
Analog and Digital Data Acquisition using the DI-148/158 and ActiveX

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Issue

You are unable to simultaneously display analog and digital data or toggle individual digital bits using a DI-148/158 and the ActiveX control library.

Resolution

To resolve these issues carefully follow the steps below.

Download the AnalogDigitalAcq Sample Program

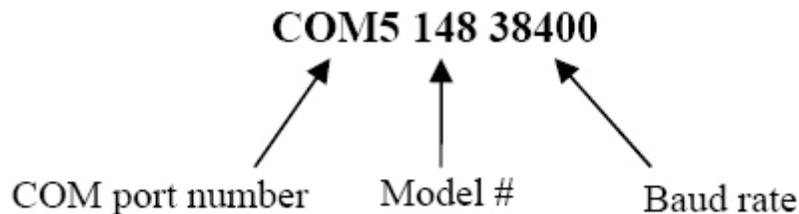
Download the AnalogDigitalAcq Visual Basic sample program at <http://www.dataq.com/develop/vb6.php?file=113>.

Enter a DeviceID

Before running the SimAnaDigAcq sample program you must enter a Device ID.

The DeviceID consists of the COM port number that your DI-148/158 is installed onto, the model number (148 or 158) and the baud rate. The format is as follows:

COM5 148 38400



COM port number Model # Baud rate

Figure 1 illustrates how/where to enter the DeviceID.

```
Private Sub Start_Click()
With DataqSdk1
*****
*****
*****
.DeviceID = "COM10 148 38400" 'Enter the deviceid here, e.g. .DeviceID="COM4
158 38400"
*****
*****
*****
.ADChannelCount = 2      'sets ADChannelCount (number of channels to enable)
.SampleRate = Val(Text1.Text) 'allows user to set attempted SampleRate
.EventPoint = 2          'sets EventPoint
End With
```

Figure 1
Enter a DeviceID

For further instruction on determining the appropriate DeviceID see “Device Drivers and Device IDs” under “Reference Materials” in the ActiveX help file. You can download the latest ActiveX help file at <http://www.dataq.com/support/documentation/helpfiles/index.htm>.

Enable, Assign and Display Additional Analog Channels/Digital Bits

1. Add Additional Analog Channels (for the purpose of this example we'll add analog channel two):
 - a. Begin by adding channel two to the ChannelList as shown in Figure 2.

```
Private Sub Form_Load()
itest = MsgBox("This program requires that parameters for DeviceID are properly set")
If itest = vbCancel Then
End
Else
ChannelList(0) = -1      'the first channel is digital (the -1 designates the channel as
digital)
ChannelList(1) = 0      'designates the second channel (channel 1 on your hardware
device)
ChannelList(2) = 1      'designates the third channel (channel 2 on your hardware
device)
End If
End Sub
```

Figure 2
Add channel two to ChannelList

Note - channel two on your DI-148/158 corresponds to channel one in the ChannelList property (channel one on your DI-148/158 corresponds to zero).

- b. Choose the object view and double-click DQChart on the VB toolbar (Figure 3).
Resize and relocate the chart as you wish.

