# VIZION Quadrotor UAV

**VTU-UAV400-D**

## Product Introduction

Equipped with 640*512 high-resolution infrared thermal imaging camera, with 13mm focal length lens and 16x digital zoom function, easy to observe distant targets. Video system, a new image processing algorithm is used to make the details of thermal imaging more clear.

## Features

- Multiple temperature measurement modes
- **Central temperature measurement | pointing temperature measurement | area temperature measurement**

Central temperature measurement: Real-time display of the temperature in the central area of the screen.
Point temperature measurement: Click the screen and show the temperature of the selected object in real time.
Regional temperature measurement: Dynamic display of average temperature, maximum temperature , the minimum temperature, the size of the area can be modified to move the position.

- **Temperature alarm | isotherm | image enhancement**

Temperature alarm: When the temperature reaches the set threshold, the system automatically prompts. Isotherm: For different objects, the temperature range can be displayed in real time to help quickly investigate the target object.
Image enhancement: Support real-time adjustment of image brightness, contrast, image details, highlight the temperature measurement target.

- **10 Pseudo-color, better recognition**

Incandescent, hot and cold, rainbow, enhanced rainbow, iron red, lava, aurora, scorching, gradient, heat detection

- **Proprietary infrared thermal analysis tool**

A free temperature analysis tool developed for the UAV temperature measurement version, which is convenient for users to quickly import images, edit and temperature analysis, and quickly generate reports for archiving and sharing.

- **PIP mode dual situation observation**

The infrared thermal imaging screen is effectively fused in the center of the visible light screen, and at the same time, the infrared thermal imaging screen can obtain clear environmental information in real time through the visible light screen, and quickly locate the root cause of the problem.

- **50MP hyper-sensing camera**

The camera has excellent noise suppression ability under low light conditions, and can still shoot clean and clear 4K night scene video with high ISO. Support 16x digital zoom and 4x lossless zoom, with remote image acquisition capabilities, insight, such as on-site. Support shooting 4K HDR video, can suppress strong light, while showing dark details, in complex light environment, restore the real scene.

- **15 km HD remote transmission**

Adopt advanced graphics transmission technology, support 2.4GHz/5.8GHz/900MHz* three frequency bands of transmission, bring up to 15km of graphics transmission distance, within 1 km of the image transmission quality can reach 2.7K; And according to the actual environment can adapt to switch the transmission frequency band, to ensure the signal transmission is stable and smooth, for the shooting operation escort.

- **Six binocular omnidirectional obstacle avoidance**

The fuselage is equipped with 12 visual sensors, integrating 19 groups of sensors such as the main camera, ultrasound, and IMU, to build 3D maps and plan paths in real time, not only perception, but also to achieve multi-angle omnidirectional obstacle avoidance, easily traversing jungle, mountains, cities and other complex areas, calmly exploring more unknown, opening a new era of autonomous and safe flight of drones.

- **Rapid deployment and flight**

The folding fuselage, ready to use, only 45 seconds from boot to take off, more powerful flight performance to ensure the efficient execution of tasks.

- **Standard intelligent remote controller**

7.9 inch 2000nits high light screen, not afraid of strong light, clearly present real-time information; Based on the advanced three-frequency graph transmission technology, to ensure the anti-interference of signal transmission, users can complete the operation and setting of the UAV within a distance of 15 kilometers; Customized Android system, users can download and install third-party apps, work more efficiently.

# Application Scenarios

It is widely used in power inspection , emergency search and rescue , police law enforcement , geographical surveying and mapping , fire rescue and other industry scenarios .

# Parameter

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|---|---|---|
| **Aircraft** | Net weight | 1136g(with battery and gimbal) |
| | Max. takeoff weight | 1999g |
| | Size | 506*620*111mm (unfolded with propeller)<br>245*130*111mm (folding with propeller) |
| | Wheelbase | 427mm |
| | Max. ascent speed | 8m/s |
| | Max. descent speed | 4m/s |
| | Max. horizontal speed | 20m/s (19m/s when operating in EU regions) |
| | Max. takeoff altitude | 7000m |
| | Max. flight time | 42mins(no wind) |
| | Max. operation radius | 7km |
| | Max. hovering time | 38mins(no wind) |
| | Max. wind resistance speed | 10.7 m/s |
| | IP | IP43 |
| | Max. tilt angle | 33° |
| | Max. angular velocity | 120°/s |
| | Operating temperature | -10℃ ~ 40℃ |
| | Internal storage | 8GB |
| | SD card | Standard with 64G SD card, up to 256 GB |
| | Max. transmission distance | 15km (FCC); 8km (CE)<br>(without interference) |
| | Operating frequency | 900M：902-928MHz(FCC/ISED)<br>2.4G：2.400-2.476GHz(SRRC)，2.400-2.4835GHz<br>5.2G：5.15-5.25GHz(FCC)<br>5.8G：5.725-5.829GHz(SRRC)，5.725-5.850GHz |
| | Transmission power(EIRP) | 900M：≤30dBm（FCC/ISED）<br>2.4G：≤30dBm（FCC/ISED）；≤20dBm（CE/SRRC/UKCA）<br>5.2G：≤30dBm（FCC）<br>5.8G：≤30dBm（FCC/ISED/SRRC）；≤14dBm（CE/UKCA） |
| | GNSS | GPS+Galileo+BeiDou+GLONASS |
| | Hovering accuracy | Vertically: ±0.1 m (vision systems); ±0.5 m (GNSS);<br>Horizontally: ±0.3 m (vision systems); ±1.5 m (GNSS) |

