## Gestures:

The firmware uses gestures for a number of functions. Currently gestures are used for:

- Accelerometer calibration ( all versions with level mode )
- Level / Acro mode switching ( if default options are used )
- Pid gestures ( enabled by default in most versions )

## Gesture timing:

The gestures can only be performed with throttle at minimum. Either yaw or roll count as left / right, to account for tx mode 1/2/3 differences.To perform “Up” for example, move the stick pitch from center position, to max, then back to center. Continue for the remainder of actions. If a gesture is not registered, wait 2 seconds before trying again. All gestures have led feedback if registered.

The time to perform a 3 action gesture, such as Down x 3, is about 1 - 2 seconds total time. Make sure the stick return to center between actions, taking the diagonal is not going to work.

## Accel calibration:

The accelerometer calibration saves offsets to flash in order to reduce drift in level mode.The gesture to start calibration is

```
Down - Down - Down: accelerometer calibration
```

Acro / Level mode switch

The acro / level mode switch uses 2 gestures, one to set level mode, and one to set acro mode. The functions actually toggle an auxiliary channel, so they could be used for any channel based function, not just level mode switching. The initial state on powerup can be changed also, for instance if the quad is to start on powerup in acro mode ( default level)

```
#define AUX1_START_ON // change powerup value
```

Gestures:

```
Left - Left - Down: acro mode (or channel AUX1 off)
Right - Right - Down : level mode (or channel AUX1 on)
```

## Pid gestures:

See also: pid gestures page

Pid gestures are used to change the pids while away from a computer. The pids can be saved so they remain after powerdown, or they will be discarded if not saved. The saved pids remain active until the pids in file pid.c are changed, and uploaded to the quad.

```
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
```

```
Down - Down - Down: Save pids if changed / accel calibration if not
```

## All gestures:

All gestures listed below for quick reference:

```
Down - Down - Down: Accelerometer calibration / Save pids 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
```

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