SNAP PAC .NET OptoMMP Messaging Toolkit

Introduction

The SNAP PAC .NET OptoMMP Messaging Toolkit provides a simple, easy-to-use interface for a developer to quickly create an Ethernet I/O-based application for Opto 22 products that use the OptoMMP protocol. The toolkit encapsulates the OptoMMP messaging protocol used by our Ethernet-based brains for reading or writing I/O data.

For more information about OptoMMP, see Opto 22 form 1465, the *OptoMMP Protocol Guide*. The guide is available on our website, www.opto22.com, and the easiest way to find it is to search on the form number.

The toolkit is available as a 100% managed DLL. This library supports Visual Studio 2005, 2008, and 2010.

System Requirements

- Visual Studio 2005, 2008, or 2010 (express or higher versions)
- Windows Vista Business SP1 (32- or 64-bit editions), or Windows 7 Professional SP1 (32- or 64-bit editions)
- Single-Core processors, 2.0 GHz or higher.
- Multiple-Core processors, 1.5 GHz or higher.
- Ethernet interface (wired or wireless).

Adding the Toolkit to your Project

The toolkit must be added as a resource to your Visual Studio project. It may be added to a C#, Visual Basic, or a CLR-enabled C++ project (Visual Studio 2005 and later).

To add the toolkit, follow these instructions:

1. In your Visual Studio Project, from the Project menu, choose Add Existing Item.
2. Navigate to the folder with the OptoMMP2.dll.
3. Select the OptoMMP2.dll.
4. In your project files, choose one of the following:
   a. For Visual Basic, add an Imports (namespace) into your code file. For example: `Imports OptoMMP2`
   b. For Visual C#, add a Using (namespace) into your code file. For example: `using OptoMMP2`

   c. For Visual C++, add a Using namespace (namespace) in the beginning of your code file.
   For example: `using namespace OptoMMP2;`

Make sure that the OptoMMP2.dll is in the same directory where the final executable is located.

To check whether the reference is included, open your project's Properties. Click on the references tab. You should see the OptoMMP2.dll listed as a reference.

Accessing Assembly Documentation

Assembly documentation is provided in an html format.

1. Unzip the file `html documentation.zip`
2. Open the html folder and open `index.html`

   Your default web browser will show the assemblies within the toolkit.

Introduction to Assemblies

Namespace OptoMMP2

This assembly serves as the OptoMMP2 interface. Use this assembly to configure, read, and write to I/O points of SNAP PAC R-series controllers and SNAP PAC EB-series Ethernet brains. (For help in understanding the architecture of the OptoMMP implementation, see the *OptoMMP Protocol Guide*.)

Namespace OptoMMPStreamHelper

If you are using a streaming function, two assemblies are included for handling the data that emanates from the brain. The two assemblies support two kinds of streaming functions:

- **OptoMMPStream assembly**—The traditional OptoMMP streaming is implemented within the brain architecture. It is limited to a maximum of 64 points of I/O on a full rack, with all I/O modules having 4 points or less.

  This functionality started with the SNAP-B3000-ENET brain (our earliest Ethernet-based brain, first released in 1998) and can still be used in the newest SNAP PAC brains, if desired. However, the newer SNAP PAC brains can support I/O modules with up to 32 points each and a full rack of 512 points, and this brain-oriented streaming is not capable of handling the expanded I/O information.

- **OptoStrategyStream assembly**—This assembly provides the expanded I/O capability for SNAP PAC R-series controllers. A PAC Control strategy running on a SNAP PAC R-series controller is required to stream the data of the higher

density I/O modules. Included with this toolkit is a PAC Control Basic R8.5g strategy archive that permits a streaming capability above the functionality supported by the SNAP-PAC-EB (and earlier generation) brains.

The OptoMMP2 assembly contains methods to configure and verify either the brain or strategy-based methods of streaming.