Pixhawk V6X Controller

Product manual

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CUAV Tech Inc.,Ltd

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Online documentation

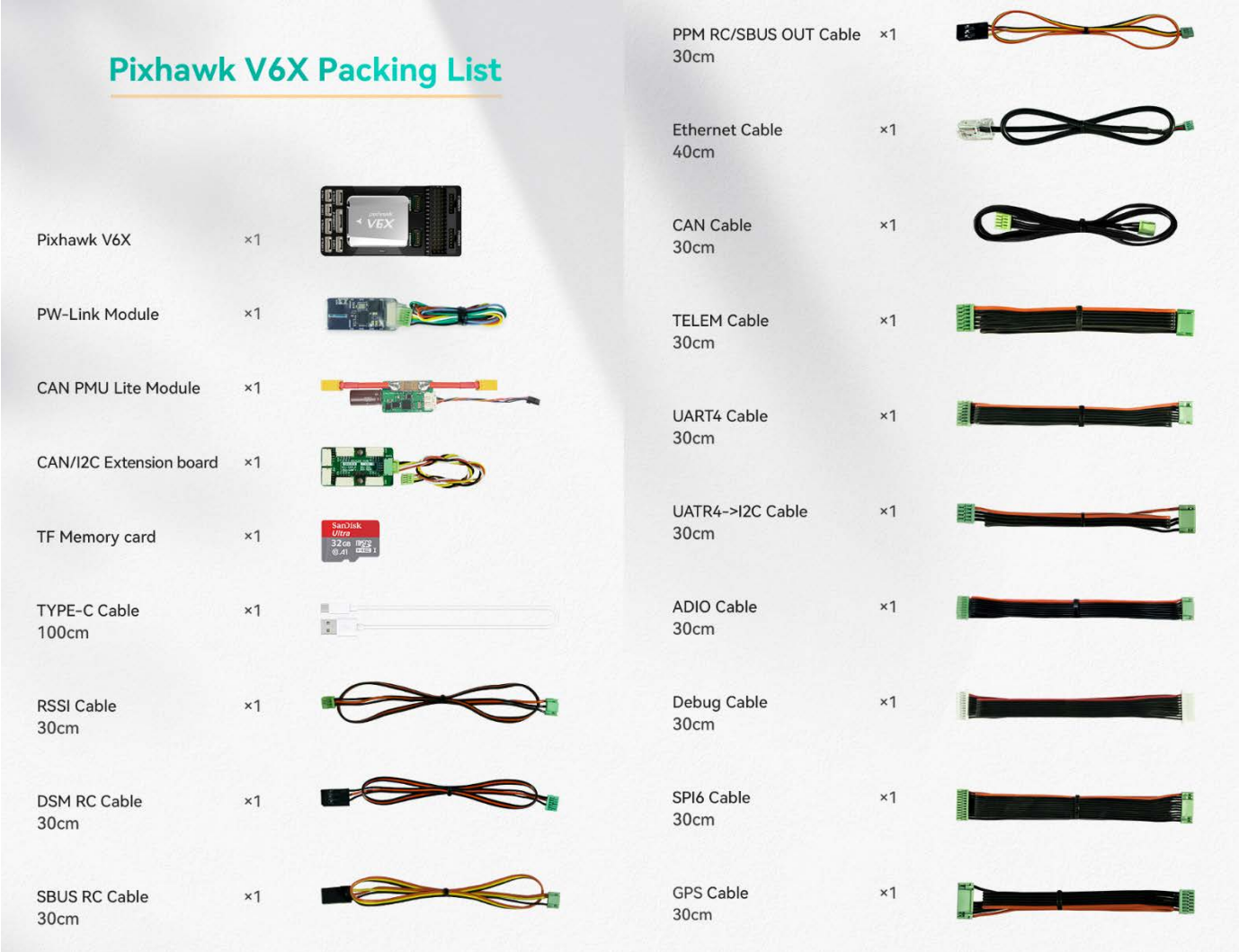
Please visit the CUAV docs for detailed tutorials and firmware downloads of this product:
http://doc.cuav.net

