

Z-2Mini

Intelligent 4K Full-Color Night Vision Dual-Sensor Micro Pod



Characteristics

- Carries an AI-ISP 4K full-color night vision camera and a thermal camera.
- Features AI multi-object detection and tracking, which can constantly track one of the persons and vehicles intelligently identified in the image.
- Micro 3-axis nonorthogonal mechanical stabilized structure reducing the weight down to 110g.
- Supports network, UART and S.BUS control and compatible with both private protocol and MAVLink protocol. Support image transmission through network and HDMI.
- Thanks to the Dual-IMU complementary algorithms with IMU temperature control and carrier AHRS fusion, the gimbal provides a stabilization accuracy at $\pm 0.01^\circ$.
- Can be mounted onto multiple carriers, whether downward or upward.
- With the Dragonfly software, user can watch the image and control the pod without protocol ducking.
- With the customized QGC software, all the functions of the pod can be achieved in conjunction with an open source autopilot.
- Screen supports overlaying OSD information such as latitude, longitude and altitude. Image supports shooting point coordinate EXIF save.
- 10~26.4 VDC wide voltage input.

Specifications

General	
Product Name	Z-2Mini
Dimensions	59 x 48.4 x 85.7mm
Weight	110g
Operating Voltage	10~ 26.4VDC
Power	6.5W (AVG) / 20W (Stall)
Mounting	Downward / Upward
Gimbal	
Gimbal Type	3-axis Nonorthogonal Mechanical Stabilization
Angular Accuracy	±0.01°
Controllable Range	Pitch: -135°~+100°, Roll: ±50°, Yaw: ±150°
Max Controllable Speed	±200°/s
Fixed Camera	
Image Sensor	1/2.8-inch CMOS, Effective Pixels: 8.29M
Lens	Actual Focal Length: 6.0mm (Equivalent focal length: 34.4mm)
	Aperture: f/1.0
	HFOV: 54.7°
	VFOV: 30.2°
DFOV: 63.2°	
Resolution	3840(H) x 2160(V)
Pixel Size	1.45µm(H) x 1.45µm(V)
Equivalent Digital Zoom Rate	8x
Object Detection Distance	EN62676-4:2015 Person ^[1] : 175m; Light vehicle ^[2] : 230m; Large vehicle ^[3] : 491m
	Johnson Criteria Person: 2069m; Light vehicle: 6345m; Large vehicle: 13517m
Object Identification Distance	EN62676-4:2015 Person: 35m; Light vehicle: 46m; Large vehicle: 98m
	Johnson Criteria Person: 517m; Light vehicle: 1586m; Large vehicle: 3379m
Object Verification Distance	EN62676-4:2015 Person: 18m; Light vehicle: 23m; Large vehicle: 49m
	Johnson Criteria Person: 259m; Light vehicle: 793m; Large vehicle: 1690m
Thermal Camera	
Thermal Sensor	Uncooled VOx Microbolometer
Lens	Actual Focal Length: 10.0mm (Equivalent focal length: 95.5mm)
	Aperture: f/1.0
	HFOV: 17.5°
	VFOV: 13.2°
DFOV: 21.8°	
Resolution	256(H) x 192(V)
Pixel Size	12µm(H) x 12µm(V)
Spectral Band	8~14µm
Sensitivity (NETD)	<50mk@25°C
Object Detection Distance	Person: 417m; Light vehicle: 1278m; Large vehicle: 2722m
Object Identification Distance	Johnson Criteria Person: 188m; Light vehicle: 575m; Large vehicle: 1225m
Object Verification Distance	Person: 94m; Light vehicle: 288m; Large vehicle: 613m

[1] Reference dimension of person: 1.8x0.5m. Critical dimension under Johnson criteria is 0.75m

[2] Reference dimension of light vehicle: 4.2x1.8m. Critical dimension under Johnson criteria is 2.3m

[3] Reference dimension of large vehicle: 6.0x4.0m. Critical dimension under Johnson criteria is 4.9m

AI Multi-object Detection & Tracking

Object Size	16x16 ~ 128x128 px
Object Identification Delay	< 40ms
Tracking Speed	±32 px / field
Tracking Deviation Refresh Rate	30Hz
Tracking Deviation Output Delay	≤5ms

Image & Video

Image Format	JPEG
Maximum Image Resolution	3840 x 2160
EXIF	Shooting point coordinate
Video Format	MP4
Maximum Video Resolution	Stream: 1920 x 1080 @30fps Recording: 3840 x 2160 @30fps
Stream Encode Format	H.264 , H.265
Stream Network Protocol	RTSP

Storage

Supported SD Cards	Supports a Speed Class 10 MicroSD card with a capacity of up to 256GB
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Environment

Operating Temperature	-20°C ~ 50°C
Storage Temperature	-40°C ~ 60°C
Operating Humidity	≤85%RH (Non-condensing)
