



## **PXDAC4800 LabVIEW Library Reference**

**Version 1.21**

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June 29, 2022

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# 1 GETTING STARTED

## Overview

The PXDAC4800 LabVIEW software is a set of LabVIEW virtual instruments (VIs) that allow a LabVIEW user to interact with one or more PXDAC4800 devices within the local host PC of a LabVIEW environment. The purpose of this document is to get a typical LabVIEW user up and running with the installed VIs as well as provide documentation on those installed VIs. This document assumes that the reader is familiar with LabVIEW programming concepts and the LabVIEW environment. This document also assumes that the reader is familiar with the basic operation and features of the PXDAC4800. For a more detailed description of the PXDAC4800 hardware please consult the PXDAC4800 Operator's Manual.

In order to use the PXDAC4800 LabVIEW VIs a few pieces of software must be present:

- LabVIEW development software (Microsoft Windows platform)
  - The minimum required LabVIEW software version is LabVIEW 2009 (32- or 64-bit).
- PXDAC4800 Windows Product Software
  - This software package includes core PXDAC4800 support for the Windows platform and includes all necessary device drivers and libraries.
  - This software is available for download from the Signatec website ([www.signatec.com](http://www.signatec.com)).
- PXDAC4800 LabVIEW Software

## Installation of PXDAC4800 LabVIEW Software

Installation of the PXDAC4800 LabVIEW software will be done with the regular PXDAC4800 installation.

## Overview of Installed Files

By default, the PXDAC4800 LabVIEW software will be installed to C:\Program Files\Signatec\ PXDAC4800\LabVIEW. The following sections provide details on the installed files and their usage.

### 1.1 PXDAC4800 Virtual Instruments (VIs)

The minimum LabVIEW version required to use the installed VIs is LabVIEW version 6.1. Older versions of LabVIEW will not open VIs developed by a newer LabVIEW version. Newer LabVIEW versions will open these VIs and automatically upgrade them to the current version's format.

All PXDAC4800 components VIs are installed into the 'LabVIEW\API' subfolder of the installation folder. General purpose PXDAC4800 VIs (e.g. Connect/Disconnect) are located in this folder. Further subfolders are used to organize the PXDAC4800 VIs into logical groupings to make it easier to find things.

The 'HwSettings' folder contains the VIs used to control the various PXDAC4800 hardware settings. This includes triggering options, generation clock rate, etc.

The 'Examples' folder contains various sample high-level VIs that make use of the PXDAC4800 VIs.

### 1.2 32-/64-bit Platform Support

The PXDAC4800 LabVIEW software comes in two flavors: 32- and 64-bit. The 32-bit PXDAC4800 LabVIEW software will only run on 32-bit LabVIEW installations. The 64-bit PXDAC4800 LabVIEW software will only

run on 64-bit LabVIEW installations. There are no problems with installing both 32- and 64-bit versions of the PXDAC4800 LabVIEW software on the same system.

For those that will be using both 32- and 64-bit LabVIEW software on the same machine, it should be noted that the PXDAC4800 LabVIEW VIs are identical for both 32- and 64-bit platforms as far as LabVIEW is concerned. When running 32-bit LabVIEW, the 32-bit underlying PXDAC4800.dll will be loaded. When running 64-bit LabVIEW, the 64-bit underlying PXDAC4800\_64.dll will be loaded. This means that the end user can reference a single PXDAC4800 VI set, regardless of which LabVIEW platform (32- or 64-bit) is being used.

## 2 PXDAC4800 LABVIEW VI REFERENCE

The LabVIEW environment contains an excellent context help feature that can be used to provide an additional reference for various LabVIEW elements. The context help is enabled by selecting “Show Context Help” from the Help menu of any of the LabVIEW windows. When the mouse cursor is hovered over a LabVIEW element (i.e. a VI or a VI input/output) the context help window displays some detail on that particular item. Each of the PXDAC4800 VIs contains context help that describe the overall function of the VI as well as information about VI inputs and outputs.

The following sub-sections briefly describe the PXDAC4800 VIs.

### Common VI Inputs/Outputs

The majority of PXDAC4800 VIs has a common set of inputs/outputs that behave identical across all the VIs. These common inputs/outputs are defined below.