Download ground control station

QGroundControl(QGC 地面站)
https://docs.qgroundcontrol.com/en/getting_started/download_and_install.html

Mission Planner:
https://firmware.ardupilot.org/Tools/MissionPlanner/MissionPlanner-stable.msi

Parts List



Parts List

Item	Parameter
Processor	STM32H743
Accelerometer	ICM-42688-P ICM-20649 BMI088
Gyroscope	ICM-42688-P ICM-20649 BMI088
Compass	RM3100
Barometer	ICP-20100*2
Interfaces	
PWM output	16

Power(CAN)	2 (1511000006)
Power(SMBUS)	2 (5055680681-5055650601)
TELEM	3
GPS	2 (One is equipped with I2C and a safety switch (GPS1), and other is equipped with I2C (GPS2))
CAN bus	2
PPM RC	1
SBUS/DSM/RSSI	1
SBUS OUT	1
FMU DEBUG	1
IO Debug	1
Ethernet	1
SPI	1 (SPI6 interface,for expanding external sensors)
ADIO	1(ADC3.3/ADC6.6)
UART4	1
USB	2(TYPE-C X1 GH1.25X1)
TF	1
Electrical and mechanical parameters	
Operating Voltage	4.5 ~ 5.5 V
USB Voltage	4.75 ~ 5.25 V
Servo Voltage	0 ~ 9.9v
Operating Temp	-20 ~ 80°c
Size	45.0 x 90.0 x 29.2mm
Weight	Controller : 99g Core Module: 43g Baseboard : 56g

Support firmware

Compatible with ArduPliot 4.23/PX4 V1.14.0 and above firmware

Firmware and source code

Pixhawk v6x supports PX4 and ArduPilot firmware. The compiled firmware is:
Firmware Download and Loading Tutorial
https://doc.cuav.net/controller/pixhawk-v6x/zh-hans/ardupilot-users-manual.html

If you need to carry out secondary development, you can download the source code through the following

link.
ArduPilot Github
https://github.com/ArduPilot/ardupilot

PX4 Github
https://github.com/PX4/PX4-Autopilot

ArduPilot firmware Compile command:

```
./waf configure --board Pixhawk6x          //Compile Pixhawk v6x firmware
./waf copter --upload                      // Write the firmware to the controller
```

