

The Portable & Mobile Real-Time Dynamic Analyzer SO Analyzer

With National Instruments high-accuracy data acquisition cards, the SO Analyzer is a flexible real-time analyzer covering a full range of applications in the field and in the laboratory. It can be used with a laptop and an additional PCI chassis, installed into a desktop PC or rugged portable PC or mounted in a PXI rack fully integrated with options for automotive DC power from 10-30 Vdc.

The 24-bit resolution ADCs and the excellent dynamic range provide the necessary precision to make the SO Analyzer well suited for the most demanding tasks in noise and vibration analysis. Input channels incorporate IEPE (ICP) signal conditioning for accelerometers and microphones.

As well as excellent real-time analysis, options are available for guided impact hammer acquisition and the system can perform parallel time history recording as well as online tachometer based analysis, filtering and acoustics analysis. Within the same user interface advanced analysis options such as ODS, modal, rotating machinery and acoustics can be added without having to transfer data to another package. The reports can be generated either in bitmap format or with ActiveX graphics in which you have full control over the graphs within the Word document using the free SO Viewer software add-in for MS Office.



A typical configuration is a standard laptop PC which is connected to an external PCI chassis via PCMCIA. The PCI chassis houses up to three NI 4472 cards with eight simultaneously sampled analog input channels each. This compact 24-channel SO Analyzer provides a mobile yet powerful platform for recording and real-time analysis up to 102.4 kS/s sampling rate.

Another solution is based on a rugged portable PC with a small extension module to accommodate the PCI cards. The system is perfect for all portable applications whether operating in a harsh environment or just needing extra protection for worldwide transport. As the portable PC is fan-less, this SO Analyzer configuration is also ideally suited for noise measurements requiring a quiet environment.

If you prefer the PXI module packaging, then this is supported with PCMCIA, PCI-Express or MXI interfaces to your notebook or desktop PC. Cards supported include the NI 4472, 4461, 4462, 6602 and many others so that your system can be tailored to provide your exact instrumentation and performance needs.

The analog inputs of the National Instruments acquisition cards have both analog and real-time digital filters implemented in hardware to prevent aliasing.

They provide several trigger modes (pre-trigger, post-trigger, delay trigger) needed for the acquisition of transient signals and in hammer impact testing.

The SO Analyzer PCI/PXI is the perfect choice for portable and stationary real-time data acquisition, analysis and reporting in the automotive, aerospace, defense, telecom and other industrial sectors. Combined with a rugged portable PC, it can be used in tough environments.

SO Analyzer PCI Specifications

- 4 (NI 4474) or 8 (NI 4472) simultaneously sampled analog inputs per card
- +/- 10 V input range
- 24-bit resolution
- 110 dB dynamic range
- 102.4 kS/s maximum sampling rate
- 45 kHz alias-free bandwidth, AC/DC coupling
- ICP support selectable on individual channels (for accelerometers and microphones)
- Real-time data acquisition, analysis and reporting in one package
- Continuous or triggered measurements
- Online real-time FFT
- Online display of spectrum, PSD, FRF, etc.
- Online waterfall displays
- Offline post-processing analysis (spectrum, PSD, FRF, etc.) of measured or imported data
- Online and offline real-time octave analysis
- MS Windows like user interface, wizards
- e-Reporter incl. automating reporting, calculator and user programming (Visual Basic)

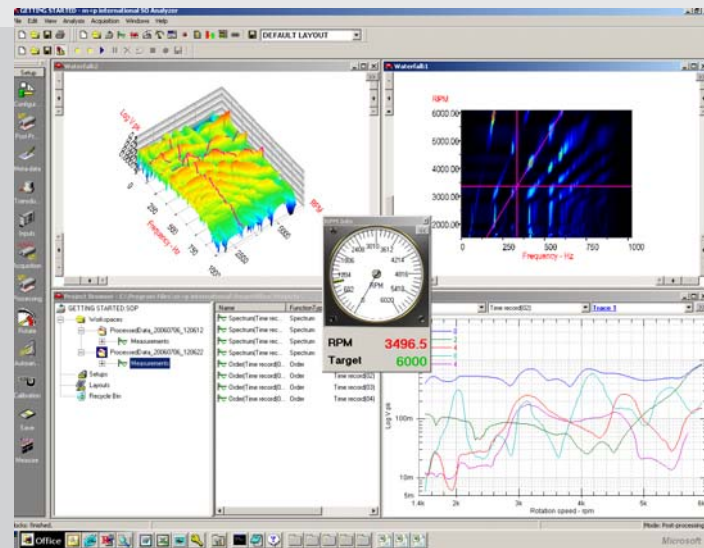
- Automated ActiveX reporting to Microsoft Windows and PowerPoint
- NI-DAQmx driver support

Options:

- Throughput to disc acquisition (time recorder), replacing conventional tape recorders
- Modal analysis (ODS, SDOF, MDOF)
- Online and offline rotating machinery analysis with tach inputs for order analysis, RPM spectral mapping etc.
- Acoustic intensity analysis
- Shock response analysis

SO Analyzer PXI Specifications

- 2 (NI 4461) or 4 (NI 4462) simultaneously sampled analog inputs per card
- 2 simultaneously updated analog outputs (NI 4461 only)
- 118 dB dynamic range, 24-bit resolution
- 204.8 kS/s maximum sampling rate
- 92 kHz alias-free bandwidth
- Input ranges from ± 316 mV to 42.4 V
- 6 gain settings
- AC/DC coupling
- Antialiasing and anti-imaging protection



- IEPE conditioning - software-configurable
- Multiple-module synchronization

The SO Analyzer supports numerous other National Instruments PCI and PXI cards as well as hardware front-end options from 4 channels upwards using VXI Technology inc. and others.

Ordering information:
SO-30xx SO Analyzer PCI/PXI
Please refer to the SO product information sheets for options.