



Air-Falcon AGSP II

Compact Airborne Gyro-Stabilized EO/IR Payload Systems

Overview

The Air-Falcon AGSP II is a fully digital, lightweight multi-sensor imaging system designed to provide exceptional surveillance and detection capabilities for Airborne Law Enforcement (ALE) and persistent surveillance missions. The systems electro-optical/infrared (EO/IR) sensors and high-definition (HD) visible camera are integrated in a 4 (5)-axis gyro-stabilized gimbal assembly to provide unparalleled image stability and target tracing in mission.

The Air-Falcon AGSP II incorporates a proprietary high-performance computer, HD video processor and power conditioning unit. With a touch-screen interaction, this unit allows simplified user input, control and monitoring of all system features.

With the systems continuous zoom capabilities and unmatched stabilization, the Air-Falcon AGSP II delivers precision imagery in long-range remote monitoring missions.

Wintek designs and manufactures a full portfolio of high-performance electro-optical infrared (EO/IR) payload systems. Wintek Technologies is a provider of end-to-end solutions in Electronic Warfare (EW), Electronic Intelligence (ELINT), Electro-optical Warfare (EO/IRW), Electro-Optical Reconnaissance (EOR) etc.

APPLICATION

- SEARCH & RESCUE
- RECONNAISSANCE
- BORDER AND COASTAL PATROL
- SURVEILLANCE

- UAVs
- FORCE PROTECTION
- LAW ENFORCEMENT

FEATURES

- Full four(or Five)-axes stabilized EO/IR Payloader
- Adaptable to different and multiple sensors due to available standard and customized mounting trays (cooled IR camera or microbolometer, daylight VIS camera or Light camera, LRF, laser designator, Laser illuminator, Laser Rangefinder)
- Direct torque drives for highest resolution and smoothest motion
- gold plated sliprings standard and optical sliprings as an option
- Available Features:
 - Stabilization and Control Unit
 - Automatic Video Target Tracker
 - Image Blending/Fusion (EO/IR)
 - Geo-Referencing INS/GPS
 - Joystick Control, Remote Control
 - Reconnaissance Information Storage and Playback
- Operate in harsh environment according to MIL-STD 810F / MIL-STD 416E on trucks, aircrafts and under naval conditions in head-up or over-head configuration.

Air-Falcon AGSP II

-Four (Five) Axial Gyro-Stabilized Gimbal Turret

Stabilized Turret Technical Specifications:

- ◆ Four Axial Stabilized Platform(Option 5 Axial)
- ◆ Angular freedom (deg) Coverage
 - Az Coverage: 360° continuous
 - El Coverage: -30° to +150° (Other TBD)
- ◆ Tracing Velocity and Acceleration
 - Max. Angular Velocity: $\geq 90^\circ/\text{S}$
 - Min. Smooth Angular Acceleration: $\leq 0.01^\circ/\text{S}$
 - Max. Angular Acceleration: $\geq 100^\circ/\text{S}^2$
- ◆ Angular Accuracy: Random Error $\leq 0.5\text{mrad}$
- ◆ Stabilized Accuracy: Random Error $\leq 0.02\text{mrad}$
- ◆ Tracing Accuracy: Random Error $\leq 0.5\text{mrad}$

SYSTEM INTERFACES

- ◆ Digital video SMPTE 292M
- ◆ Analog video NTSC/PAL
- ◆ Control RS-232, RS-422, Ergonomic Laptop or Hand-held
- ◆ Data RS-232, RS-422, ARINC 419/429, MIL-STD-1553B

ENVIRONMENTAL

- ◆ Standards MIL-STD-810E and MIL-STD-461F
- ◆ Operating temperature -40° C to 65° C

POWER REQUIREMENTS

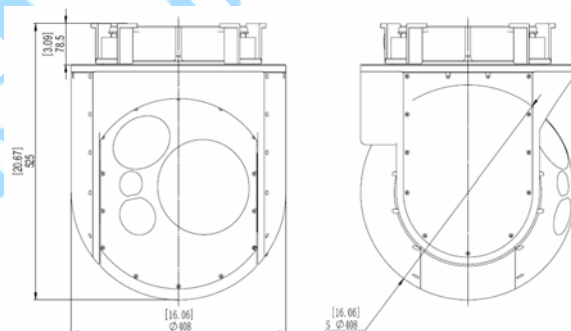
- ◆ Input Voltage: 24V DC
- ◆ Power Consumption: nom. < 250 W, up to 1500 W,

DIMENSIONS, WEIGHT & MOUNTING

- ◆ Platform Weight: <50kg (depends on payload)
- ◆ Platform Total Size: Sphere D = 408 mm,
H = 525 mm (dep. on payload)

OTHER OPTIONS & ACCESSORIES

Automatic Target Tracker, Navigation/Radar Interfaces, Quick-Disconnect Mounts, Displays and Recorders, Moving Map Systems, Video Downlinks



