Silverware readme

Silverware is a firmware for some micro quadcopters, which adds features not normally present in the stock firmware. Most useful of these is acro mode, but also the ability to change settings for custom builds, or to adapt to personal preferences.

Why use silverware:

- already tuned for supported quads
- learn acro mode risking a $20 quadcopter, not a $150 one
- try something new

Installation

Because of differences between boards, installation is covered by a rcgroups post. For linux instructions use the install.md file. (See also links section)

For MacOS, see below

Settings

Configuration options are placed mostly in file "*config.h*" . This covers many flight settings, like maximum rate in acro mode, max angle in level mode, as well as switch assignments. Hardware settings can be found in file *"hardware.h"*, they mainly don't need changing as they cover fixed things such as radio pins and leds. A small amount of other settings exist in other files.

Pids are set in the "*pid.c*" file for acro mode. For level mode, acro pids are used, plus the level pids in file "*angle_pid.c*"

Radio

The default protocol used is Bayang, a modification of it allows use of telemetry on transmitters which support it, such as Devo 7e with Deviation installed for example. Telemetry needs to be enabled in the transmitter, the quad software will support either protocol variation without changes.

Gestures

By default, certain stick sequences, which we call gestures, are used to activate some features, or issue commands. For example, the gesture *Down - Down - Down* would be accomplished by moving

the pitch stick down 3 times in a short time.

Gesture list:

```
Down - Down - Down: Accelerometer calibration / Save pids & bind state if
changed

Left - Left - Down: acro mode
Right - Right - Down : level mode

Up - Down - Up: Cycle pid term to the next ( P - I - D )
Up - Down - Down: Cycle pid axis to be changed ( Roll/Pitch - Yaw )
Up - Down - Left: Decrease the selected value
Up - Down - Right: Increase the selected value

Up - Up - Up: Auto-Bind ON (1 blink)
Up - Up - Up: (again) Auto-Bind OFF (2 blinks)
```

Pid tuning using gestures

The pids can be tuned and saved via gestures, or by editing the pid.c file. Saving the pids after changing them using gestures, they will remain active after a power cycle. They remain usable even after flashing a firmware to the quad again, provided the pid.c values have not changed since the last upload.

Flashing with OSX

User 527FPV has managed to code an app for Mac users allowing customising of the config.h, pid.c etc files and compiling and flashing with a simple click. For now it comes bundled with NotFastEnuf's fork of the code which can flash all the STM32 fcs. Download from here https://silverware.simonernst.com/

More Information

Further information can be found in the silverware wiki

http://sirdomsen.diskstation.me/dokuwiki/doku.php?id=start