



GeoSat
Microwave

- Navigation;
- Fishery and aquaculture monitoring;
- Seaport & airport security and safety monitoring;
- Lake, river & water system monitoring;
- Mariculture monitoring.



HD Infrared Night Vision Laser Imaging Camera

Model: GSM7502M

Model	GSM7502M
Laser Illumination	
Detection	2000m - 3000m
Laser Specification	
Laser Light Source	<ol style="list-style-type: none"> 1. Consumption: 15W; 2. Wavelength: 810nm; 3. Laser angle: 0.5°~20°; 4. Encapsulation: the illuminator is sealed with inert gas to prevent oxidation; 5. Using distributed laser design, laser emitter and high-temperature components are directly affixed to the shell's cooling fins, that have stronger heat dissipation capability if compared with the modular laser.
Laser Len	<ol style="list-style-type: none"> 1. Lens form: 60X f1.2-80mm ultra-short focal zoom patented technology, laser 600 micron cross-section imaging lens; 2. Transmittance: multi-layer NIR Anti-reflective coating, high efficiency laser coupling; 3. Homogenization: GHT-II super homogenization HD illumination patented technology, full focus spot brightness equilibrium is > 92%; 4. Laser Safety: Using ZQB safety laser beam processing patented technology, which complying with International IEC60825 Safety Standard; 5. Focus Angle Positioning: Precision digital drive positioning. <p><i>Spot form: (Optional: elliptical spot illuminator - the spot always keeps elliptic in the process of change, better matching with 16:9 HD camera picture, where the laser utilization rate increased by 30%)</i></p>
Angle and distance matching	<ol style="list-style-type: none"> 1. Matching method: Automatic tracking or manually fine-tuning intelligent matching method; 2. Synchronization control: DSS digital stepping illumination angle control technology, 0.1 degree precise servo control;

	<p>3. Response time: Z-super laser angle and imaging ratio matching algorithm, tracking response time less than 500 ms;</p> <p>4. Synchronization effect: Laser synchronization effect adjusts the modes of cut-in, cut-out and full-screen coverage, which can be set arbitrarily according to the scene remotely.</p> <p>5. Optical axis alignment: SLM double optical axis self-locking alignment device, the accuracy can reach 0.01 degrees, reserve external alignment window, without cover removal maintenance</p>
Laser Switch	<p>1. Control mode: Mandatory opening, mandatory closing and photosensitive automatic control, can be set remotely.</p> <p>2. Photosensitive synchronous control: independent photosensitive control circuit, precise synchronous switching of laser switch and camera into day-night mode.</p> <p>3. Data Processing: Built-in Intelligent Anti-Strong Light Jamming Algorithms, Shielding the False Switches Caused by Strong Light at Night</p>

Visible Camera

Weather Condition	Good	Normal (lightly polluted)
Detection	Vehicle: >10000m	Vehicle: 8000m
	Human: 3500m	Human: 1500m
Recognition	Vehicle: 8000m	Vehicle: 6000m
	Human: 2500m	Human: 1200m
Identification	Vehicle: 5000m	Vehicle: 3000m
	Human: 1200m	Human: 500m - 800m
FOV	<p>Wide angle: 38.80° x 33.82° x 19.02°</p> <p>Long focus: 0.71° x 0.62° x 0.35°</p>	

Camera Specification

1. Sensor type: 1 / 1.8 "progressive scan CMOS
2. Minimum illumination: color: 0.0007 lux @ (f1.2, AGC on); black and white: 0.0001 lux @ (f1.2, AGC on)
3. Shutter: 1 second to 1 / 100000 second
4. Slow shutter: Support
5. Lens interface: Type C / CS interface
6. Automatic diaphragm: DC drive
7. Day night conversion mode: ICR infrared filter
8. Digital noise reduction: 3D digital noise reduction
9. Wide dynamic range: 120dB
10. Focus-a: Support ABF auxiliary focus

Compression standard:

- 1. Video compression standard: H.265/H.264/MPJEG
- 2. H.265 coding type: Main profile
- 3. H.264 encoding type: Baseline profile / main profile / high profile
- 4. Video compression rate: 32 Kbps ~ 16mbps
- 5. Audio compression standard: G.711/G.722.1/G.726/mp2l2/aac/pcm
- 6. Audio compression rate: 64Kbps (G.711) / 16kbps (G.722.1) / 16kbps (G.726) / 32-160kbps (mp2l2) / 16-64kbps (AAC)

Image:

