

## Marinized Electro-Optic Tracking System

# TBX-15 EO/IR Gyro Stabilized Gimbal Camera



The TBX-15 series is equipped with a high-performance Cooled thermal imaging zoom camera or Uncooled thermal imaging zoom camera and Full HD/4K color zoom camera. It is an automatic video tracking camera with high performance 2-axis gyro motion stabilization, and 3-axis gyro motion stabilization is available as an option. It is a high tech rugged day&night camera system which has proven performance and durability mounted on small/medium sized patrol boats and unmanned surface boats. It is also possible to support the automatic orientation function by interworking with systems such as RADAR, LIDAR or AIS mounted on a ship.

### MAIN FEATURE

- Dual Camera Monitoring(Color/Thermal)
- Video Tracking & Radar Tracking
- Fire-Fighter Mode
- Fire Fighting Software including Thermal Heat Data & Isothermal Graph
- High Performance Gyro Stabilization
- Marine Environment Proven
- Image Stabilization
- IPx6 Harsh Environment

#### **(Un)Cooled Thermal Camera**

- High Resolution : 640×480 Pixels
- Various Lens Selectable
- 15~100mm Optical LWIR / MWIR (Option)

#### **HD Color Camera**

- 30x Motor Zoom Camera
- Autofocus

## APPLICATION



[ Ship ]



[ Coast Guard ]



[ USV ]

## SPECIFICATION

### Uncooled Thermal Camera\*

Option	HD MWIR	SD MWIR	LWIR
Sensor Type	Cooled	Cooled	Uncooled
Pixel Pitch	10μm	15μm	17μm
Wave Length	3 to 5 μm	3 to 5 μm	8 to 14 μm
Resolution	1280 x 720	640 x 512	640 x 512
Lens Focal Length (HFOV)	15 ~ 300mm, Optical Zoom	20 ~ 275mm, Optical Zoom	15 ~ 100mm, Optical Zoom
F Number	f/4	f/5.5	f/1.4
Field of View	37.6°~ 1.9°	27.4°~ 1.9°	42.2°~ 6.2°
Digital Zoom	2x & 4x Digital Zoom		
NETD	≤ 38 mK	≤ 25 mK	≤ 50 mK
Video Format	NTSC/PAL		
Frame Rate	60 Hz (30 fps)		
Focus System	Auto Focus		
Detection Range** NATO Target	18km	15km	6km
Recognition Range** NATO Target	8km	6km	1.7km

### Day/Night Color Camera

Sensor Type	1/2.8 inch CMOS
Image Resolution	1920(H) x 1080P(V), 1280 X 1024, 1280 X 960, 1280 X 720P
Focal length	30x Optical Zoom, 12x Digital Zoom

\* Thermal Camera may be replaceable with various focal length

\*\* Range depends on whether condition 50% probability

### SWIR Camera (Options)

Spectral Range	700 to 1700nm
Resolution	HD(1280x1024) or VGA(640x512) Selectable
Lens	Fixed FOV lens 25, 50, 100mm Selectable
Frame Rate	60 Hz (30 fps)

### LRF (Options)

Laser wavelength	1.5 um, eyesafe
Detection Range	10km for 2.3x2.3m Nato Target
Accuracy	1 ~ 1.5m

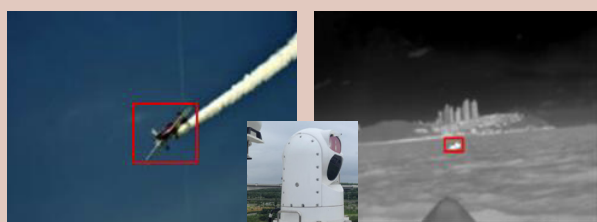
### Controller (Options)

Joystick	PTZ control
Display	LED Display
Buttons	Stabilization Mode Select, Tracking Engagement
Interface	RADAR, GPS, Ethernet, RS232/RS422

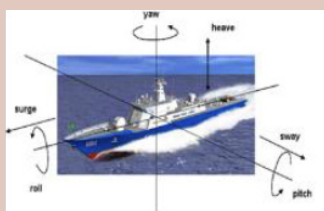
### Gimbal

Dimensions	Ø250mm x 380mm
Weight	≤15Kg
Pan/Tilt Range	Pan : 360° continuous Tilt : -30° ~ +90°(Mechanical)
Max Speed	Pan : 60°/s, Tilt : 30°/s
Stabilization	2 Axis Gyro Stabilization System (3 Axis Stabilization -Option)
Power Requirement	12-34 VDC, 100 W or less
Operating Temp.	-30°C to +55°C
Environmental Rating	IPx6

## Stabilization & Video Auto Tracking

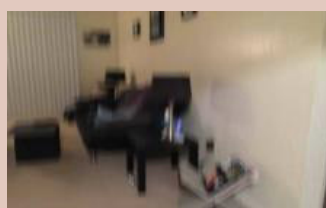


[ Auto Tracking Feature for UAV and Boat ]



[ Gyro Motion Stabilization ]

## Onboard Video Processor



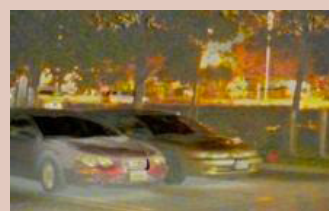
[ Digital Image Stabilizer ]



[ Anti Fog ]



[ On Screen Display ]



[ Video Fusion ]