# ISS
## Innovative Solutions & Support

# Integrated Standby Solutions

# IS&S Integrated Standby Solutions

**IS&S Standby Display Product Line**

Innovative Solutions & Support (IS&S) developed Integrated Standby solutions that set a new standard for reliability and modernity in fixed wing and rotary aircraft. 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 IS&S 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 and vibration testing. The IS&S 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 IS&S 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.

IS&S 3ATI ISU Part Number: 9D-80196-1

IS&S 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 IS&S 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, IS&S 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 IS&S 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 IS&S 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 IS&S 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.

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



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



IS&S 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 |

# Performance (May slightly differ among models)

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|---|---|---|---|
| **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 – 200 Foot Lamberts, Dimmable |
| | | **Viewing Angle:** | ±60 Degrees |

IS&S is the world's leading supplier of RVSM systems and integrator of Cockpit Information Systems (Cockpit/IP®) for the Commercial Air Transport, Military, and Business Aviation Markets. IS&S incorporates leading edge technologies into sophisticated, cost-effective solutions for the aerospace industry.

**Innovative Solutions & Support**

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