

## Simulation & Analysis Software for AFDX/ARINC 664

### Features

- Monitor, record, filter, export, and generate databus activity
- Receive and monitor using a standard Ethernet NIC
- View data in engineering units
- View data through virtual instruments, strip charts, and moving map displays
- Autodetect Virtual Links (VLs), Ports and bus speed
- Optional FDS/DS (Functional Data Set/Data Set) usage
- Generate various errors with Error Injection
- Save/Load database information
- Customize CoPilot with scripts

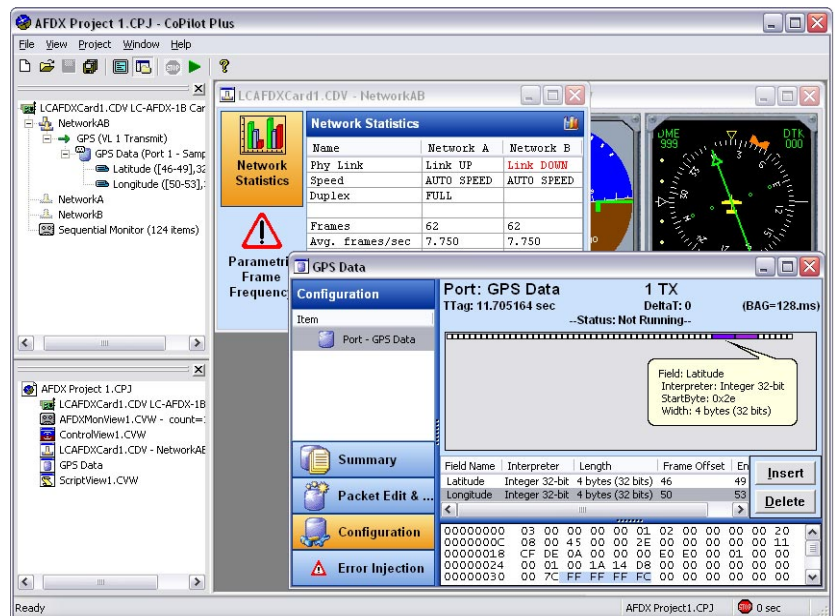
### The CoPilot System

CoPilot AFDX is part of the CoPilot System—a complete line of software and hardware interfaces to AFDX/ARINC 664, ARINC 429, ARINC 708, and MIL-STD-1553. Multiple boards and protocols may be hosted in a single CoPilot project. A CoPilot AFDX System consists of the CoPilot AFDX software and a Ballard AFDX interface board. Alternatively, a standard Network Interface Card (NIC) can be used for receive and monitor applications. CoPilot AFDX can be ordered in two versions: Standard and Plus.

### CoPilot AFDX Overview

CoPilot AFDX is an intuitive program that simplifies the simulation and testing of AFDX avionics systems. Users can transmit and receive on AFDX databuses with just a few clicks of the mouse. Then, while the bus is running, data can be entered and displayed in engineering units.

Features built into CoPilot AFDX automate the detection of installed hardware and bus activity, and



simplify the development of transmit schedules. The powerful Sequential Monitor saves time-tagged messages to a host file for subsequent processing and analysis. An AFDX database for saving/loading configuration and engineering units is also included.

### Intuitive Databus Interface

The AFDX databus is represented in CoPilot by an Explorer®-style hardware tree. When CoPilot AFDX is started, incoming VL and Port activity is automatically detected, posted in the hardware tree, and associated with the appropriate attributes from the AFDX database if possible. Alternatively, users may pre-populate the hardware tree manually or from the database for both transmit and receive items.

Transmit VL and Sub-VL schedules are automatically built based on the user's configuration parameters. The relative transmis-

sion rate of Sub-VL schedules is modified using VL factors. Data for transmit messages may be continuously altered through the Data Generator, Engineering Unit Editor, custom scripts, or the Port View.

