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CoPilot®

Databus Simulation & Analysis Software

The Ultimate Databus Problem-Solver

CoPilot is an intuitive, graphical software program that allows you to easily monitor, record, replay, analyze, and simulate avionics bus data. With CoPilot you can interact directly with data on multiple buses using Astronics Ballard Technology interface hardware. This advanced program features powerful tools for development, testing, troubleshooting and maintenance of avionics equipment and systems.

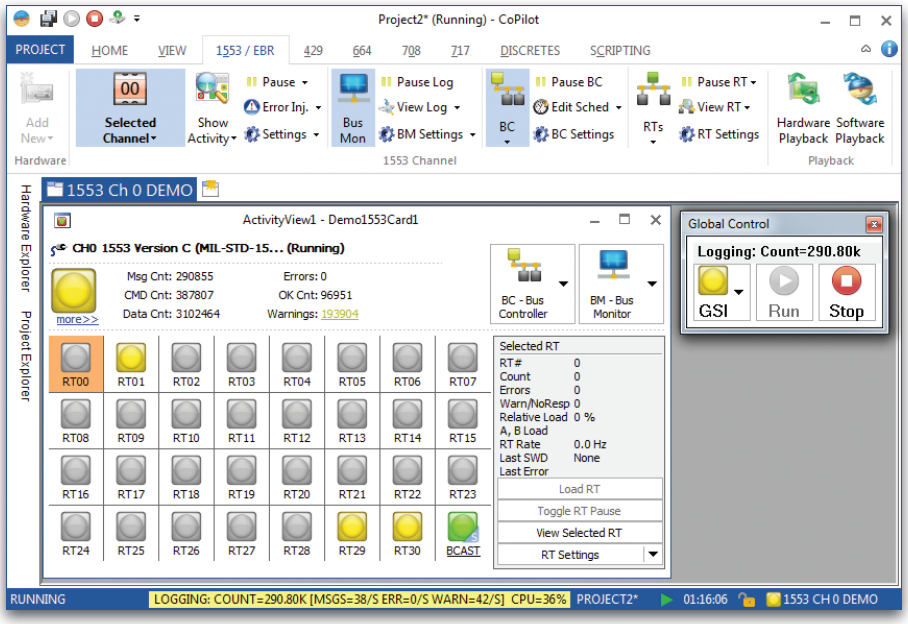
Comprehensive Protocol Support

CoPilot supports multiple hardware devices and protocols simultaneously:

- **MIL-STD-1553**
- **EBR 1553**
- **ARINC 429**
- **ARINC 708**
- **ARINC 717**
- **ARINC 664 (AFDX®)**
- **Serial**
- **Discrete I/O**



CoPilot Running on a rugged tablet with a Ballard USB MIL-STD-1553 Interface



The familiar graphical interface and intuitive operation of CoPilot minimizes the learning curve and gets you up and running fast.

See CoPilot in Action

Experience the power of CoPilot for yourself. Visit our website for videos that show how quickly and easily databus tasks can be accomplished. Then download the full program and evaluate CoPilot on your computer.

▶ **Astronics.com/copilot**

Key Features

CoPilot includes some of the most advanced and comprehensive databus analysis and simulation tools available, yet it remains incredibly easy to use.

- **Eliminates the need to write your own software—saving time and money**
- **Intuitive organization and navigation**
- **Auto discovery of hardware and bus activity**
- **Supports up to 24 simultaneous interface devices**
- **Visual protocol analysis**
- **Powerful scripting environment**
- **View and manipulate data in engineering units**
- **Multiple import/export formats**
- **Log data from multiple channels**
- **Sophisticated graphical displays**
- **Hardware and software playback**
- **Controllable error injection**
- **Built-in start, stop & pause triggers**
- **Complete solution for automated testing**
- **Comprehensive program security**
- **Easy licensing with no dongles to fuss with or lose**

