Prana Air

Air Quality Drone

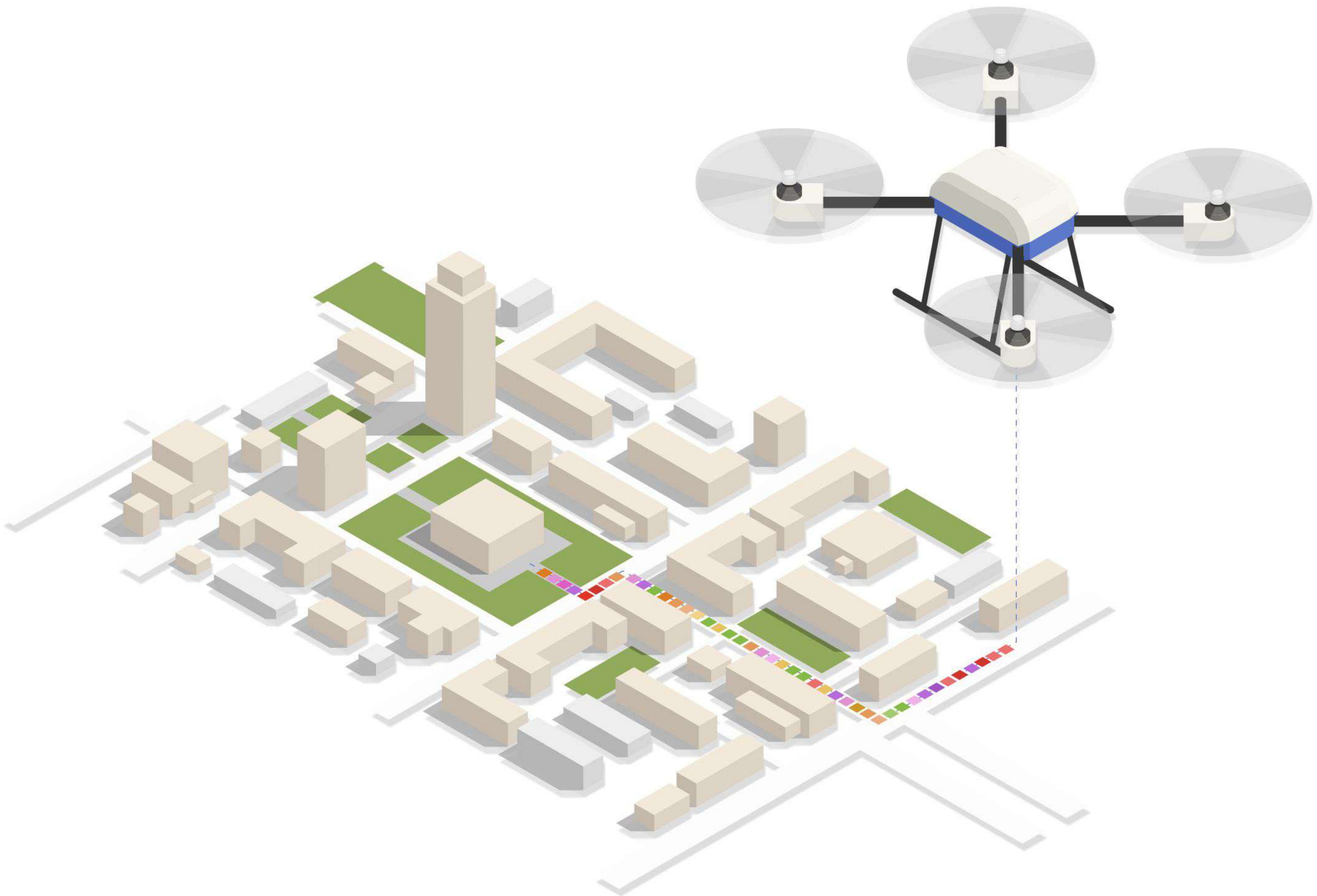
Designing and developing a drone-mounted air quality monitor that can collect real-time air quality data over a large area.

MONITORING THE

AMBIENT AIR

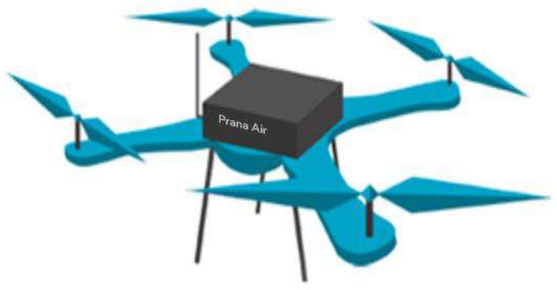
Air pollution is a global problem that has serious negative impacts on human health and the environment. In order to mitigate the effects of air pollution, it is important to have accurate and timely information on air quality.

Traditional ground-based air quality monitoring systems have limitations in terms of coverage and flexibility. A drone-mounted outdoor air quality monitor is a solution that can provide high-resolution air quality data over a larger are, while being mobile and easily deployable.



ALL ABOUT

PRANA QUAD



Air Quality Monitoring

PM2.5, PM10, SO2, NO2,O3, CO, H2S , Temp and Humidity.