- 1. Maximum image size: 1920 × 1080
- 2. Main stream resolution and frame rate: 50Hz: 25FPS (1920 × 1080, 1280 × 960, 1280 × 720), 60Hz: 30fps (1920 × 1080, 1280 × 960, 1280 × 720)
- 3. The resolution and frame rate of the third stream are independent of the settings of the main stream, and the maximum support is 50Hz: 25FPS (1920 × 1080); 60Hz: 30fps (1920 × 1080)
- 4. Image setting: Corridor mode, saturation, brightness, contrast and sharpness can be adjusted by client or browser
- 5. Image enhancement: Backlight compensation, strong light suppression, fog penetration, electronic anti shake, 3D noise reduction.
- 6. Day night conversion mode: Automatic, timed, alarm triggered
- 7. Image overlay: Supports BMP 24 bit image overlay and optional area
- 8. ROI in region of interest: Supports three bitstreams to set four fixed regions respectively to ensure face details at low bitrate

Network Function:

- 1. Storage function: Supports micro SD / SDHC / SDXC card (128G) off network local storage, NAS (NFS, SMB / CIFS all support)
- 2. Intelligent alarm: Motion detection, blocking alarm, network cable disconnection, IP address conflict, memory full, memory error, illegal access
- 3. Support protocols: TCP / IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1x, QoS, IPv6

Lens	<ul style="list-style-type: none"> 1. Focal Length: 22 - 750mm, 200 mil electrical focus (Optional: 12.5 - 750mm lens); 2. HD infrared correction: Optical IR correction design, diurnal focus; 3. Auto aperture: support; 4. Night-day wide spectrum: 0.4-0.75um visible broad spectrum window and 0.8-0.95um NIR narrow spectrum window with day-night independent double-pass window to improve the signal-to-noise ratio of imaging light and stray light.
------	--

	5. Preset position: precision potentiometer, DC5V, zoom focusing feedback
	6. Interface: C/CS
Penetrate fog (Optional)	Optical filtering and AFR optoelectronic enhanced image processing technology, color penetrate fog
LPR (Optional)	Avoid strong light, license plate recognition

Housing

1. Material: Integral aluminum alloy housing, sealed and waterproof;
2. Structure: integration double window design;
3. Window glass: 4mm microcrystalline infrared high-efficiency transparent HLIN optical glass, transmittance > 98%;
4. Surface spraying: PTA three-resistance coating, anti corrosion (optional);
5. Temperature control: The whole system adopts thermal balance design + wide temperature electronic and optoelectronic devices, with built-in heating and heat dissipation components, which can work in low temperature and high temperature environment.
6. Weather proof: IP66, water-proof, dust-proof;
7. Connector : Aviation Water-Proof Connector.

PT

1. Load duty : 50kg CNC Pan-Tilt;
2. Pan: 0 - 360° continuously, Tilt: +45°~-45°
3. Rotation speed : Pan: 0.01~30°/S, Tilt: 0.01~15°/S, support with lens focus speed adaptive function;
4. Preset: 255 preset, support lens zooming and focus preset;
5. Accuracy: ±0.1°;
6. Cruise Line-Scan: support 6 cruise line, 1 apple-skin scan, 1 line scan;
7. Watching: Pre-positioning/Automatic Cruise Route/Automatic Scanning Route
8. Power-off memory: support (restoring pre-power-off position, preset point status, cruise status, line-scanning status)
9. Azimuth Information: Support angle query, return and positioning;
10. Zero correction: support for north-to-zero remote correction function.
11. Power consumption: about 120W
12. Weight: 23kg

Enhancements (Optional)

1. Auto-focus tuning: support remote auto-focus precision parameter adjustment, adapt to different scenarios;
2. Day and night cruise: D/N cruise with different preset groups, day cruise 1 - 40 preset, night cruise 41 - 80 preset, according to the photosensitive status will automatically D/N switching, adapt to different space-time scenarios;