**[Input] *Handle*** – This is essential when you’ve got more than one PXDAC4800 in your system. The handle is a unique number that the user receives when he calls the connect function.

**[Output] *Handle (out)*** – This is always the value passed into the *Handle* input and is useful when chaining VIs together.

**[Output] *error out*** – This is a normal LabVIEW error cluster used to pass error information through the VIs. If an error is encountered while executing the VI, error information will be specified in this output cluster.

### General Purpose PXDAC4800 Virtual Instruments (VIs)

#### 2.1 PXDAC4800\_ConnectToDeviceXD48

Icon



### Summary

This VI is used to establish a connection to a PXDAC4800 device. This VI must be invoked before any other PXDAC4800 VI.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	brdNum	The number of the board [0, N].
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

### Remarks

Once this VI is invoked, the connection to the PXDAC4800 device will remain until the PXDAC4800 \_Disconnect VI is invoked to terminate the connection.

## 2.2 PXDAC4800\_Disconnect

### Icon



### Summary

This VI is used to close a connection to a PXDAC4800 previously established with the PXDAC4800\_Connect VI. This VI should be invoked when finishing use of the PXDAC4800.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## 2.3 PXDAC4800\_GetDeviceCountXD48

### Icon



## Summary

Obtains the number of physical PXDAC4800 devices present in the local system.

## Inputs/Outputs

Uses only [Common VI Inputs/Outputs](#).

On success, this function will return the number of physical PXDAC4800 devices.

## Remarks

The count of PXDAC4800 devices returned will include all PXDAC4800 device types.

## 2.4 PXDAC4800\_IssueSoftwareTrigger

### Icon



### Summary

Issues a software-generated trigger event to the PXDAC4800 device.

### Inputs/Outputs

Uses only [Common VI Inputs/Outputs](#).

### Remarks

If this VI is called while the PXDAC4800 is armed for generation and waiting for a trigger then the data generation will begin.

If this VI is called while the PXDAC4800 is in Standby mode or in generation mode, nothing will happen.

## 2.5 PXDAC4800\_GetSerialNumberXD48

### Icon



### Summary

Obtains the serial number of the PXDAC4800 devices present in the local system.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Serial num	Serial number of the board.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## Remarks

The serial number is unique for each board. This number should not change.

## 2.6 PXDAC4800\_GetActiveMemoryRegionXD48

### Icon



### Summary

The Active Memory region defines the area of PXDAC4800 RAM that is used for all subsequent playbacks and data transfers.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Offset bytes	The byte offset into PXDAC4800 memory at which to begin playing or transferring data.
Output	Playback bytes	This parameter defines the total number of bytes that will be considered for subsequent playback or data transfer operations.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## Remarks

See the PXDAC4800 Operators Manual.pdf for more information about this function.

## PXDAC4800 RAM Playback Virtual Instruments (VIs)



The VIs listed in this section are located in the ‘RAM Playback’ subfolder of the main PXDAC4800 VI folder. These VIs are used for performing RAM playback. A RAM playback is a PXDAC4800 data generation in which data is transferred from the disk to the PXDAC4800.

## 2.7 PXDAC4800\_BeginRamPlaybackXD48

### Icon



### Summary

This VI performs a RAM playback from the given region in PXDAC4800 RAM.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Ram offset bytes	The byte offset into PXDAC4800 RAM at which to begin playing back data.
Input	Ram length bytes	The total number of bytes of data to use for play back data.
Input	Playback bytes	The total number of bytes that the PXDAC4800 will play back per trigger.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

### Remarks

This function is the primary method for starting a RAM playback operation. A RAM playback operation is a playback operation in which all playback data has been previously loaded into PXDAC4800 RAM. The PXDAC4800 can then play (or loop on) this data at rates up to the maximum playback rate which is 1.2GHz. Calling this function will arm the PXDAC4800 for RAM playback and return immediately. This function will not wait for the playback to complete. Actual hardware playback will not begin until a trigger event is detected by the PXDAC4800.

A RAM playback operation is stopped by calling EndRamPlaybackXD48. Putting the board into the Standby operating mode or calling the SetPowerupDefaultsXD48 will also implicitly stop a RAM playback operation. The LoadRamBufXD48 function is the primary means by which data is loaded into PXDAC4800 RAM. The LoadFileIntoRamXD48 function will synchronously load a file into PXDAC4800 RAM.