Flight Time

20 minutes with payload

Monitoring App.

Drone Controller

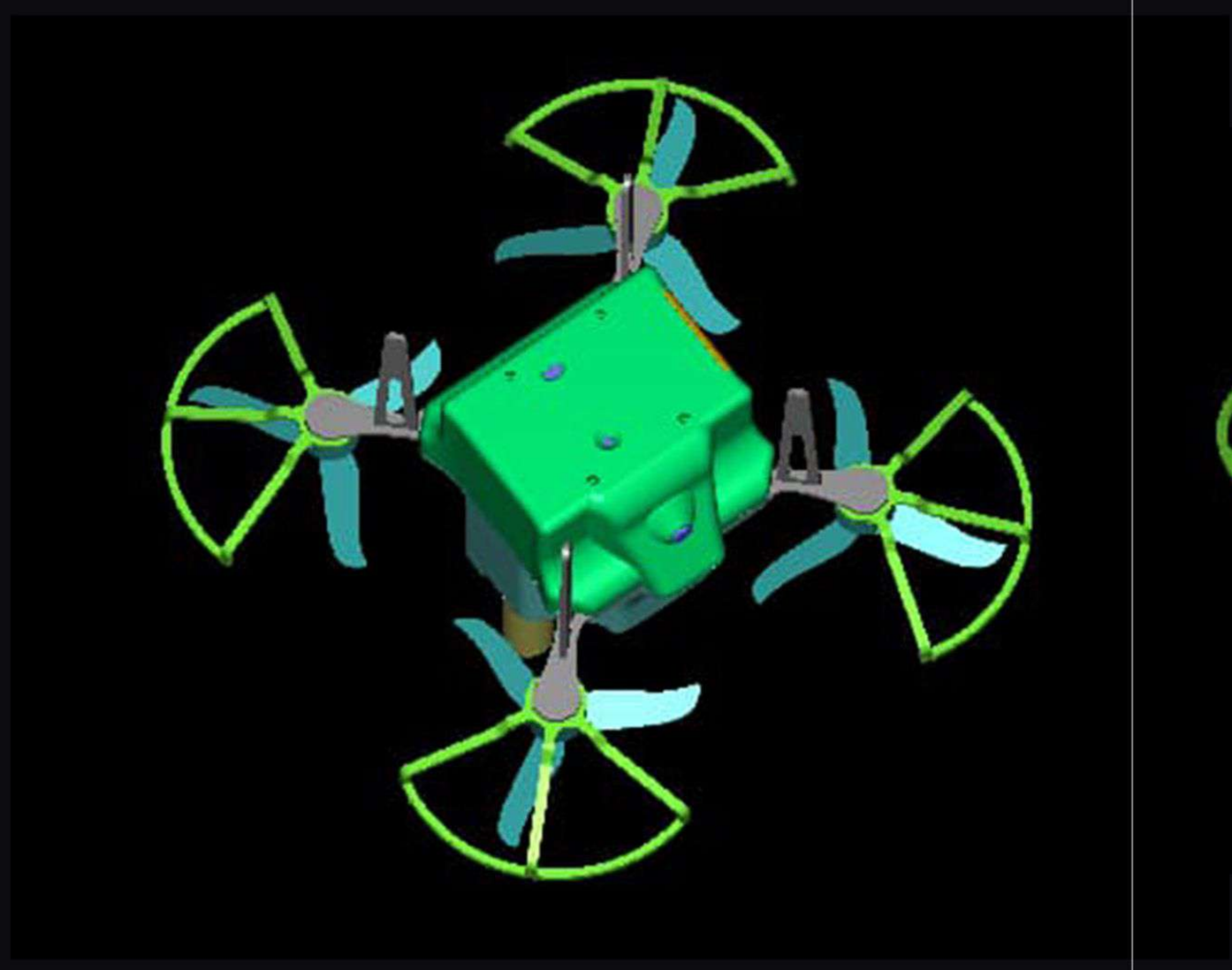
Max. Speed

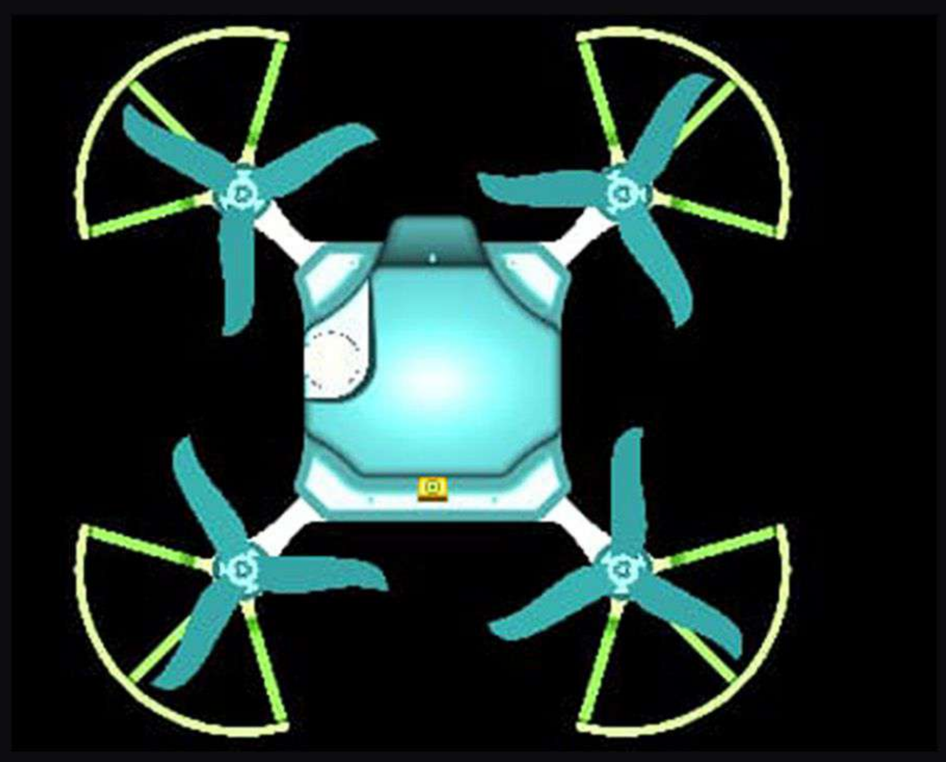
6 m/s Maximum

PRANA –

QUAD

The Prana Air quadcopter, equipped with four motors, serves as an efficient drone-based air quality analyzer. It can sample and analyze ambient conditions, monitor pollution levels, and track sources of harmful gases with precision.





BUNDLE –

PACK

Our drone mount an air quality monitoring sensor, real-time detect the ambient elements PM2.5, PM10, SO2, CO, NO2, O3, H2S, CH4, Temperature and Humidity. Drone-based air quality analyzer can be used to sample and analyze the ambient condition, pollution monitoring, and harmful gas source tracking.

The bundle pack includes :

Air Quality Drone

Drone Controller

TECHNICAL

SPECIFICATION

Parameters	Sensor Type	Range	Resolution	Accuracy
PM10, PM2.5 & PM1	90° Light Scattering	0 to 1000μg/m³	1 μg/m³	0-150 μg/m³ is for ±10% & for 150 μg/m³ onwards is ±15%
Temperature	Digital Sensor	-40 to 70 °C	0.1°C	±0.5°C
Humidity	Digital Sensor	0 to 100% RH	0.1%	±0.3% RH
Nitrogen Dioxide (NO_2)	Electrochemical	0 to 9.99 ppm	1 ppb	±3%
Sulphur Dioxide (SO_2)	Electrochemical	0 to 9.99 ppm	1 ppb	±3%
Carbon Monoxide (CO)	Electrochemical	0 to 99.99 ppm	10 ppb	±3%
Ozone (O_3)	Electrochemical	0 to 20ppm	1 ppb	±3%
Hydrogen Sulfide (H_2S)	Electrochemical	0 to 9.99 ppm	1ppb	±3%

Product Specification

Flight Control System	Mcontroller® V7 Cross-Modal Flight Control System
Processor	STM32H743
Core	32Bit ARM Cortex — M7
Operating frequency	480MHZ
Flash	2MB
RAM	1MB
MicroSD	≤256G
LED	x8

