OCPOC™ ZYNQ MINI SPECIFICATIONS

HARDWARE SPECIFICATIONS:

OcPoC is more than an inside-the-box flight controller. It is an adaptable, powerful embedded flight controller platform that redefines what UAVs can do..

OcPoC™ Zynq Mini includes:
- **FPGA+ARM System-on-Chip: Xilinx Zynq Z-7010**
  - **CPU: 667 MHz Dual-Core ARM A9**
  - **FPGA: Artix-7 with 28k Logic Cells**
  - **RAM: 512 MB DDR3**
  - **Flash: 128 MB**
  - **SD Card (for Linux booting and data logging): 16 GB**
- **16 programmable tri-pin I/Os**
  - **See "Pinouts For Sensors" below for default configuration**
- **10x Programmable I/Os on JST-GH connectors supporting the following interfaces:**
  - **I2C**
  - **USB-OTG**
  - **USB-UART**
  - **SPI**
  - **CSI**
  - **GSI**
  - **CAN (only available on port 3)**

- **IMU: 2x MPU9250 9-DOF**
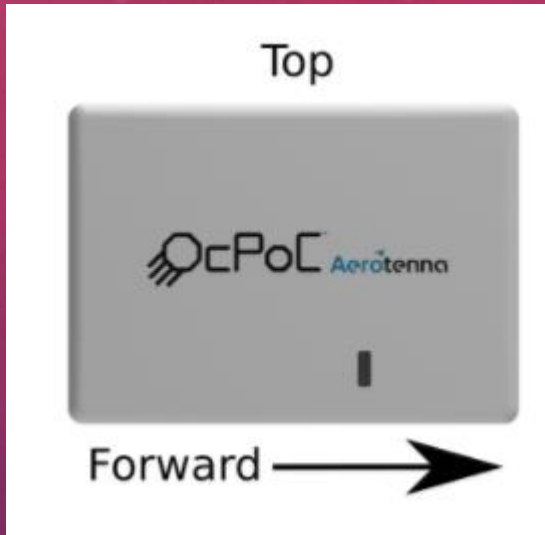- **Baro: 1x MS5611**
- **Power: 5-30 VDC**
  - **OcPoC regulates internally to 5V**
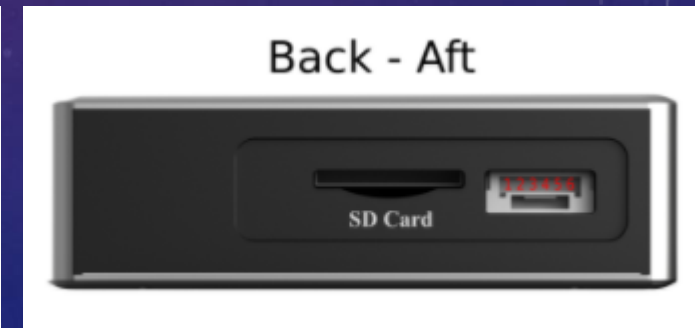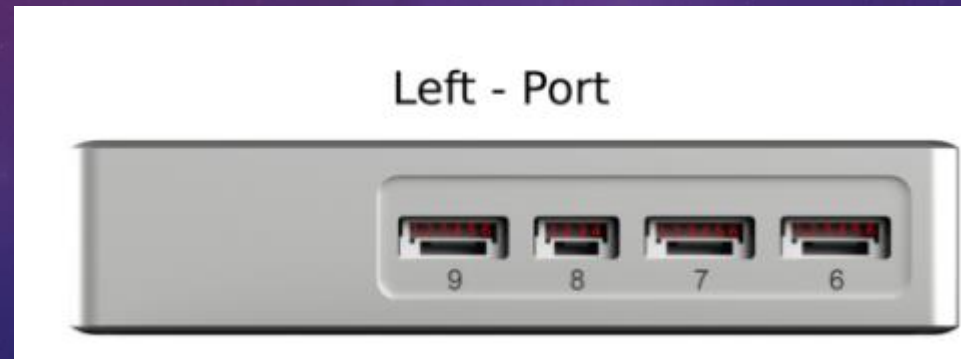 - **2S-6S LiPo battery typical on-airframe power source**
- **Console "USB1" port supplies 5V for bench testing**

NOTE: Almost all of the 4-pin and 6-pin JST GH connectors on the OcPoC Zynq Mini are programmable to any supported interfaces as listed above. The default boot files provided by Aerotenna are presented below, but this can be customized as needed.