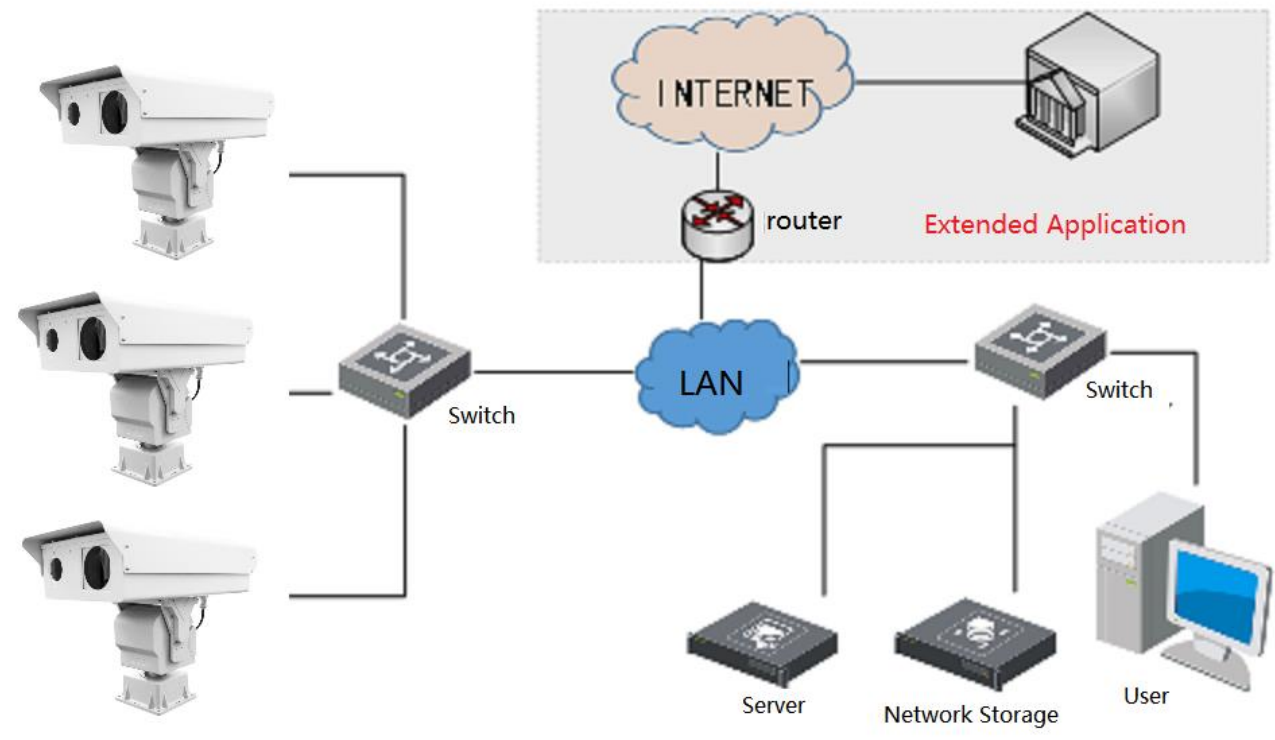
3. Temperature Compensation: TCS automatic rear focus compensation function, adapts to a wide range of high and low temperature changed environment, the rear focus remained clear always;
4. Remote Maintenance: Support the remote upgrade of embedded programs, convenient for after-sales maintenance;
5. Wipers: (Optional: built-in wipers);
6. Window cleaning: (Optional: external small sprinkler, self-storage water, freezing without damage, won't affect the camera's function);
7. Lens Servo: (Optional: Lens Focus Field of View Return/Location Function);
8. Extension module: (Optional: extended functions such as GPS, laser ranging, etc.);
9. Extended interface: (RS422/485 and analog video can be reserved, azimuth data can be returned for radar, GIS linkage positioning, or third-party intelligent analysis);
10. Optical network: (Optional: built-in fiber module, single mode fiber output, improve anti-jamming)

Intelligence Function (Optional)

1. Regional intrusion detection support;
 2. Border-Crossing intrusion detection support;
 3. Panoramic stitching;
 4. Radar linkage;
 5. Auto-tracking support;
 6. Multi-scene group cruising support;
 7. 3D zooming/positioning selection;
- (The above functions need to be implemented in conjunction with general software and network modules)

Other Specifications

Protocol	<ol style="list-style-type: none"> 1. Network interface: RJ45. 10/100 Base-T adaptive (integrated video output and RS485 control) 2. Network protocol: TCP/IP, UDP, IPv4/v6; support HTTP, RTP, RTSP, NFS, DHCP, NTP, SMTP, SNMPv1/v2c/v3, UPNP, PPPoE, DNS, FTP; support PSIA, ONVIF2.0, GB28181 3. Support Onvif 2.0 a 4. Pelco-P、Pelco-D baud rate 2400、4800、9600、19200(optional) 5. Power supply: AC/DC24V, Anti-reverse connection protection 6. Interface : aviation waterproof connector.
Environmental index	<ol style="list-style-type: none"> 1. Working temperature: - 25 ~60 (- 40 Optional); 2. Storage Temperature: -45 ~+70; 3. Humidity: <90%; 4. Seismic resistance: 0.2g (in accordance with GB/T15211-2013 5.4 harsh grade 2); 5. Impact resistance: 15g (in accordance with GB/T15211-2013 5.3 harsh grade 3); 6. Lightning protection: built-in surge protection interface circuit, 4000V power supply, 2000V signal; 7. Salt spray prevention: continuous spray for 96 hours at pH 6.5 to 7.2, no change in surface. 8. Protection Level: IP66
Total Weight	≤45kg (PT included)
Total Consumption	180W



Networked Intelligent Application



Car window (tinted) see-through function

