VIAVI Solutions

Brochure

VIAVI
ADS-B INTEGRITY Application

The VIAVI software application is a time-saving tool used for performance testing of ADS-B Out systems. The application is ideal to support Supplemental Type Certification (STC) and post approval testing for ADS-B Out equipment installations and R&D requirements. A complete detailed ADS-B Out performance report in FAA format can be generated showing Pass/Fail criteria, along with detailed analysis of system latency.

Accuracy and Integrity Performance Test (requires IFR6000 or IFR6015)

- Parameter checks per 20–165B (91.227) and FAA ADS-B Operation Performance Report
- Mode S address validation (from GICB to ADS-B and against known problem values)
- ADS-B Out performance requirements for SIL, SDA, NIC/NUC, NACp, NACv
- Latitude/Longitude positional accuracy per bounds of NACp
- Emitter category reporting

Positional Accuracy Test (requires GPSG-1000)

- Log of latitude and longitude positional data for evaluation of accuracy and integrity over a simulated flight path
- Exact simulated time and position information logged
- ADS-B squitter data received and logged
- Squitter positional data compared against coordinated simulation
- Logging and evaluation of SIL, SDA, NIC/NUC, NACp, NACv values in static or dynamic motion scenarios
- Logging of N/S, E/W velocity data with reasonableness testing per bounds of NACv

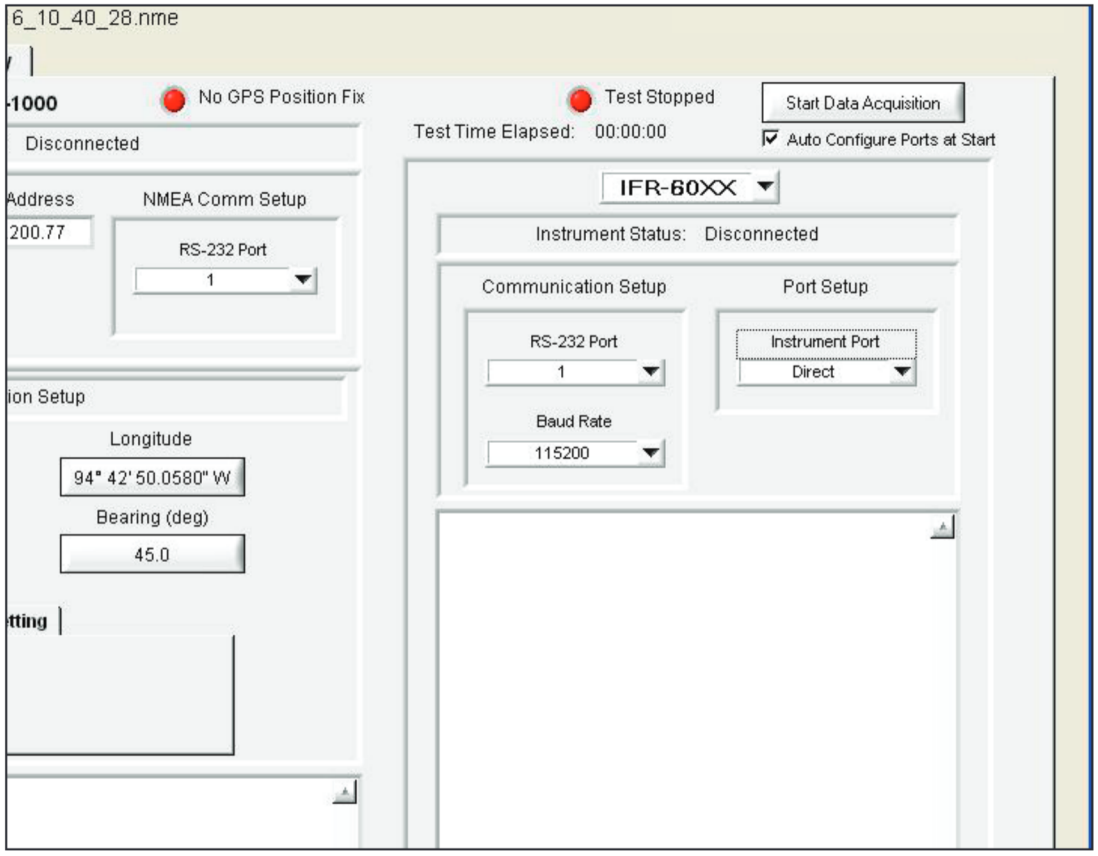
Benefits

- ADS-B equipment installation verification
- Complete AC 20–165B fast and convenient reporting to identify installation issues
- STC support
- Eliminate post STC operational flights
- Coupled testing in the hangar or on the flight line eliminates:
  - Open sky requirements
  - GPS repeater
  - Weather issues
  - Interference with ATC operations
- Comprehensive solution for accurate system latency measurements
- Ability to measure latency and associated errors over a variety of simulated velocities and positions
- Save time and money