Control Unit

Control Handle



Air-Falcon AGSPII- -Payload EO/IR Camera Selection Guide

Thermal Imager

- ◆ Sensor Type: Cooled MCT MWIR FPA Detector
- ◆ Resolution: 640 x 512 MCT MWIR
(Optional: 1280 x 1024 MWIR FPA)
- ◆ Wavelength: 3-5 μ m
- ◆ Field of View Type: 3-FOV,
 - NFOV: 1.64° x 1.31°
 - MFOV: 4° x 3.2°
 - WFOV: 24° x 19.2°
- ◆ Focal Length: 25/80/320mm
- ◆ Digital Zoom: 2X, or Optional 4X
- ◆ Zoom Ratio: 12x optical, 60x overall
- ◆ Analog output : NTSC/PAL
- ◆ Digital Output: HD-SDI, 8 or 14Bit High Speed Digital Serial O/P
- ◆ User Control: RS-422, Or RS-232
- ◆ Power Supply: 18V-32VDC, Nominal 25W
- ◆ Zoom Ratio: 20X Optical, 80x Overall

Environmental Conditions

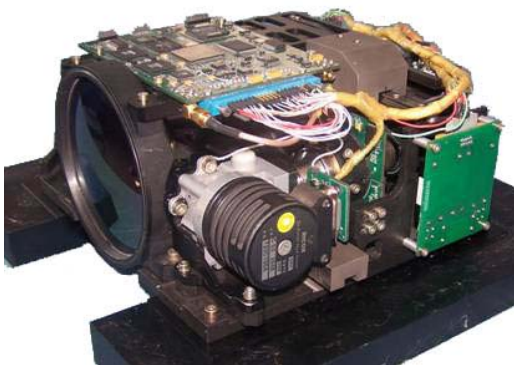
- ◆ Operating Temp. -30° C to 60° C
- ◆ Environmental MIL STD 810
DEFSTAN 00-35
- ◆ Electromagnetic DEFSTAN 59-411
MIL STD 461

Overall Size: 325 x 320 x 145mm

- ◆ Weight: <8.5Kg

Option:

- ◆ Field of View Type: Continuous
- ◆ Digital Zoom 2X,
- ◆ Zoom Ratio 20x Optical, 40X Overall
- ◆ Focal Length 15-300mm



Thermal Imager

HD DAYLIGHT IMAGER

- ◆ Sensor Type: 1/3" CMOS-CCD
 - ◆ Resolution: 1920x 1080
 - ◆ Field of View Type: Continuous
 - ◆ Focal Length: 5.1mm to 153mm
 - ◆ Optical Field of View: 50.4° to 1.8°
 - ◆ Digital Zoom: 4x
 - ◆ Effective Focal Length: 612mm
 - ◆ Zoom Ratio: 30x optical, 120x overall
- Note: Zoom Ratio Subject to Turret Size and EO/IR Sensor Qty.**

COLOR HIGH DEFINITION ZOOM CAMERA (OPTIONAL)

- ◆ Wavelength: 0.4-0.75 μ m
- ◆ Sensor type: Color CCD 2/3" TV
- ◆ Resolution: 1920x1080 HD and HD-SDI
- ◆ FOVs: 29° to 0.25°
- ◆ Zoom ratio: 120X

Note: Zoom Ratio Subject to Turret Size and EO/IR Sensor Qty.

LASER RANGEFINDER

- ◆ Laser Type: Erbium-glass, Class 1(eyesafe)
- ◆ Wavelength: 1.54 μ m
- ◆ Pulse Rate: 12 PPM
- ◆ Range: 25km
- ◆ Range Resolution: +/- 5m

LASER ILLUMINATOR (OPTIONAL)

- ◆ Laser Class: Class IIIb;
- ◆ Wavelength: 830nm
- ◆ Out Power: 1W or 2W

OTHER LASER PAYLOADS (OPTIONAL)

- ◆ Designator: 1.064 μ m, up to 20 hz, Class 4
- ◆ Pointer: 100 mW, Class 3b

Air-Falcon AGSPII (Optional Function) -Electro-Optical Reconnaissance (EOR) & Information Analysis

Recorded Recon Information Unit (RRIU) :

- ◆ Rec./Plyb Rate: 500MB/s;
- ◆ Capacity: 1TB, Erase life time 100,000;
- ◆ with ECC function;
- ◆ Rear Panel: Supply 4 Channel Comeralink
- ◆ Communication Port: 1x Gbit Ethernet Port, 1x RS232;
- ◆ PowerPC CPU 800MHz, 512MB DDR;
- ◆ Support System level Consist of Multi-Board;
- ◆ Support real time multi-Channel Playback;
- ◆ Max Power: 50W.
- ◆ Operating Temp. -40 degree C to +70 degree C
- ◆ Rugged level 1) Air Cooling level ;
2)Conduction Cooling Level



Post-Processing of Recon Information: (PPRI):

Major Features:

- ◆ Base on image detail from recon mission to analyze processing with overlays comply with GPS & digital map on ground station
- ◆ To Compare Information of different date
- ◆ Accurate location of Surveying and mapping etc.



Archiving Recorded Data Warehouse (ARDW)

Major Features:

- ◆ Archive rates about 400 Mbytes/sec that significantly reduces back up time
- ◆ Archiving can be performed over a 10GbE link or by physically moving the record disks from the RRIU (record / playback system)
- ◆ Flexible GUI to manage archiving and playback file transfer
- ◆ 32 TB of archive space
- ◆ Create Information Warehouse for Information retrieval and archiving backup



Note: Some (5 or 10) EO/IR Payloader equipped with one set (1x RRIU, 1x PPRI or 1x ARWD),

