🏠   Guides   Current   **Mixer Support**

Mixer Support

- Beginning with 3.1.7, some rarely used mixers have being dropped from F1 and F3 firmwares due to flash space limitation.
- In addition, some mixers are not supported from the beginning (or at least I couldn't find any remains of the code).
- On 3.2 and later, unsupported mixer is detected and reset to default (mixers without servos to "Custom" and mixers with servos to "Custom Airplane").

The future

Ultimately, motor and servo mixes will be dynamically loaded by configurator, and rarely used mixers are likely to resurrect (if devs find them useful enough).

The support matrix (x = not included, o = included)

Mixer	F1 (*1)	F3	F4 & F7	Note
QUADX	o	o	o	
QUADX 1234	o	o	o	
QUAD+	o	o	o	
Tricopter	o	o	o	
Gimbal	o	o	o	
Hex +	x	x	o	
Hex X	o	o	o	
Hex H	x	x	o	

Mixer	F1 (*1)	F3	F4 & F7	Note
Octo Flat +	x	x	o	
Octo Flat X	x	x	o	
Flying Wing	o	o	o	
Airplane	o	o	o	Single prop (inconsistent with graphic)
Heli 120	x	x	x	No code
Heli 90	x	x	x	No code
Single Copter	x	x	x	Insufficient code (no mmix)
Dual Copter	x	x	o	Doesn't reset without #3178
Bicopter	x	x	o	Doesn't reset without #3178
V-tail Quad	o	o	o	
A-tail Quad	o	o	o	
Y4	o	o	o	
Y6	x	x	o	
Octo X8	x	x	o	Can be emulated by mmix (see below)
PPM to SERVO	x	x	x	No code, can be emulated by smix (see below)
Custom	o	o	o	
Custom Airplane	o	o	o	

Mixer	F1 (*1)	F3	F4 & F7	Note
Custom Tricopter	o	o	o	

*1: CJMCU and MICROSCISKY only supports QUAD mixer.

Octo X8 emulation

```
mixer custom
mmix reset
mmix 0  1.000 -1.000  1.000 -1.000
mmix 1  1.000 -1.000 -1.000  1.000
mmix 2  1.000  1.000  1.000  1.000
mmix 3  1.000  1.000 -1.000 -1.000
mmix 4  1.000 -1.000  1.000  1.000
mmix 5  1.000 -1.000 -1.000 -1.000
mmix 6  1.000  1.000  1.000 -1.000
mmix 7  1.000  1.000 -1.000  1.000
```

PPM to SERVO emulation

An example of direct channel mapping.

```
mixer customairplane
smix reset
smix 0 0 4 100 0 0 100 0
smix 1 1 5 100 0 0 100 0
smix 2 2 6 100 0 0 100 0
smix 3 3 7 100 0 0 100 0
smix 4 4 8 100 0 0 100 0
smix 5 5 9 100 0 0 100 0
smix 6 6 10 100 0 0 100 0
smix 7 7 11 100 0 0 100 0
```

Other emulations

It is easy to create a set of mmix/smix for a given mixer configuration; take corresponding lines from the source `src/main/flight/{mixer,servos}.c` and convert them to CLI format.

Youtube
▶ Joshua Bardwell
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