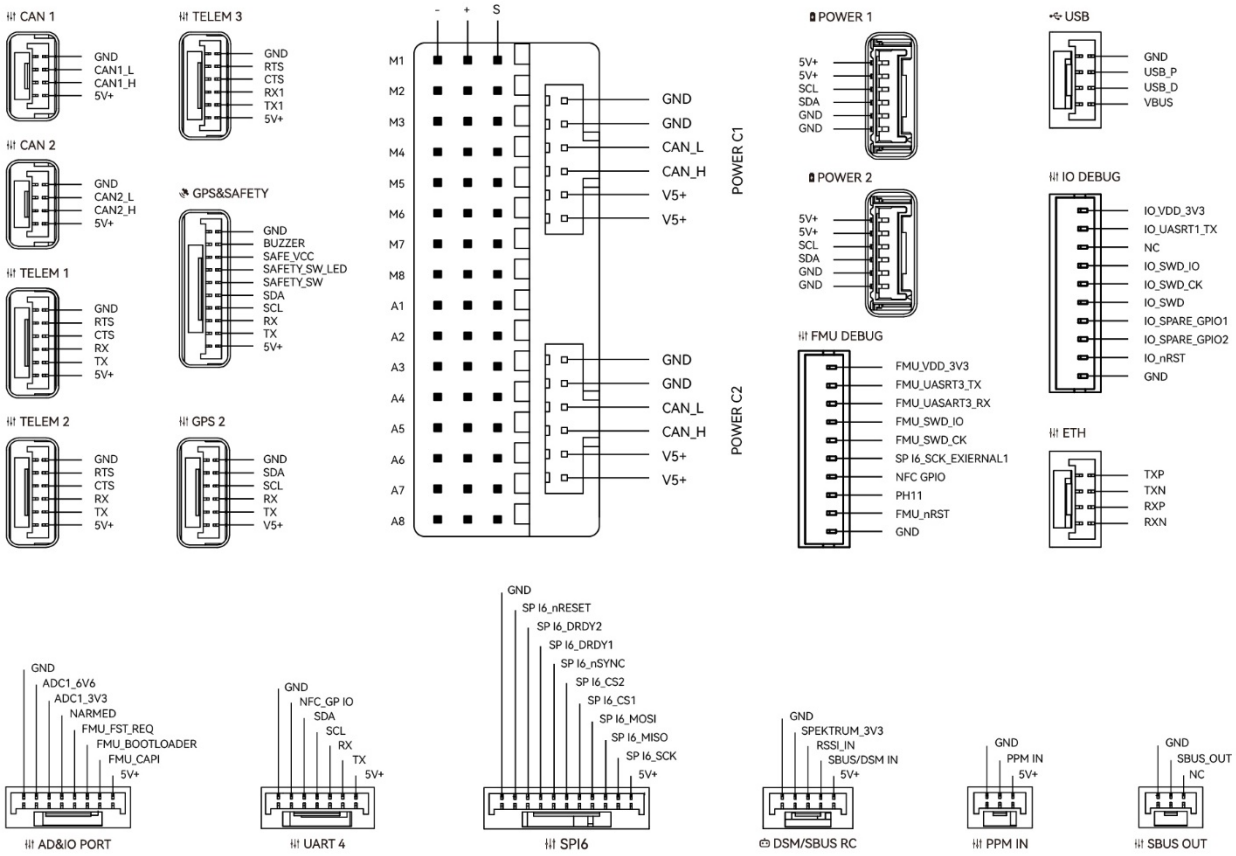
Compile firmware command(PX4):

```
make px4_fmu-v6x_default                   //Compile cuav_nora branch firmware
```

Pinouts

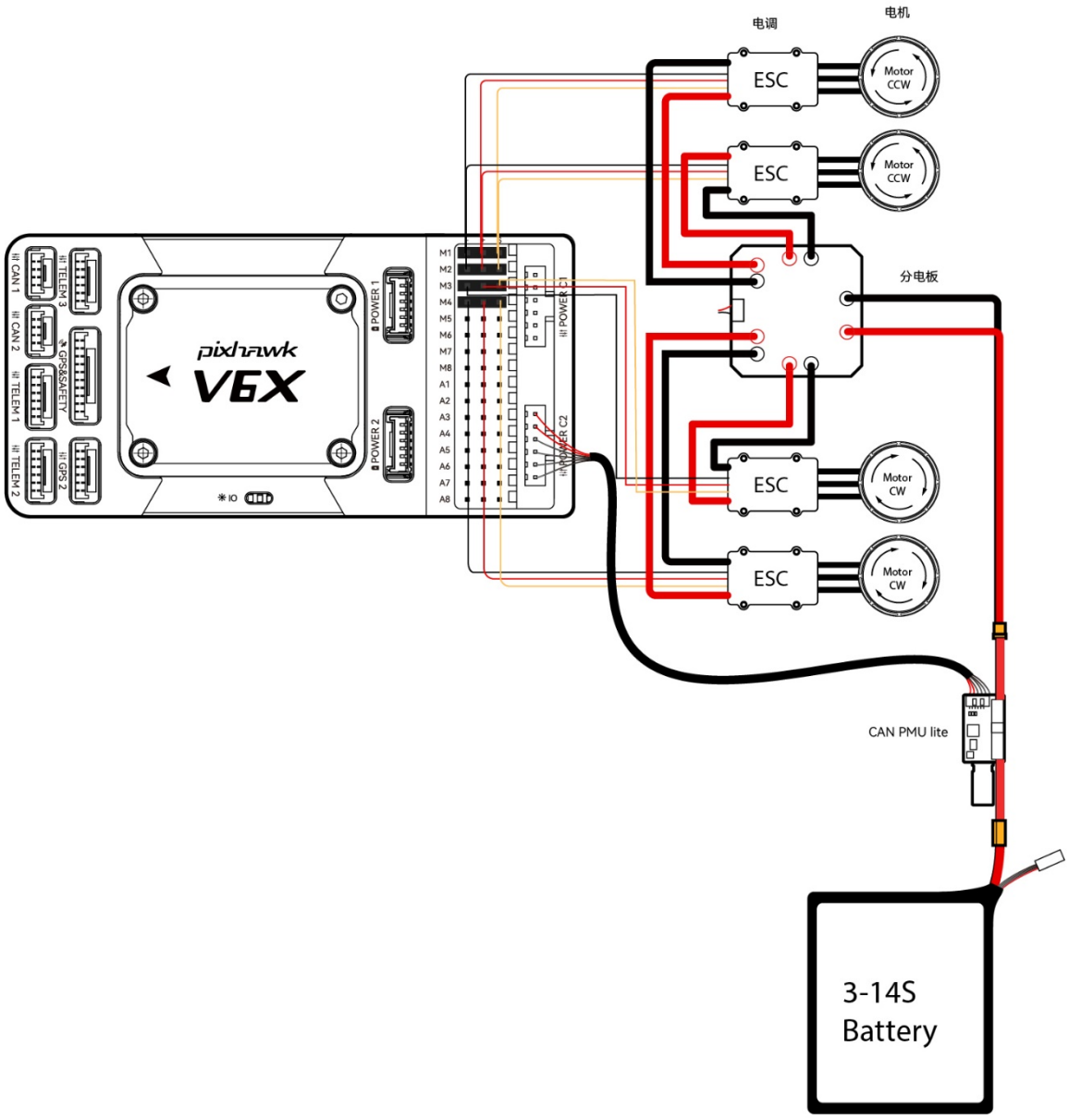
The design of the Nora+ interface uses Pixhawk standard pinouts. Please read the description of the interface definition carefully and use the original wiring of the product. If the wiring is not used according to the standard defined by the interface, the company will not compensate for the damage to the equipment.

