

Avionics

IRS 1200 Automatic Inertial Reference Unit Test System



The IRS 1200 is an inertial reference test system used to test Honeywell Air Data Inertial Reference Units (ADIRU) and Inertial Reference Units (IRU) of air transport, commuter and business aircraft, as well as cockpit control panels and system display units.

With the fully-automated configuration of the IRS 1200, an operator can initiate multiple NAV runs and allow the ATE to run overnight with no intervention. The system can be configured for the customer's fleet.

Test Program Sets are delivered complete with (1) LRU Test Unit Adapter (TUA), (2) TUA Self-Test Adapter (not applicable for cockpit devices), (3) Test Program Source on Executable diskettes, (4) Complete Documentation, including TUA design drawings and detailed English language descriptions of test programs, (5) Maintenance and Software Training.

Two Configurations

Automated: 2-Axis Tilt Table

Optional: Manual Tilt Table

Fully Automated Configuration

Unattended Test Operation

Multiple Unattended NAV Runs

Comprehensive Turnkey ATE System Includes

Tilt Table

Power Supplies

Measurement Resources

Test Unit Adapters (TUA)

Test Program Sets

ARINC Databus Resources

Test Control Computer w/ Test Exec. Software

Spares Kit

Software Revision Service

Capable Field Application Engineering staff can provide in-depth training (factory or on-site), installation and expert technical support.

GENERAL SPECIFICATIONS

SHOP POWER REQUIREMENTS

115 to 220V AC / 50 to 60 Hz, +10%

3 phase AC power required for B777 FT-ADIRU/SAARU testing

LINE CURRENT REQUIREMENTS

20 Amps Maximum Surge for Automatic Table

30 Amps Max for Test Station

ENVIRONMENTAL REQUIREMENTS

Temperature

59° to 95° F

15° to 35° C

Relative Humidity

20% to 80%

SHOP AREA REQUIREMENTS FOR A 2-BAY IRS

Width

92" / 234 cm

Depth

85 inches / 216 cm (includes
30" / 77cm for rear access doors)

Height

69 inches / 175 cm

SHOP AREA REQUIREMENTS FOR A 2-AXIS AUTOMATIC TABLE

Width

73.7" / 187.2 cm

Depth

63.7" / 162 cm

Height

48.7" / 123.7 cm

2-axis table weight

2,000 lbs./900 kg

Ideal Aerosmith's, 2-axis positioning tables have been designed to satisfy a wide scope of inertial navigation test requirements. The test table can be programmed to simulate the roll and pitch motions of an aircraft in flight. Each axis can be programmed individually, or simultaneously with the other axes. Rate, accelerations, continuous slewing (clockwise or counterclockwise), reversing and stopping in any position can be easily and rapidly programmed. The user has the option of operating the table manually, if required, for manual positioning and testing.

Programming is accomplished through the IEEE-488 communication buss to the auxiliary controller. The auxiliary controller is used to switch the table from remote to local mode, which allows the table to be operated in local mode by utilizing the touch screen menus to perform various functions such as position, jog, stop and move to the home position. The controller's CRT displays position and velocity, and prompts the user for inputs.

PHYSICAL / ENVIRONMENTAL CHARACTERISTICS

Table top diameter

32" / 81cm (Auto table)

Payload weight

150 lbs./68 kg centered

Table dimensions (auto)

73.7" w x 26" d x 48.7" h

187.2 cm x 66 cm x 123.7 cm

SWING RADIUS ABOUT

Inner axis

28" / 71 cm (auto table)

OPERATING ENVIRONMENT

Temperature

50° to 95° F

10° to 35° C

Relative humidity

5-85%

Total weight

2000 lbs./900 kg (auto table)

Note: The above specifications are for a 2-axis automatic table. For custom specifications or special requirements, please contact Aeroflex, JcAIR Test Systems. We will gladly submit a detailed proposal and quotation for your consideration.

The IRS 1200 Inertial Reference Test System has been designed as a replacement for the UG2994 and to test the complete Honeywell IRU/ADIRU product line, including the cockpit control panels and system display units.

The basic version of the IRS 1200 is designed to test basic digital IRUs, supporting the following Honeywell part numbers:

HG1050AX	B747-400, F100
HG2001XX	MD-90, F100, RJ
HG1050BX	A300-600, A310
HG1150BX	MD-11
CG1XXX	IRMP, ISDU, MSU, CDU - All Aircraft

The ADIRU expansion to the system is required to test the IRU as well as all ADIRUs, giving the system the ability to test these additional Honeywell part numbers:

HG1150AX	A320
HG2030XX	A319, A321, A330, A340
HG2050XX	B737-600/700/800
HG1103BA	MD-90
HG1075, 1086, 1095	Business Jets
HG2040	SAARU Level 1 RTS and Level 2 (maint)
HG2060	FTADIRU Level 1 RTS

A Manual Tilt Table option is available. Operator intervention is required during the testing of units.

The B777 FT-ADIRU/SAARU version of the IRS 1200 includes the automated tilt table, as well as considerable additional resources required to test these components. Additional power supplies, data-bus resources (ARINC 429 and 629) and tilt table holding fixtures are required. A Boeing data loader computer is also included to allow capability of downloading new flight software.

Finally, individual Test Program Sets are required for each LRU type. They are maintained in conformance with the test requirements in the Honeywell Component Maintenance Manuals (CMMs). Selected IRU/ADIRU programs have a troubleshooting mode so the user can query the internal BITE memory locations and obtain key internal parameters such as power supply voltages, laser intensity, accelerometer bias, gyro bias, etc. Program source code can be reviewed and modified by the user. Continuous test program updates that track OEM test specification changes can be obtained through our Software Revision Service (SRS).

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