



Helitune

Engineering Rotortuner Solutions



HT-VHM System

VHM & Onboard RTB System

Latest standard in Vehicle Health Monitoring and On-Board Rotor Track and Balance.

The HT-VHM is Helitune's latest Vehicle Health Monitoring and Rotor Track & Balance system, providing parallel and simultaneous data acquisition across all measurement input channels and rotors – significantly reducing data collection times for RTB and Vibration Analysis operations.

On-Board avionics configurations are available to support Integrated Vehicle Health Management (IVHM) / HUMS applications and traditional RTB functions utilising a common data acquisition platform.

Features and Benefits

- Modular and expandable architecture provides a flexible, scalable and affordable solution.
- System connectivity options with built-in sensing to significantly reduce aircraft integration cost and installation weight.
- Parallel data acquisition for all connected measurement sensors.
- Simultaneous data acquisition for all components and rotors, significantly reducing data collection times.
- Expandable architecture – 8 or 16 channel options, plus further expansion by 'daisy chaining' additional modules.
- Compact and lightweight.
- Extensive connectivity and flexible input configuration.
- Continuous raw data storage.
- Optional interface with OEM flight displays and flight data recorders via aircraft databus.
- Multiple data extraction methods for On-Board applications (Ethernet, USB and Wi-Fi).
- Optional integrated GPS and inertial sensing.
- EMC and Environmental qualification to RTCA/DO-160G.
- Software development to RTCA/DO-178C, Level D.
- Hardware development to RTCA/DO-254, Level D.



HT-VHM System showing HT-VMU with Helitune Flitepad®, RT-TipTrak™ and Helitune Optical Pick-up.

Design Overview

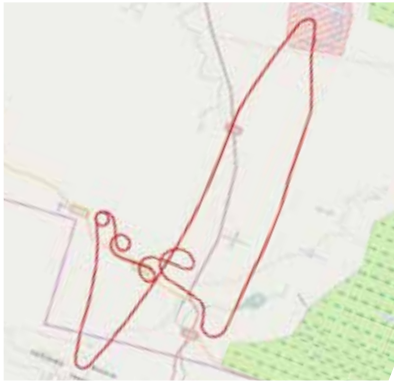
The HT-VHM System delivers a powerful new solution for IVHM/HUMS, RTB and Vibration Analysis applications.

The unique product architecture of the HT-VMU ensures that all measurement inputs are sampled simultaneously, resulting in significantly reduced data collection times at each flight condition. For RTB maintenance flights, this can significantly reduce the test flight time, thus reducing the cost of operations and unnecessary maintenance airframe hours. For On-Board applications, this means

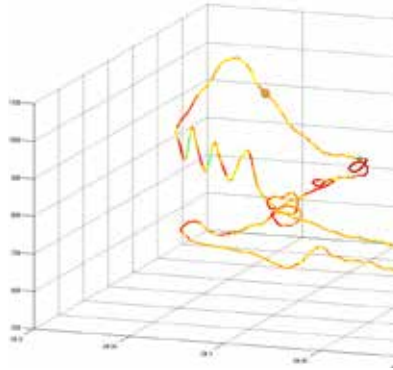
that a full set of vibration data condition indicators can be acquired for multiple aircraft components even when flight conditions are maintained for only a short time period, overcoming one of the common limitations of existing HUMS systems by utilising latest technologies.

A seamless upgrade path is provided for existing RT-2000, RT-5 JS+ and RT-6 operators.

