

**mti instruments**

By **VITREK**

A WORLDWIDE LEADER IN PRECISION MEASUREMENT SOLUTIONS

# *PBS eXpress* For Business and Regional Jets

Vibration Measurement and Engine Rotor Balancing

To optimize the small-frame turbofan and turboprop engines used extensively in the regional jet, business jet, and general aviation markets.



# Product Overview

The MTI PBS eXpress is designed to optimize the small-frame turbofan and turboprop engines used extensively in the regional jet, business jet, and general aviation markets.

The design objective of the *PBS eXpress* is fast vibration assessment for your power plant with rapid, one-shot balance if the engine measures an exceedance.

The *PBS eXpress* was designed using the PBS-4100+ family DNA – the most respected turbine engine vibration and balancing solution in the market today. The system contains the technology DNA of PBS in a lightweight, easy to learn and use package to provide vibration measurement and engine rotor balancing.

## Useful for What Types of Applications

Perfect for MROs and operators with small to mid-sized corporate jets, the PBS eXpress provides many of the powerful features that can be found in upmarket portable balancing products, designed to meet the requirements and price point of corporate aviation.

## Key Features

### Simplicity

- Easy to Setup: Pre-configured engine parameters. Just connect cables and begin testing.
- Intuitive Touch-based User Interface
- Works with existing cable sets for enhanced migration capabilities
- Compatible with odd-tooth tachometer sensors (including short/long/offset tooth types)

### Trim Balance Wizard

- Guides even 1<sup>st</sup> time users to success in as little as two engine runs.
- Configurable balance speed points and associated bias/weighting
- Transient Balance
- Influence Coefficients

### Powerful Visualization

- Vibration Surveys with exceedance limits shown on the plot.
- Order tracking for accessories such as starter generators and fuel pumps.
- Review/Export Saved Data:
  - Create reports with integrated plots and tables.

## Supported Engine Platforms

Honeywell TFE731 family	GE CF34	Williams FJ33 family
Honeywell HTF7xxx	GE HondaJet HF120	Williams FJ44 family
Honeywell ALF500 series	PWC PT6 family	APU: Honeywell 131, 331, 36 series
Honeywell ATF3	PWC PW100 family	APU: PW900 series
Rolls-Royce BR700 series	PWC 300, 500, and 600 series	APU: PW APS series
Rolls-Royce/Allison 250 family	PWC JT15D	

\* Additional engines and engine families added continuously, contact factory for additional information.

# Product Overview

## Balancing Capabilities

<b>User Selectable</b>	<ul style="list-style-type: none"> <li>One Shot (stored influence coefficient)</li> <li>Trial Weight (baseline run and trial weight run)</li> </ul>
<b>Speeds</b>	1-20 speeds simultaneously (configurable speed points)
<b>Channels</b>	1 to 4 channels simultaneously
<b>Planes</b>	1 or 2 balance planes simultaneously
<b>Weights</b>	Up to 20 standard weight classes, user configurable
<b>Types</b>	Transient Balancing and Fixed Speed Point

## Speed

<b>Input Channels</b>	2 standard, up to 4 optional
<b>Input Voltage Range</b>	200V Pk-Pk
<b>Speed Range</b>	150 to 75,000 RPM
<b>Speed Accuracy</b>	Better than 0.02%
<b>Phase Accuracy</b>	1° typical
<b>Types</b>	Any 1/REV or embedded odd-tooth type signal (N/REV) (including short/long/offset tooth, optical, and tach ratio types)

## Vibration

<b>Input Channels</b>	2 standard, up to 4 optional
<b>Input Voltage Range</b>	20V Pk-Pk
<b>Frequency Range</b>	5 to 30 kHz
<b>Tracked Amplitude Accuracy</b>	Better than +/- 1%
<b>Tracked Components</b>	N1, N2, N3 + up to 4 customizable tracked orders

## Additional Specifications

<b>Connectors</b>	Industry compatible MS-type cannon plugs, universally compatible.
<b>Through-put</b>	4 spectra/sec
<b>Power</b>	Li-Ion Battery, up to 5 hr run time, 2.5 hr charge time. Able to operate while charging
<b>Display</b>	8.4" Color TFT display with Capacitive Touchscreen
<b>Operating Temperature</b>	0-50°C operation (battery charging stops at 45°C)

## Applications

Optimized for Business, Regional, and General Aviation aircraft engines, PBS Express performs these functions:

- Vibration Survey
- Spectral Analysis
- Fan/Turbine Balance
- Transient Balance
- Propeller Balance





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