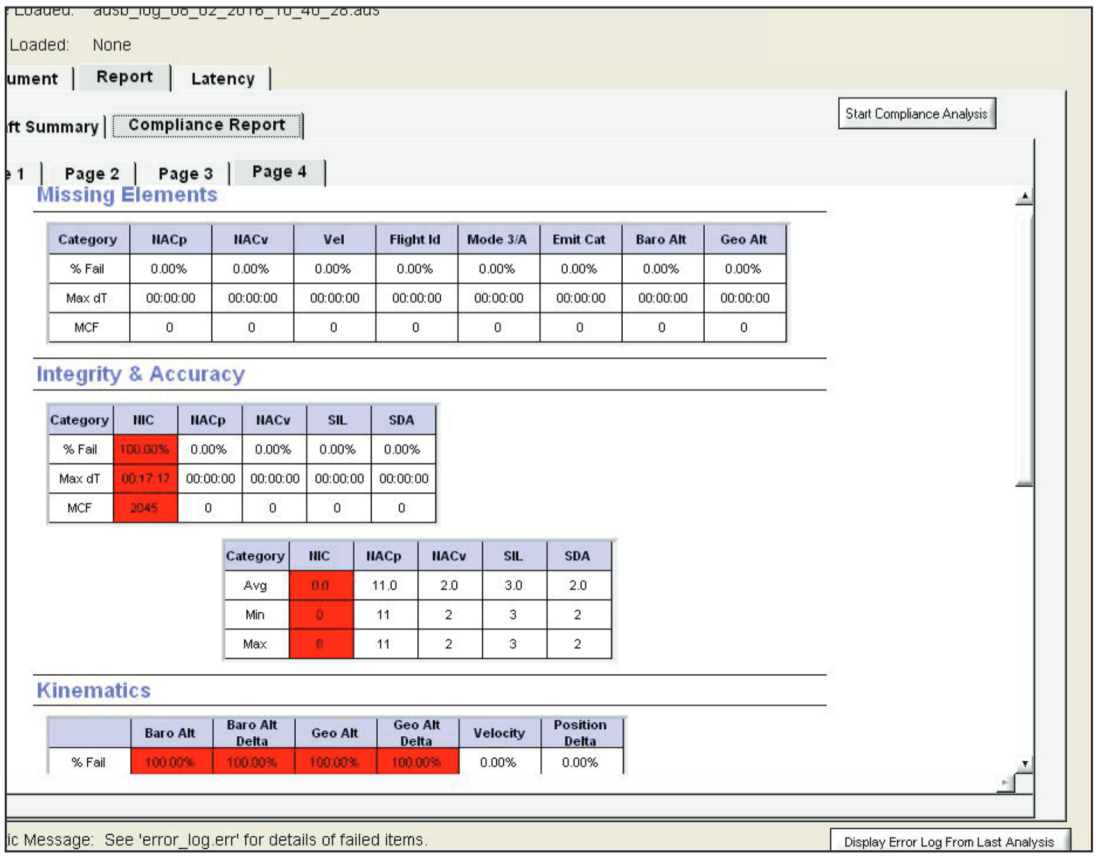
Applications

- Performance verification of:
  - ADS-B Transponders
  - UAT Transceivers
  - GPS Receivers

