

Advantech AE Technical Share Document

Date	2018/05/22	SR#	1-3458567511
Category	■FAQ □SOP	Related OS	N/A
Abstract	How to use AdamApax.NET class library to set the digital filter parameters on ADAM-6250?		
Keyword	AdamApax.NET class, digital filter function		
Related Product	ADAM-6250		

■ Problem Description:

This document explains how to use the AdamApax.NET class API to modify the digital filter setting on ADAM-6250.

■ Answer:

The digital filter function setting is realized by the following two parts. As shown in below screenshot, it's composed by the **Channel configuration** and **Digital filter setting** function.

In **Channel configuration**, there are total four parameters, such as *DI mode*, *DI invert*, *Keep counter value*, and the *enable digital filter* for user to set.

In **Digital filter setting**, there are minimum low and high signal widths for user to set.

ADAM-6250 DI[0] setting:

DI mode:

Counter

1

Apply to all

Apply mode

Setting:

☐ Invert signal

Apply to all

Apply this

☐ Keep last value when power off

☐ Enable digital filter

2

Minimum low signal width
(1 ~ 65535)

105

0.1 ms

Minimum high signal width
(1 ~ 65535)

512

0.1 ms

Counter value:

0 times

Stop

Clear

Here are the three main APIs you will use for modifying the setting of digital filter on ADAM module.

DigitalInput.FormIOConfig() : to get all the IO config about that channel, such as DI mode, keep counter value, digital filter and the DI invert setting

adamSk.DigitalInput().SetIOConfig(): to set the correct IO config

DigitalInput.SetDigitalFilterMiniSignalWidth Method (Int32, Int64[], Int64[]) : to set the digital filter min high and low width

For more information, you can refer to the help document in below path

[C:\Program Files \(x86\)\Advantech\AdamApax.NET Class Library\Document](C:\Program Files (x86)\Advantech\AdamApax.NET Class Library\Document)

For example, you can find how to use those APIs as below screenshot.

Advantech AdamApax .NET Class Library Help
DigitalInput.FormIOConfig Method
[See Also](#)
☐ Collapse All Language Filter: All

Support module: ADAM-4100, ADAM-6000. Form the DI configuration byte.

Namespace: [Advantech.Adam](#)
 Assembly: Advantech.Adam (in Advantech.Adam.dll)

Syntax

Visual Basic (Declaration)

```
Public Shared Sub FormIOConfig( _
    ByVal i_byMode As Byte, _
    ByVal i_bRecordLastCount As Boolean, _
    ByVal i_bDigitalFilter As Boolean, _
    ByVal i_bInvert As Boolean, _
    <OutAttribute> ByRef o_byConfig As Byte _
)
```

C#

```
public static void FormIOConfig(
    byte i_byMode,
    bool i_bRecordLastCount,
    bool i_bDigitalFilter,
    bool i_bInvert,
    out byte o_byConfig
)
```

Advantech AdamApax .NET Class Library Help
DigitalInput.SetIOConfig Method (Byte[])
[See Also](#)
☐ Collapse All Language Filter: All

Support module: ADAM-4100 and ADAM-6000. Set DIO configuration.

Namespace: [Advantech.Adam](#)
 Assembly: Advantech.Adam (in Advantech.Adam.dll)

Syntax

Visual Basic (Declaration)

```
Public Function SetIOConfig( _
    ByVal i_byConfig As Byte() _
) As Boolean
```

C#

```
public bool SetIOConfig(
    byte[] i_byConfig
)
```

Advantech AdamApax .NET Class Library Help
DigitalInput.SetDigitalFilterMiniSignalWidth Method (Int32, Int64, Int64)
[See Also](#)
☐ Collapse All Language Filter: All

Support module: ADAM-4100, ADAM-6200. Set digital filter minimum signal width.

Namespace: [Advantech.Adam](#)
 Assembly: Advantech.Adam (in Advantech.Adam.dll)

Syntax

Visual Basic (Declaration)

```
Public Function SetDigitalFilterMiniSignalWidth( _
    ByVal i_iChannel As Integer, _
    ByVal i_lHigh As Long, _
    ByVal i_lLow As Long _
) As Boolean
```

C#

```
public bool SetDigitalFilterMiniSignalWidth(
    int i_iChannel,
    long i_lHigh,
    long i_lLow
)
```

Below is the simple flow for you to understand about how to use it.

// Get all channel config

```
adamSk.DigitalInput().GetIOConfig(out m_byConfig);
```

//Parse the channel you want to set, and will return *m_byMode*, *m_bRecordLastCount*, *m_bDigitalFilter*, *m_bInvert*

```
DigitalInput.ParseIOConfig(m_byConfig[2], out m_byMode, out m_bRecordLastCount, out m_bDigitalFilter, out m_bInvert);
```

//Set *m_bDigitalFilter* to true to enable digital filter function

```
m_bDigitalFilter = true;
```

//Combine all return parameter for the IO config

```
DigitalInput.FormIOConfig(m_byMode, m_bRecordLastCount, m_bDigitalFilter, m_bDigitalFilter, out byConfig);
```

//Put this IO config to the channel you want to change

```
m_byConfig[2] = byConfig;
```

//Finish all the setting

```
adamSk.DigitalInput().SetIOConfig(m_byConfig);
```

// Parse the channel you want to set the width, and will return *i_IHigh*, *i_ILow*

```
adamSk.DigitalInput().GetDigitalFilterMiniSignalWidth(out i_IHigh, out i_ILow);
```

// Set the min low/high signal width for your filter

```
i_ILow[2] = 128;
```

```
i_IHigh[2] = 500;
```

```
adamSk.DigitalInput().SetDigitalFilterMiniSignalWidth(i_IHigh, i_ILow);
```

Here is the result of above code, which set the digital filter setting on DI2 successfully

ADAM-6250 DI[2] setting:

DI mode:	DI	Apply to all	Apply mode
Setting:	<input type="checkbox"/> Invert signal	Apply to all	Apply this
<div style="border: 2px solid red; padding: 5px;"> <input checked="" type="checkbox"/> Enable digital filter <div style="display: flex; justify-content: space-between;"> <div>Minimum low signal width (1 ~ 65535)</div> <div>128 0.1 ms</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Minimum high signal width (1 ~ 65535)</div> <div>500 0.1 ms</div> </div> </div>			
DI status:	<input type="radio"/>		