Note that this function deals with playback data in terms of bytes. If you are using one of the 14-bit sample formats, each data sample will be two bytes.

The ram\_offset\_bytes and ram\_length\_bytes parameters define the segment of PXDAC4800 memory that will be used as the source for playback data. Depending on the playback\_samples parameter or the Trigger Mode setting, the PXDAC4800 may try to playback more than ram\_length\_bytes bytes. In this case, the PXDAC4800 will loop around back to the start of the playback data as necessary.

If the current Trigger Mode setting is configured for Continuous then the playback\_bytes parameter is ignored and the PXDAC4800 will loop around the specified RAM segment indefinitely after it receives a single trigger. If the current Trigger Mode setting is configured for Play-Per-Trigger then the PXDAC4800 will playback playback\_bytes bytes of data and then stop playback and rearm for another trigger. When another trigger is received the PXDAC4800 will playback another playback\_bytes bytes of data, resuming where it stopped in the RAM segment, looping as necessary. This process is repeated until the RAM playback is stopped.

If the current Trigger Mode setting is configured for Single Shot, then the PXDAC4800 will playback playback\_bytes bytes of data and then stop playback altogether, ignoring any further trigger events. In order to resume playback, the RAM playback will be need to be stopped and rearmed.

## 2.8 PXDAC4800\_EndRamPlayBackXD48

### Icon



### Summary

End the current RAM playback operation.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

### Remarks

This function is used to end the current PXDAC4800 RAM playback operation. Calling this function will result in the PXDAC4800 being put into Standby mode and DAC outputs will be set to idle setting.

## 2.9 PXDAC4800\_LoadFileIntoRamXD48

### Icon



### Summary

Load a file into PXDAC4800 RAM.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	dst_offset_bytes	The offset, in bytes, into PXDAC4800 RAM at which to begin loading playback data. This parameter must be an integer multiple of 16384.
Input	dst_length_bytes	The number of bytes to load from the file.
Input	srcp	A string containing the pathname of the file to load.
Input	src_offset_bytes	The offset, in bytes, into the source file at which to begin copying.

Input	src_length_bytes	The number of bytes to copy from the file. If this parameter is zero then the file size (minus src_offset_bytes) will be used.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## Remarks

This function will synchronously load the given file into PXDAC4800 RAM for a future RAM playback operation. The function will not return until all data has been loaded.

## PXDAC4800 Hardware Settings

The VIs listed in this section are located in the 'HwSettings' subfolder of the main PXDAC4800 VI folder. These VIs are used to set the various PXDAC4800 hardware settings.

### 2.10 PXDAC4800\_SetActiveChannelMaskXD48

#### Icon



#### Summary

Defines which channels are played back.

#### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Value	<p>Selects the channel(s) that will be digitized for all subsequent data generation. Can be any of the following:</p> <ul style="list-style-type: none"> <li>• XD48CHANMASK_4_CHANNEL (0xF) - Four channel: channels 1, 2, 3 and 4</li> <li>• XD48CHANMASK_2_CHANNEL_1_2 (0x3) - Dual channel: channels 1 and 2</li> <li>• XD48CHANMASK_2_CHANNEL_3_4 (0xC) - Dual channel: channels 3 and 4</li> <li>• XD48CHANMASK_1_CHANNEL_1 (0x1) - Single channel: channel 1</li> <li>• XD48CHANMASK_1_CHANNEL_2 (0x2) - Single channel: channel 2</li> <li>• XD48CHANMASK_1_CHANNEL_3 (0x4) - Single channel: channel 3</li> <li>• XD48CHANMASK_1_CHANNEL_4 (0x8) - Single channel: channel 4</li> </ul>
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

### 2.11 PXDAC4800\_GetActiveChannelMaskXD48

## Icon



## Summary

Get which channels are played back.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetActiveChannelMaskXD48 will return the current active channel selection.