Laser Ranging and Optical Flow Positioning

Laser ranging	Yes
Optical flow positioning	Yes

Flight Control Expansion Board

UWB positioning	Yes
Wi-Fi data transmission module	Mlink-esp
Remote control receiver	R8FM
Uart	×2
PWM	x8
GPIO	x4
Power interface	x2

GNSS and Camera

GNSS	UM982 high-precision GNSS module
GNSS working mode	GPS/BDS/GLONASS
Wi-Fi Integrated module for image and data transmission	Mlink-video Relay version
Camera Resolution	2048 × 1152 pixels
Camera Working Voltage	7.4V — 11.1V

Motor and Battery

Motor	Brushless Motor
Battery	3S Li-ion Battery
Capacity	5000mAh
Charging Time	Approx. 58 mins (80W Charger)
Hot Plug	Yes

Wireless Communication

Remote control method	Remote Control/ Mobile Phone (Android/iOS)/PC (ROS)
Remote Control	T8S
RC Control Distance	1km (Open and undisturbed)
Ground Station App	Prana Air UAV App (Android)
Mlink-esp Control Distance	50m (Open and undisturbed)
Mlink-video Relay version Control Distance	1km (Open and undisturbed)
ROS Communication	Yes

Drone Flight Parameters

Takeoff Weight	Approx. 720g
Max Payload	300g
Max Flight Time	20mins
Max Flight Altitude	120m
Limited height	The maximum height limit is less than the maximum laser ranging value in the current environment
Landing Alarm Voltage	9V (Customizable not less than 9V)
Pos-Hold Flight	Yes
Alt-Hold Flight	Yes

Working Conditions

Working Voltage	9V - 12.6V
Working Temperature	-10°C — 40°C

Dimension, Weight and Color

Dimension	300×300x253mm (Including GNSS antenna)
Propeller	5 inches
Weight	Approx. 720g (Excluding drone shell)
Color	Black

Prana Air

CONTACT US

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