

AIRCRAFT DATA NETWORK (ADN) RECORDING

Avionics Data Visibility and Storage

Aircraft manufacturers like Boeing Aircraft have adopted and/or adapted commercial-off-the-shelf Ethernet as the 'next-gen' aircraft data network (ADN) technology. Designers recognize that today's low-cost Ethernet is an optimal way to quickly and reliably move data between their product's airborne-systems; from flight-control-signaling to passenger entertainment systems.

AFDX®/ARINC 664 Part 7 is one example of a deterministic, Quality of Service (QoS) ADN technology for both commercial-freight and passenger aircraft. Electronic systems that interface and utilize the AFDX® network are installed into the plane at various stages of its production cycle. Designers and builders understand the importance of monitoring the aircraft's data-bus as avionics systems are brought online. The captured data is valuable for both systems troubleshooting and design improvements of their aviation products.

However, the assembly of just one passenger plane could take from four to six weeks to complete. An ideal solution would be a long duration recording system that could capture bus data from the start of the aircraft's production until its completion. Such a solution offers an opportunity to archive critical data for future aircraft systems analysis.

What's Needed?

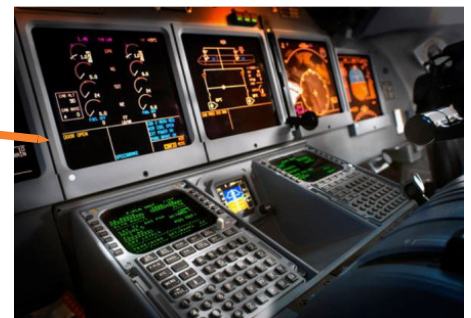
- ✓ **A long-duration Ethernet/AFDX®/ARINC 664 recording solution.**
 - ✓ Commercial and freight aircraft can take several weeks to build while recording data.
- ✓ **An Ethernet recorder that captures and stores 100% of the data.**
 - ✓ AFDX® is designed for the assured transmission of all data. It is just as important that ALL data is recorded.
- ✓ **A flexible and open recorder solution.**
 - ✓ Recorded data should be in a standard format so that power analysis tools can access and utilize the stored data.

AFDX®/ARINC664 Network Recording

DDR70-Mini-40G
(4 x 10GbE links)



Network recorder software



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An aircraft data-bus tool solution

Many capable bus tools aid in the development, troubleshooting, and maintenance of an aircraft's avionics systems. Companies such as Abaco Systems offer a powerful software suite that is complete with deep avionics analytics; including test and simulation capabilities.

These software tools generally feature a graphical user interface (GUI) with an optional API that is hosted on either Windows® or Linux operating systems. Both the engineer and the technician can then present bus-data in multiple forms. They include simple message-based displays of raw data to advanced visualizations such as graphical analog gauges and strip charts.

Such software typically interfaces directly with the aircraft for real-time analysis and limited logging capability. However, a full-rate data recorder is useful when a real-time operation of an aircraft is not convenient or feasible. Archived data from a previous operation is valuable as it could be exported or played back as it was originally captured to the recorder's disk-based volume(s).

Applications

- ✓ Avionics systems troubleshooting
- ✓ Protocol analysis
- ✓ Bus-data simulation (playback)
- ✓ Data logging
- ✓ Data display



DDR70-Mini-20G (2 x 10GbE links)

A conventional bus analysis tool should not notice the difference between recorded data and actual data from a running aircraft.

Daqscribe's **DDR70-Mini-20G** has been chosen by leading aircraft manufacturers for long-duration AFDX®/ARINC664 (via Ethernet) recording. The product features 100% Ethernet packet capture, single-system storage capacities up to 30TB, and a remarkably easy-to-use operations GUI.

Ask us how Daqscribe recorders can enhance your aircraft data-bus analysis process with a turnkey aircraft data network recording solution.