## 2.12 PXDAC4800\_SetClockDivider1XD48

## Icon



## Summary

Set clock divider #1 value.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Div	The divider to use for clock divider #1. This can be any value from 1 to 32.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## Remarks

The PXDAC4800 has two external clock dividers that operate in series. Clock divider #1 can be any value from 1 to 32. Clock divider #2 can be any value from 1 to 6. The two dividers yield 108 unique clock division combinations for a maximum division of 192.

## 2.13 PXDAC4800\_GetClockDivider1XD48

### Icon



### Summary

Get clock divider #1 value.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetClockDivider1XD48 returns the current clock divider #1 setting.

### Remarks

The PXDAC4800 has two external clock dividers that operate in series. Clock divider #1 can be any value from 1 to 32. Clock divider #2 can be any value from 1 to 6. The two dividers yield 108 unique clock division combinations for a maximum division of 192.

## 2.14 PXDAC4800\_SetClockDivider2XD48

### Icon



### Summary

Set clock divider #2 value.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.

Input	Div	The divider to use for clock divider #2. This can be any value from 1 to 6.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

### Remarks

The PXDAC4800 has two external clock dividers that operate in series. Clock divider #1 can be any value from 1 to 32. Clock divider #2 can be any value from 1 to 6. The two dividers yield 108 unique clock division combinations for a maximum division of 192.

## 2.15 PXDAC4800\_GetClockDivider2XD48

### Icon



### Summary

Get clock divider #2 value.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetClockDivider2XD48 returns the current clock divider #2 setting.

### Remarks

The PXDAC4800 has two external clock dividers that operate in series. Clock divider #1 can be any value from 1 to 32. Clock divider #2 can be any value from 1 to 6. The two dividers yield 108 unique clock division combinations for a maximum division of 192.

## 2.1 PXDAC4800\_SetCustomDacDefaultValueXD48

### Icon



### Summary

Set default DAC value of the specified channel. Specific to DC model.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Channel	The channel to which to apply the DAC value.
Input	Value (0-65535)	DAC value to set.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Status	Operation result code returned by the driver. A negative value indicates an error.

### Remarks

The default DAC value is the DC level to apply to the channel output when the PXDAC is in stand-by mode.

## 2.2 PXDAC4800\_GetCustomDacDefaultValueXD48

### Icon



### Summary

Get default DAC value of the specified channel. Specific to DC model.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Channel	The channel from which to get the default DAC value.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Value (0-65535)	Default DAC value returned by the driver. A negative value indicates that an error occurred. The value then is the error code.

## 2.3 PXDAC4800\_SetCustomDacValueEnableXD48

### Icon



### Summary

Set DAC value enable mask in the PxDAC4800. Specific to DC model.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	EnableMask	User friendly mask value indicating the channels for which the DAC value is enabled.  16 possible values: None Channel 1 Channel 2 Channel 3 Channel 4 Channels 1-2 Channels 1-3 Channels 1-4 Channels 2-3 Channels 2-4 Channels 3-4 Channels 1-2-3 Channels 1-2-4 Channels 1-3-4 Channels 2-3-4 Channels 1-2-3-4
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Status	Operation result code returned by the driver. A negative value indicates an error.

## 2.4 PxDAC4800\_GetCustomDacValueEnableXD48

### Icon



### Summary

Get DAC value enable mask, indicating the channels for which the DAC value is enabled. Specific to DC model.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	EnableMask	User friendly mask value indicating the channels for which the DAC value is enabled.
Output	MaskValue	Raw mask value. A negative value indicates an error.



		Possible values: XD48DACDEFAULT_ENABLE_NONE (0): None XD48DACDEFAULT_ENABLE_1 (0x1): Ch1 XD48DACDEFAULT_ENABLE_2 (0x2): Ch2 XD48DACDEFAULT_ENABLE_3 (0x4): Ch3 XD48DACDEFAULT_ENABLE_4 (0x8): Ch4 XD48DACDEFAULT_ENABLE_1_2 (0x3): Ch1, Ch2 XD48DACDEFAULT_ENABLE_1_3 (0x5): Ch1, Ch3 XD48DACDEFAULT_ENABLE_1_4 (0x9): Ch1, Ch4 XD48DACDEFAULT_ENABLE_2_3 (0x6): Ch2, Ch3 XD48DACDEFAULT_ENABLE_2_4 (0xA): Ch2, Ch4 XD48DACDEFAULT_ENABLE_3_4 (0xC): Ch3, Ch4 XD48DACDEFAULT_ENABLE_1_2_3 (0x7): Ch1, Ch2, Ch3 XD48DACDEFAULT_ENABLE_1_2_4 (0xB): Ch1, Ch2, Ch4 XD48DACDEFAULT_ENABLE_1_3_4 (0xD): Ch1, Ch3, Ch4 XD48DACDEFAULT_ENABLE_2_3_4 (0xE): Ch2, Ch3, Ch4 XD48DACDEFAULT_ENABLE_1_2_3_4 (0xF): Ch1, Ch2, Ch3, Ch4
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## 2.5 PxDAC4800\_SetExternalPlaybackClockRateXD48

