Integrated Standby Solutions

INNOVATIVE AEROSYSTEMS

Innovative Aerosystems Integrated Standby Solutions

Standby Display Product Line

Innovative Aerosystems (IA) developed Integrated Standby solutions that set a new standard for reliability and modernity. The Integrated Standby Unit (ISU) is designed to reduce both the equipment count and overall weight in the cockpit, fitting seamlessly into a standard 3-ATI slot. Functioning as a scaled-down primary flight display, the ISU ensures that pilots can execute precision and non-precision approaches safely in all weather conditions, even when all other equipment has failed or degraded.

Versatile Compatibility and Extensive Testing

The IA ISU flies on a wide range of aircraft, including the A-4, C-130, B757, B767, B737 Classic, PC-12 Legacy and NG, King Air 200 and 300, King Air 260 and 360, and Eclipse 500 and 550 airplanes. Units undergo extensive testing including extreme chamber conditions. The IA ISU was the only standby unit to pass rigorous testing for the A-4, earning full qualification for this high-performance platform.

Advanced Functionality and Data Processing

The IA ISU is capable of calculating, processing, and displaying critical flight information such as altitude, attitude, airspeed, slip/skid, and navigation display information (TACAN, VOR, ILS, and ADF) on a single, logical, and concise display. It simultaneously acquires altitude and airspeed data via digital smart probe or air data computer (ADC) input, as well as through dedicated Pt and Ps plumbing. The onboard micro-electro-mechanical system (MEMS) sensor provides a proven and dependable air data solution. Additionally, the ISU supports potential enhancements for Radio Management and Alternate Navigation functionalities.

Integral Inertial Measurement Unit

A key feature of the ISU is its integral Inertial Measurement Unit (IMU), which includes accelerometer, gyro, and magnetometer triads. The IMU's integral air data module measures static and total pressure, enabling independent display of altitude, airspeed, and Mach number. The back end circuit assembly fits into a 3 ATI cutout, containing the common rear connector, sensor package, and graphics rendering processor.

IA 3ATI ISU Part Number: 9D-80196-1

IA 3ATI ISU (as well as other models) replaces
2-3 standby instruments:
•Air Speed Indicator
•Altitude Indicator
•Attitude or Horizon Indicator

Features & Options

- Advanced display technology
- Versatile interface capability
- Highly accurate data sensors
- DG Mode
- Software: RTCA DO-178B (Level certifications vary per model)
- Complex Electronic Hardware: RTCA DO-254 Level A
- Hardware Qualification: RTCA DO-160G
- ARINC 429 inputs (6x) and outputs (2x)

- Reduced pilot workload
- Increased safety
- Logistics and maintenance benefits by integrating multiple functions into one LRU
- Options:
    - NVIS
    - External magnetometer interface
    - Standby Radio Management Unit (RMU)
    - Alternate Navigator Functionality
    - RVSM Compliance

High-Resolution Display and Robust Interface

The IA ISU features a high-resolution LCD display with WVGA resolution and full LED backlighting. Tactile keys allow for mechanical input of the current barometric correction value, independent of PFD/MFD status. The graphics generated by the ISU's latest-generation ARM® processors are fully anti-aliased, offering unprecedented accuracy and detail.

The ISU leverages IS&S's extensive background in integrating cockpit controls into Control Panels, Displays, and Altimeters. To ensure reliability, IA performs life testing on all encoder part numbers used in their products and subjects each part received from vendors to rigorous functional tests.

I2C Interface and Installation Configuration Module

The IA ISU uses an I2C interface that communicates with an Installation Configuration Module (ICM). This preferred method stores aircraft-specific information settings, ISU configuration parameters, and relevant calibration coefficients. The ICM assigns capabilities to the ARINC, discrete, and other interfaces, providing interface flexibility. The ISU interface is intended exclusively for the direct connection of an IA ICM.

During installation, the ISU is calibrated to the specific aircraft using the ICM, which stores data such as static error correction, Vmo, and Mmo. The ICM, programmed with aircraft-specific data, connects to the ISU and configures the system with the necessary data upon power-up.

The IA ISU line stands out as a modern, reliable standby solution for various aircraft platforms. Its advanced functionality, and robust interface ensure that pilots can rely on it in critical situations, making it an essential component of modern cockpit design.

IA 9D-80190-(x) available with encoder or bezel buttons with no encoder. Available in Gray or Brown.

IA 9D-84176-(x) available for mounting in portrait and landscape modes fitting 3ATI existing panel openings

IA 9D-84180-(x) Standby Display System
(Includes Magnetometer and Remote Standby Controller)

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Certification

TSO C2d	Airspeed Instruments
TSO C3e	Turn and Slip
TSO C4c	Bank and Pitch
TSO C6e	Direction Instrument Magnetic
TSO C8e	Vertical Speed
TSO C10b	Altimeter, Pressure Actuated Sensitive Type
TSO C34e	ILS Glideslope
TSO C36e	ILS Localizer
TSO C40C	VOR Receiving Equipment
TSO C46A	Max Allowable Airspeed Indicator
TSO C66C	Distance Measuring Equipment
TSO C95a	Mach Meters
TSO C106	Air Data Computer
TSO C113a	Airborne Multipurpose Displays
TSO C201	Attitude and Heading Reference System

Pitch Range:	±90 Degrees	**Pitch/ Roll Range:**	300 Degrees/Second
Roll Range:	±180 Degrees	**Baro Setting Input Range:**	22.00 to 32.00 InHg (745 to 1084 MB)
Pitch/ Roll Accuracy:	±0.5 Degrees	**Brightness:**	0.1 – 140 Foot Lamberts, Dimmable
		Viewing Angle:	±45 Degrees

Innovative Aerosystems is the world's leading supplier of RVSM solutions and a trusted integrator of Cockpit Information Systems (Cockpit/IP®) across the Commercial Air Transport, Military, and Business Aviation markets. We deliver advanced, cost-effective avionics by incorporating leading-edge technologies into proven, mission-ready systems for the global aerospace industry.

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