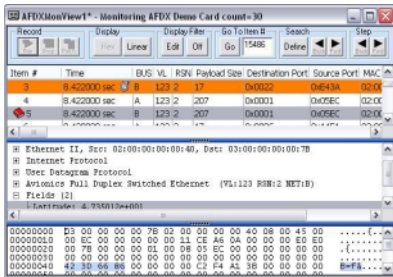
### Engineering Units

Data fields of AFDX frames can be associated with interpreters to view and modify values in engineering units. Once defined, this information can be saved in CoPilot's customizable AFDX database. Objects in the hardware tree are added to display windows through a drag and drop operation.

### Powerful Monitor

CoPilot users can collect databus activity with the sequential monitor. Users can save databus information or use filters to create a highly selective record. The Monitor View displays the recorded frames with time tags,

data, and header information. Display Filters in the monitor view limit the display to frames of interest. Display Filter criteria include error, activity, VL number, port number, and other parameters.



A variety of charting, analysis, and search tools simplify the evaluation of monitored data.

### CoPilot OLE Automation

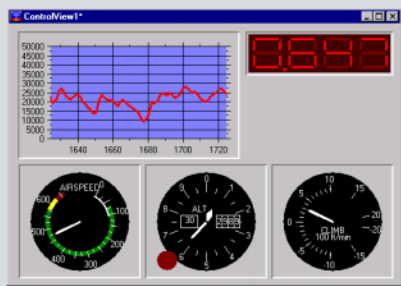
Using OLE Automation technology, users can control CoPilot from third-party applications and host Automation-compliant documents directly in CoPilot. 'Plus' users can control third-party applications via Automation with CoPilot scripts.

### CoPilot AFDX Plus

CoPilot AFDX Plus contains all the features of CoPilot AFDX Standard, plus powerful graphical displays, scripting, and software playback.

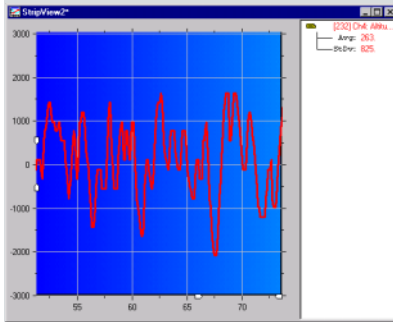
### Graphical Displays

'Plus' users can quickly simulate aircraft instruments, view data val-



ues in strip charts, or create moving map displays.

**Virtual Instruments**—Automatically generate pre-configured controls from AFDX data labels or import from a library of virtual aircraft instruments and other ActiveX controls.



**Strip Charts**—Create dynamic, two-dimensional strip charts. Configure the display during simulation, and quickly review the dataset to analyze data trends in depth.



**Moving Map**—Display aircraft position by linking positional data to a moving map display. Import a map background or generate a photographic or topographical map using the built-in TerraServer® engine.

### Scripting Routines

Scripts can be used to respond to bus events, create programmable triggers, or transfer information between CoPilot and other ap-

plications. Modify one of the example VBScripts or write your own.

### Software Playback

Software playback allows previously recorded data to be replayed through CoPilot as if being received from the bus. Consequently, monitored data can be reexamined through engineering unit displays and instruments.

### Specifications

CoPilot AFDX supports Ballard's PCI, cPCI, and PMC families of AFDX boards, and standard Network Interface Cards.

CoPilot AFDX runs under Windows® NT/2000/XP. Internet Explorer® 5 or higher is required.

### Ordering Information

Buying a CoPilot System (hardware and software together) provides significant savings over purchasing these components separately. Consult the Ballard website or individual hardware brochures for order numbers.

If you already own a Ballard AFDX board, you can create a CoPilot system by purchasing **SW-AFDX-CS** (Standard version) or **SW-AFDX-CP** (Plus version). To operate CoPilot with a standard Ethernet NIC, order either **SW-ANIC-CS** (Standard version) or **SW-ANIC-CP** (Plus version). CoPilot packages include software CD, reference manual, tutorial guide, online help, and example projects and scripts.

Call for additional information or a free evaluation copy of CoPilot.

**Ballard Technology**

3229A Pine Street  
Everett, WA 98201-5306 USA  
Tel: (800) 829-1553 (425) 339-0281  
Fax: (425) 339-0915  
E-mail: sales@ballardtech.com  
Web: www.ballardtech.com

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