Visual Studio is the latest development environment from Microsoft. It supports a variety of different languages, including Visual Basic, Visual C++ and C#. All these languages fully support ActiveX controls, and hence the Mint ActiveX/COM components can be included in the development of host applications.

Introduction
This document aims to show the reader how to get started with automating ABB’s Mint motion control and drive products using Microsoft Visual Studio. Later on we will also discuss some of the differences that may be encountered when moving from Visual Basic 6 to Visual Studio.

Including the Mint controls in a project
The first step to using the Mint ActiveX control in Microsoft Visual Studio is to add the control to the toolbox. To do this, select “Choose Toolbox Items…” from the Tools menu. In the resulting dialog, select the “COM Components” tab, which will list all COM (ActiveX) components that are registered on your computer. Listed amongst these should be the Mint CommandPrompt control, the MintController control and the MintTerminal control. There will probably be several versions of each control registered, just choose the version you want to work with (if you’re not sure then choose the latest) by clicking in the small box to the left of the name (this will become ticked). When you have added the controls you wish to use press OK.
The ‘Mint Controller’ item is essential, it’s this control that you need to connect to the controller and issue motion commands or read/write data. The Terminal and Command Window controls are optional and are only needed if your host application needs to recreate the Terminal and Command Window features provided by Mint Workbench.

Once you have added the Mint controls to the Visual Studio (VS) toolbox you will find the ActiveX controls in the ‘Components’ section of the toolbox dialog. You can add a control to your project by selecting it in the toolbox and drawing it on your form.

Alternatively the Mint controls can be added to the VS project as a reference instead of adding them as a toolbox item. Use the Project>Add Reference… menu item to do this and then select the COM>Type Libraries menu…

It is assumed the reader is familiar with the use of references in VS projects – if further information is required please refer to application AN00135 or contact your local ABB support team.
**New features in Visual Studio**

If you have previously written host applications with the Mint ActiveX control in Visual Basic 6 then you will notice a few differences when using Microsoft Visual Studio.

*Property Naming*

In Visual Studio, ActiveX properties that have parameters (e.g. Speed) now have a set_ or get_ in front of the property name. For example:

**VB6:**

```
Controller.SPEED(0) = 20
value = Controller.SPEED(0)
```

**VB .NET:**

```
Controller.set_SPEED(0, 20)
value = Controller.get_SPEED(0)
```

So when using the Mint ActiveX help file with Visual Studio, remember to add a set_ or get_ to the start of the name of any property with a parameter in the VB examples.

If you add the controls by reference (rather than drawing an object on a form) then the set_ and get_ prefixes are not used.

*Method Calling*

In Visual Basic 6, method calls could be made without using brackets:

**VB6:**

```
Controller.SetNextMoveESLink 2, 1, 57600, True
```

This is no longer supported, so all method calls must include brackets around the arguments:

**VB .NET:**

```
Controller.SetNextMoveESLink( 2, 1, 57600, True )
```

Note that if you accidentally use the VB6 syntax, the Visual Basic .NET editor will automatically add the brackets to it.

*Capture*

One of the Mint ActiveX properties, CAPTURE causes a naming conflict in Visual Basic .NET and so is not accessible (note that other Visual Studio languages are not affected by this). From version 5212 of the Mint ActiveX control, MintController has a new property CAPTURESTATE which is functionally equivalent to CAPTURE but can be called from Visual Basic .NET:

**VB6:**

```
Controller.CAPTURE = 1
```

**VB .NET:**

```
Controller.CAPTURESTATE = 1
```

Note that CAPTURESTATE doesn't have any parameters, so it isn't prefixed with set_.

**Using the Command Prompt and Terminal ActiveX controls (52xx builds)**

In Visual Basic 6 you could easily connect the Terminal or Command Prompt controls to the MintController control using the setMintController method:

**VB6:**

```
Controller.SetMintDriveIILink 2, 1, 57600, True ‘ create a controller connection
Terminal.setMintController Controller ‘ connect the controller to the terminal
```
This no longer works in Visual Studio. Instead, the old setMintControllerID function should be used:

VB .NET:
Controller.SetMintDriveIIlink( 2, 1, 57600, True)
Terminal.setMintControllerID( Controller.ControllerID )

For the command prompt you also need to set up the compiler and symbol table:

VB .NET:
Controller.SetMintDriveIIlink( 2, 1, 57600, True)
Prompt.setMintControllerID( Controller.ControllerID )
Prompt.setCompiler( 10 ) ' See below. Must call this before setting symbol table.
Dim str As String = ""
Controller.GetSymbolTableForController( False, str )
Prompt.setSymbolTable( str )

The Compiler target format that is written with the setCompiler() call is linked to the version of the ActiveX control being used. The following table shows which compiler target format to use for a given ActiveX control.

<table>
<thead>
<tr>
<th>ActiveX Control</th>
<th>Compiler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Builds 50xx</td>
<td>8</td>
</tr>
<tr>
<td>Builds 51xx</td>
<td>9</td>
</tr>
<tr>
<td>Builds 52xx</td>
<td>10</td>
</tr>
<tr>
<td>Builds 53xx</td>
<td>10</td>
</tr>
<tr>
<td>Builds 542x</td>
<td>13</td>
</tr>
<tr>
<td>Builds 545x</td>
<td>14</td>
</tr>
<tr>
<td>Builds 56xx</td>
<td>14</td>
</tr>
<tr>
<td>Builds 58xx</td>
<td>14</td>
</tr>
</tbody>
</table>

Using the Command Prompt and Terminal ActiveX controls (55xx builds and later)
For both Visual Basic 6 and Visual Studio the terminal and command prompt initialization was simplified. Both environments allow you to use:

Controller.setUSBControllerLink (or whatever link function is called)
Prompt.setUSBControllerLink (or whatever link function is called)
Terminal.setUSBControllerLink (or whatever link function is called)

These calls handle all the processing of the compiler etc… so it’s much simpler for the user.

It is always recommended to use the latest version of the Mint ActiveX control as we’re always striving to simplify operation for the user!

Contact us
For more information please contact your local ABB representative or one of the following:

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