Test Setup and Results



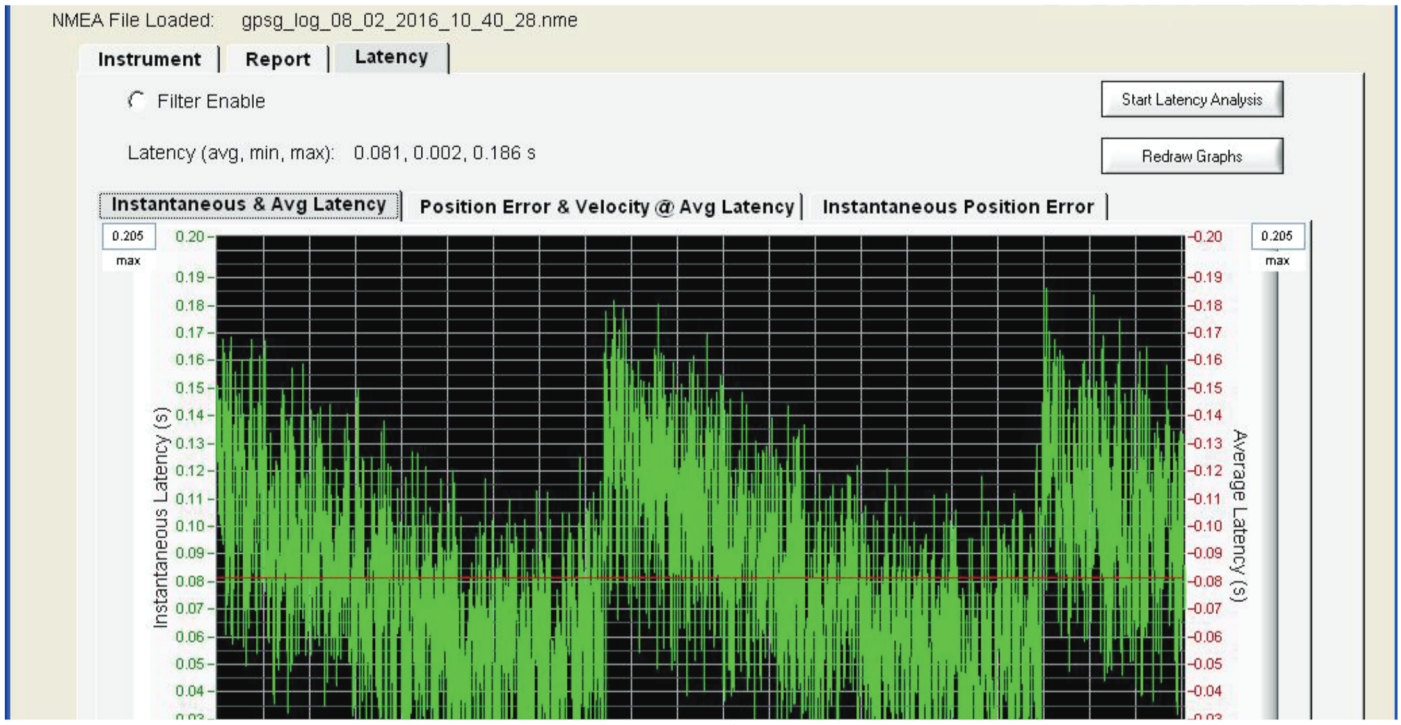
Instrument Setup



Data analysis screen indentifies performance failures

Latency

Plots of instantaneous and average system latency, velocity at average latency, and instantaneous positional error based on linear track are available.



Instantaneous Latency

PC Minimum Requirements

- Windows® XP or Windows® 7 32-bit (or later)
- CPU: Intel® Core 2 Duo P8400 2.26 GHz or equivalent
- RAM: 2 GB
- Monitor: XGA (1024 x 768) or higher
- Free Disk Space: 1 GB

