



OROS MOBI-PACK™

The multichannel vibration analyzer
for rotating and structural analysis



MAIN FEATURES

- ☐ All-In-One Analyzer
- ☐ Up to 16 input channels
- ☐ Portable
- ☐ Designed for the field
- ☐ Real-time bandwidth: 40kHz
- ☐ PC Based, 100 Mbits/s Ethernet Connection
- ☐ Touch and measure: Tablet Operation
- ☐ $\pm 40V$ Inputs for proximity probes.
- ☐ 24 bits, TEDS, ICP®
- ☐ Accelerometers, Proximity Probes, Microphones, Dynamic pressure.
- ☐ 2 to 6 external trigger/tachometer inputs
- ☐ 2 to 6 generator outputs
- ☐ 4 DC process channels: temperature, static pressure, torque, load
- ☐ Data Recording: Removable 60GB Mobi-Disk™
- ☐ Single Cord Power supply and battery
- ☐ Remote Control
- ☐ Desktop extension leaf
- ☐ FFT, Order analysis and multiple diagnostic tools
- ☐ Dimensions (w.h.d.) mm: 470 x 180 x 360
- ☐ Dimensions (w.h.d.) inches: 18.5" x 7" x 14"
- ☐ Weight: 12 kg (26.5 lbs) with the controller PC.

INTRODUCTION

The Mobi-Pack™ is a multichannel all-in-one vibration analyzer. It combines all the functionalities and performances of the OROS 3-Series analyzers in a package made for the field: tough and rugged. Using its 16 channels will let you carry your tests with minimum downtime and minimized number of machine stops.

PORTABILITY

Mobi-Pack™ is designed for noise and vibration specialists traveling everywhere to troubleshoot issues from an offshore platform to the turbine side of a power plant. It can be practically carried and used in the field thanks to its rugged design. With its lightweight and compact dimensions, it is the ideal companion on your trips around the world.



ROUGH, RUGGED AND RELIABLE

Mobi-Pack™ thrives in dirty, dusty, humid, and magnetically loaded situation without compromise on the precision of the instrument. Its rugged and compact design will let it be easily transported. Moreover, the Mobi-Pack™ will even continue acquiring data with the same precision in high shock and vibration environments.



HIGH END ACQUISITION & PROCESSING

The tough look of the Mobi-Pack™ hides a wonder of technology improving your comfort and allowing accurate tests. The high input range ($\pm 40V$) allows to directly connect proximity probes. The 24 bit ADC brings a huge 120 dB dynamic range so that tests can be carried out without worries about the noise floor.



All-in-one power



*Tablet Operation
& Mouse
Extension Leaf*

FAST AND EASY OPERATION

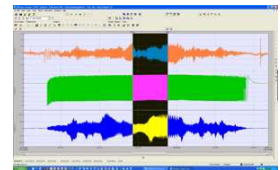
On the field, it is immediately operational. Mobi-Pack™ can just be powered from the battery or by plugging one single power cord to the mains. Opening the BNC cover and using it for the mouse as an extension leaf, will let you use the system on any surface including the ground. The remote control will let you drive the system from a distance: for example it is very practical to conduct impact hammer tests.



Remote Controller

REAL-TIME ANALYSIS AND RECORDING

Mobi-Pack™ can both analyze on-line or record raw time data for later post-processing. The removable 60 GB Mobi-Disk™ allows efficient sharing of acquired data. Features such as the desk extension leaf or the tablet PC operation possibility make its operation very handy. Tools such as macro edition and automatic reporting are available to carry efficient batch post-processing.



Signal recording display



Mobi-Pack™

Designed for the field:



- ☐ Power Generation
- ☐ Oil and Gas
- ☐ Chemical and Petrochemical
- ☐ Military Tests
- ☐ Marine Propulsion
- ☐ Turbo Machinery



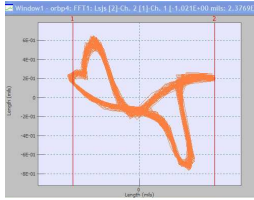
Functions and Applications: The system for Rotating and Structural Vibration Analysis

The Mobi-Pack™ is a powerful and versatile system for vibration analysis on rotating machinery. The system works with a PC for setup, viewing the data and managing the extracted data. NVGate®, the OROS Noise and Vibration software platform, controls all the analysis and measurements carried out by Mobi-Pack™. The software interface is easy to use. The range of applications covers it all: from impact testing for structural analysis to rotating applications such as order tracking or machinery balancing.

