PX2IO – Input / Output and Servo Module

QUICK START – HARDWARE VERSION 1.1

Description

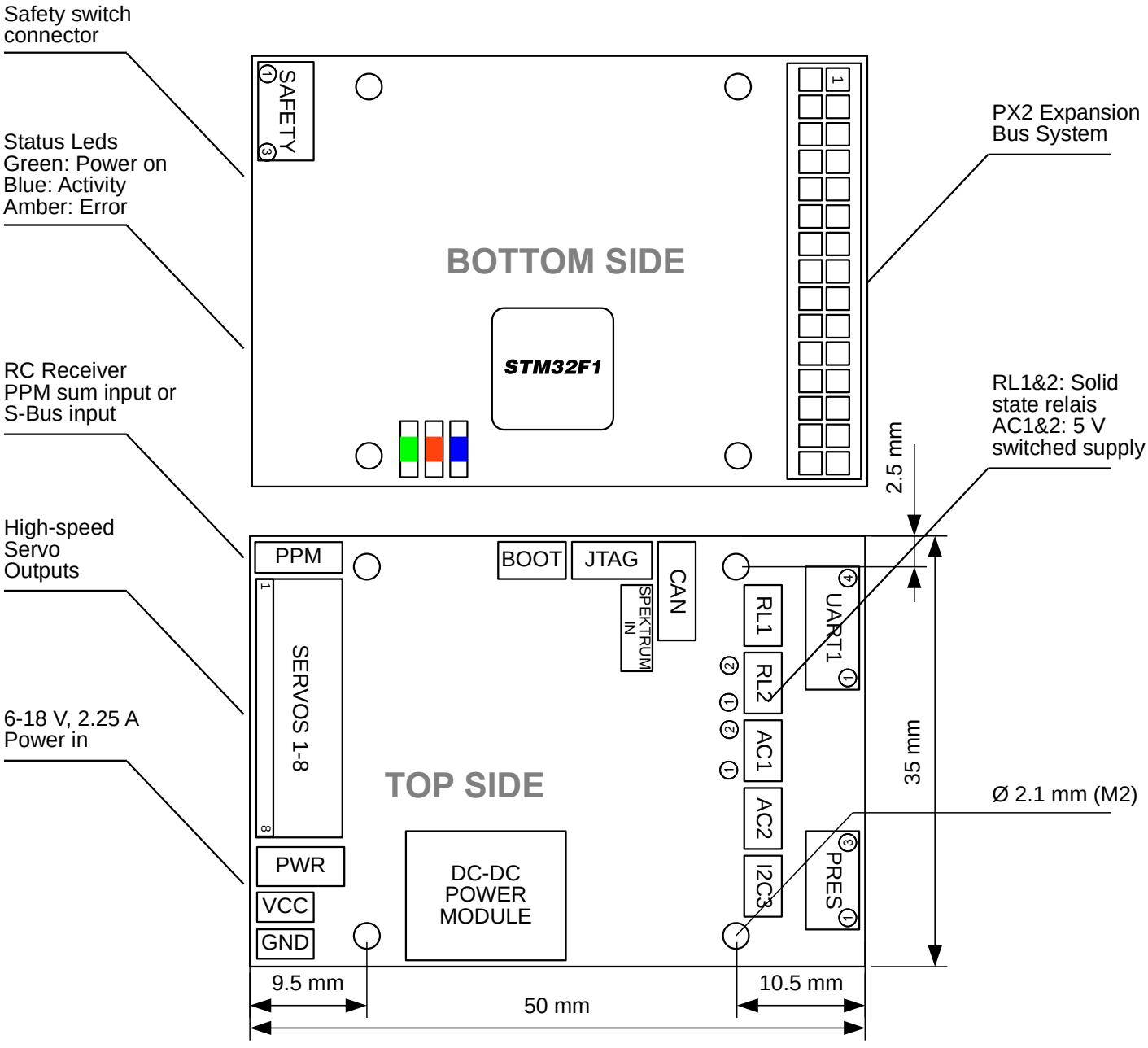
PX2IO is an input/output board providing servo and receiver inputs/outputs. It also provides four solid-state relays and a wide range of additional I/O connectors. The 30-pin expansion bus allows to combine it with other modules to provide additional I/O.

