



XRDS™

The Expandable Rotorcraft Diagnostic System



XRDS™ is the most advanced health and usage monitoring system available. It provides a fully integrated, lightweight, powerful solution that enables comprehensive health management and flight data monitoring. Expandable and custom tailored for each aircraft and operator, the XRDS is available in 32 or 16 channel configurations.

Features include:

- ☒ Vibration Health Monitoring (VHM)
- ☒ Usage Monitoring and Structural Health Monitoring
- ☒ Flight Data Monitoring (FDM)
- ☒ Advanced Rotor Track and Balance (RTB)
- ☒ Supports Flight Operations Quality Assurance (FOQA)
- ☒ Supports Safety Management Systems (SMS)

Embedded functionality includes Attitude and Heading Reference System (AHRS), a variety of communication interfaces, compatibility with a wide range of additional sensor inputs for enhanced diagnostics, prognostics, and on-board processing capabilities.

XRDS provides helicopter operators **One System ~ One Software Solution™**.



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	32GB (1092 fh at 30MB/fh)

I/O Characteristics

Universal Analog Interface

Supported sensors	IEPE accelerometers and both AC or DC coupled single ended or fully differential signals (uses 2 channels)
Number of channels	32 or 16 channel option
Simultaneous capture	8 channels
IEPE conditioning	4mA bias with 24VDC compliance voltage
Converter	24-bit ΔΣ ADC, 70kHz bandwidth

Tachometer Interface

Number of channels	4 channels (active or passive devices)
Simultaneous capture	4 channels

Communication Interfaces

Ethernet	1x Transceiver (full duplex 10/100Mbps)
ARINC 429	2x Receivers (12.5kbps and 100kbps), 1x Transmitter
RS-485	1x Transceiver (baud rates up to 20Mbps)
CAN	1x Transceiver (baud rates up to 1Mbps)
1-Wire	1x Transceiver (15.4kbps and 125 kbps)

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 m
Max velocity	500 m/s
Vehicle dynamics	≤ 4 g
Antenna type	3.3 VDC active antenna

Triaxial MEMS Accelerometer

Range/resolution	±8 g : 0.2 mg (16-bit ADC)
FDM acquisition rate	10 Hz

Triaxial MEMS Gyroscope

Range/resolution	±500 °/s : 0.15 m°/s (16-bit ADC)
FDM acquisition rate	10 Hz

Triaxial MEMS Magnetometer

Range/resolution	±4800 μT : 0.15 μT (16-bit ADC)
FDM acquisition rate	10 Hz

Data Retrieval Interfaces

Wireless	2.4GHz IEEE 802.11 b/g/n, in flight RF inhibit
USB host	USB Mass Storage Class devices (thumb drives)
Ethernet	Direct to logbook PC or tablet
Direct to MMS/MCD/MFD	According to customer needs