ds30 Loader
api usage guide

This document shows how easy it is to incorporate the ds30 Loader c# engine into a 3rd party application. It assumes basic knowledge of c# and Visual Studio / MonoDevelop.

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Introduction

ds30 Loader

ds30 Loader is an open source bootloader for PIC18, PIC24 and dsPIC30 families of MCUs from Micropchip. It supports all devices in each family out of the box (those in production), only minor adjustments need to be done in firmware. The firmware is written in asm/asm30 and comes with a preconfigured MPLAB-project. The GUI is written in C#.

Prerequisites and Requirements

ds30 Loader is written in C# for .NET 2.0. During development, Microsoft Visual C# 2008 has been used. There is a free version available for download. It is called Visual C# 2008 express edition. See appendix A for a link.

Mono / MonoDevelop is a free alternative to .NET and Visual Studio. It has successfully been tested with ds30 Loader under both Windows and Linux.

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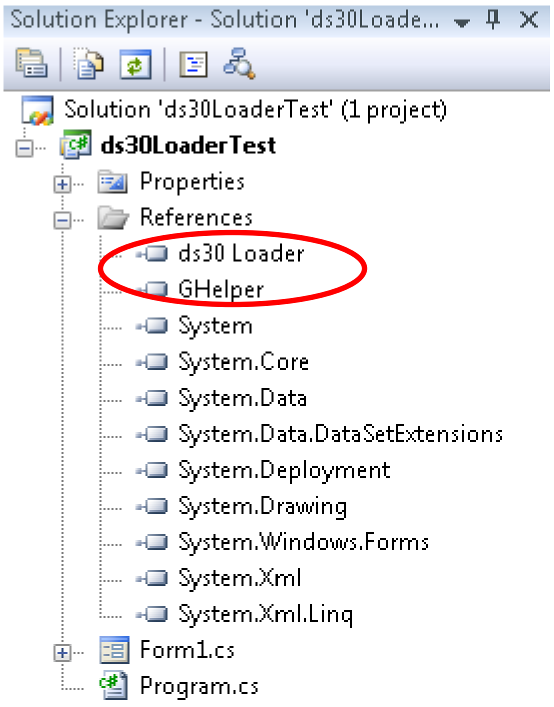
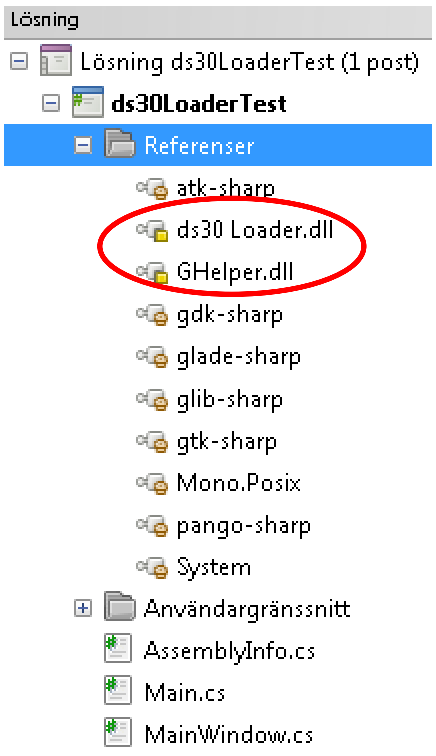
Getting started

Add reference

In order to use the ds30 Loader in your Visual Studio or Mono project is to add a reference to the ds30 Loader.dll. Right click reference and choose add/edit references. Then browse for ds30 Loader.dll and GHelper.dll.



```
Solution Explorer - Solution 'ds30Loade...
Solution 'ds30LoaderTest' (1 project)
  ds30LoaderTest
    Properties
    References
      ds30 Loader
      GHelper
      System
      System.Core
      System.Data
      System.Data.DataSetExtensions
      System.Deployment
      System.Drawing
      System.Windows.Forms
      System.Xml
      System.Xml.Linq
    Form1.cs
    Program.cs
```



```
Lösning
Lösning ds30LoaderTest (1 post)
  ds30LoaderTest
    Referenser
      atk-sharp
      ds30 Loader.dll
      GHelper.dll
      gdk-sharp
      glade-sharp
      glib-sharp
      gtk-sharp
      Mono.Posix
      pango-sharp
      System
    Användargränssnitt
    AssemblyInfo.cs
    Main.cs
    MainWindow.cs
```

References in Visual Studio and MonoDevelop

Example 1

The following code shows the absolutely minimum of code you need to use the ds30 Loader.

```
using ds30Loader;
using GHelper;
```

```
// Init device database
clsDevices.Init();

// Create port
clsSerialPort objPort = new clsSerialPort("com1", 115200);

// Get device
clsDevice objDevice = clsDevices.DeviceGet("pic18f2550");

// Configure download settings
clsDownloadSettings objDownloadSettings = new clsDownloadSettings();
objDownloadSettings.writeProgram = true;

// Create hex object
clsHex18F objHex = new clsHex18F("d:\hexfile.hex");

// Download
bool bDownloadResult = false;
clsds30Loader.Download(
    objDevice,
    objPort,
    objHex,
    objDownloadSettings,
    0,
    ref bDownloadResult
);
```

Example 2

In this example we'll add some code to process the events from the ds30 Loader engine.

```
using ds30Loader;
using GHelper;
```

```
static private void Download()
{
    // Init device database
    clsDevices.Init();

    // Create port
    clsSerialPort objPort = new clsSerialPort("com1", 115200);

    // Get device
    clsDevice objDevice = clsDevices.DeviceGet("pic18f2550");

    // Configure download settings
    clsDownloadSettings objDownloadSettings = new clsDownloadSettings();
    objDownloadSettings.writeProgram = true;

    // Create hex object and subscribe to events
    clsHex18F objHex = new clsHex18F("d:\hexfile.hex");
    objHex.HexFileValidate += new clsHex.HexFileValidateDelegate(
Hex_Validate );
    objHex.HexFileParse += new clsHex.HexFileParseDelegate( Hex_Parse );

    // Download
    bool bDownloadResult = false;
    clsds30Loader.Downloading += new clsds30Loader.DownloadingDelegate(
ds30L_Downloading );
    clsds30Loader.Download(
        objDevice,
        objPort,
        objHex,
        objDownloadSettings,
        0,
        ref bDownloadResult
    );
}

private void Hex_Parse( object obj, clsHexFileParseEventArgs e )
{
    txtInfo.AppendText( e.message );
}


private void Hex_Validate( object obj, clsHexFileValidateEventArgs e )
{
    txtInfo.AppendText( e.message );
}

private void ds30L_Downloading( object obj, clsDownloadingEventArgs e )
{
    txtInfo.AppendText( e.message );
}
```

Appendix A – Links

ds30 Loader homepage
http://mrmackey.no-ip.org/elektronik/ds30loader/

Microsoft Visual C# express edition
http://www.microsoft.com/express/vcsharp/

Mono / MonoDevelop
http://www.mono-project.com