

Welcome to Silverware wiki

This Wiki should introduce and help in and on a project, RCGroups user silverxxx has started in september 2015

Silverware provides both, level and acro mode - on all supported boards

There are two main versions of Silverware:

- The one for H8mini/green, H101/H8s boards which are based on a GigaDevice 32KB flash MCU
- The one for CG023/H8mini blue board and many, many others which are based on a STM32 16KB flash MCU (which is **not** a deficit! Flash space is enough anyway)

Features:

- Acro mode
- Level mode (switchable via TX channel or gestures, using stock TX)
- Telemetry via Bluetooth using [SilverVISE](#)
- Telemetry using a DEVO and [Bayang Telemetry Protocol](#) (Telemetry support since the December '16 nightly builds of [Deviation](#))
- Telemetry using [Taranis/9X/TH9X](#)
- [Brushless](#) motor Driver supporting PWM, PPM, Oneshot and DShot
- Inverted flight possibility on Floureon H101 / Eachine H8S
- Well suitable for custom builds, such as different frames, larger motors, Hexas, Brushless. Most compatible boards are known to drive 8520 coreless motors without issues
- Switchable output to switch 'something' on and off during flight via TX (e.g. FPV gear)
- Buzzer support (watch the mod section) for lost quad detection
- 2S support for the green and blue H8 boards (don't use 1S brushed motors! For brushless only recommended, you might fry the FETs otherwise!)
- Support for various other TX protocols

The quads everything started with





Compatibility list

Quad	H8 dual	H101 dual	CG023	Other	Notes
Eachine/JJRC H8, green board	yes				
Eachine H8 3D mini				yes 3D(code)	
Floureon H101		yes			
Eachine H8S		yes			
Eachine CG023			yes		
Eachine/JJRC H8, blue board			yes	[1]	Keil Bug, solve it that way , CLK/DAT swapped
GW008 Skull Quad				yes, forum post	
DHD D1			info	acro only	
Bayang X9, GD F130 mcu board	yes (post)				motor order changed, 16k flash
Eachine 3D X4, CG027R board			yes		
FQ777-124	yes (post)				bikemike's fork
CX Model CX023	yes (post) and following				bikemike's fork :wiki:hardware_cx023.h..zip

See the [OpenMicro \(CG023\) Hardware compatibility charts](#) for more detailed list of possible and work in progress compatibility.

Common info links, including how to start

Flashing guide video	
Changing config settings.	
Changing the target device.	
Guide to installing required software.	
Download the GigaDevice GD32F130 support pack.	

Flashing guide video / Blue Board	
Gallery of awesome pictures with few ways on how to do the flashing port.	
Silverware H8/H101 thread.	
Github H8 dual source	
Github H8 acro source	
Github Floureon H101 dual source	
Hexa using H101 FC (Circular Style)	
Hexa using H101 FC (H Style)	
Tricopter using H8 FC+	
H101 "Rattitude" Version	
Silverware CG023 thread	
Github CG023 dual source	
Github DHD D1 source acro only(beta)	
CG023 firmware wiki page	

Beginner's Guide

[Differences between Level and Acro - why does the quad what it does?](#)

Transmitter config

[Stock Transmitter Config](#)

[Devo Config](#)

FAQ

Flashing

Question	Answer
"Error, Flash download failed - Could not load file './.axf'"	Project not compiled, go to 'Project → Build Target (or press F7)'. Errors in code may be causing compilation to fail. Check that the number of errors is zero when compiling.
"No target connected"	Quad not powered on, you need to supply power to the board; either plug the battery, or the serial cable. If powered, check your clk and data connections. This message indicates the computer can't communicate to the quadcopter.
"Unknown target connected"	Wrong chip selected, go to "Project → Options For Target (Alt + F7)". New window opens, switch to 'Debug' tab and on top right, press "ST-Link Debugger" Settings button. New window opens, switch to 'Flash Download' tab, select the proper chip family, press Remove, then Add, and then select the proper chip.
Internal Command Error. Error: Flash Erase failed - Target DLL has been cancelled"	Your programming wires might be too long. Try to keep them as short as possible.

Question	Answer
ST-link USB communication error or similar popup	Disconnect/reconnect st-link or Restart computer. This may also be a special blue board problem. read here
Select device menu grayed out	This is from video, use text instructions from post, or skip the related steps

Firmware settings

Question	Answer
What PWM frequency is the best?	The pwm frequency changes the linearity of the motors (due to their inductance) and as such it can have an effect on flight. For 720 motors 8Khz seems to result in linear thrust. Some 6mm motors are similar. Increasing frequency reduces thrust at low throttle, so it can help with wobbles that occur while descending. 820 motors are still somewhat nonlinear even at 32Khz

Flight

Question	Answer
My quad is drifting in flight	Try the accelerometer calibration: Place the copter on a level surface, throttle low, roll&yaw center, and pitch down three (3) times in quick succession. The LEDs will blink alternating while the calibration is in process.
How do I fly acro without crashing all the time?	<i>"There is an art to flying, or rather a knack. Its knack lies in learning to throw yourself at the ground and miss. ... Clearly, it is this second part, the missing, that presents the difficulties."</i>

PID tuning

[PID Tuning Guide](#)

[PID Sample Settings](#)

Where to buy stuff?

STlink, spare props, good quality motors, batteries and so on.

ST-Link V2 Emulator for firmware flashing (banggood)
Silverxxx's rcgroups st-link post

We all no doubt know the joys of the slow boat from China but hey they are cheap and available at Banggood

Mods

[quadcopter mods](#)

Changing firmware settings

[Settings information](#)

Debug mode

[using debug mode](#)

Brushless setups

[brushless setup](#)

[driving esc's - firmware settings](#)

[brushless setup - general build info](#)

[brushless builds - pics/specs/settings](#)

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