WW-844DN Wireless Dynamic Strain Test & Analysis System

DESCRIPTION

The WW-844D Wireless Dynamic Strain Test and Analysis System, with use of independent distributed module structure, specially designed for the strength and life evaluation test of large mechanical structure.

Expanded via wireless WiFi/Ethernet communication, the input signal of dynamic stress-strain of no more than 16 DAQ units can be measured and analyzed in parallel and synchronously by a single computer.

WW-844D is widely used for the performance testing and analysis of various structure in a variety of industries such as civil engineering, bridge engineering, mechanical engineering, automotive industry, aerospace.

FEATURES

Small size, easy to carry, can use magnetic base fixed installation;

One-click switch between wired and wireless communication modes. Wired high-speed and reliable, wireless free from the layout of communication cables, convenient and safe. Suitable for various test occasions;

Directly installed near the measuring point, wireless data transmission, strong anti-interference ability;

DC bridge, stable performance;

Standard 2.4G wireless WiFi communication technology, communication distance up to 200 meters (visual), optional wireless relay can achieve long-distance wireless transmission;

Each computer can control 16 4-channel acquisition modules at the same time;

Built-in 16G storage to ensure data integrity;

Program control to switch the status setting of full bridge, half bridge, three-wire system 1/4 bridge (120Ω);

With strain bridge self-test function;

Any measuring point can be set as the compensation measuring point;

Optional GPS/ Beidou module can realize synchronous sampling of all modules;

With signal long-term real-time high-speed recording function (mass storage);

Built-in large-capacity lithium battery to ensure continuous working time of the instrument for more than 7.5 hours;

SPECIFICATIONS

Number of Input Channel	4 channles/DAQ unit, 16 DAQ units/computer
Full-scale Voltage Value	±0.05V, ±5.0V
Nonlinearity	0.10%
Noise	≤3μVRMS
Zero Drift	<3μV/2h
Strain Measurement	
Full-scale Strain Value	±3000με, ±30000με
Indication Error	≤0.5%±3με
Self-balancing Range	±10000με
Bridge Excitation	
Bridge Configuration	Full, Half, Three-wire quarter bridge (Default 120Ω)
Bridge Completion Resistors	120Ω/350Ω (Three-wire quarter bridge) 60Ω~20000Ω (Half bridge/Full bridge)
Bridge Voltage	2V, 5V DC
Freq. Response	DC ~ 40kHz
A/D Converter	24-bit Σ-Δ
Max. Sampling rate	128kHz
Sync. Mode	GPS / Beidou / Synchronous clock box
Anti-aliasing filter	
Cut-off Frequency	1/2.56 of sampling rate
Stop-band Attenuation	- 80dB/Oct.
Flatness	<±0.1dB
Comm. Mode	WiFi / Ethernet
Comm. Distance	200m (Visual)
Power Supply	Lithium battery, over 7.5h of battery life (fully charged)
Dimensions	163×104×35mm (Exclu. antenna)
Weight	Approx. 600g (Exclu. antenna)
Environmental Conditions	
Operating Temperature	- 10 ~ 50°C
Operating Humidity	20 ~ 90%RH@40°C
Storage Temperature	- 40 ~ 70°C
Storage Humidity	90%RH24h@60°C
Vibration	Frequency cycle range: 5Hz ~ 55Hz ~ 5Hz Drive amplitude (peak): 0.19mm Sweep frequency: ≤1Oct./min Duration of resonant: 10min Vibration direction: x, y, z

SYSTEM CONFIGURATION

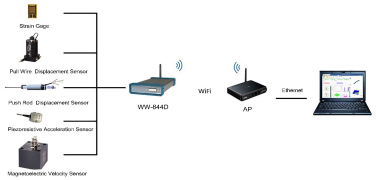

Figure 1 Single System Block Diagram(WIFI)

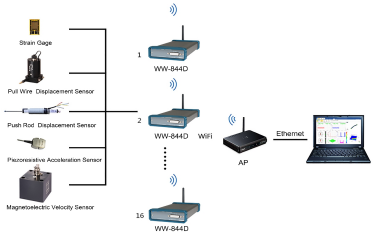

Figure 2 Multiple System Block Diagram(WIFI)

SOFTWARE

DE-BPS Basic Platform Software

Running on XP/Win7/Win8/Win10 operating system

Parameters setting, Function control, Real-time/post-acquisition analysis, data browsing, cursor readouts, scaling curve, data management and simple processing, report generation, long-term continuous data recording, etc.

AP01 Android Software App (Optional)

Mobile phone control and analysis

Parameter setting, sampling control, data management, etc.

Time domain & amplitude domain analysis

Frequency domain analysis based on FFT

MODULES / ACCESSORIES

WW-844D DAQ Unit

4 input channels

Sampling rate up to 128kHz for simultaneous sampling of all channels

Wireless measurement through WiFi/Ethernet, communication distance up to 200 meters

Software-selectable full bridge, half bridge, three-wire quarter bridge

Programmable channel self-check function

Bridge balance can be controlled wirelessly

Built-in lithium battery for 7 hours of battery life (fully charged)

WW-844D-L DAQ Unit (Optional)

4 input channels

Sampling rate up to 50kHz for simultaneous sampling of all channels

Wireless measurement through AP mode

Software-selectable full bridge, half bridge, three-wire quarter bridge

Programmable channel self-check function

Bridge balance can be controlled wirelessly

Built-in lithium battery for 12 hours of battery life (fully charged)

IP65 environmental rating.

GPS01 GPS Module (Optional)

Used for synchronous sampling of multiple DAQ units

DT15211 Lithium Battery Module (Optional)

Used for AP receiver power supply

Built-in 8 lithium batteries with a capacity of 3400mA/3.7V

Optional output of 5V/2A, 9V/2A, 12V/2A, 24V/1A

WW-844D-L Signal Input Cable

5-core shielded cable

High strength PTFE cable, 4-channel per cable

Default 5m cable