

Release Notes for Eggtimer Quantum Software 1.06

Bug Fixes

Low Velocity Routine Change

It was discovered that under some very rare circumstances (most likely only occurring with airstarts) that the low velocity routine may not pick up apogee properly, and may keep deployments from occurring. The Low Velocity routine has been changed to keep this from happening. Note that we have no reports of this actually occurring in the field; we made it happen while testing the airstart code (yes, big ouch...)

New Features

Airstart Code

Airstart timer capabilities have been added to the Quantum software. You select the Quantum to be either a standard deployment controller (its default mode) or an airstart controller with a special URL. Once selected, the menus change to reflect the differences in options. Airstarts are timed from launch detect (not the LDA, the actual launch) and can be qualified with altitude@time, velocity@time, and/or breakwire detect. Due to the complexity of electronic airstarts, there is a new manual, Eggtimer Quantum Airstart Manual, that discusses the functions and some of the things you need to know when planning an airstart.

Release Notes for Eggtimer Quantum Software 1.05

Bug Fixes

Low Temperature Fix for Altitude

It was discovered in early morning Fall flight testing that the barometric pressure (and therefore, the reported altitude) became wildly inaccurate at temperatures below approximately 60 F, and caused a hardware fault at power-up. After some diagnostic work, we found that there was an error in the temperature compensation route for the baro sensor, it has been fixed, and we have confirmed that it works accurately from 0 F all the way to 150 F.

Release Notes for Eggtimer Quantum Software 1.04a

Bug Fixes

Improvements to WiFi Connection Reliability

The WiFi code has been changed to make it more reliable and persistent. Previously, it was possible that a strong outside WiFi signal on Channel 1 might prevent the Quantum from sending out a WiFi “beacon”, and make it unconnectible. This is much less likely with this release.

Release Notes for Eggtimer Quantum Software 1.03

Bug Fixes

Page Change for Deployment Test

Previously, it was possible to resubmit a deployment test that had been completed if the validation code had not been changed, and the page URL with the previous validation code was resubmitted. This was possible in some browsers if you hit the back button from the browser, or picked the validated URL, immediately after reconnecting to the Quantum’s WiFi interface after having previously disconnected from it right after the deployment test.

While the chance of this happening seems remote, it has happened out in the field. A flyer with two Quantums in their rocket tested both at their work table, put it back together, and attached to the second Quantum on the pad to arm it. When he launched his browser, it was from the last cached setting, which was the validated test URL. He put the phone down for a few seconds, and didn’t notice that the deployment countdown was going on, and... pop.

To prevent this, when a deployment test is completed a new random validation code is generated. This prevents a cached page from launching a test, because it will fail the validation; instead, you’ll get the test home page.

Release Notes for Eggtimer Quantum Software 1.02b

Bug Fixes

Changes to Servo Routines

The servo routines “sometimes” caused the Quantum’s processor to reset. In addition, the pulse widths were not always consistent with R/C standards. The servo routines have been rewritten from scratch

and carefully checked so that they will no longer cause a processor reset, and they are as close to the standard (1.0 ms – 2.0 ms “on” in a 20 ms cycle) as we can get them.

Continuous Firing-Time in Igniter Mode

The continuous firing time has been fixed, previously it did not work properly. If you select this option, the channel will be held “on” until landing. Do NOT use this with high-current loads (such as a hotwire line-cutter) or you may damage the output transistors and/or reset the Quantum (if you’re using a single battery). Also, note that if you select this option and do a deployment test it will fire for 9 seconds, it will not stay on forever.

Large Values of Drogue Delay Saved Incorrectly

Drogue delays over 2500 ms were being changed to zero, this has been fixed.

Continuity Check

The continuity check for the Main channel sometimes showed a false “OFF” reading when there was actually continuity, preventing you from arming the Quantum for flight. It’s been fixed.

Features/Changes

Page Changes

The servo Direction/Skew setting in the Global Settings page has been changed to be in percent of travel rather than degrees, since many servos do not rotate a full 180 degrees. For example, if you had previously selected “CCW 90 Degrees” the new value will be “CCW 100%”.

The Deployment Test page now shows the current deployment channel settings as well as the deployment channel continuity status.

The Flight Select page now shows an empty memory location as “No Flt”, and the link to “More” is suppressed.

We’ve added a selection to the Main deployment channel to fire at Nose-Over, at the request of an ARLISS mentor. This allows you to fire the Main near apogee, then use the Drogue channel to deploy the CanSats at apogee + 6 secs. by selecting a delay of 5.0 secs. If you don’t know what we’re talking about, you should check out arliss.org... it’s really cool stuff.

All of the HTML pages now tell the browser to not cache any of the pages. Whether or not the browser listens is up to the browser. Note that you can still get a “dirty” page by clicking the Back button on your browser, there’s no way to disable that. Don’t do it.

Documentation Changes

Servo-Related Changes

We are now recommending that if you use servos larger than the “micro” type that you use a separate battery to power them. The chance of a large servo causing a power sag that resets the processor is there, so it’s prudent to avoid that scenario.

We are also recommending that you add a .1 uF and a 220uF-470uF electrolytic capacitor to any servos to filter the power and signal noise. Details are in the Eggtimer Quantum User’s Guide.

Screen Changes

The Status Page screen shot was changed to reflect the version change from 1.01 to 1.02.

The Deployment Test screen shot was changed to reflect the version change from 1.01 to 1.02.