EN

S2X SRL

S²DDA

Software Solution

Dynamic Data Acquisition

> Simplify the acquisition and management of data collected in the field



100% MADE IN ITALY

NATIVELY INTEROPERABLE

STANDARD COMPLIANT



WHAT IS S2-DDA?

S2-DDA is the software developed to simplify data acquisition for dynamic testing and permanent structural monitoring or seismic monitoring. The software allows to control data acquisi tion systems based on programmable hardware to collect data from sensors.

WHAT IS IT FOR?

01 Acquire data from dynamic tests and structural monitoring systems

02 Manage multiple sensors (accelerometers, thermocouples, and instrumented hammers)

03 Support permanent structural and seismic monitoring

04 Coordinate distributed and synchronized acquisition systems

05 Simplify the management of collected information



WHY S2-DDA?

100% MADE IN ITALY

S2-DDA is a software developed entirely in Italy, born from experience in the data acquisition and management sector, offering a reliable and adaptable tool for various infrastructure control applications.

DISTRIBUTED ARCHITECTURE

A common application requirement involves the installation of numerous sensors over large distances. S2-DDA allows for the management of multiple synchronized acquisition systems, organized in a distributed architecture.

STANDARD COMPLIANT

The software operates in accordance with the indications given in the "Guidelines for the Classification and Management of Risk, Safety Assessment and Monitoring of Existing Bridges" issued by the Ministry of Infrastructure and Transport - Superior Council of Public Works.

NATIVELY INTEROPERABLE

S2-DDA was designed and developed to be natively interoperable with other S2X software including: S2-SHM for Structural Health Monitoring and S2-OMA for Operational Modal Analysis.

MAIN FEATURES



USER-FRIENDLY INTERFACE

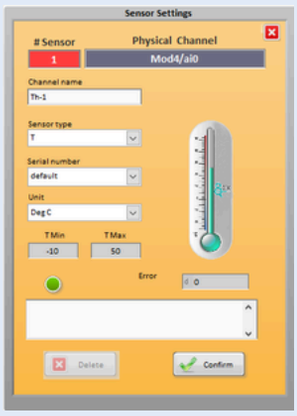
The user-friendly interface makes the data acquisition setup very simple, enabling the quick startup of field measurements and an initial assessment of the quality of the acquired data.



AUTOMATIC MODULE DETECTION

The software automatically detects the types of sensor module and loads the appropriate interface to setup the measurement channels.





CUSTOM SENSOR DATABASE

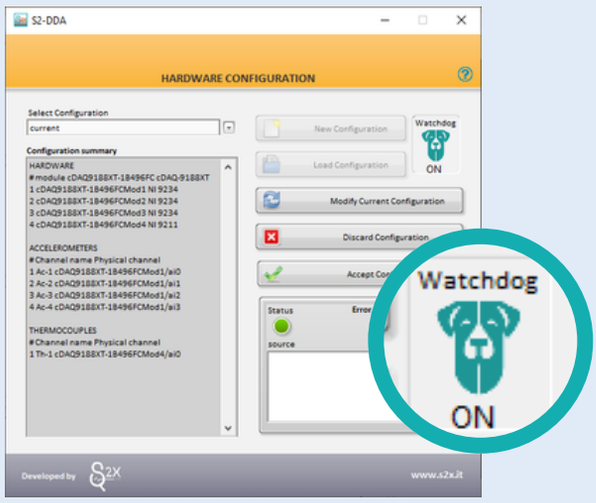
The software allows the creation of a customized sensor database (including IEPE accelerometers, thermocouples, and an impact hammer for input-output modal tests) and/or user-defined hardware configurations to speed up the tedious initial setup phase.

DATA FORMAT

The software returns data in the common *.tdms file format.