### Icon



### Summary

Set the external clock rate in MHz.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	dRateMHz	The external clock rate in MHz. This value must be a integer in the range [1, 1200] MHz.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

### Remarks

This setting is only relevant when the external clock is selected as the playback clock source.

This function should be called any time the external clock rate changes when the external clock is selected as the acquisition clock source. This will ensure that the PxDAC4800 firmware is synchronized properly with the playback clock. Failure to call this function when the external clock frequency is changed can result in bad playback data.

The GetPlaybackClockRateXD48 function implementation will use this rate when calculating the effective clock rate when the external clock is selected.

## 2.6 PXDAC4800\_GetExternalPlaybackClockRateXD48

### Icon



### Summary

Get the external clock rate in MHz.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	ratep	Current assumed external clock rate.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetExternalPlaybackClockRateXD48 returns the current DAC sample format setting.

### Remarks

This setting is only relevant when the external clock is selected as the playback clock source.

## 2.7 PXDAC4800\_SetExternalReferenceClockEnableXD48

### Icon



### Summary

Set the external or internal 10MHz reference clock.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bEnable	If this parameter is non-zero then the PXDAC4800 will be configured to use

		an externally provided 10MHz reference. If this parameter is zero then the PXDAC4800 will be configured to use the internal 10MHz reference clock.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## Remarks

The 10MHz reference is only used when one of the internal playback clocks are selected.

## 2.8 PXDAC4800\_GetExternalReferenceClockEnableXD48

### Icon



### Summary

Get the external or internal 10MHz reference clock enable status.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetExternalReferenceClockEnableXD48 returns the current reference selection.

## Remarks

The 10MHz reference is only used when one of the internal playback clocks are selected.

## 2.9 PXDAC4800\_SetDacSampleFormatXD48

### Icon



### Summary

Set the DAC sample format; e.g. signed or unsigned data.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Value	XD48SAMPFMT_UNSIGNED (0) : Data samples are interpreted as unsigned 14 bits: [0, 16383], 8 bits: [0, 256] (power up default)  XD48SAMPFMT_SIGNED (1) : Data samples are interpreted as signed 14 bits: [-8192, 8191], 8 bits: [-128, 127]
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## Remarks

This hardware setting affects all channels; mixed channel formats are not allowed.

## 2.10 PXDAC4800\_GetDacSampleFormatXD48

### Icon



### Summary

Get the DAC sample format; e.g. signed or unsigned data.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetDacSampleFormatXD48 returns the current DAC sample format setting.

## Remarks

This hardware setting affects all channels; mixed channel formats are not allowed.

## 2.11 PXDAC4800\_SetDacSampleSizeXD48

### Icon



### Summary

Set the DAC sample size/padding.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Value	XD48SAMPSIZE_8BIT (0) : 8-bit (0xFF)  XD48SAMPSIZE_14BIT_MSBPAD (1) : 14-bit, 16-bit aligned with MSB zero-padded (0x3FFF)  XD48SAMPSIZE_14BIT_LSBPAD (2) : 14-bit, 16-bit aligned with LSB zero-padded (0xFFFC) (power-up default)
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

### Remarks

This hardware setting affects all channels; mixed channel formats are not allowed.

## 2.12 PXDAC4800\_GetDacSampleSizeXD48

### Icon



### Summary

Get the DAC sample size/padding.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.

Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetDacSampleSizeXD48 returns the current DAC sample size/padding setting.