M002-069-2



DIAGNOSTICS ON FLUID FILM BEARINGS

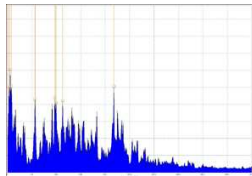


Orbit display

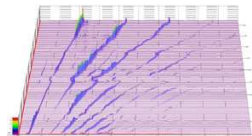
Monitoring the vibrations of machinery with fluid film bearings, like turbines or compressors, require special functionalities. The orbit diagram, and its evolution as a function of speed, gives a crucial indication of the potential defects existing in a machine. Filtering the orbit is also key when separating the different causes of vibrations. Both DC and AC components of the proximity probe signals may be monitored thanks to the 40V inputs of the Mobi-Pack™. The Bode plots or the waterfall, recorded during a Run-up or Coast-Down, let you localize critical speeds.



DIAGNOSTICS ON GEARS AND ROLLER BEARINGS



FFT Analysis

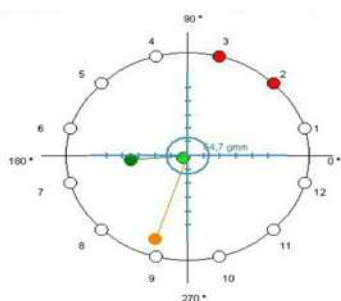


Waterfall during run-up

Damaged or worn out gears and roller bearings give a clear frequency signature. Tools such as side bands markers or envelope analysis give key information for the analysis of damaged roller bearings. For gear box analysis, kurtosis calculation or cepstrum analysis will be convenient to detect teeth defects. On this type of machinery, it is often difficult to get a tach or a keyphasor signal on the desired shaft: virtual tachs let you define wheel ratios between different shafts in order to process order analysis or FFT analysis.



BALANCING

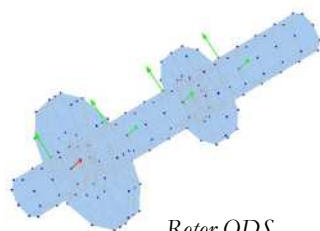


Balancing Positions

One of the most common maintenance actions is rotor balancing. The Balancing Solution provides a specific interface to guide you along the full balancing procedure. It is dedicated to rigid rotor balancing that actually covers most of the imbalance cases. This application is based on a balancing carried out on one or two planes. The imbalance position is determined using the order tracking method based on time domain averaging, which is the most accurate analysis for the phase determination. It assists you to reach the specified balancing quality.



STRUCTURAL ANALYSIS



Rotor ODS

The rotating excitation always interacts with the natural frequencies of the shaft and the machine bearings, body, and foundations. High vibration levels may be caused by the match of the excitation frequency (unbalance, misalignment, etc...) and one of the natural frequencies. Structural analysis tools, such as ODS (Operating Deflection Shapes), Experimental Modal Analysis (EMA) or Operational Modal Analysis (OMA) let the user determine deflection shapes, natural frequencies and damping. Sources can be the natural excitations generated by the machine or artificially introduced using impact hammers or shakers.



MACHINERY VIBRATION MONITORING

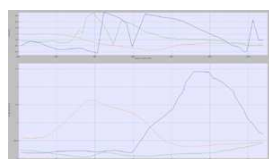


Mobi-Pack™
Monitoring

Machinery needs, on some occasions, to be left under surveillance: typically after installation, maintenance or when looking after occasional high vibration levels. So, the Mobi-Pack™ can be left on site monitoring the machine. The unique Time to Stop function allows to trigger the raw time domain data capture when exceeding a given alarm threshold. The data can then be analyzed using the post-processing functions.



ON SITE ACCEPTANCE TESTS



Bode diagram

After any machine installation, demanding on site vibration acceptance tests have to be carried out. They often require a sequence of stable speeds, letting the machine stabilize, and of run-up sessions. Vibration levels can be monitored as a function of time or RPM. Alarm levels can be defined as overall values or as a function of frequency based on customizable spectrum templates.

ORDERING INFORMATION

Reference	Designation
ORMP-FREQ-16	Mobi-Pack™ – 16 Ch FFT Analyzer
ORMP-ORD-16	Mobi-Pack™ – 16 Ch Order Analyzer
ORNV-FFTDiag	Real-Time diagnostic tool set (Envelope, Cepstrum, Pk, Pk-Pk, Crest Factor)
ORNV-BAL3-FL	Balancing Module
ORNV-MOD300	ODS (Operating Deflection Shape)
ORNV-MOD380	ODS+EMA+OMA
OR36/8-DSK	Additional 60 GB dual port removable disk.
ORNV-RMTC	Wired Remote control- OLED Matrix display, 8 direct buttons
ORAC-MPCTRL	Mobi-Pack™ controller: HP TC4400 Tablet PC or equiv., 80 GB, 512 MB RAM, 12.1" + English MS Windows® and MS Office®
ORSC-SNY-3	Serenity 3: 3 years full warranty on new systems or 2 years of full warranty extension

The Mobi-Pack™ is also available in 4, 8 or 12 channels. Other software options, accessories, and maintenance contracts are available; please contact OROS for more information.