

# Airborne Surveillance System



- Continuous Operations
- Rapid Deployment
- Stabilized Platform
- High Performance



## AIRBORNE SURVEILLANCE SYSTEM



The role of airborne surveillance whether autonomous, semi-autonomous or teleoperated, has been proved to be important and applicable to be a wide range of applications such as search and rescue missions, border security, resource exploration, wildfire and oil spill detection. The surveillance system in combination with the ground equipment provide a detailed picture of a situation which can be used in connection with, for example, border surveillance, rescue operations as well as in combating terrorism and organized crime.

Electronia proposed aerostat that can carry day and night sensors up to 1500 feet altitude with additional features as listed below:

- Six Weeks of continuous operations Coverage above 35 miles
- Rapid deployment
- Stabilized platform

In recent years, high performance visible and IR cameras have been used widely for tactical airborne reconnaissance. The process improvement for efficient discrimination and analysis of complex target information from active battlefields requires for simultaneous multi-band measurement from airborne platforms at various altitudes.

Electronia proposed solution is a new dual band airborne camera designed for simultaneous registration of both visible and IR imagery from mid-altitude ranges.

Some of the major components of the Airborne Surveillance System are as below:

- Dual Axis Trailer consists of: electronics shelter environmentally controlled for extremed conditions, Shelter Air Conditioner, Battery Back-up, Generator with auto-start, Aerostat launch/retrieve on slide out, Aerostat U shaped cradle, Aerostat and tether storage cases, etc.
- Para cam system, Electronic Optical/Medium wave Infrared 3-Fixed field of vision
- Para cam starter camera option
- Tether 3000/5000 lbs breaking strength-2X18 ga copper wire-4 strand fiber optic-38 lbs per 1000-0.3" diam
- 31-25' diameter/16' height/5252 cu' helium with release valve/EDD patches standard valve set-up/fill sleeve and rubber band.



## Terminal Specifications

900-90012-00 Configuration Options			
Cameras	Image Resolution	Lens	HFOV
Daylight Cameras			
Sony FCB-EX480	380K pixels	16.1x Optical	46.6°-2.9°
Sony FCB-EX980	380K pixels	20.8x Optical	52.0°-2.5°
Sony FCB-EX1000	380K pixels	32x Optical	55.3°-1.7°
Sony FCB-H11	2,000K pixels	9.1x Optical	36.5°-4°
Prosilica GC Series	Up to 5M pixels	C-mount	Up to 5M pixels
IR Cameras (LWIR) *Limited tilt range due to physical size of lens.			
FLIR Photon 320	324 x 256	19mm	36°
		35mm	20.0°
		*50mm	14.0°
Thermoteknix 110K	384 x 288	14.25mm or *32mm	50.5° or 23.7°
Thermoteknix 307K	640 x 480	14.25mm or *32mm	58.6° or 28.1°
<b>SWIR Cameras</b>			
Shortwave infrared linear arrays and near-infrared cameras available upon request. They meet many application needs in such diverse applications as defense, security, automated inspection, and spectroscopy			

### Key Features:

Parallel drive design minimizes the rotating mass and turret size

- Payload bay environmentally sealed
- Operation modes include pilot mode, stabilized mode, and Lat/Long/Altitude mode
- Available software includes ground control GUI, video/telemetry recording and playback, and ground based object tracking and video stabilization
- Custom camera and directional antenna integration available

900-90020-00 Configuration Options			
LT Cameras	Image Resolution	Lens	HFOV
Sony FCB-IX11A EO	NTSC 380K Pixels	10x Optical	46°-5°
Sony HD 110	2M Pixels	12x - 10x	50° - 5.4°
<b>IR Cameras</b>			
FLIR Tau	320 x 240	19mm	24°
		35mm	13°
FLIR / Indigo Photon 320	324 x 256	19mm	36°
		35mm	20°
Thermoteknix 110K	384 x 288	14.25mm	50.5°
		32mm	23.7°
<b>SWIR Cameras</b>			
Goodrich SU 320 KTX	320 x 240	16mm	30.5°
		25mm	19.6°
All configuration options available in NTSC or PAL video format.			

### Key Features

- Fits within 114 mm (4.5 inch) tube
- Supports camera range of EO and IR imagers
- Nose mount or belly mount pan over tilt configuration
- Fast slew and acceleration rates



## Terminal Specifications

900-90021-00 Configuration Options				
Cameras	Image Resolution	Lens	HFOV	Voltage
<b>On-Board Image Processing</b>				
Sony FCB-EX980	720 x 525	26x Optical	55.0°-2.3°	12V
FLIR Photon 640	640 x 480	60mm	15.0°	24V
Sony FCB-EX980	720 x 525	26x Optical	52.0°-2.5°	12V
FLIR Photon 320	640 x 480	Dual Field of View	22.5°-9°	24V
<b>Ground-Based Image Processing (License for tracking software sold separately)</b>				
Sony FCB-EX980	720 x 525	26x Optical	55.0°-2.3°	12V
FLIR Photon 640	640 x 480	60mm	15.0°	24V
Sony FCB-EX980	720 x 525	26x Optical	52.0°-2.5°	12V
FLIR Photon 640	640 x 480	Dual Field of View	22.5°-9°	24V
<b>SWIR Cameras</b>				
Shortwave infrared linear arrays and near-infrared cameras available upon request. They meet many application needs in such diverse applications as defense, security, automated inspection, and spectroscopy.				

## Key Features

- Environmentally sealed gimbal
- Direct drive brushless motors for increased stabilization performance
- Onboard video processing standard
- Video from multiple cameras can be switched on board or viewed simultaneously
- Three-axis IMU for standalone operation
- Communications spec fully compatible with existing TASE applications such as Gimbal UI
- Operation modes include pilot mode, stabilized mode, and Lat/Long/Altitude mode
- Available software includes ground control GUI, video/telemetry recording and playback
- Custom camera and directional antenna integration available





## Terminal Specifications

900-90022-00 Configuration Options			
Cameras	Image Resolution	Lens	HFOV
<b>Standard Package 1</b>			
EO: Sony FCB-EX980	380K pixels	20.8x Optical	52.0°-2.5°
LWIR: FLIR Photon 320	324 x 256	35mm	20.0°
<b>Standard Package 2</b>			
EO: Sony FCB-EX980	380K pixels	26x Optical	52.0°-2.5°
LWIR: FLIR Photon 320	324 x 256	19mm	36.0°
<b>SWIR Cameras</b>			
Shortwave infrared linear arrays and near-infrared cameras available upon request. They meet many application needs in such diverse applications as defense, security, automated inspection, and spectroscopy.			

## Key Features

- Mounting and electrical interfaces identical to the others.
- Payload bay environmentally sealed.
- Operation modes include pilot mode, stabilized mode, and Lat/Long/Altitude mode.
- Available software includes ground control GUI, video/telemetry recording and playback, and ground based object tracking and video stabilization.
- Custom camera and directional antenna integration available.
- Two video connections allow both the EO and IR imagery to be viewed simultaneously. Video outputs can be switched through the Gimbal User Interface (UI), which allows the user to alternately view EO and IR video over a single video link.
- Object detection occurs at 3280 feet, recognition at 1230 feet, and identification at 656 feet for the Sony daylight camera.
- Detection of an individual or group of individuals is at 1815 feet, recognition at 681 feet, and identification at 363 feet for the FLIR IR Photon camera.

