
Lockheed Martin C-130/L-100 Hercules

Avionics Solutions



UNIVERSAL® AVIONICS
SYSTEMS CORPORATION

Universal Avionics specializes in bringing advanced avionics technologies to the aviation industry. Our innovative retrofit avionics solutions for military aircraft enhance a diverse range of C-130 flight operations. Increased capabilities, greater tactical situational awareness, and safety are all provided in order to meet the evolving Communications, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) requirements. We have your C-130 solution for Automatic Dependent Surveillance-Broadcast (ADS-B) Out, Performance-Based Navigation (PBN), Localizer Performance with Vertical Guidance (LPV), Satellite-Based Augmentation System (SBAS), and more. Not only do our C-130 solutions allow for safer, more efficient and cost-effective operations, but they also address obsolescence issues.

Third Party Interface Expertise

When it comes to developing integrations with third party equipment, Universal Avionics is the industry expert. We work with an abundance of third party radar systems, TACAN systems, air data systems, radios, autopilots, IFFs, and more. Our Commercial Off-The-Shelf (COTS) products,

and non-proprietary bus architecture and “building block” system allows for flexible integration into the C-130, while also allowing for expandability with future customization and upgrades, and minimizing cost of schedule impacts and overall programmatic risk.

Proven Performance

Universal Avionics has experienced success in positioning a wide range of products for government and military aircraft, including proven past performance with multiple tactical airlift and ISR platforms, both domestic and international. We have past performance on both Direct Commercial Sales (DCS) and Foreign Military Sales (FMS).

Solid Experience

- **Airbus** CC-140 (A310)
- **BAe** C-29A
- **Beechcraft** C-12C/D/F/J, King Air B200/300, RC-12X
- **Boeing** RC-135
- **CASA** C-212, CN-235
- **Cessna** Citation Encore (560), Citation V Ultra (560)
- **DeHavilland** DHC-7, Q-Series 100/200/300 (Dash 8), DHC-RC7
- **Gulfstream** G-III
- **Learjet** C-21A
- **Lockheed** C-130B/H/L-100/KC-130T, P-3 Orion
- **Martin** WB-57
- **McDonnell Douglas** C-9, DC-8
- **Northrop** T-38N
- **Pilatus** PC-12/12NG, U-28A
- **Short** 360, C-23
- **Sikorsky** UH-60/SH-60

Customers

- **Belgian Air Force**
- **Colombian Air Force**
- **Korea Coast Guard**
- **NASA**
- **Royal Air Force**
- **Royal Canadian Air Force**
- **Royal New Zealand Air Force**
- **U.S. Air Force**
- **U.S. Army**
- **U.S. Coast Guard**
- **U.S. Marine Corps**
- **U.S. Navy**

“I always tell them I chose Universal’s product because it was easily the most intuitive FMS out there.”

-Major Mike Wolter, Retired, Pilot, Royal Canadian Air Force

Navigation From Takeoff to Touchdown

The Satellite-Based Augmentation System (SBAS)-capable Flight Management System (FMS) features an extremely precise, internal SBAS GPS receiver that improves accuracy and integrity of GPS-derived position information. It is the same across both flight deck upgrade solutions with the EFI-890R Advanced Flight Display and InSight system.

- Navigation Database compatible with DAFIF Navigation Database
- Additional Navigation Database options available (Jeppesen, NAVBLUE)
- Compatible with EFI-890R and InSight
- Full interface capability for flight guidance systems, autopilots, and flight deck displays (digital/analog)
- Multiple navigation sensor compatibility (INS systems and Embedded GPS/INS (EGI))
- Up to four fuel flow sensor inputs
- Most versatile FMS in the industry
- Compatible with commercial ADS-B Out transponders and APX-119G as well as ADS-B Out compliant IFF systems
- NVIS-compatible/compliant* models
- FlexPerf® Module for takeoff, landing, and fuel optimization performance (software option/no additional hardware, aircraft specific)
- Flight plan/waypoint input from mission computer

Key Benefits

- ADS-B Out
- CNS/ATM
- LPV
- PBN
- RNAV
- RNP
- SBAS

**InSight is NVIS-compliant*

Advanced Technology for Special Missions

For special mission operations, the Multi-Missions Management System (MMMS) is unmatched. It incorporates the advanced technology, system design, features, and capabilities included in the FMS, along with special interfaces and the ability to fly six distinct search patterns. It is a software option that does not require any additional hardware or LRUs.

- Unique/user-defined tactical search patterns (six)
- Drifting Target capability (SAR)
- Mark on Target capability (SAR)
- ARC Search

Multi-Function Control Display Unit

The MCDU interfaces with the UNS-1Fw FMS/MMMS in C-130 aircraft to provide user control and display. Developed for special mission operations, the MCDU features additional ARINC 429 I/O ports which can support up to six ARINC 739 interfaces for ACARS, SatCom, and future NextGen CNS/ATM systems.