http://github.com/qgc/hardware

Features

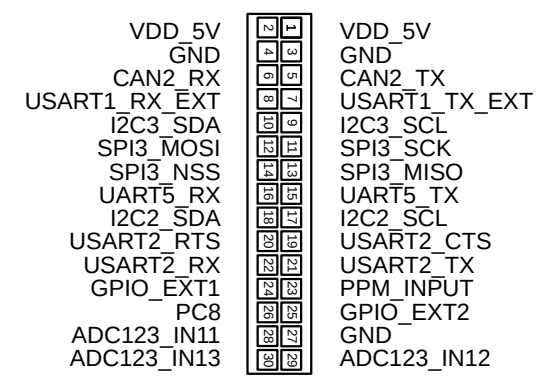
- 24 Mhz Cortex-M3 I/O multiplexer
- 6-18V wide supply in, 5V / 2.25 A and 3.3 V / 1 A supply out
- 8x high-speed servo outputs (up to 400 Hz), max. 1 A combined
- PPM sum signal input
- Spektrum receiver input
- S-BUS compatible receiver input
- 2x 0-40 V, 1 A solid-state relay (MOSFET)
- 2x 5 V, 0.5 A solid-state switched 5 V supply (current-limiting)
- PX2 Expansion bus (PX2FMU: Flight Management Unit)
- 50x35x14 mm (1.38x1.97x0.55“), 20g, 30x30 mm mounting

Connectors, Jumpers and Dimensions

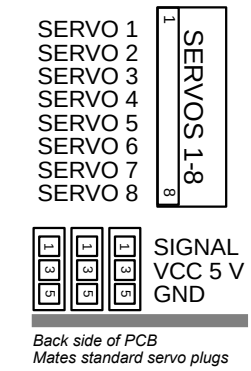


Pinout and absolute maximum Ratings

- Input: 6-18 V, max current: 2.5 A
- Accessory outputs: 5 V, 0.5 A current limited each
- Peripherals output: 3.3 V, 0.5 A current limited
- Servo Output: 5V, 1.0 A current limited
- Do NOT connect a 6 V servo system without REMOVING diode D1 before



Mates 2 mm header: 3M "9532230-2000-AR-PR"



Back side of PCB
Mates standard servo plugs

All connectors are oriented the same way as shown in the overview picture. Check the pin 1 markings in the overview if unsure.

UART1
4 - GND
3 - RX
2 - TX
1 - VCC_3V3

UART2
4 - GND
3 - RX
2 - TX
1 - VCC_3V3

I2C3
4 - GND
3 - RX
2 - TX
1 - VCC_3V3

Mates 4 pos Molex PicoBlade housings
Part # 51021-0400
Crimp terminals
Part # 50058-8000 (for AWG 28 wire)
Crimp tool
Part # 0638190400

PRES
3 - GND
2 - SIGNAL
1 - VDD_5V

SAFETY
1 - VDD_3V3
2 - LED3
3 - SAFETY

BOOT
3 - GND
2 - RX
1 - TX

Mates 3 pos Molex PicoBlade housings
Part # 51021-0300
Crimp terminals
Part # 50058-8000 (for AWG 28 wire)
Crimp tool
Part # 0638190400

RL1
2 - OUT
1 - IN

RL2
2 - OUT
1 - IN

AC1
2 - GND
1 - VCC_5V

AC1
2 - GND
1 - VCC_5V

Mates 2 pos Molex PicoBlade housings
Part # 51021-0200
Crimp terminals
Part # 50058-8000 (for AWG 28 wire)
Crimp tool
Part # 0638190400

BAT
2 - GND
1 - VBAT (6-18V)

Mates 2 pos JST PA housings
Part # PAP-02V-S(P)
Crimp terminals
Part# SPHD-001T-P0.5 (for AWG 22-26 wire)

CAN
4 - GND
3 - CAN RX
2 - CAN TX
1 - CAN_VCC

Mates 4 pos JST ZH housings
Part # ZHR-4
Crimp terminals
Part # SZH-002T-P0.5 (for AWG 28-26 wire)

SPK
3 - GND
2 - SPEKTRUM
1 - VCC_3V3

Mates Spektrum RC receiver cables:
JST
Part #
Crimp terminals
Part # (for AWG xx wire)

PPM
3 - GND
2 - VCC 5 V
1 - PPM SUM

Mates 3-pos servo cable. Solder cables into the holes and connect RC receiver with it.
Fits 0.1“ header (both straight and right-angle)

Upgrading Firmware / Developing Custom Code

PX2IO is designed as failsafe board with a stable codebase. It's code is automatically updated by a connected PX2FMU board if necessary. Building custom firmware is only recommended for very advanced users.
To develop custom code, follow the PX2FMU toolchain guide at: http://www.example.com/developers_guide

Contact, Copyleft and further Information

PX2FMU is an open hardware design, following the XXX open hardware license. You can do XXX with it. PX2FMU was created by XXX. The XXX project contributed XXX.

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Further information is available here:

- PX2FMU website
- Appropriate mailing list 1
- Appropriate community 1