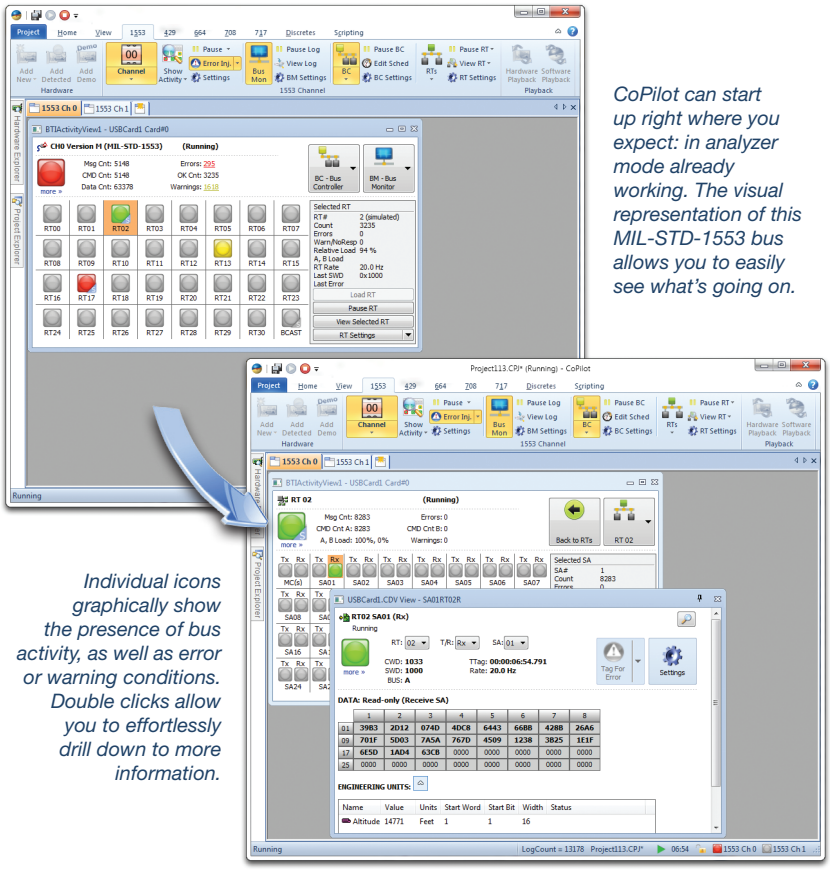
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CoPilot®

