



## ***Develop your own Time-Gated Imaging applications with Imagex-TGi programming libraries!***

The *Imagex-TGi* Programming Libraries allow you to develop your own Windows™ applications using members of the Microsoft Visual Studio family such as Visual Basic and Visual C++™. There are two *Imagex-TGi* Library packages:

The IMXLITE library is included with the *Imagex-TGi* system for free and allows the user to develop applications which control the Imagex time-gated camera and which save the resultant image to a 16-Bit TIFF file. This allows you to develop your own applications to create images in a format that is used by a wide range of 16-bit image processing and recognition packages. The library is supplied with instructions and a sample Visual Basic™ application.

The IMXFULL library is a low-cost add-on programming system which allows access to all the low level functions of the camera and also provides a range of useful 16-bit display routines and inter-image mathematical functions. It is supplied with a comprehensive manual and example applications written in Visual Basic™ and Visual C++™.

The IMXLITE library is most suitable for the inexperienced programmer who simply wants to create data for commercial image-processing packages. IMXFULL requires some programming experience and a more detailed understanding of the imaging process.

## ***Files Included with Imagex-TGi Programming Library Packages***

**IMXLITE** includes the following files:

- IMXLITE.DLL-IMXLITE User Library
- IMXLINC.BAS-IMXLITE Include file for Visual Basic
- IMXLINC.H-IMXLITE Include file for Visual C++
- PRSIMDRV.SYS-NT Technology Driver
- PRSIMDRV.VXD-95/98/ME Driver
- PRSIMDRV.DLL-Driver Library

**IMXFULL** includes the following files:

- IMXFULL.DLL-IMXFULL User Library
- IMXFINC.BAS-IMXFULL Include file for Visual Basic
- IMXFINC.H-IMXFULL Include file for Visual C++
- PRSIMDRV.SYS-NT/2000 Driver
- PRSIMDRV.VXD-95/98/ME Driver
- PRSIMDRV.DLL-Driver Library

### ***Programming Example: Recording an image with IMXLITE and Visual Basic***

The IMXLITE library system is a simple-to-use dynamic link library that can be used with Visual Basic™ or Visual C++™. The following simple example allows you to record an image from the Imagex camera which is then saved as a 16-Bit TIFF image on your desktop. You will need an appropriate image viewer to look at the image.

The library has one routine and has one user defined type. These are defined in the basic file IMLINC.BAS which is included with the IMXLITE package. For this example to work you must copy the IMXLITE driver files to the Windows\system folder of your hard drive. For Windows NT/2000™ you will need administrator access to your machine to achieve this.

Step 1) Create a new project with Visual Basic

Step 2) Load the IMLINC.BAS as one of the modules for the project

Step 3) On the main form create a command button labelled "Record"

Step 4) In the form designer, double click on the "Record" button to fill in the following program lines:

```

Private Sub Command1_Click()
  Rem ***** Create imxtiff data Structures *****

  Dim i as imxtiff
  Dim r as byte

  Rem***** Fill in required imaging parameters *****

  i.exposetime=1000
  i.gatewidth=1000
  i.delay=50
  i.freq=300
  i.lampcombo=1
  i.darkimage=false
  i.dcimage=false
  i.adgain=210
  i.adoffset
  i.lptport=&H378

  Rem***** Set the file path for the TIFF image file *****

  f$="c:\windows\desktop\test.tif"

  Rem***** Select the required resolution *****

  r=2

  Rem***** and take the image! *****

  e&=imxtiff i,r,f

  Rem***** if e& is not equal to Zero after calling the ****
  Rem***** imxtiff routine then there has been an error ****
End Sub

```

Step 5) When you click on the 'Record' button the Imagex Camera will record an image and the image will be saved as a 16-bit TIFF image

Step 6) To make the program more interactive you could add controls for the exposure time and gating parameters and write a routine which loads up the TIFF image to display it. There are several commercially available programming libraries which can load and display TIFF images within your own application. Alternatively you may wish to purchase the IMXFULL library which includes a range of 16-bit display routines for use with the windows *picturebox* control.

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