USER README

This document is intended to give users guidance on which drivers to install to use the VTI Instruments common VTEX driver set. This driver set is used across several different products from our RX0124, RX0224, RX0424, EMX-4250, EMX-4350, EMX-4380, EMX-1434, EX1401, and EX1403(A) product families. Drivers exist for a number of different environments from Windows to Linux. We also provide both 32-bit and 64-bit versions to give users flexibility depending on the operating system they are using. Documentation on how to use the drivers is included with the driver installation as well as example programs. The product manuals include more information on driver installation and usage.

Digitizer

The VTEXDigitizer/libDigitizer driver (for Windows and Linux, respectively) supports several digitizer instruments, such as the EX1403A (a standalone strain instrument) and EMX-4250/4350/4380 (modular instruments). The Digitizer driver does not support the EMX-1434 or tachometer inputs.

DSA

The VTEXDsa/libDsa driver includes all features in the Digitizer driver, with additional support for EMX-1434 tachometer inputs and DAC outputs. The DSA driver is essentially a superset of the Digitizer driver and is useful when using the digitizer and tach/DAC in conjunction in applications such as order tracking, NVH analysis, etc. Either driver can be used to control digitizer instruments, though the Digitizer driver is slightly simpler to use when tachometer/EMX-1434 support is not required.

Platform

The VTEXPlatform/libPlatform driver provides control of the PXIe controller and chassis, including routing triggers in the EMX-2500 Ethernet controller. It also provides access to non-digitizer-specific functionality, such as fans, temperature sensors, and date/time settings. This functionality is supported on the standalone EX14xx instruments, the EMX-2500 Ethernet controller, and the CMX09(A)/CMX18(A) chassis.

Windows

The Windows drivers (VTEXDigitizer, VTEXDsa, and VTEXPlatform) are IVI drivers, compliant with the specifications published by the IVI Foundation. All IVI-compliant drivers require installing the IVI Shared Components, available from the IVI Foundation's website: https://www.ivifoundation.org/shared_components/Default.aspx The 64-bit IVI Shared Components include both 32-bit and 64-bit components. The 32-bit IVI Shared Components can only be installed on 32-bit versions of Windows.

The drivers provide an IVI-COM API that can be used from any environment that supports Microsoft's standard COM technology, such as C++ (Visual Studio) or C#. An IVI-C API is also available. The IVI-C API is generally only used with LabWindows/CVI, since the IVI-COM API generally provides a better user experience when developing applications.

The 64-bit driver installers include 32-bit and 64-bit components, so a 32-bit program can be compiled and run on a 64-bit version of Windows. The 32-bit driver installers can only be used on 32-bit versions of Windows.

The drivers support Windows 7 and higher. Windows XP and Windows Vista are not supported.

Documentation & Examples

The IVI drivers are installed using the directory structure and other requirements defined by the IVI Foundation's specifications. On 32-bit Windows, the root of the install directory is `C:\Program Files\IVI Foundation\IVI`. On 64-bit Windows, the 32-bit driver components are installed at `C:\Program Files (x86)\IVI Foundation\IVI` and the 64-bit driver components are installed at `C:\Program Files\IVI Foundation\IVI`. All driver-specific files such as documentation and example programs can be found in the `<IVI Root>\Drivers\<Driver Name>` subdirectory.

The installers include driver documentation in the form of a CHM file (HTML 1.0 help file) and files for Microsoft Help Viewer, which integrates the driver help content with the Visual Studio local help content. Example programs that demonstrate various driver features are installed in the `Examples` subdirectory. Most example programs are C++ or C# with Visual Studio projects, though some drivers include additional examples for other programming languages.

Example programs should always be copied to a writable location (away from the install directory) before building and running.

Linux

The Linux drivers (libDigitizer, libDsa, and libPlatform) provide C++ APIs that are very similar to the IVI-COM APIs provided by the corresponding Windows drivers, but they use standard C++ datatypes rather than COM datatypes. All Linux drivers depend on the libCommon package. The 32-bit Linux RPMs contain only 32-bit binaries, while the 64-bit RPMs only contain 64-bit binaries. Select the appropriate package for the architecture of your Linux system.

Refer to the driver release notes for information about supported compilers and Linux distributions.

Documentation & Examples

The Linux drivers install files to `/opt/vti/`. The driver release notes, documentation (CHM file), and example programs can be found in `/opt/vti/share/doc/<driver name>`.

Example programs should always be copied to a writable location (away from the install directory) before building and running.

LabVIEW (Windows only)

LabVIEW wrappers are provided for the Windows IVI drivers. These wrappers require the corresponding IVI driver to be installed first. The IVI-COM API can also be used directly from LabVIEW. Using IVI drivers in LabVIEW and other NI products may also require installing NI's IVI Compliance Package: https://www.ni.com/en-us/support/downloads/drivers/download.ivi-compliance-package.html

Extract the zip file downloaded from the website in the below location

```
C:\Program Files (x86)\National Instruments\LabVIEW xxxx\instr.lib
```
(for LabVIEW 32-bit)

```
C:\Program Files\National Instruments\LabVIEW xxxx\instr.lib
```
(for LabVIEW 64-bit)

Examples can be found at `<LabVIEW Install Dir>\instr.lib\VTI Instruments VTEX<driver name>\Examples`

Part Numbers

Windows

- 72-0350-000 VTEXDigitizer, 32-bit
- 72-0350-100 VTEXDigitizer, 64-bit
- 72-0367-000 VTEXDsa, 32-bit
- 72-0367-100 VTEXDsa, 64-bit
- 72-0377-000 VTEXPlatform, 32-bit
- 72-0377-100 VTEXPlatform, 64-bit

Linux

- 72-0353-100 libCommon, 32-bit
- 72-0353-200 libCommon, 64-bit
- 72-0354-000 libDigitizer, 32-bit
- 72-0354-100 libDigitizer, 64-bit
- 72-0368-000 libDsa, 32-bit
- 72-0368-100 libDsa, 64-bit
- 72-0377-200 libPlatform, 32-bit
- 72-0377-300 libPlatform, 64-bit

LabVIEW

- 72-0358-000 Digitizer
- 72-0391-000 DSA
- 72-0377-500 Platform