Required Equipment for ADS-B Installation/ Verification and Performance Report

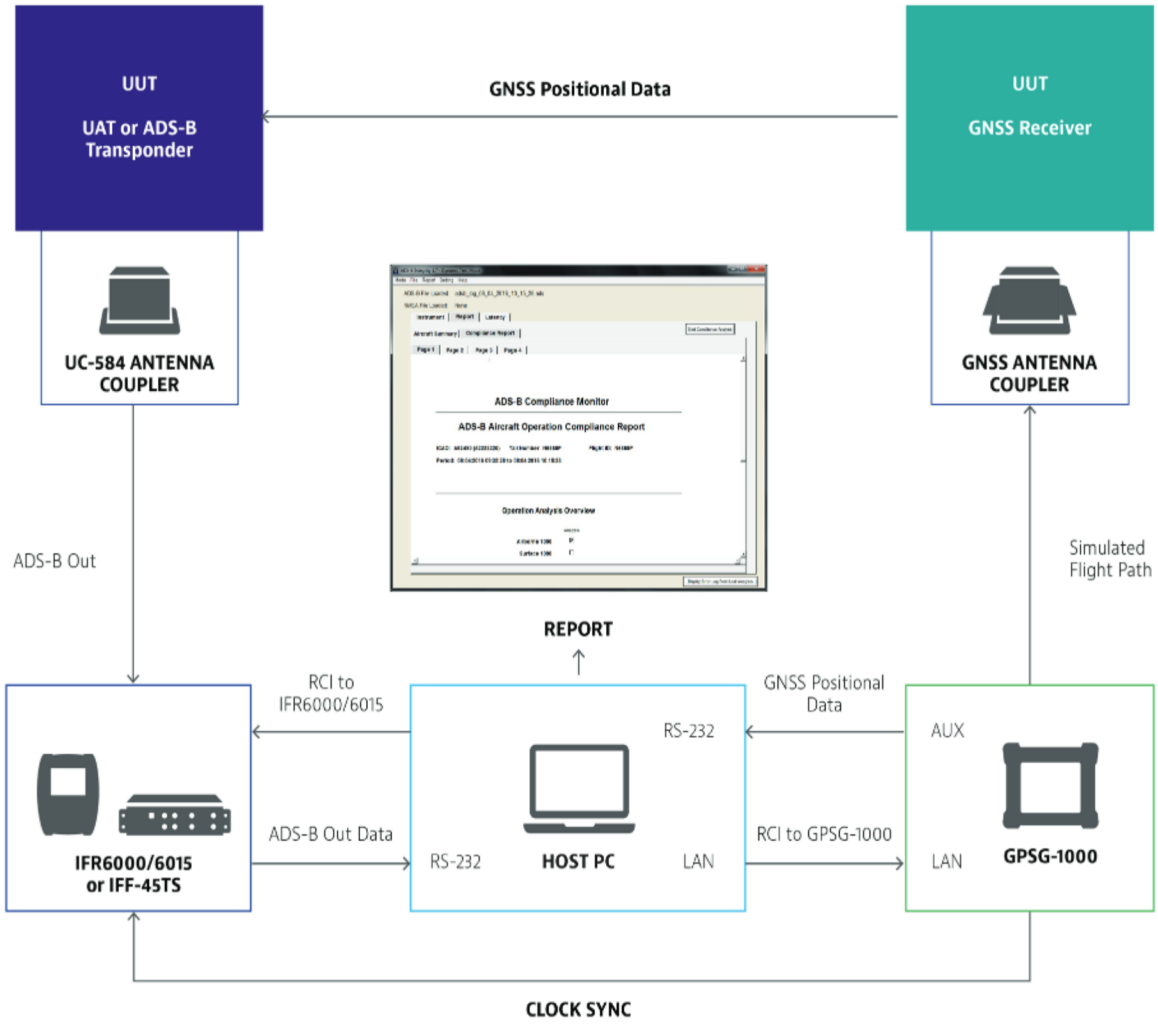
Part No.	Description
72422 **or** 72424	IFR6000 Mode A/C/S Transponder/DME Test Set
	IFR6015 Military version including E-TCAS and TACAN
83411	6000OPT3 ADS-B 1090 MHz option
112795	6000OPT5 UAT 978 MHz option (if applicable)
140609*	6000Opt6 ADS-B Integrity Test option*
112350	UC-584 Coupler Kit, Single Antenna (recommended)
91136	Coupler Kit, Dual Antenna GPS Systems (if required)
91137	Coupler Kit, Triple Antenna GPS Systems (if required)
87339	GPSG-1000 Twelve Satellite GPS Simulator
140607	GPSGOPT3 ADS-B Integrity Test option
Note: the following military kits are available	
141112	Includes P/N's 72424, 83411, 140609, 87339, 140607, 112350
141111	Same as 141112 plus controller P/N 92137

*This option includes the ADS-B Integrity app

Required Equipment for R&D and Factory Test

Part No.	Description
72438 **or** 72439	IFF-45TS Mode A/C/S Transponder/DME Test Set
	IFF-45TS-A Military version including E-TCAS and TACAN
91684	45TSOPT5 ADS-B Out option
140608*	45TSOPT10 ADS-B Integrity Test option*
87339	GPSG-1000 Twelve Satellite GPS Simulator
140607	GPSGOPT3 ADS-B Integrity Test option

*This option includes the ADS-B Integrity app



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