### XRDS™ HARDWARE SPECIFICATIONS

#### General Specifications
- **Power Requirements:** 350 mA at 28 VDC
- **Input Voltage Range:** 9 to 36 VDC
- **Operating Temperature:** -40 to 85 °C
- **Dimensions:** 170 x 180 x 54 mm
- **Installed Weight:** ~2 kg (varies by platform)
- **Data Storage Capacity:** 32 GB (2000 ft at 30 MB/ft)

#### I/O Characteristics
- **Universal Analog Interface**
  - **Supported Sensors:** IEPE accelerometers and both AC or DC coupled single ended or fully differential signals (16 or 2 channels)
  - **Number of Channels:** 16 or 32 channel option
  - **Simultaneous Capture:** 8 channels
  - **IEPE Conditioning:** 4mA bias with 24 VDC compliance voltage
  - **Converter:** 24-bit 2x ADC, 70kHz bandwidth
  - **Subcarrier Interface:**
    - **Supported Channels:** 6 channels (active or passive devices)
    - **Simultaneous Capture:** 6 channels

#### Communication Interfaces
- **Ethernet:** 1x Transceiver (full duplex 10/100 Mbps)
- **ARINC 429:** 4x Receivers (15.5 Mbps and 100 Mbps), 1x Transmitter
- **RS-485:** 1x Transceiver (baud rates up to 20 Mbps)
- **CAN:** 1x Transceiver (baud rates up to 1 Mbps)
- **1-Wire:** 1x Transceiver (15.4 kbps and 125 kbps)

#### Legacy Aircraft FDM Support
- **GPS:**
  - **Receiver Type:** L1 frequency, C/A code, 50 Channels
  - **Position Accuracy:** 2.5 m CEP
  - **SBAS Support for:** WAAS, EGNOS, MSAS
  - **Max Altitude:** 50,000 ft
  - **Max Velocity:** 500 m/s
  - **Vehicle Dynamics:** ≤ 4 g
  - **Antenna Type:** 3.3 VDC active antenna
  - **Range/Resolution:** ± 8 g or ± 2 mg (16-bit ADC)
  - **FDM Acquisition Rate:** 10 Hz

#### Data Retrieval Interfaces:
- **Wireless:**
  - **Interface:** 2.4 GHz IEEE 802.11 b/g/n, in flight RF inhibit
- **USB Host:**
  - **Interface:** USB Mass Storage Class devices (thumb drives)
- **Ethernet:** Direct to logbook PC or tablet
- **MMS/MCD/MFD:** According to customer needs

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### CUSTOMERS AND CLIENTS
- US Navy: NAVAIR
- US Army, Coast Guard, Air Force
- Aerospace Industries Association
- Civil helicopter operators
- Department of Energy
- Aviation Public Safety Organizations
- Energy and other utility customers
- Law Enforcement
- Maintenance repair and overhaul
- International and foreign military sales
- Oil and gas operators
- NASA

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### Innovative Technology for Aviation Vehicle Health & Advanced Data Analysis

Better than HUMS
THE MOST EXPERIENCED HELICOPTER HEALTH MONITORING TEAM IN THE WORLD

HISTORY
Founded in 2006, RMCI is at the forefront of aircraft vehicle health and usage monitoring and data analysis. RMCI has a broad range of experience working with government and private industry, including 10 years of experience monitoring the condition of more than 3,000 helicopters in support of the U.S. Army.

RMCI has reduced the costs of quality products for aviation operations while improving technology and increasing safety. Based on our expertise in the field, we are able to provide unparalleled quality and capability that is affordable to our customers.

CORE COMPETENCIES
RMCI’s data analysis techniques reduce the time and effort needed to collect and interpret data, while enhancing accuracy and performance. We provide leading diagnostics and health and usage monitoring of dynamic systems.

We also support a variety of platforms through design, instrumentation, and data analysis. We offer advanced statistical analysis of data to measure program success through the design, development, and evaluation of operating metrics.

DIFFERENTIATORS
Our team is agile and multi-disciplined, with a unique ability to quickly and responsively address a wide variety of technical challenges.

Because we have a broad base of experience analyzing HUMS data from multiple vendor systems in support of the U.S. Army’s helicopter fleet, our multi-disciplined team has the unique ability to quickly and responsively address a wide variety of technical challenges.

XRDS™
XRDS is RMCI’s Expandable Rotorcraft Diagnostic System - an embedded system for rotorcraft vehicle health management, flight data monitoring, FOQA, and advanced rotor smoothing. XRDS effectively monitors multiple components simultaneously, such as bearings, shafts, engines, and rotor systems.

Our system is fully integrated, lightweight, low-power, and affordable, all in a single system solution for multiple aircraft platforms.

KRENO™
Krēnō™ is RMCI’s software system for displaying, analyzing, and managing health monitoring and flight operations data in a user-friendly form.

Krēnō supports decisions for fleet management, mission planning, maintenance, and engineering. Its powerful features include a streamlined interface, cloud and local databases, universal accessibility, automatic backups, third-party support, and automatic notifications.

ENGINEERING SERVICES
RMCI provides expert HUMS support and enhanced data analysis techniques. Our powerful solutions tackle fleet maintenance risks while improving the performance of data collection systems and mechanical failure alerts.

Our analysis techniques have increased component diagnostic accuracy while monitoring over 3,000 HUMS equipped helicopters.

The range of service we provide includes bearing, gear, and shaft vibration analysis; custom condition indicator analysis; modal testing; failure analysis and damage prediction; and improved rotor smoothing coefficients.

RESEARCH & DEVELOPMENT
RMCI excels in research of advanced vibration analyses and its development of algorithms for diagnostics and prognostics. These efforts have yielded cutting-edge techniques that are more effective than legacy approaches.

RMCI has developed IDFI™, a software that allows users to decode flight recorder data through format discovery and data translation, making format discovery much easier and faster.

By increasing the accessibility of data, the IDFI software can enable significant improvements in overall program efficiency and performance while also saving time and money.