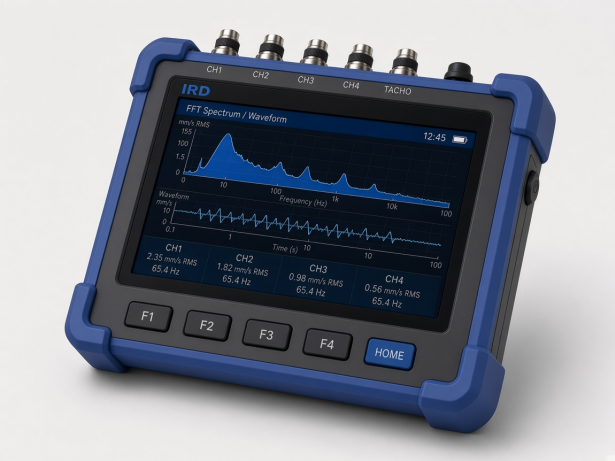
# dataPAC 2040

**4-Channel Portable Vibration Analyser & Data Collector**

**SALES BROCHURE**
Preliminary technical specification
November 2026

dataPAC 2040 is a compact, rugged four-channel analyser and data collector for route-based condition monitoring, machinery diagnostics and field balancing.




**4 + tacho**
SIMULTANEOUS DYNAMIC CHANNELS

**80 kHz**
FREQUENCY RANGE, SINGLE CHANNEL

**25,600**
FFT LINES, SINGLE CHANNEL

**7-inch**
COLOUR IPS TOUCHSCREEN, LANDSCAPE

**IP65**
WITH CONNECTOR CAPS FITTED

**≥ 10 h**
BATTERY LIFE, TYPICAL ROUTE USE

## INPUTS

| | |
|---|---|
| **Dynamic channels** | 4, acquired simultaneously |
| **Tachometer / phase reference** | 1 dedicated input. Optically isolated; auto or adjustable trigger; 1 to 300,000 RPM. 5 V supply for a laser tachometer and a strobe-trigger output. |
| **Sensor power** | IEPE / constant-current, selectable 0 / 2 / 4 mA at 24 V, with bias-voltage and cable-fault check |
| **Other signal types** | AC voltage (±10 V); DC voltage including proximity-probe gap (0 to −24 V and ±24 V); 4–20 mA; velocity-coil transducers |
| **Connectors** | BNC bulkheads for CH1, CH2, CH3, CH4 and TACHO, plus a USB-C port with a tethered sealed cap. All six connectors are on the top edge and point upward. |
| **Triaxial sensors** | Supported on three channels |

## MEASUREMENT & ANALYSIS

| | |
|---|---|
| **Analogue-to-digital conversion** | 24-bit, simultaneous sampling on all four channels. Dynamic range ≥ 110 dB. |
| **Frequency range (Fmax)** | Up to 80 kHz on one channel; up to 40 kHz with all four channels active |
| **FFT resolution** | Up to 25,600 lines on one channel; up to 12,800 lines on all four channels simultaneously. Zoom FFT. |
| **Measured quantities** | Acceleration, velocity and displacement. Overall vibration to ISO 20816. |
| **Core functions** | Overall level, frequency spectrum, time waveform, gSE (spike energy) bearing demodulation, multi-band envelope demodulation |
| **Phase, orbit and cross-channel** | Phase at 1× to n× running speed; orbit; cross-channel phase, coherence and frequency-response (FRF) |
| **Advanced diagnostics** | Bump / impact test; run-up and coast-down with Bode, Nyquist and waterfall plots; order tracking; time-synchronous averaging (TSA) |
| **Route data collection** | Overall, spectrum, waveform and gSE captured together in one record, with on-screen alarm colour |
| **Field balancing** | Single- and two-plane, using up to four sensors at once; 30 to 60,000 RPM; trial-weight calculation; stored influence coefficients for one-shot repeat jobs; trim; split or combine correction weights to fixed positions or blades; ISO 21940-11 tolerance check |
| **Windows and averaging** | Hanning, flat-top and rectangular windows; linear, exponential, peak-hold and synchronous averaging |
| **Octave and 1/3-octave band analysis** | 1 Hz to 20 kHz, linear or A-weighted (designed to IEC 61260-1 Class 1). |
| **User-defined frequency bands** | Up to 12 per measurement point, set in Hz or in orders of running speed, each with its own alert and danger limits, trended in the PC software. |

## BUILT FOR THE FIELD

**Route data collection**
Overall, spectrum, waveform and gSE captured together in one record.

**Bearing demodulation**
gSE (spike energy) bearing demodulation and multi-band envelope demodulation.

**Field balancing**
Single- and two-plane field balancing, using up to four sensors at once.

## DISPLAY & CONTROLS

| | |
|---|---|
| **Display** | 7-inch colour IPS touchscreen, landscape orientation. Intended for sunlight-readable, optically bonded, glove-capable use. |
| **Keys** | Sealed F1, F2, F3, F4 and HOME keys below the display |
| **Handling** | All connectors on the top edge, clear of the screen and keys. Protective elastomer impact boot. |

## DATA & CONNECTIVITY

| | |
|---|---|
| **Local storage** | Internal memory (8 GB or greater) plus microSD expansion |
| **Wired interface** | USB-C for charging and data. Device and host operation. |
| **Wireless** | Wi-Fi, 2.4 GHz and 5 GHz |
| **Route transfer** | Load routes to the instrument and upload measurements by USB-C or Wi-Fi |

## COMPANION PC SOFTWARE

| | |
|---|---|
| **Platform** | Desktop application for Microsoft Windows |
| **Functions** | Plant tree and route builder; download and upload; trend and alarm exception review; spectrum and waveform analysis (cursors, harmonics, sidebands, waterfall, orbit, Bode / Nyquist); bearing fault-frequency overlay; balancing jobs and reports; report output in PDF, Word and Excel |
| **Data exchange** | Export to CSV and UFF58; published package format so recorded data are not locked to a single application |

## POWER

| | |
|---|---|
| **Battery** | Rechargeable lithium-ion pack, which can be swapped in the field |
| **Charging** | USB-C, including USB Power Delivery |
| **Operating time** | ≥ 10 hours typical route use on one charge |

## MECHANICAL & ENVIRONMENTAL

| | |
|---|---|
| **Enclosure** | Handheld industrial housing with a protective elastomer impact boot. Dark housing with a blue boot. |
| **Instrument** | dataPAC 2040 is supplied in the protective impact boot. |
| **Dimensions** | 215 × 150 × 46 mm (housing). 221 × 156 × 54.3 mm with the impact boot fitted. |
| **Weight** | ≤ 1.1 kg including battery |
| **Ingress protection** | IP65 with connector caps fitted |
| **Operating temperature** | −10 to +50 °C |
| **Drop resistance** | 1.5 m onto concrete |
| **Compliance** | Designed for EMC (EN 61326-1), electrical safety (IEC 61010-1) and rechargeable-battery safety and transport (IEC 62133 and UN 38.3, with applicable national registration). Certification planned. |




IRD Mechanalysis

**IRD Mechanalysis Limited**
www.irdmech.com · sales@irdmech.com