



WIRELESS BALANCING SYSTEM

# AIRVIB

WIRELESS VIBRATION BALANCER SYSTEM  
UAV, UAM, & ULTRALIGHT AIRCRAFT



DIAGNOSTIC  
SOLUTIONS  
INTERNATIONAL LLC

# AIRVIB<sup>®</sup> WIRELESS BALANCING SYSTEM FOR UAV, UAM, DRONE & ULTRALIGHT AIRCRAFT



The AIRVIB system consists of an Acquisition Unit (to be installed in the UAV ultra light aircraft in flight to which various sensors are connected to, and a Display Unit (which remains on the ground controlled by an operator). This lightweight and wireless system allows the recording, processing and interpretation of all vibratory signals generated in flight to meet all your needs. Its quick and punctual installation allows the use of a single system for a full fleet of aircraft, thus optimizing operational costs.

The track measurement on a rotary wing makes it possible to visualize and adjust the positions of the blades. The universal tuning program offers balancing solutions for all types of flying models.

## ACQUISITION UNIT

- **4 Tachometer Channels:**  
4 inputs with integrated power supply for magnetic or optical speed sensors
- **8 Simultaneous Accelerometer Channels:**  
8 inputs for piezoelectric accelerometers with simultaneous vibration analysis on all channels
- **RP-SMA Connector:**  
Standard RP-SMA connector for antenna
- **LEDs:**  
Power, battery level and wireless link LEDs indicator
- **USB-C Connector:**  
Battery charge and software update with a standard USB-C connector.
- **RP-SMA Connector:**  
Standard RP-SMA connector for antenna.

## DISPLAY UNIT

- **USB-C Connector:**  
Battery charge and software update with a standard USB-C connector.
- **RP-SMA Connector:**  
Standard RP-SMA connector for antenna.
- **SD Card:**  
Parameters and measurements can be saved on SD card in non-proprietary text file.
- **Interface:**  
3 buttons (Start, Back, Save) for an easy navigation in the menus.
- **Joystick:**  
Joystick for intuitive navigation.
- **LCD Color Screen:**  
Color interface on 480x320 pixels and 3.5" (8.9 cm) graphical screen.

## KEY SYSTEM BENEFITS & FEATURES

Remote vibration analysis on the Drone UAV, VTOL, UAM & ULA in flight with a maximum range of 8 km (5 mi) designed to analyze and tune fixed and rotar wing aircraft, as well as multi-rotor systems.

Affordable system delivered complete with all its accessories supplied in a rugged, compact and lightweight carrying case. Modern technology with a color screen, choice of measurement units and language, battery charge with USB C port and SD card for backup. Complies with European industry standards relating to electromagnetic disturbances and USA FCC and radio spectrum.



## SPECTRUM ANALYSIS 8 CHANNELS

Ability to perform spectral analysis on up to 8 vibration channels simultaneously with 800 points for each measurement. Spectrums can be displayed on the LCD screen in graphic and peak mode. Data can be saved using the removal SD card for being used on Excel or many other software.

## DYNAMIC BALANCER 4 CHANNELS

The balancing process can be performed on up to 4 rotors simultaneously using 4 tachometer sensors and 4 vibration sensors. Appropriate unit can be selected by the user (RPM/Hz, IPS/g). Balancing data can be saved on the removal SD card. The integrated universal balancing chart provides balancing solutions for any type of UAV, UAM, ULA and ultralight aircraft.

## TRACK MEASUREMENT UP TO 12 BLADES

Ability to perform a track measurement on a rotor/propeller up to 12 blades simultaneously with results in height and lead/lag differences. Data can be saved on the removal SD card.

## WIRELESS COMMUNICATION UP TO 57 NM

The display unit can be connected to any acquisition unit by scanning the devices present in the perimeter. The system works within 57 nautical miles / 65 miles radius range\*.

AIRVIB® ACQUISITION UNIT	
Number of vibratory channels	8 channels
Number of tachymeter channels	4 channels
Amplitude accuracy	+/- 5%
Phase resolution	1 degree
Tachymeter frequency range	180 RPM - 30000 RPM
FFT frequency ranges	0 - 10 kHz
FFT resolution	800 points
Autonomy	≈ 10 hours
Dimensions (in)	6,9 x 3,2 x 1,9
Weight	≈ 1,1 lb
Languages: English, French, Spanish, Chinese	
Measurement saving on SD card	
AIRVIB® DISPLAY UNIT	
Simultaneous vibratory channels	8 FFT / 4 balance
Simultaneous tachymeter channels	4 balance
Autonomy	≈ 14 hours
Dimensions (in)	5,6 x 2,9 x 1,1
Weight	≈ 0,57 lb
WIRELESS RANGE (Unobstructed, Free of Interference)	
EU/ASIA ETSI, NEW ZEALAND RSM and BRAZIL Anatel Compliant	8 km (4 NM / 5 mi)
USA FCC, CANADA IC and AUSTRALIA RCM Compliant	105 km (57 NM / 65 mi)
China SRRP Pending	105 km (57 NM / 65 mi)
GENERAL INFORMATIONS	
868 MHz or 900 MHz radio link depending on country	
Modularity capability allows user to connect several acquisition units controlled by one display unit interface	





**Diagnostic Solutions International, LLC**

ISO9001 & AS9100D Certified

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