

## Finding Help for the Astronics Ballard Technology Instrument Driver for LabVIEW™

### Overview

The intent of this document is to provide direction to the appropriate documentation based on the topic of interest. Unless otherwise stated, all documentation resources listed here are automatically installed by the Instrument Driver for LabVIEW™ installer, and can thus be found in the installation directory or via the generated application menu shortcut.

In the sections below, find the topic of interest. The references below each topic are to documents and help resources that may be of use.

### Installation

There are various requirements and instructions for installing each piece of the provided VI library. The following documents describe this info for each piece:

- **Ballard Card README**  
This HTML help file provides info on the piece of the library that deals with general hardware operations.  
It is found at <LabVIEWInstallDirectory>\instr.lib\BTICardLib\Ballard Card README.html.
- **Ballard 1553 README**  
This HTML help file provides info on the piece of the library that deals with MIL-STD-1553 operations.  
It is found at <LabVIEWInstallDirectory>\instr.lib\BTI1553Lib\Ballard 1553 README.html.
- **Ballard 429 README**  
This HTML help file provides info on the piece of the library that deals with ARINC-429 operations.  
It is found at <LabVIEWInstallDirectory>\instr.lib\BTI429Lib\Ballard 429 README.html.

### Hardware

- **Hardware Manual**  
The BTI Instrument Driver Library exclusively supports the Ballard OmniBus II PXIe product sold through National Instruments. For a detailed description of hardware capabilities, architecture, and pinouts - see the "OmniBus II PCIe PXIe User Manual" provided on the NI website. Browse to the Ballard Technology Product Page from <http://www.ni.com/pxi/> for your avionics protocol (1553 or 429). From there, click on the "Resources" tab to download the manual. This manual is not provided with the installer to ensure the most up-to-date version is always available.

### Graphical Configuration Manager

BTI XML Editor is a graphical program that provides a simple means of editing BTI XML hardware configuration files. The following documentation exists for it:

- **BTIXMLEdit Help**  
This HTML help file describes the general usage of the editor. It also discusses some advanced features, such as exporting configuration files to binary.

In the installation directory, it is found at GUI\Help\index.html.

## LabVIEW™ Instrument Driver

The LabVIEW Instrument Driver for BTI hardware consists of a LabVIEW Virtual Instrument, or VI, library, which both consumes BTI XML configuration files and allows for operations on the hardware itself. The following documentation exists for it:

- **Library Documentation**

This compiled HTML help file can be used as both a "getting started guide" and as a general reference when writing programs for BTI hardware using LabVIEW™ and the provided VI library. It contains example usage of the library in the form of skeleton programs and common VI combinations. It also explains the structure of BTI hardware, and it provides an overview of the MIL-STD-1553 protocol and the ARINC-429 protocol.

In the installation directory, it is found at Documentation\Ballard LabVIEW Instrument Driver Guide.chm.

- **Context-sensitive Help**

On top of the general information provided by the Library Documentation, every VI provided by the library includes specific documentation, available from within LabVIEW™, pertaining to its function and use. To access this documentation, turn on context-sensitive help in LabVIEW™ by selecting Help→Show Context Help or pressing Ctrl+H, then select a Virtual Instrument.

- **Schema Help**

The configuration files that are created by BTI XML Editor and consumed by the VI library must conform to a specific format description, known as a "schema". The schema describes the legal nodes, attributes, and structure thereof that can be used to syntactically describe a BTI hardware configuration. The provided HTML help explains this schema with diagrams and definitions, and is thus a vital tool in constructing valid BTI XML configuration files.

In the installation directory, it is found at Help\index.html.

- **Example Programs**

Many LabVIEW example programs have been provided to illustrate many of the features the library has to offer. The quickest way to dive into writing your own program is often to find the example that most closely demonstrates your use case and to make modifications to the configuration file and/or program to match your system. Every example has been carefully documented with block diagram comments and a description provided on the front panel. By following National Instruments style guidelines, these comprehensive examples are easy to follow and understand.

## Further Help

National Instruments provides support for the BTI Instrument Driver Library for LabVIEW™. For specific issues and questions concerning its use that are not resolvable through the resources previously listed in this document, visit <http://www.ni.com/en-us/support.html> to create a support ticket