



- Bridge Testing & Rating Services
- Structural Testing Equipment
- Long-Term Monitoring
- Fatigue Monitoring Systems

STS-WiFi Wireless Structural Testing System

The new wireless Structural Testing System (STS-WiFi) from Bridge Diagnostics, Inc. is the latest upgrade to our highly successful and field-proven load testing system. Based on the experience of over 300 field tests, the STS-WiFi has been developed to be very portable, rugged, lightweight, and highly efficient. A typical bridge can be tested with up to 64 channels in less than one day!

The system uses a stand-alone Base Station along with up to 16 four-channel STS-WiFi “nodes” which are placed on the structure near the gage locations. The familiar and easy-to-use WinSTS software controls the STS-WiFi system in addition to allowing the user to monitor signal strength and power consumption.



Wireless Structural Testing System

Don't waste time trying to configure and program other general-purpose data acquisition systems for load testing! The BDI STS-WiFi is a turnkey system that will pay for itself with just a few uses due to the huge reduction in testing time!



BDI Intelliducer

All standard STS-WiFi systems come complete with our highly-accurate BDI Intelliducer Strain Transducers. However, a wide variety of other sensors are supported including LVDT's, load cells, string wire potentiometers, accelerometers, and foil strain gages.

Applications

Even though the STS-WiFi was originally developed for running load tests on highway bridges, it has been used for many other applications including:

- **Short- and Main-Line Railroad Bridges**
 - Through-Trusses, Through-Girders, Guide-Rail and Tie tests
- **Hydraulic Structures**
 - Lift, miter and tainter style gates
- **General Laboratory & Structural Testing**
 - All types of steel members, pre-stressed and reinforced concrete members, Fiber-Reinforced Polymer (FRP) members, timber members

Key Features

- Standard 802.11b/g wireless protocol - no cables!
- System can run continuously up to six hours on single battery charge, or for several days with Stand By Mode
- Intelliducer sensors automatically identify themselves to the system – no tracking of channel numbers! Just note the gage number and its location on the structure!
- WinSTS software is extremely simple to operate: **no programming required!**
- Automatically monitors WiFi signal strength and battery power level
- Existing STS owners can re-use their BDI Intelliducers and AutoClicker
- Additional Base Station units can be used to increase communication range

You'll be amazed at how simple the STS-WiFi system is to implement!

A Complete “Turnkey” System

The STS-WiFi system comes complete with all hardware and software required to run a load test including batteries, chargers, antennas, one wireless Base Station, multiple 4-channel units, and BDI Intelliducers. Complete STS systems include communication radios and the BDI AutoClicker for wireless tracking of load vehicle position.

Accessories

- Additional STS-WiFi Base Stations
- Different gain antennas for various testing situations
- Gage extensions for reinforced concrete structures
- Accelerometers, LVDTs, Load Cells and other sensors
- Custom cable types and lengths for all sensors



BDI AutoClicker

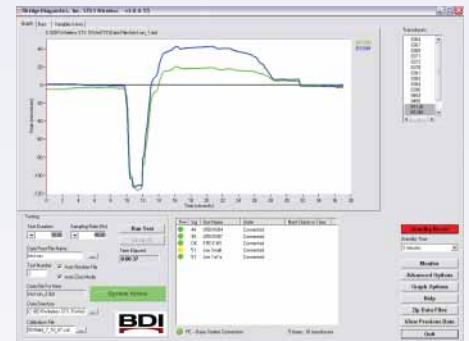
Technical Specifications

Channels	4 to 64, Expandable in multiples of 4
Hardware Accuracy	± 0.2% (2% for Strain Transducers)
Sample Rates	Max 500 Hz (Internal over-sampling rate is 19.5-312 KHz)
Max Test Lengths	21 minutes at 100 Hz. 128K samples per channel maximum test length
Gain Levels	1, 2, 4, 6, 16, 32, 64, 128
Digital Filter	Fixed by selected sample rate
Analog Filter	200 Hz, -3db, 3rd order Bessel
Max. Input Voltage	10.5 VDC
Power	9.6V NiMH rechargeable battery (Programmable low-power sleep mode)
Alternative Power	9-48 VDC input
Excitation Voltages	
Standard:	5 Volts DC
LVDT/Other	5.5 Volts DC
A/D Resolution	0.3uV bit (24-Bit ADC)
PC Requirements	Windows 2000 or higher
PC Interface	Wi-Fi Ethernet 802.11b: 10/100 Mbps
Auto Zeroing	Sensor automatically zero before each test
Enclosures	Aluminum splash resistant
Sensor Connections	All aluminum military grade, circular bayonet “snap” lock
Vehicle Tracking	BDI AutoClicker, switch closure detection
Sensors	BDI Intelliducer Strain Transducers Also supports LVDTs, foil strain gages, accelerometers, various DC output sensors Single RS232 serially-interfaced sensor
On-board PC	
Processor:	520 MHz Intel XScale PXA270
RAM	64MB
Dimensions	
Base Station:	10” x 6” x 4”
STS 4 Channel Unit:	11” x 3.5” x 3.25”

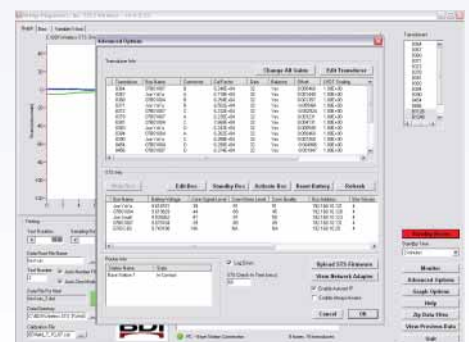
WinSTS Testing Software

This software is extremely simple to use!

- NO PROGRAMMING REQUIRED; SIMPLY CLICK “RUN TEST” AND DATA COLLECTION BEGINS!
- Remotely control Stand By times to conserve battery power
- Easily adjust sample rates and test lengths
- Graph sensor data in real time
- Multiple graphic functions: change scales, X-axis, and numerical output with the click of a button
- Displays power levels, signal strengths, and node status



WinSTS Screen Shot



WinSTS Screen Shot