



PRECISION PERFORMANCE
MEASUREMENT CONFIDENCE
INFRASTRUCTURE SERVICEABILITY
STRUCTURAL AND FATIGUE
TEST SOLUTIONS FROM VTI





Structural and Fatigue Testing

In a competitive world where users demand more performance out of new structures: whether its better fuel efficiency, longer life, less maintenance, or improved manufacturability, static structural and fatigue testing provides the verification that is essential to validate those structures.

New materials require even better tools to adequately measure structural responses in more challenging situations. Carbon fiber and other new materials challenge current techniques and instruments to deliver the same quality of measurements. VTI Instruments continue to provide measurement capability to deliver this capability.



Schedule demands and cost control require new paradigms to reduce the cost of test, and reduce the time needed for test setup. Typical measurements include Strain, Load, Pressure, and displacement. Channel counts continue to increase to provide the Analyst a better understanding of the structure to help make better design changes or improvements.



Challenges

- Increasing channel counts
- Proper transducer location and channel identification
- Measurement confidence, minimize uncertainty
- Cost of cabling and setup
- Instrument flexibility, reduced measurement complexity
- Quality measurements in the presence of noise and other barriers

VALUE PROPOSITION



VTI's Commitment

VTI Instruments is committed to providing test tools that not only address the common test requirements, but deliver the ability to address the overall program needs of reduced cost, reduced schedule, and improved performance. Working with key partners and solution providers allows VTI Instruments to provide solutions that help address the bottom line through the use of quality engineering and innovative products.



VTI is Changing the Cost of Testing

Reducing the cost of test requires innovative thinking as well as the adoption of new technology to allow engineers the tools needed to address the complex problems of structural testing. These include the ability to use lower cost cable and connectors for transducers that are also designed to greatly reduce the labor associated with terminating those cables. Users have been able to see over a 5 fold decrease in cost and schedule using innovative connectors like the RJ-45 to reduce the cost and time needed for connectorization. In addition new technologies like TED's (Transducer Electronic data sheets) allow test personnel the ability to eliminate the tedious end to end testing and management of transducer cables as well as eliminate mis-matched connections. This capability has been adapted to provide users an open non-proprietary approach that allows end users the ability to manage cost of this technology.



Enhance Measurement Confidence and Ensure Accountability

Using the latest 24 Bit A/D technology coupled with advanced filtering gives users the confidence that they are making the highest quality measurements available in the market. Features such as independent bridge excitation per channel and built-in auto shunt calibration and lead wire compensation provide the best in measurement capability. VTI Instruments also provides an internal confidence bus to provide independent measurements to validate the quality of the measurements from the transducer all the way through the measurement process.

Driving down the cost of testing and improving measurement fidelity are what VTI Instruments is committed to deliver for its customers.



Simplify Infrastructure Installation

LXI/Ethernet enabled instruments available from VTI provide the ability to distribute the instruments around the article under test reducing the cost of cabling and simplifying the connection and checkout of any test configuration. LXI provides the tools above what Ethernet provides by allowing the instruments to be fully synchronized for higher measurement capability and fidelity. TEDs eliminates mis-connected measurements and a universal front end allows one instrument the ability to measure all of the standard transducer types with a simple software reconfiguration. No need for multiple hardware configurations or module changes to adapt to an ever changing test configuration.

Improve Infrastructure Serviceability and Simplify Maintenance

Instruments designed with built-in self test and simplified calibration help users not only maintain instruments that are fully traceable, but also easy to keep in use and not be tied up in metrology waiting for calibration. This capability is critical to our customers and VTI Instruments listened and created instruments with this ability fully built-in so that users are capable of maintaining instruments with a minimum of overhead.