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| **Gimbal** | Mechanical range | Pitch: -135° ~ 45°<br>Heading: -100° ~ 100° |
| | Controllable range | -Pitch: -90° ~ 30°<br>Heading: -90° ~ 90° |
| | Stable system | 3-axis mechanical gimbal (pitch, roll, heading) |
| | Angular jitter | ＜0.005° |
| | Max. control speed | 300°/s(pitch) |
| **Visible Zoom Camera** | Sensor | 1/1.28" CMOS, 50M |
| | Lens | FOV: 85°<br>Equivalent focal length: 23mm<br>Aperture: f/1.9<br>Focusing distance: 0.5m ~ ∞ |
| | ISO range | Photo: ISO100 ~ ISO6400<br>Video: ISO100 ~ ISO64000 |
| | Shutter speed | Photo: 8s ~ 1/8000s; Video: 1s ~ 1/8000s |
| | Zoom | 16X |
| | Max. photo resolution | 8192*6144 |
| | Max. video resolution | 3840*2160 |
| **Thermal Camera** | Thermal sensor | Uncooled VOx Microbolometer |
| | Lens | FOV: H33°V26°<br>Focal length: 13mm |
| | Temperature measurement accuracy | ±3℃ or reading ±3% (using the larger value) @ambient temperature range -20℃~60℃ |
| | Video resolution | 640*512@25FPS |
| | Photo resolution | 640*512 |
| | Pixel pitch | 12 um |
| | Temperature measurement distance | 2~20m |
| | Temperature measurement method | Center measurement; Pot measurement; Rectangular measurement |
| | Temperature measurement range | -20°C ~ 150°C, 0 ~ 550°C |

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| **Battery** | Capacity | 7100 mAh |
| | Voltage | 11.55V |
| | Energy | 82 Wh |
| | Battery type | LiPo 3S |
| | Charging temperature | 5ºC ~ 45ºC |
| | Net weight | 365g |
| | Charging time | 90min |
| | Power adapter | Input: 100-240 V~50/60Hz |
| **Visual Sensing System** | Sensing range | Front: 0.5 ~ 18m, Rear: 0.5 ~ 16m<br>Left and right : 0.5 ~ 10m;<br>Up: 0.5 ~ 10m; Down: 0.5 ~ 16m |
| | FOV | Front & Rear: 60° horizontal, 80° vertical<br>Up & Left & right : 65° horizontal, 50° vertical<br>Down: 100° horizontal, 80° vertical |
| | Operating environment | Front/Rear/Left/Right: The surface has rich texture and sufficient light conditions (>15lux, indoor fluorescent lamp normal exposure environment)<br>Up: The surface is diffuse and the reflectivity is >20%<br>Down: The surface is diffuse and the reflectivity is >20%, adequate lighting conditions (>15lux, indoor fluorescent lamp normal irradiation ring) |
| **Navigation light** | Size | 39*72*34 mm |
| | Weight | 19.5g |
| | Power | 1.6W |
| | Working range | 5000m |
| | Light intensity | An average of 290cd |
| **Speaker** | Size | 46*80*77 mm |
| | Weight | 98.5g |
| | Power | 18W |
| | Decibel (65db ambient noise) | Within 120dB @1m; 88dB@60m; 70dB @ 110m |
| | Stream | 36kbps |
| | Adjustable Angle | 0° ~45° |
| **Searchlight** | Size | 48.5*72*63 mm |
| | Weight | 77g |
| | Power | 35W |
| | Working range | 30m |
| | Adjustable Angle | 0° ~90° |
| | Illuminance | FOV14°, Max: 11lux @ 30 m direct |