

### F-SIM-A429

# ARINC 429 Simulator & Bus Analyzer Software Application

#### Overview

AIT's Flight Simulyzer<sup>™</sup> application provides users with an intuitive and easy-to-useARINC 429 simulation and data analysis application. Flight Simulyzer<sup>™</sup> allows the user to configure, control, and view ARINC 429 bus data via a rich set of Chronological Monitor, Current Value Label Monitor, and ARINC 429 Label Simulation controls and displays. Flight Simulyzer<sup>™</sup> is available for MS Windows.

Flight Simulyzer is compatible with AIT's entire family of ARINC 429 instruments and also provides seemless operations together with AIT's ARINC 429 Software Development Kits (SDK) supporting user applications development in C, C++, C#, and LabVIEW (VIs). All of the Flight Simulyzer input (Rx) and Output (Tx) configuration data (stored in XML format), can also be imported and used through the SDK software APIs

#### **Key Features**

- Software GUI Application for Operating AIT ARINC 429 Interfaces
- Capture & Analyze Data from Multiple ARINC 429 Input Channels
- Define & Execute Complex Simulations of Multiple Rate-Oriented Labels
- Simulate Output Data on Multiple Channels Simultaneously
- Replay Previously Captured Bus Data
- Full Error Injection & Detection
- Update, Modify, & View ARINC 429 Data on-the-fly
- Engineering Unit Displays & Software Widgets
- Receive Data to Label/SDI Specific Buffers
- Also Supports MIL-STD-1553, ARINC 664, Ethernet, & Data Load operations

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#### Flight Simulyzer Main ARINC 429 Window

For More Information Visit: <u>Aviftech.com/f-sim-a429/</u>

## Simulate, Monitor, & Analyze ARINC 429 Bus Data

#### **ARINC 429 Monitor Operations**

AIT's Flight Simulyzer™ application provides a simple and intuitive ARINC 42 monitor that allows the users to start capturing and analyzing ARINC 429 bus words right out of the box with just a few clicks.

The ARINC 429 Monitor provides a chronological display of the received bus words including the high resolution timestamps, Label ID, Parity Bit, Data, and the Label name. Simple filters can be defined to mask unnecessary bus data. All errors detected are clearly displayed in the monitor.

The ARINC 429 Monitor also includes a Label ID Activity display which provides an intuitive and easily recognizable display of the active Labels detected on the ARINC 429 channel. The data rate of each detected Label ID as well as the count and number of errors detected for the Label ID. Captured bus data can be stored to a file for offline analysis or replay using Flight Simulyzer<sup>™</sup> output features. Captured data can be exported to common data format (e.g. .csv) for post processing.

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#### **ARINC Data Transmission**

Flight Simulyzer<sup>™</sup> provides easy-to-use controls for configuring and simulating ARINC 429 data outputs. Data Label transmissions can be easily configured for periodic output by setting either the period or rate independently for each Label ID. Additionally, acyclic (one time, on demand), and block transmissions can also be simulated.

Error injection is supported with the following error types:

- Bit Count High/Low Errors
- Parity Errors Data
- Inter-word Gap Errors

For each ARINC 429 channel interface, the user can also independently select the data rate. High Speed, Low Speed, and Custom Speeds (including 50kbps) are supported.

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•	Periodic	Flight Director - Roll		0	50.00000	20	Cyclic	None
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	Periodic	Flight Director - Yaw		0	50.00000	20	Cydic	None
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	Periodic	Time to Go		0	100.00000	10	Cydic	None
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#### Receive & Monitor Displays

### **Current ARINC Label Value Tables**

In addition to a chronological channel monitor Flight Simulyzer<sup>™</sup> also provides the display of current and buffered data sorted by individual Label ID (or by Label ID and SDI). The Label data can be displayed as Hex, Octal, Decimal or Binary data in each display.

### **ARINC 429 Replay**

Previously captured ARINC 429 data can also be easily replayed using Flight Simulyzer<sup>™</sup>. Data replay can be independently controlled for each ARINC 429 channel interface.