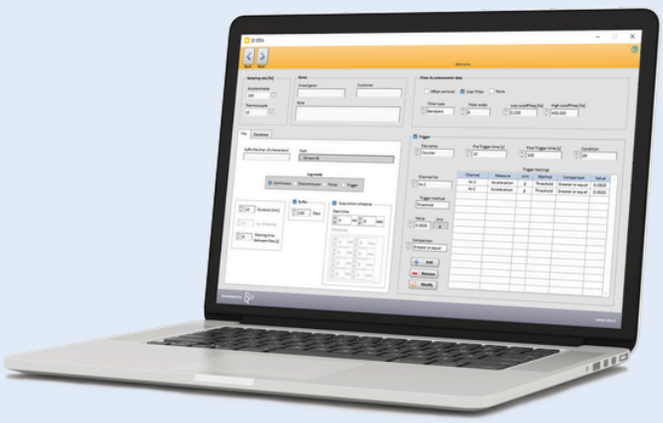
WATCHDOG

For structural monitoring applications, it is possible to enable the “watchdog” feature to automatically restart data acquisition* in the event of an unexpected system shutdown such as a power failure.



OPERATING MODES

The software can operate continuously, at scheduled intervals, or in trigger mode. In trigger mode, acquisition can be activated based on custom threshold settings or by using the STA/LTA algorithm, ensuring precise event detection tailored to your monitoring needs.



REAL-TIME FIELD MEASUREMENT VISUALIZATION

Acquired data is displayed in real time, along with the power spectral density of a selected channel, enabling immediate assessment of measurement quality.



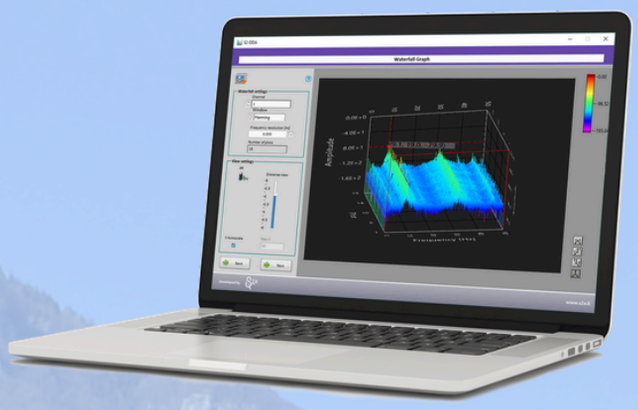
TECHNICAL ASSISTANCE AND UPDATES

Technical assistance is available in Italian and English, via phone, e-mail or video call. Technical assistance and updates for one year are included for all licenses. Video tutorials are also available on the S2X YouTube channel.

(*) Note: To enable the automatic restart of the computer/server in the event of an unexpected shut down, its motherboard must support the WATCHDOG function.

WHAT IS S2-FFT?

S2-FFT is an add-on for the S2-DDA software (also available as a stand-alone version) for immediate as well as effective analysis and manipulation of recorded signals.



WHAT IS IT FOR?

The software allows you to:

01 Inspect time series, apply windows

02 Compute the Fourier Transform

03 Represent signals in terms of amplitude and phase in the frequency domain

04 Identify dominant frequency components and checks signal stationarity

WHY?

Therefore, it is a versatile and comprehensive tool for the field evaluation of measurement quality, particularly useful for structural monitoring applications and vibration measurements.

DO YOU NEED A COMPLETE SOLUTION?

Customized measurement systems: find the ideal configuration

YOU CHOOSE THE APPLICATION

- Operational Modal Analysis
- Vibration measurements
- Structural Health Monitoring
- Seismic monitoring

TYPE OF STRUCTURE

- Very stiff or massive structures (e.g., historical buildings, masonry arch bridges...)
- Ordinary buildings
- Tall buildings
- Axial load elements (cables, tie rods)
- Ordinary bridges
- Long-span bridges

S2X DEVELOPS A TAILORED MEASUREMENT SYSTEM FOR YOU

For any information, clarification, or further details on our services and activities, we invite you to visit our website ***www.s2x.it***

WE SIMPLIFY COMPLEX DATA PROCESSING



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