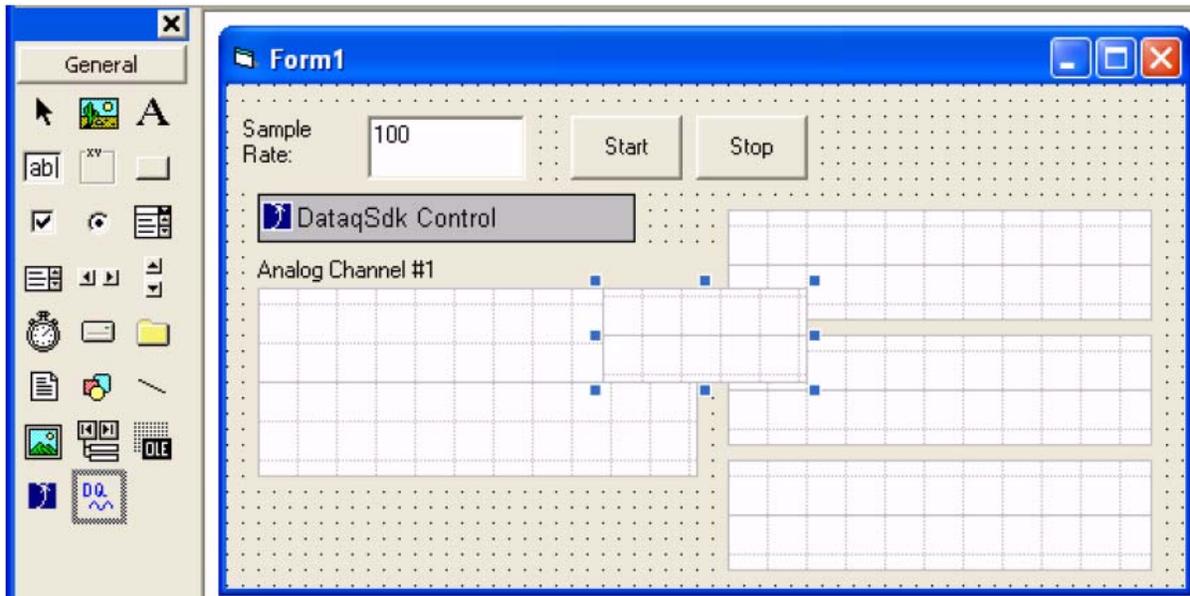


Figure 3

Double-click DQChart in the toolbar to add a chart to the form

- c. Set the DQChart Channel property to 2 in order to display channel two data (Figure 4).



Figure 4

Set the DQChart channel property to 2

- d. With the chart placed in the form and the Channel property set, add the DQChart to the chart list as shown in Figure 5.

```
Private Sub DataqSdk1_NewData(ByVal Count As Integer)
v = DataqSdk1.GetData

'Most of the settings for the charts can be done in the properties window
DQChart1.Chart (v) 'plots and displays Bit0 of digital port
DQChart2.Chart (v) 'plots and displays Bit1 of digital port
DQChart3.Chart (v) 'plots and displays Bit2 of digital port
DQChart4.Chart (v) 'plots and displays analog channel one
DQChart5.Chart (v) 'plots and displays analog channel two
End Sub
```

Figure 5
Add the DQChart to the chart list

- e. Edit the DataqSdk1.ADChannelCount property to reflect the total number of channels enabled (Figure 6).

```
Private Sub Start_Click()
With DataqSdk1
*****
*****
*****
*****
.DeviceID = "COM10 148 38400" 'Enter the deviceid here, e.g.
.DeviceID="COM4 158 38400"
*****
*****
*****
*****
.ADChannelCount = 3 'sets ADChannelCount (number of channels to
enable)
.SampleRate = Val(Text1.Text) 'allows user to set attempted SampleRate
.EventPoint = 2 'sets EventPoint
End With
```

Figure 6
Edit the ADChannelCount property

- 2. Add Additional Digital Bits (for the purpose of this example we'll add digital bit 3):

- a. Choose the object view and double-click DQChart on the VB toolbar (Figure 7).
Resize and relocate the chart as you wish.

