

Cockpit Voice and Flight Data Recorder System

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Key Features

- Compact, low weight CVR/FDR that exceeds EUROCAE ED-112A requirements
- Flexible FDAU uses COTS design with over 100 plug-in modules

Applications

- Crash Protected Recording
- Data acquisition and storage for
 - + FOQA/FDM/FDAP
 - + Aircraft performance monitoring
 - + Engine condition trend monitoring

Flight Data Acquisition Unit and Crash Protected Recorder System

Cockpit Voice and Flight Data recorders (CVR/FDR) recorders are designed to protect data in extreme environmental conditions to ensure reliable access to cockpit voice and flight data following an incident. They are mandated for many aircraft, and desirable for many others, but not all aircraft have a suitable data stream available to output the required information. There is also a trend towards using the flight recorder system as an active component in aircraft maintenance, expanding its role to include applications such as Flight Operations Quality Assurance (FOQA) and Condition Based Maintenance (CBM).

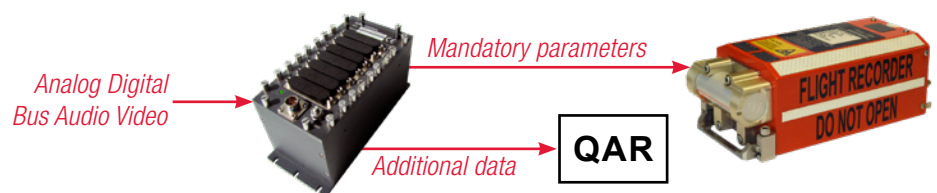
Curtiss-Wright provides a solution for these needs with a fully qualified CVR/FDR and an easily customizable Flight Data Acquisition Unit (FDAU). This allows for a highly customized system to be delivered without the high costs associated with bespoke designs and easily accommodates small production quantities.

The Multi-Purpose Flight Recorder (MPFR) is a compact, low weight combined CVR/FDR. It features a 90 day Ultrasonic Locator Beacon (ULB) option, attaches directly to airframe and has fast Ethernet data recovery.

The FDAU is a rugged, compact unit with a configurable modular design that has out of the box connectivity to the MPFR product line. Chassis are available in a number of sizes and can be hard-mounted in any orientation on an airframe. Along with a wide range of analog, digital, bus, audio and video modules, Built-In Test (BIT), GPS and onboard processing modules are also available.

Thus, this crash recorder system is ideal for applications where a CVR/FDR is required and a large digital/analog parameter set must be captured. In this situation, a commercial off-the-shelf configurable FDAU can acquire/process the mandatory parameters and send the appropriate ARINC data stream to the MPFR.

The system can also be used to support an aircraft maintenance system. Additional modules can be used to acquire data from sources such as strain gauges and accelerometers and the FDAU can send the required parameters to a separate quick access recorder (QAR).



The recorder system allows for flexible data retrieval

Outline Specifications

Summary information only, for further details, please see www.curtisswrightds.com

MPFR

Cockpit Voice Recorder (CVR) function

- Recording duration: 4 channels x 120 minutes
- Audio: 3 voice channels, 1 area microphone channel
- Playback: Off-aircraft high-speed download of complete CVR record using Ethernet

Flight Data Recorder (FDR) function

- Duration: 25 hours (at 512 words/sec)
- FDAU interface: ARINC 573/717
- Data rates: 64, 128, 192, 256, 384, 512 and 1,024 wps
- Replay: Real-time recorded output

MPFR common to all configurations

- Data download: On-or off-aircraft high speed download using Ethernet
- Fault reporting: Discrete output or via web status pages
- Cooling: Free air convection, no forced cooling
- Connector: MIL-C-38999 Series III

Electrical and Mechanical

- Power (system): 28 VDC, 13W max
- Mass: 7.0 lb (3.2 kg) including Underwater Locator Beacon
- Dimensions (H x L x W) within
 - + 3.5 x 10 x 4.6"
 - + 89 x 253 x 118 mm
- Underwater Locator Beacon to TSO-C121b, battery and bracket included – 90 day beacon

FDAU

Interfaces

- Analog: Extensive range for current, voltage, strain, temperature, vibration, wideband, pressure and other applications
- Digital: Serial, discrete, bi-level and optoisolated
- Bus: Extensive range includes ARINC 429/573, MIL-STD-1553, Ethernet, AFDX, CAN bus, CCDL, CSDB, PCM, FireWire and RS-232/485
- Other: Audio and video encoding, RF encoding, built-in test, power monitoring, wireless sensor options

Options

- Chassis: 3, 6, 9 or 13 user-slot configurations
- Time: GPS, IRIG-B, IEEE 1588 PTP v1/2
- Output format: ARINC 429/573/717, IRIG-106 PCM, 100Base-T Ethernet, MIL-STD-1553

Electrical and Mechanical

- Power: 18-40 VDC, 28 VDC (typical)
- Mass: 2.4 lb (1.1 kg) to 6.2 lb (2.8 kg)
- Dimensions for 6U chassis (H x L x W)
 - + 3.88 x 7.17 x 3.15"
 - + 98.5 x 182 x 80 mm

Optional Equipment

- Miniature Cockpit Area Microphone (CAM)
- Slimline Cockpit Control Unit (single or dual recorder support), NVG option
- Mounting adapter for ARINC 757 retrofit installations
- Portable Replay Equipment (PRE)
- Recorder Independent Power Supply (RIPS)
- Replay software

Ordering Information

Please contact Curtiss-Wright Defense Solutions.