

HEIM MDR – Flight Test Recorder*

The HEIM MDR series is a range of tough, versatile and very compact flight test recorders.

The MDR comes in three versions, one having slots for up to 8 signal interface modules, one having slots for 2 signal interface modules and the smallest, an Ethernet only recorder. The 8 slot version provides a highly flexible platform for recording multiple channel types and high channel counts. This version is available with or without the display and control button panel. The smaller versions are ideal for cockpit mounted applications.

The modular MDR system meets a wide variety of specific test requirements with user configured signal interface modules.

For data storage, the MDR uses either industrial grade Compact Flash (CF) cards with capacities up to 64 GB or built-in or external Solid State Drive (SSD) media with capacities up to 256 GB.



HEIM MDR Ethernet recorder – this screw down version is an Ethernet only recorder without additional interface cards and uses external storage media.



HEIM MDR 2s – this DZUS mounting version is ideally suited for cockpit installations and has space for 2 signal interface modules. It contains a status display and basic buttons facilitating display and control for the operator. A built-in receiver for industrial grade CF cards provides convenient, portable, removable media.



HEIM MDR 8s – this version has space for up to 8 signal modules in any mix of types and quantity. The ATR mount provides robust installation with quick removal when required. This version can be supplied with or without the control and display panel. Recorded on CF card or external SSD, test data are easily transferred from the MDR to computers for review, analysis and archive. Built on HEIM's years of experience designing robust, modular, airborne systems, the MDR provides a single compact, economical data acquisition solution for multiple missions and tests.

COMPACT, MODULAR DATA ACQUISITION

Applications

- Flight test instrumentation
- Cockpit video recording
- Ethernet recording

Features

- Up to 100 Mbit/s aggregate data rate
- Up to 64 GB storage capacity on CF card
- Up to 256 GB storage capacity on SSD
- External storage available
- IRIG106 Chapter 10 Data File Format
- IRIG A, B, G, PPS and GPS time input
- IEEE 1588 network time synchronization
- Extensive remote control
- Reconfigurable by exchanging signal interface modules
- UDP broadcast

Signal Interfaces

- ARINC 429
- MIL-STD-1553
- PCM
- Multi-channel analog
- Video (SD and HD)
- Voice
- Ethernet 10/100/1000 BaseT
- Asynchronous Serial Data

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MDR Built-in Interfaces

Voice (2 channel)

input:	single ended line
output:	head set monitor
Sampling rate	max. 25 kS/s selectable in steps
High pass filter	300 Hz selectable
Resolution	8 bit / 16 bit
Dynamic range	48 dB / 70 dB
Input Range	2 V _{peak} , 1 Vrms, 0.5 Vrms, 0.2 Vrms, 0.1 Vrms, 50 mVrms, 20 mVrms, 10 mVrms

Ethernet (1 channel)

Input format	10 / 100 / 1000 Mbit/s Ethernet bus communication
Functions	Ethernet data input channel, remote control, UDP broadcast, IEEE 1588 time code synchronization, FTP server download/upload.
Total Bit Rate	100 Mbit/s Maximum

Serial (1 channel)

Input format	RS232 / RS422
Function	GPS NMEA protocol (time synchronization) or asynchronous serial line input

Setup Interfaces

USB2.0, Ethernet, RS232, RS422

Contact Remote

6 discrete control inputs	
Input level high	4.7 V – 36 V
Input level low	0 V - 3.5V
Input impedance	min. 25 kΩ

6 open collector status outputs	
Output current	max. 60 mA
Output voltage	max. 36 V (short circuit protected)

External Storage Interface

E-SATA

HEIM MDR



	MDR 2s	MDR 8s
Overall data rate	100 Mbit/s max.	100 Mbit/s max.
Channel count	up to 16	up to 64
Data format	IRIG106 Chapter 10	
Storage capacity	up to 64 GB with industrial CF card up to 256 GB with external SSD	
Control buttons	Record, Stop, Mode, Event	Optional Record, Stop, Mode, Event
Data interfaces	GIGE	
Real time clock	Yes	
Time code input	IRIG -A, -B, -G, GPS (NEMA), IEEE 1588	
Time code output	IRIG A, B, C	
PPS input	1 or 10 pps	
PPS output	1 or 10 pps	
Temperature range	- 31 to +71 °C	
Power	9 – 36 VDC according to MIL-STD-704E	
Power consumptions	< 15 Watt	< 25 Watt
Dimensions (L x W x H)	4.80 x 5.83 x 3.43 in (122 x 148 x 87 mm)	10.24 x 4.96 x 4.33 in (260 x 126 x 110 mm)
Weight	< 8.8 lb (4 kg)	< 17.6 lb (8 kg)
Mounting	DZUS or screw down	ATR or screw down

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*preliminary specification, subject to change

ZODIAC DATA SYSTEMS

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