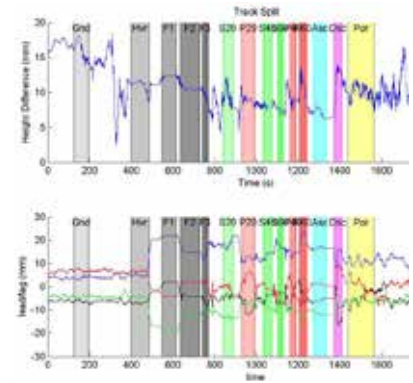
Location Data



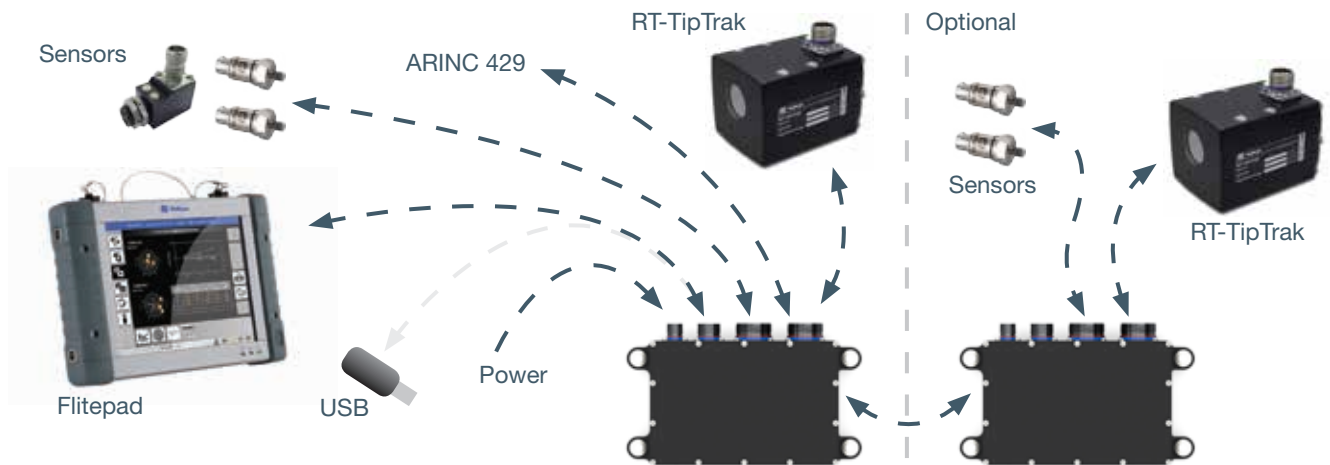
Flight Data Display



Regime Recognition

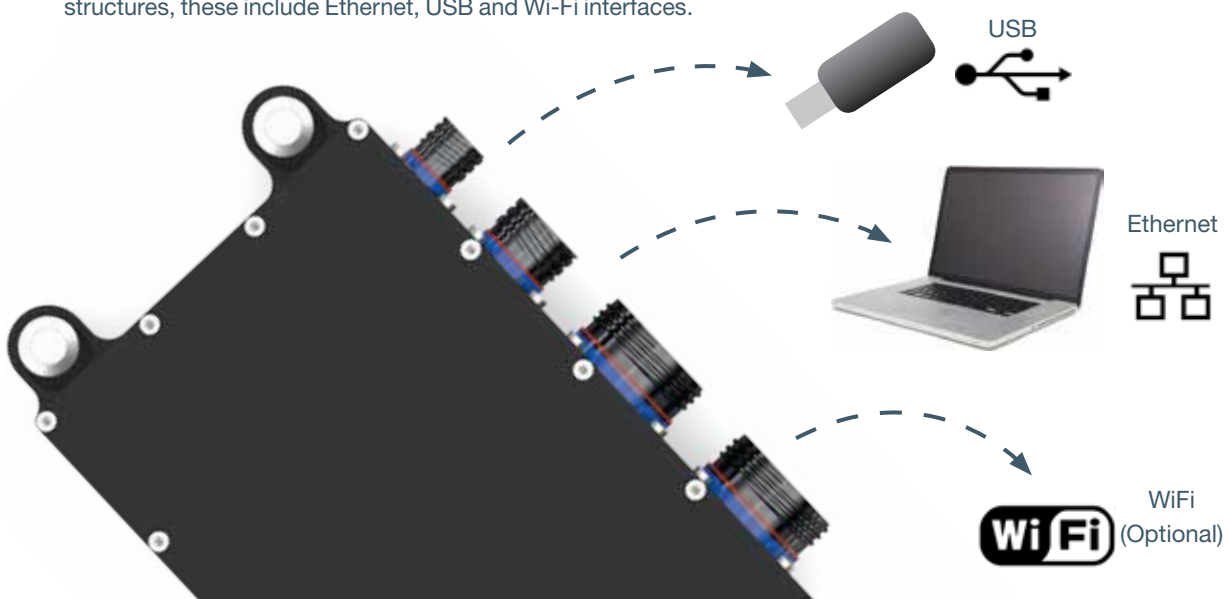


System Integration



Data Transfer

HT-VMU offers multiple methods for the download of stored data and upload of aircraft acquisition configuration structures, these include Ethernet, USB and Wi-Fi interfaces.





Technical Specifications

Accelerometers	8 (16 Optional)	
Speed Sensors	4 (8 Optional)	
Trackers	Helitune MkII Line Scan Camera or RT-TipTrak	
Digital Communication		
	USB	Yes
	Ethernet	Yes
	RS232 / 422 / 485	Yes
	ARINIC 429	Optional (2 Transmit, 4 Receive)
	Mil-Std-1553B	Optional
	ARINC 825 (CAN)	Optional
	Discrete Logic	Yes (ARINC 717 compatible)
GPS	Optional (requires external antenna)	
Internal Sensors (MEMS - Vib 3-axis)	Yes	
Wireless (802.1)	Optional (requires external antenna)	
Physical	L x W x H (mm)	180 x 120 x 56 mm
	Weight	<1.6Kg
Environmental		
	Operating Temp	-40°C to +70°C
	DO-160G	Yes
EMC	DO-160G, MIL-STD-461F	
Software	DO-178C	Level D
Hardware	DO-254	Level D
Regulations	CAP-753	Yes
Power	+28V Mil-Std-704F, DO-160G Section 16	

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Helitune's Quality Management System is certified to BS EN ISO9001:2008 and AS9100

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This specification may change without notice.

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