



Release Notes for Version 1.0.1

24 August 2011

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Version 1.0.1 is a major release, adding support for the TeleMini device and lots of new AltosUI features

1. AltOS

AltOS New Features

- Add TeleMini v1.0 support.
- Support operation of TeleMetrum with the antenna pointing aft. Previous firmware versions required the antenna to be pointing upwards, now there is a configuration option allowing the antenna to point aft, to aid installation in some airframes.
- Ability to disable telemetry. For airframes where an antenna just isn't possible, or where radio transmissions might cause trouble with other electronics, there's a configuration option to disable all telemetry. Note that the board will still enable the radio link in idle mode.
- Arbitrary frequency selection. The radios in Altus Metrum devices can be programmed to a wide range of frequencies, so instead of limiting devices to 10 pre-selected *channels*, the new firmware allows the user to choose any frequency in the 70cm band. Note that the RF matching circuit on the boards is tuned for around 435MHz, so frequencies far from that may reduce the available range.

AltOS Fixes

- Change telemetry to be encoded in multiple 32-byte packets. This enables support for TeleMini and other devices without requiring further updates to the TeleDongle firmware.
- Kalman-filter based flight-tracking. The model based sensor fusion approach of a Kalman filter means that AltOS now computes apogee much more accurately than before, generally within a fraction of a second. In addition, this approach allows the baro-only TeleMini device to correctly identify Mach transitions, avoiding the error-prone selection of a Mach delay.

2. AltosUI Application

AltosUI New Features

- Add main/apogee voltage graphs to the data plot. This provides a visual indication if the igniters fail before being fired.
- Scan for altimeter devices by watching the defined telemetry frequencies. This avoids the problem of remembering what frequency a device was configured to use, which is especially important with TeleMini which does not include a USB connection.
- Monitor altimeter state in "Idle" mode. This provides much of the information presented in the "Pad" dialog from the Monitor Flight command, monitoring the igniters, battery and GPS status withing requiring the flight computer to be armed and ready for flight.
- Pre-load map images from home. For those launch sites which don't provide free Wi-Fi, this allows you to download the necessary satellite images given the location of the launch site. A list of known launch sites is maintained at altusmetrum.org which AltosUI downloads to populate a menu; if you've got a launch site not on that list, please send the name of it, latitude and longitude along with a link to the web site of the controlling club to the altusmetrum mailing list.
- Flight statistics are now displayed in the Graph data window. These include max height/speed/accel, average descent rates and a few other bits of information. The Graph Data window can now be reached from the *Landed* tab in the Monitor Flight window so you can immediately see the results of a flight.

AltosUI Changes

- Wait for altimeter when using packet mode. Instead of quickly timing out when trying to initialize a packet mode configuration connection, AltosUI now waits indefinitely for the remote device to appear, providing a cancel button should the user get bored. This is necessary as the TeleMini can only be placed in "Idle" mode if AltosUI is polling it.