<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MindPX</td>
</tr>
<tr>
<td>2.</td>
<td>6-pin cable</td>
</tr>
<tr>
<td>3.</td>
<td>4-pin cable</td>
</tr>
<tr>
<td>4.</td>
<td>4 to 6 pin convertor cable</td>
</tr>
<tr>
<td>5.</td>
<td>PPM encoder</td>
</tr>
<tr>
<td>6.</td>
<td>Voltage/Current detector</td>
</tr>
<tr>
<td>7.</td>
<td>USB cable</td>
</tr>
<tr>
<td>8.</td>
<td>M2 countersink screw × 6</td>
</tr>
<tr>
<td>9.</td>
<td>Light pipe × 2</td>
</tr>
<tr>
<td>10.</td>
<td>3M tape</td>
</tr>
<tr>
<td>11.</td>
<td>TF card</td>
</tr>
<tr>
<td>12.</td>
<td>Buzz</td>
</tr>
</tbody>
</table>
Quick self check

Before mounting please perform following quick check for any potential damages to MindPX during logistic:
1. Check if any pin headers on the rear are bended or contacted
2. Check if the enclosed case is broken or damaged
3. Check if accessories are intact
If any situation above, please contact your local sales representatives for replacement.

<table>
<thead>
<tr>
<th>1. Mounting</th>
<th>Quick Start</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Wiring</td>
<td>MindPX can control 2-rotors, 3 rotors, 4 rotors and 6 rotors. Follow the instructions to quickly start your air journey!</td>
</tr>
<tr>
<td>3. Calibrating</td>
<td></td>
</tr>
</tbody>
</table>
1. Mounting

- Adhere on the bottom of MindPX as illustrated
- Attach MindPX to the frame. Please keep the front of MindPX consistent with frame’s front.
- Attach MindPX to the frame. Please keep the front of MindPX consistent with frame’s front.

- Airframe Orientation
2. Wiring

ESC
PWM pins should be connected to the corresponding motors as they are numbered in Figure Airframe Orientation.
Power module

Data transmission
MindFlow

GPS/Compass module

TF card
## PIN

1. Power
2. Debug (refresh bootloader)
3. USB1 (refresh firmware)
4. Reset
5. UART3 (GPS)
6. I2C1 (external compass)
7. TF card slot
8. NRF/SPI (Remote Control)
9. I2C2 (MindFLow)
10. USB2 (Serial 2 to )
11. UART4,5
12. UART1 (Transmission)
13. CAN
14. ADC
15. Tricolor Light
16. Looper
3. Calibrate

Before you take off you need to calibrate the copter first. QGroundControl needs to be installed first which can be downloaded from: http://www.qgroundcontrol.org/downloads

Install QGroundControl

1. Agree License

2. Select installation path

3. Start installation
4. Install PX4 driver

5. Agree driver software license
6. Select driver installation path

7. Start driver installation
8. Continue driver installation

9. Finish PX4 driver installation
10. finish QGroundcontrol installation
The calibration process

Connect MindPX USB1 port to your PC with USB cable, and start QGroundcontrol.

1. Drop down “connect” menu on top right corner, and select pixhawk on COMx (depending on your computer configuration).

2. Select frame type
   - After frame selected, the “airframe” label on the left will turn from red to green, indicating setting is successful. The corresponding label will turn to green after each calibration succeeds.
- **Calibration for 250 frames**

Because QGroundControl doesn't originally support 250 frames, at the first step of calibration, you should choose DJI Flame Wheel 330 as a replacement. Before taking off, it is necessary to adjust parameter of airframe 330.

Choose **PARAMETER Tab**, adjust PID parameters in Multicopter Attitude Control, set MC_PITCHRATE_P, MC_ROLLRATE_P to 0.1, MC_YAWRATE_P to 0.22.
3. Caliberating remote controller

- Mode 1 is set to left throttle, Mode 2 is set to right throttle.
- Move throttle stick according to prompts in software

- Move all the transmitter switches/dials to their extreme position
- Skip remaining steps
4. Configure Channels
- Set main mode to channel 5, set position control to channel 6 (channel number may vary depending on your remote controller)
- Use channel 5 to select between 3 modes: manual mode, assist mode, and auto mode.
- Under assist mode, use channel 6 to switch between altitude-control mode or position-control mode

5. Sensor Calibration
Compass
- Rotate frame to specified orientation according to software prompts.
**Gyro**

- Place frame into one of the incomplete orientation shown on software screen, and hold it still. Proceeds according to software prompts.
**Accelerometer**
- Place frame into one of the incomplete orientation show on software screen, and hold it still. Proceeds according to software prompts.
FAQ

1. MindPX

Q: What is the environments requirements for MindPX?
A: MindPX working temperature range: -10C ~ 100C;
MindPX working humidity range: 10%~90% RH

Q: What is the maximum controllable range of MindPX
A: 1~2km, depending on transmitting power of your remote controller

Q: What is the maximum flight speed?
A: About 100km/h (depends on your rotors and frames)

Q: What is the hardware requirements for hardware ground station?
A: MindPX can be connected to ground station via a USB cable, or a wireless data transmission module.

Q: Can navigation mode be interrupted?
A: You can switch mode using remote controller.

Q: What if MindPX loosing connection with remote controller during flight?
A: MindPX will control the copter return to where it launches automatically in this case. Or you can also set it to auto landing as you demanded.

Q: How to retrieve MindPX source code and hardware schematics/layouts?
A: You can download source code from: https://github.com/airmind/MindPX
You can download schematics/layouts from: https://github.com/airmind/Hardware

2. Accessories

Q: What is the cruise time of battery in one charge, and how long it takes to charge a battery?
A: Typically for a 1500mah battery, the cruise time is about 15 minutes for normal load. It takes about 2 hrs to charge the battery to full.

Q: What if the copter ran out of battery?
A: MindPX will trigger alarm when battery level goes down below threshold. The flashing LED will turn yellow and buzzer beeps.
Q: Can MindPX filming from the air and transmit video back to ground?
A: You can purchase additional video capture and transmitting devices and mount it onto the frame.