UNS-1Fw MMMS with MCDU

Airdrop

Airdrop is an optional software module available for the MMMS and is compliant with AFI 11-203. It calculates Low Altitude Computer Air Release Point (CARP) and High Altitude Computed Air Release Point (HARP). No additional hardware or LRUs are required for Airdrop capability.

- Customizable ballistics database
- Proven interface to Air Guidance Unit (AGU) computer to support Joint Precision Airdrop System (JPADS)

Tactical Mission Support Capability



C-130 Flight Deck Solutions

EFI-890R Advanced Flight Displays

The EFI-890R Advanced Flight Display is Universal Avionics proven solution, first introduced to the market in 2004. It is one of the most versatile retrofit display systems available on the market today.

- MFD, PFD, and ND
- MFD at Navigator Station provides additional situational awareness and display path for radar upgrade
- Clean display formats that facilitate better crew interaction and crew resource management
- High-resolution, high-contrast display
- 8.9-inch diagonal
- Analog video display capability
- NVIS-compatible model option
- Adaptable design/extensive integration capabilities
- Low Altitude Mode (enlarges displays of radio altitude and vertical speed)



Flexible Integration Capabilities

- 17+ types of attitude/heading sensors
- 14+ types of air data sensors
- Multiple analog and digital radio altimeters (6+ known types)
- 13+ Different weather radar systems
- 10+ Different flight director/autopilot systems to include the FCS-105, FCC-86/APS-85, and more
- 5+ Traffic Collision and Avoidance Systems (TCAS)
- Supports numerous analog and digital radios

Extensive Interfaces

- Analog and digital heading sources
- Moving map overlays
- Flight plan data from FMS/GPS system (including conics when provided)
- VOR/DME and VOR/TAC station locations (identifiers when provided by the sensors)
- Bearing and distance data for VOR, FMS/GPS, TACAN, and NDB (analog and digital sources supported)
- Terrain Awareness and Warning System (TAWS) graphics
- Vision-1[®] Synthetic Vision System (SVS) graphics
- Enhanced Ground Proximity Warning System (EGPWS) graphics
- Traffic Collision and Avoidance Systems (TCAS1, TCAS2 or T2CAS™) overlays
- Weather radar displays (multiple radar systems supported – VP displays when provided)
- Electronic charts, broadcast weather, and other graphical images from multiple systems
- Mission video from tactical mission systems
- Analog video including cameras, EO/IR, and search radar



EFI-890R Advanced Flight Display

InSight® Display System

InSight is our latest in display design, representing a more integrated flight deck solution, with a host of embedded features like synthetic vision with advanced mapping capability, electronic charts, advanced radio control, and broadcast weather. With fewer Line Replaceable Units (LRU) for essential functions than traditional avionics systems, InSight means less avionics weight and wiring for the aircraft.

- MFD, PFD, and ND
- MFD at Navigator Station provides additional situational awareness
- Clean display formats that facilitate better crew interaction and crew resource management
- High-resolution, high-contrast display
- 10.4-inch diagonal
- NVIS-compliant model option
- Digital video display capability
- Additional video input/output capabilities
- Open architecture for flexible integration/future customization
- High-speed Ethernet-based communication architecture (minimizes aircraft wire bundle size and weight)
- Pilot-selectable screen layouts
- Graphical user interface with cursor control options
- Centralized control of flight displays, FMS, radios, weather, traffic, and terrain
- Greater mission sensor interface and control capabilities (compared to currently fielded, traditional avionics display architecture)




The InSight Family: EFDU-1040, EFIS Control Display Unit (EFDU), and Alphanumeric Keyboard (ANK)

- Analog and digital air data, attitude, and heading sources
- Digital engine data
- Weather radar display (profile views when provided)
- Electro-optical/infrared imaging systems (via ntsc/rs-170 composite video)
- Analog video/mission computers (via VGA/SGA/XGA)
- Embedded synthetic vision with multiple simultaneous views
- Lightning sensor system (via ARINC 429)
- Analog and digital flight director/autopilot/radio altitude systems
- Specific versions of the ASCB bus system
- Radio tuning and control via ARINC 429, CSDB, and Honeywell RSB
- MIL-STD-1553 interface supported via protocol conversion