Interface Definition



Hardware connection diagram

Take the quadcopter as an example:



Product connection

Interface	Connected accessories
POWER C1	Used to connect Dronecan/UAVCAN ammeter, CAN PMU lite/CAN pmu to Power C1/C2.
POWER C2	Used to connect Dronecan/UAVCAN ammeter, CAN PMU lite/CAN pmu to Power C1/C2
POWER 1	Connect SMBUS/I2C power module, generally not used
POWER 2	Connect SMBUS/I2C power module, generally not used
GPS&SAFETY	Connect NEO 3/C-RTK 9Ps; this port contains GPS, safety switch, and buzzer pins.

GPS2	Second GPS port, connect GPS/RTK
UART 4	Support user customization
TELEM1/TELME2/TELEM3	Connect to data transmission or other Mavlink devices
TF CARD	Install a TF card for log storage
M1~M8	PWM output from IO, connected to ESC or servo
A1~A8	Derived from the FMU, it can be defined as PWM/GPIO; supports Bdshot; used to connect to camera shutter/hot shoe, servo, ESC, etc.
USB	Connect to a computer to enable communication between the controller and the computer, such as loading firmware.
CAN1/CAN2	Connect to Dronecan/UAVCAN devices, such as C-RTK2 and NEO 3 Pro
DSM/SUB/RSSI	Includes DSM, SBUS, and RSSI signal input interfaces. The DSM interface can be connected to a DSM satellite receiver, the SBUS interface can be connected to an SBUS remote control receiver, and the RSSI signal strength return module
PPM	Connecting a PPM Receiver
ETH	100M Ethernet port, used for high-speed communication between the controller and expansion hardware, and connecting to Ethernet devices such as accompanying computers.
AD&IO	This is the analog input interface (ADC3.3/ADC6.6); generally not used

Certification

Product has passed CE certification

Product has passed CE certification

CUAV has passed ISO 9001 quality management system certification

More information

CUAV official website: www.cuav.net

For more usage and assembly instructions, please visit the document center: doc.cuav.net