Databus Simulation & Analysis Software

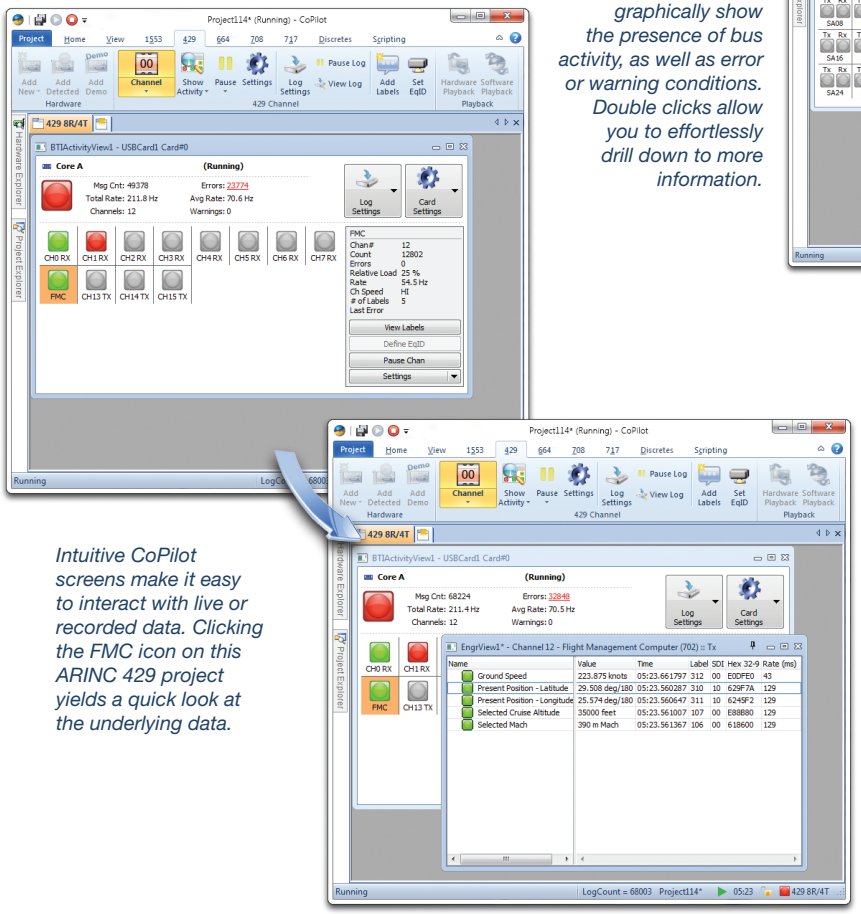
Powerful...Yet Easy to Use

From the moment you start CoPilot, you'll be surprised at how easy and intuitive it is to use. Often-used functions are within easy reach in the Office-style ribbon interface and separate tab groups clearly organize the functions for each major avionics protocol. Avionics bus activity is visually represented with the intuitive ability to "drill in" by double-clicking elements to view more and more details. You can also navigate directly to desired views.



CoPilot can start up right where you expect: in analyzer mode already working. The visual representation of this MIL-STD-1553 bus allows you to easily see what's going on.

Individual icons graphically show the presence of bus activity, as well as error or warning conditions. Double clicks allow you to effortlessly drill down to more information.



Intuitive CoPilot screens make it easy to interact with live or recorded data. Clicking the FMC icon on this ARINC 429 project yields a quick look at the underlying data.

The Versatile Solution

CoPilot is a powerful and flexible tool for engineers, developers, maintenance personnel, and others involved with avionics systems and equipment. It is a highly-effective solution for applications such as:

- **Databus system troubleshooting & analysis**
- **New software development**
- **Custom software prototyping**
- **Automated testing of avionics equipment**
- **Remote testing & analysis**
- **Avionics flight line validation/testing**

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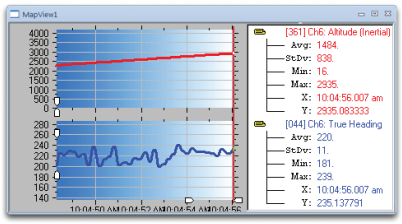
Databus Simulation & Analysis Software



Whether your project is large or small, complex or basic, CoPilot makes it simpler to interact with avionics busses, alleviates the need to write test software, and makes it easier for you to get your job done.

Sophisticated Graphical Displays

CoPilot graphical displays and virtual instruments provide highly effective ways to view and modify avionics data. From functional radar displays, moving maps or strip charts, to complex reproductions of hardware control panels, CoPilot offers nearly limitless capability to create the working environment you need.





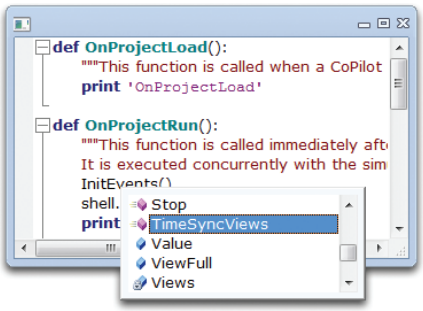
CoPilot professional displays and controls provide powerful ways to view, analyze, and interact with bus data.

Automate and Customize CoPilot for Your Exact Needs

CoPilot's advanced customization tools allow you to quickly and easily automate test processes, prototype custom applications, develop powerful operational avionics software, and more.

Powerful Scripting Environment

Expand and customize CoPilot features, functions, and data manipulation to perfectly meet the needs of your project using the comprehensive built-in script development environment. Integrated Python programming and debugging tools include watch window, object browser, command prompt, and break points with single step operation.



