by DIP switches. While this could conceivably be done in the field, our intention is that the delay should be set for a particular use, and the timer dedicated to that use. Adding a DIP switch would have nearly doubled the device's size and increased its cost. We will have a larger timer available in the future with switchable delays, multiple outputs, and higher current capability. The microTimer was originally intended as a low-cost evaluation of one's kit-building skills before attempting the more complex altimeters, providing a useful accessory in the process.