InSight® Display System

Flexible System Configuration Options



Traffic Display On/Off



Airports On/Off



Nav aids On/Off



Fixes On/Off



Special Use Airspaces On/Off



Airways Lo/Hi/Off



North Up Mode On/Off



Compass On/Off



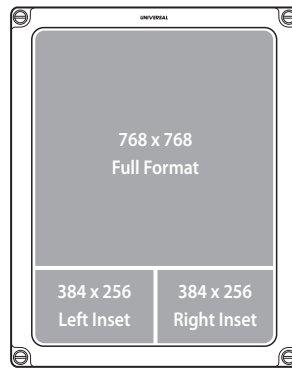
Lightning On/Off



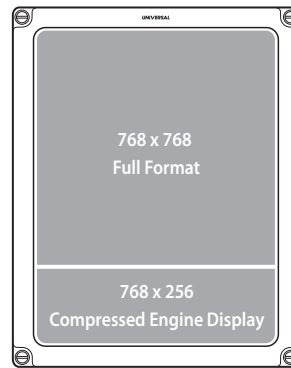
Broadcast Weather On/Off



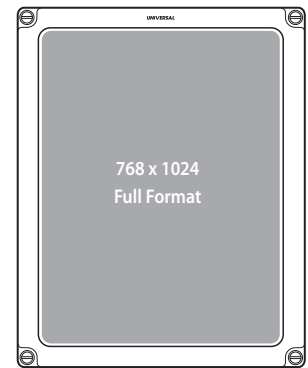
SVS Terrain On/Off



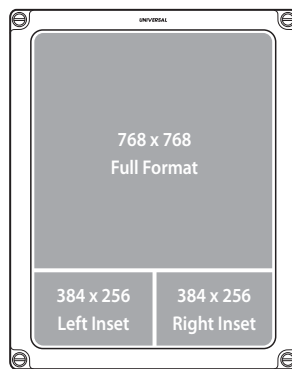
PFD with Insets



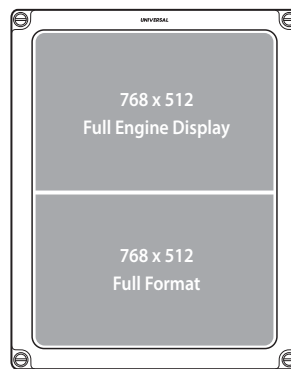
PFD with Compressed Engine Display



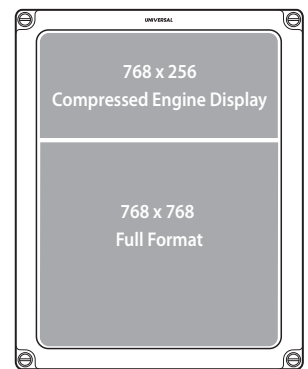
MFD Full Format Display



MFD with Insets



MFD with Full Engine Display



MFD with Compressed Engine Display

A Platform for the Future CNS/ATM Environment

The UniLink® UL-800/801 Communications Management Unit (CMU) provides superior operations and control of digital communications in the exceedingly complex CNS/ATM environment.

- Future Air Navigation System (FANS) 1/A+
- ATN Level B1 (ATN B1)
- Controller-Pilot Data Link Communications (CPDLC)
- Automatic Dependent Surveillance-Contract (ADS-C)
- Air Traffic Services (ATS) Facilities Notification (AFN)
- UniLink Trainer – Computer-based FANS familiarization training



UniLink® UL-800/801

Lightweight and Compact Recorders

Universal Avionics line of Cockpit Voice and Flight Data Recorders (CVR/FDR) includes five model options, providing a customized recording solution for your C-130. Low cost replacement options are available for integrating to older analog interfaces.

- Lightweight
- Solid-State
- Internal Recorder Independent Power Supply (RIPS) option
- Combination Cockpit Voice and Flight Data Recorder (CVFDR) Model
- Data Link message recording for FANS 1/A+
- ULB 90-day compliant



CVR/FDR

Industry-Leading Support

At Universal Avionics, we leverage commercial best practices against the traditional government support infrastructure; from the design and testing, to the installation/configuration, flight testing, and certification stages. Our Technical Sales team, Technical Publications team, and technical materials are available for you throughout the process. Continual support for customers throughout the product lifecycle is the keystone of our company's service philosophy.

We realize the importance of proper training and offer general operational and maintenance courses for technicians and operators, including flight crews, along with helpful training materials, and online training videos. Training arrangements can be made for our Tucson Training Center, Wichita Training Center, or on-site. We will tailor your level of support and training to meet your specific installation/integration. In addition, we have many current relationships with part task trainers and platform level training providers.



InSight® Desktop Trainer

Post-Integration Logistic Support

- Live technical support from Universal Avionics and Field Service Engineers
- 24-Hour AOG hotline for parts support
- Loaner, consignment and rental unit pool maintained at Universal Avionics
- Loaners provided at no charge during warranty period
- Universal Avionics repair stations in Wichita, Kansas (USA) and Tucson, Arizona (USA)
- Authorized repair stations around the world
- Ongoing software refinement and maintenance for product improvements



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Specifications and graphic displays contained herein are subject to change without notice. Features and capabilities may be limited due to installation or interfacing equipment.

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