Python scripting within CoPilot allows users to automate tasks ranging from simple macros to complex test frameworks.

Automated Test Environment (ATE)

CoPilot is an invaluable tool for production environments. The built-in Test Manager delivers a complete solution for test development and management. Extensive scripting capability and OLE automation provide full control over automated testing and full integration with associated hardware and software components.

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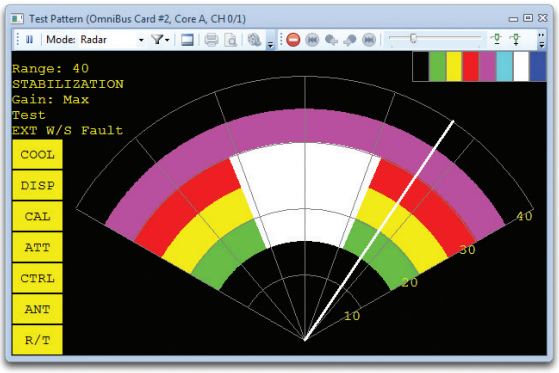
Databus Simulation & Analysis Software

Simultaneous Multi-Protocol Operation

CoPilot is suitable for projects of all sizes and complexities. It simultaneously supports all of the following avionics databus protocols and hardware devices, as well as other protocols like serial links and Discrete I/O.

MIL-STD-1553/EBR 1553

Analyze databus activity, set up and run bus controller schedules, simulate remote terminals, and monitor bus traffic. Simulate all aspects of BC behavior and create complex on-card custom schedules. Configure up to 32 remote terminals per channel and use the bus monitor to log 1553 message sequences for analysis or export.



CoPilot displays real-time data for ARINC 708 airborne pulse Doppler weather radar.

ARINC 429

Analyze databus activity, set up and run transmit schedules, receive labels, translate data into engineering units, and monitor, analyze, and export bus activity.

ARINC 664 (AFDX®)

CoPilot supports graphical configuration and analysis of AFDX® VLs, ports, and engineering unit interpretations. Create transmit VL and Sub-VL schedules, modify data using the data generators, view status of networks, VLs and ports, and inject errors on the bus.

ARINC 708

View ARINC 708 data in real time while receiving, transmitting, or in software playback mode. Multiple display formats include Radar View and List View with the ability to view in engineering units, raw hexadecimal, and filter with Data Accept. When paired with ARINC 429, T-R unit control is possible.

ARINC 717

View, analyze, simulate and record bus activity from an aircraft Digital Flight Data Acquisition Unit or Digital Flight Data Recorder output databus. Supports sub-frames, super-frames, and data rates from 64 to 8192 words per second.

Serial

View and transmit RS422 serial data and set up scripting event handlers to control or log serial port communication.

Discrete I/O

Use discrete I/O lines from the hardware interface for external sync outputs, external trigger inputs, signaling script conditions (events), reading/writing digital values, and for controlling 1553 branching.

See CoPilot In Action

Experience the power of CoPilot for yourself. Watch videos of CoPilot in action or download the full program for evaluation on our website at:

Astronics.com/copilot

Software Licensing Overview

The CoPilot license was designed to be easy on your business. There are no dongles to lose or expensive site licenses to manage, just a simple software "key" embedded in the Ballard databus interface hardware. You can freely install CoPilot on as many computers as you need for pre-run setup, scripting, or post analysis. When you need to access the live databus, just connect any of these computers to hardware containing a license key.

System Requirements

CoPilot 6 requires the Microsoft® Windows® Vista Operating System or above.

Suggested Hardware

Intel® Core™2 Duo, 2 GHz (multi-core) processor or higher
4 GB RAM
2 GB of available hard disk space (additional free disk space required for data logging)

Minimum Hardware

1 GHz 32-bit (x86) or 64-bit (x64) processor
2 GB RAM
1 GB of available hard disk space

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