SoftMotion Drive Interface (SDI)

Plug-in Documentation and Testing Requirements

Last Updated: Friday, March 6, 2015

By: Zach Jones

# Introduction

This document describes a documentation and testing procedure for SDI Plug-ins. The SDI Plug-in must meet the documentation requirements and pass all of the tests detailed in this document to be approved for release on the LabVIEW Tools Network. These tests will ensure a minimum required level of support for common motion control actions and guarantee minimal user-to-developer troubleshooting interactions.

# Hardware Requirements

At minimum, the following hardware is required to complete the testing requirements for SDI Plug-in acceptance:

* 2 third-party EtherCAT motor drives
* 2 compatible motors, preferably the same model
* 2 sets of power/feedback cables
* Power supply for drives and motors
* NI Real-Time target with 2 or more Ethernet ports
* RJ-45 Ethernet cable
* PC

# Software Requirements

The following software is required to complete the testing requirements for SDI Plug-in acceptance:

* Windows 7/8/8.1 (32-bit or 64-bit) operating system
* NI LabVIEW 2014 SP1 32-bit Graphical System Design Environment (or newer)
* NI LabVIEW 2014 SP1 Real-Time Module (or newer)
* NI LabVIEW 2014 SP1 FPGA Module (or newer)
* NI LabVIEW 2014 SP1 SoftMotion Module (or newer)
* NI-RIO 14.5 (or newer)
* NI Industrial Communications for EtherCAT 14.5 (or newer)

# SDI Documentation Requirements

The LabVIEW Tools Network has specific requirements on documentation for hosted packages. SDI Plug-in code should follow these guidelines and strive to meet the documentation standards of the Certified LabVIEW Developer exam. The LabVIEW Tools Network documentation guidelines can be found at:

* <http://www.ni.com/labview-tools-network/contribute/>

# SDI Plug-in Required Testing Procedures

It is a requirement that the SDI Plug-in and associated hardware must pass the testing procedure outlined in this section for acceptance in the Drive Partner Network.

## Single-Drive Test Procedure

### Position Mode Test

T

### Velocity Mode Test

T

### Torque Mode Test

T

### Find Reference Test

T

### Error Clearing

T

### Stress Test

T

## Multi-Drive Test Procedure

### Synchronized Axis Test (Same Axis Type)

T

### Multi-Axis Stress Test (Same Axis Type)

T

### Multi-Axis Stress Test (SDI Axis + Another Type)

T

# SDI Plug-in Packaging Requirements

This section lists the required components and method for packaging a SDI Plug-in into a VI Package using the VI Package Manager by JKI Software.

## Required Documentation and Code Components

* Stuff
* Things

## Creating and Testing a SDI Plug-in VI Package

### Preparing SDI Plug-in Files

T