

# Vital Link Hush House Engine and Aircraft Test Capability



Vital Link has been a major supplier in the aircraft engine test facility market since 1990; including Hush House projects in support of the USAF and Air Forces of other governments worldwide.

Designed to support military fighter aircraft, Hush Houses provide an enclosed acoustically treated environment to test afterburning turbofan engines either in or out of frame. Out of frame testing is supported through use of a mobile engine test stand system. This includes fuel supply and air start capability, with engine operation and test controlled and monitored using a computerized system designed in accordance with engine OEM requirements.

A recent Hush House project commissioned by Vital Link is probably the most advanced facility of its kind in the World. It provides "State of the Art" engine test capabilities for installed engine testing for aircraft including the F-16 and Mirage 2000-9 and for un-installed testing of the GE F-110 engine as a "Turnkey" package. Enhanced noise suppression systems incorporated into the design provide excellent noise attenuation at any engine condition. Typically, less than 70 dB(A) at 77 m (250 ft) and less than 60 dB(A) in occupied areas of the building during full afterburn operation.

Features of the facility are:

- Specially designed and constructed to meet aero-thermodynamic, structural and environmental requirements
- High Performance Acoustics – Enclosure, Intake and Exhaust Silencing Systems
- High Accuracy Fuel Metering, Storage and Distribution System
- Engine Air Start and Shop Air Systems
- Movable Engine Test Stand / Transportation Trolley System with 48" Rail Interface to Suit OEM and Users Stand Dress Kit and GSE
- Fire Detection and Suppression System
- Vital Link **FADAS™** Automatic Data Acquisition and Facility Control System
- The **FADAS™** Automatic Engine Throttle System
- OEM Cross Calibration and Certification Services



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## Engine and Aircraft Test Capability



The Vital Link Hush House design provides flexibility to support a range of engines and aircraft within a single facility. Engine adapters for a range of engines can be provided for the common interface Engine Test Stand. Dress Kits for engine types are provided to the engine OEM requirements. One of the most advanced features at the heart of the facility is the Vital Link designed and manufactured **FADAS™** package or “Fully Automatic Data Acquisition System”. This system is a high speed, high accuracy engine data capture and control system developed using “Commercial Off The Shelf” (COTS) equipment for ease of future maintenance and up-grade. With the benefit of an optional fully automated test capability, it can also provide complete facility control and self diagnosis. The Vital Link **FADAS™** system includes a high accuracy, dual redundant electronic throttle system providing precise control from the desk mounted quadrant to the engine via the test stand mounted throttle actuator. The throttle system offers various options including automated control of engines in accordance with the OEM test schedule. With virtually 100% redundancy “built in” **FADAS™** provides unprecedented reliability for all engine & facility systems.

Vital Link's **FADAS™** system incorporates features that provide the following benefits:

- Touch Screen Control
- Automated Engine Running
- Raw Data Reduction and Calculation to OEM Requirements
- Data Bus Interfaces including RS232, RS485, ARINC, MIL-STD-1553B
- Annunciator Panel
- Full Recording Capability
- Blackbox Recorder
- Event Log
- Audio and Visual Alarm Prompts
- Data Backup
- Technical Publication Suite
- Integrated System Fault Diagnostics and Troubleshooting
- Network Monitoring
- CCTV Integration
- Weather Station
- Cost Effective Upgrade and Modification Capability for Future Requirements



ISO 9001:2008



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