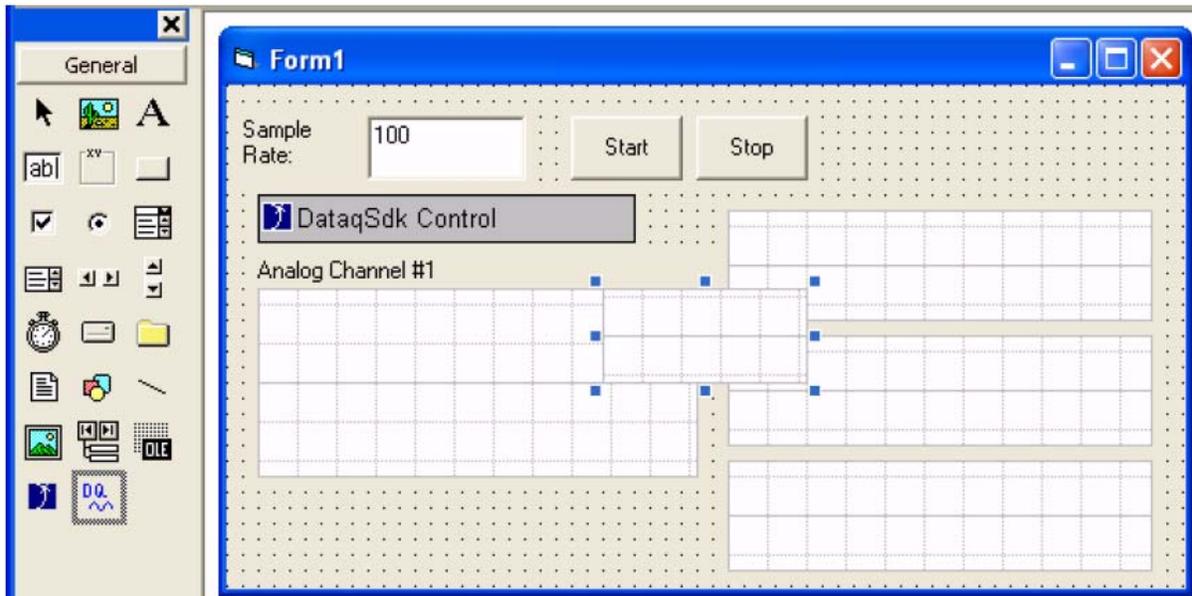


Figure 7

Double-click DQChart in the toolbar to add a chart to the form

- b. Set the DQChart Channel property to 0 (zero) and the DQChart DigitalMask property to 2048 - PlotBit11 (Figure 8)

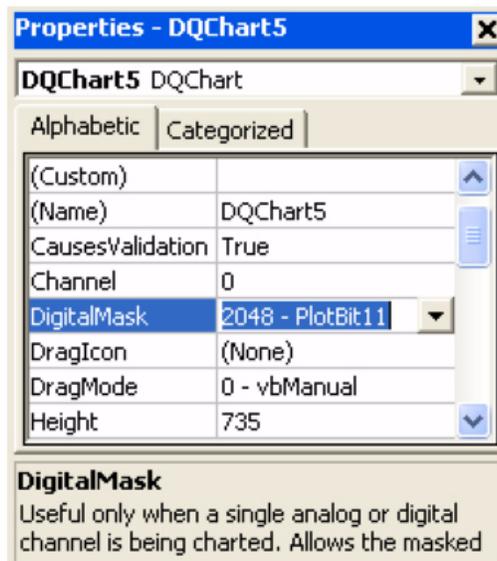


Figure 8

Set the DQChart DigitalMask property to 2048 – PlotBit11

- c. With the chart placed in the form and the Channel and DigitalMask properties set, add the DQChart to the chart list as shown in Figure 9.

```
Private Sub DataqSdk1_NewData(ByVal Count As Integer)
v = DataqSdk1.GetData
```

```
'Most of the settings for the charts can be done in the properties window
DQChart1.Chart (v) 'plots and displays Bit0 of digital port
DQChart2.Chart (v) 'plots and displays Bit1 of digital port
DQChart3.Chart (v) 'plots and displays Bit2 of digital port
DQChart4.Chart (v) 'plots and displays analog channel one
DQChart5.Chart (v) 'plots and displays Bit3 of digital port
End Sub
```

Figure 9

Add the DQChart to the chart list

3. Set the Direction of the Digital Bits

Before individual bits can be toggled the direction of the digital bits must be set

The DigitalDir constant is used to set the direction of the digital bits (as outputs). This is accomplished by setting the DataqSdk1.DigitalOutput property equal to the DigitalDir constant. Individual bits can be set as inputs on the same line (Figure 10).

```
DataqSdk1.DigitalOutput = DigitalDir + D2 + D3 'sets the direction (DigitalDir)
of all digital bits and allows you to choose which are inputs (+ D2 + D3)
```

```
DataqSdk1.DigitalOutput = D0 + D1 'will output 1 on D0 and D1 (assuming that
the bits selected are outputs)
```

Figure 10

Set the direction of the digital bits

4. Toggle Individual Bits (outputs only)

With the direction of the digital bits set individual bits can be toggled as shown in Figure 11. Each digital port assigned to DataqSdk1.DigitalOutput will output a 1 (high).

```
DataqSdk1.DigitalOutput = DigitalDir + D2 + D3 'sets the direction (DigitalDir)
of all digital bits and allows you to choose which are inputs (+ D2 + D3)
```

```
DataqSdk1.DigitalOutput = D0 + D1 'will output 1 on D0 and D1 (assuming that
the bits selected are outputs)
```

Figure 11

Toggle individual bits

Applies To

The DI-148/158 and AnalogDigitalAcq sample program.