## Remarks

This hardware setting affects all channels; mixed channel formats are not allowed.

## 2.13 PXDAC4800\_SetExternalTriggerDirXD48

### Icon



### Summary

Set the external trigger pulse edge to use for a trigger event.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Value	XD48TRIGDIR_POS (0): Positive-going (rising) edge (power-up default)  XD48TRIGDIR_NEG (1) : Negative-going (falling) edge
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## Remarks

This setting is relevant only when an external trigger is being used to trigger data playback.

## 2.14 PXDAC4800\_GetExternalTriggerDirXD48

### Icon



## Summary

Get the external trigger pulse edge to use for a trigger event.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetExternalTriggerDirXD48 will return the current external trigger pulse edge selection.

## Remarks

This setting is relevant only when an external trigger is being used to trigger data playback.

## 2.15 PXDAC4800\_SetExternalTriggerEnableXD48

### Icon



## Summary

Set the external trigger enable; allows externally provided triggers to trigger playback.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bEnable	If this parameter is non-zero then the external trigger will be enabled. If this parameter is zero then external triggers will be ignored by the PXDAC4800.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## 2.16 PXDAC4800\_GetExternalTriggerEnableXD48

### Icon



### Summary

Get the external trigger enable; allows externally provided triggers to trigger playback.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetExternalTriggerEnableXD48 returns the current external trigger enable setting.

## 2.1 PXDAC4800\_SetDigitalIoCfgXD48

### Icon



### Summary

Set configuration of the digital IO port. Configure either as output or input

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Config	User friendly value for the configuration to apply to the port: output or input.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Status	Operation result code returned by the driver. A negative value indicates an error.

## 2.2 PXDAC4800\_GetDigitalIoCfgXD48

### Icon





## Summary

Get configuration of the digital IO port.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Status	Result code returned by the driver. 0: Digital output 1: Digital input Negative value: Error

## 2.3 PXDAC4800\_SetDigitalIoModeXD48

### Icon



## Summary

Set the mode in which to use the digital IO port.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	IoMode	User friendly value for the mode to set.  5 possible values: Out Clk Div 8 Out Pulse Begin Playback Out Pulse End Playback Out DAC Playing Data Out DAC Pulse Underflow
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Status	Operation result code returned by the driver. A negative value indicates an error.

## 2.4 PXDAC4800\_GetDigitalIoModeXD48

### Icon



## Summary

Get the mode in which the digital IO port is used.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Status	Result code returned by the driver. 0: DATA_CLK / 8 1: Pulse at the beginning of a playback. 2: Pulse at the end of a playback. 3: DACs are playing data. 4: Pulse at underflow error. Negative value: Error

## 2.5 PXDAC4800\_SetFiltersCHXD48

### Icon



## Summary

Set the filters in the channels specified by the enable mask. Specific to DC model.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	EnableMask	User friendly enable mask value specifying the channels for which the filter has to be enabled.  16 possible values: None Channel 1 Channel 2 Channel 3 Channel 4 Channels 1-2 Channels 1-3

		Channels 1-4 Channels 2-3 Channels 2-4 Channels 3-4 Channels 1-2-3 Channels 1-2-4 Channels 1-3-4 Channels 2-3-4 Channels 1-2-3-4
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Status	Operation result code returned by the driver. A negative value indicates an error.

## 2.6 PXDAC4800\_GetFiltersCHXD48

### Icon



### Summary

Get channels for which the filter is enabled. Specific to DC model.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	MaskValue	Mask value specifying the channels for which the filter is enabled. A negative value indicates an error.
Output	EnableMask	User friendly enable mask value specifying the channels for which the filter is enabled.  16 possible values: None Channel 1 Channel 2 Channel 3 Channel 4 Channels 1-2 Channels 1-3 Channels 1-4 Channels 2-3 Channels 2-4 Channels 3-4

		Channels 1-2-3 Channels 1-2-4 Channels 1-3-4 Channels 2-3-4 Channels 1-2-3-4
--	--	--

## 2.7 PXDAC4800\_SetTriggerModeXD48

### Icon



### Summary

Set trigger mode; relates how trigger events affect data playback.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Value	XD48TRIGMODE_PLAY_PER_TRIGGER (0) : Single start trigger runs memory data once  XD48TRIGMODE_CONTINUOUS (1): Single start trigger runs memory data repeatedly (power up default)  XD48TRIGMODE_SINGLE_SHOT (2) : Trigger runs memory data once; subsequent triggers ignored
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## 2.8 PXDAC4800\_GetTriggerModeXD48

### Icon



### Summary

Get the external trigger enable; allows externally provided triggers to trigger playback.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache

		associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetTriggerModeXD48 returns the current trigger mode setting.