DIMENSIONS:

Top

OcPoC Aerotenna

Forward →

Front - Stern

pwm 1 2 3 4 5 6 7 8   rc in GND

GND
VCC
SIG

GND
GND
VCC

Right - Starboard

1 2 3 4 5 USB1 USB2

Left - Port

9 8 7 6

Back - Aft

SD Card

Height: 2 cm
Width: 6.3 cm
Length: 9.2 cm
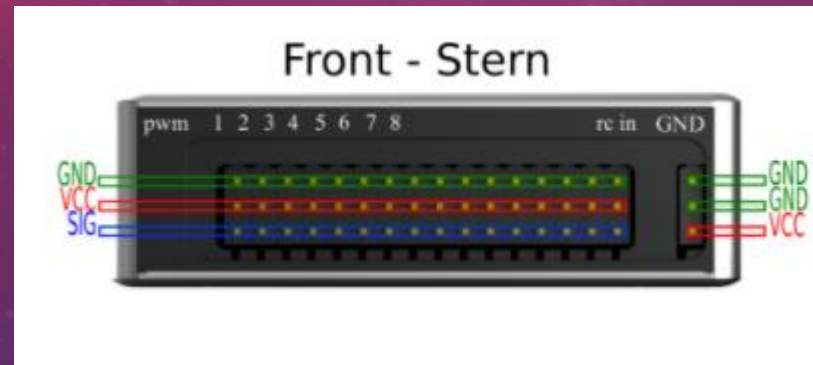
Serial (4-pin)	I2C (4-pin)	CAN (4-pin)	GPIO PINS	
1 GND	1 GND	1 GND	1	PWM 1
2 RX	2 SDA	2 CAN Hi	2	PWM 2
3 TX	3 SCL	3 CAN Low	3	PWM 3
4 VCC	4 VCC	4 VCC	4	PWM 4
			5	PWM 5
			6	PWM 6
			7	PWM 7
Serial/I2C (6-pin)	SPI (6-pin)		8	PWM 8
1 GND	1 GND		9	PWM 9
2 SDA	2 Mosi		10	PWM 10
3 SCL	3 Miso		11	PWM 11
4 RX	4 CLK		12	PWM 12
5 TX	5 CS		13	SCL /dev/i2c-0
6 VCC	6 VCC		14	SDA /dev/i2c-0
			15	N/A
			16	RC Input (PPM and SBUS) and /dev/ttyS2

The table below presents the default OcPoC bootup configuration for each connector, as provided in the following quick installation guide.

OcPoC Port #	Protocol	Device Path	Default Peripheral Device
1	I2C	/dev/i2c-2	Air Data Probe or I2C Splitter
2	Serial	/dev/ttyS5	
3	CAN	N/A	
4	Serial	/dev/ttyPS1	Radio Telemetry
5	Serial	/dev/ttyS0	uSharp-Patch
6	Serial + I2C	/dev/ttyS3 /dev/i2c-4	GPS/Compass #1
7	Serial + I2C	/dev/ttyS7 /dev/i2c-5	GPS/Compass #2
8	Serial	/dev/ttyS6	uLanding Radar Altimeter
9	Serial + I2C	/dev/ttyS1 /dev/i2c-3	GPS/Compass #3
10	SPI	/dev/spidev2.0	

CONNECTORS

- The 4-pin and 6-pin connectors on OcPoC Zynq Mini are JST GH series:

- **4-pin: Digi-Key Link: GHR-04V-S**

- **6-pin: Digi-Key Link: GHR-06V-S**

- You can also get a ready made cable with the 4-pin JST-GH connector going to open wire:

- **mRobotics.io Link: MRC0233**

PROVIDING POWER TO YOUR OCPOC

There are two ways to provide power to your OcPoC. If you connect to your OcPoC via the port labeled 'USB1', the micro USB port will provide 5V to the board with enough current to transfer files from your host PC to the OcPoC. In general, it is best to power OcPoC with a LiPo battery (or a separate 5V power supply) once you connect external peripherals. A GPS module or telemetry radio will work from USB power, but peripherals such as a WiFi adapter or any Aerotenna radar sensors require more current than USB power can supply.
The OcPoC has an on-board voltage regulator which can safely handle batteries providing up to 30 volts. Any 2S-6S LiPo battery connected directly to the OcPoC power pins will work well as a power source on the airframe. **We recommend using a Futaba style 3-pin connector to connect the battery's positive (+) terminal to the Vcc pin, and the battery's negative (-) terminal to the two GND pins as marked below.** However, OcPoC will still work with only one GND pin connected to battery GND. Please refer to the 'Front - Stern' Image above for a visual of the pin orientation.

USB1에 5V 인가 하는 방법으로는 보드 파일전송(프로그램) 수준 정도로만 사용할 수 있음.
리튬폴리머 베터리 또는 5V 전원공급기를 사용하여 각종 인터페이스 장치와 센서들에 충분한 전류 공급필요
커넥터는 후타바 스타일의 3핀 커넥터 사용을 권장.