## 2.9 PXDAC4800\_SetOutputVoltageCh1XD48

## 2.10 PXDAC4800\_SetOutputVoltageCh2XD48

## 2.11 PXDAC4800\_SetOutputVoltageCh3XD48

## 2.12 PXDAC4800\_SetOutputVoltageCh4XD48

### Icons



### Summary

Set the channel output voltage range.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Value	An integer in the range of [0, 1023] that represents the output voltage range for the channel. A value of 0 is equivalent to the minimum output voltage range and value of 1023 is equivalent to the maximum output voltage range.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## 2.13 PXDAC4800\_GetOutputVoltageCh1XD48

## 2.14 PXDAC4800\_GetOutputVoltageCh2XD48

## 2.15 PXDAC4800\_GetOutputVoltageCh3XD48

## 2.16 PXDAC4800\_GetOutputVoltageCh4XD48

## Icons



## Summary

Get the channel output voltage range.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetOutputVoltageCh1XD48 will return the current output voltage range setting.

## 2.17 PXDAC4800 \_SetPlaybackClockSourceXD48

## Icon



## Summary

Set the PXDAC4800's playback Clock Source setting.

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	Value	XD48CLKSRC_INT_1200_MHZ (0) : Internal 1200 MHz oscillator  XD48CLKSRC_INT_900_MHZ (1) : Internal 900 MHz oscillator  XD48CLKSRC_EXTERNAL (2) : Externally provided clock
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

## Remarks

Do not change the clock source or frequency while a playback or data transfer is in progress.  
There are three classes of base clocks: two Internal and one External.

### Internal Clocks

The PXDAC4800 has two internal clocks. The internal clocks are phase locked to a 10 MHz reference clock, which may be externally provided.

- XD48CLKSRC\_INT\_1200\_MHZ (0) : 1200 MHz oscillator
- XD48CLKSRC\_INT\_900\_MHZ (1) : 900 MHz oscillator

### External clock

The PXDAC4800 supports an externally provided clock. When the external clock is selected, the SetExternalPlaybackClockRateXD48 function should be called to specify the external clock rate. The PXDAC4800 software will need this information so that it can properly configure the hardware.

- XD48CLKSRC\_EXTERNAL (2) : External clock

## 2.18 PXDAC4800 \_GetPlaybackClockSourceXD48

### Icon



### Summary

Get the PXDAC4800's playback Clock Source setting.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetPlaybackClockSourceXD48 will return the current playback clock source selection.

## Remarks

There are three classes of base clocks: two Internal and one External.

### Internal Clocks

The PXDAC4800 has two internal clocks. The internal clocks are phase locked to a 10 MHz reference clock, which may be externally provided.

- XD48CLKSRC\_INT\_1200\_MHZ (0) : 1200 MHz oscillator
- XD48CLKSRC\_INT\_900\_MHZ (1) : 900 MHz oscillator

#### External clock

The PXDAC4800 supports an externally provided clock. When the external clock is selected, the SetExternalPlaybackClockRateXD48 function should be called to specify the external clock rate. The PXDAC4800 software will need this information so that it can properly configure the hardware.

- XD48CLKSRC\_EXTERNAL (2) : External clock

## 2.19 PXDAC4800 \_SetDacInterpolationEnableXD48

### Icon



### Summary

Set the DAC interpolation (2X) enable.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bEnable	If this parameter is non-zero then the DAC 2x interpolation will be enabled. If this parameter is zero then the DAC 2x interpolation will be disabled..
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.

### Remarks

When interpolation is enabled the DACs will interpolate playback data by a factor of 2. When interpolation is enabled, the playback clock rate will be the same but the playback data rate (the rate at which data is consumed) will be halved since the DAC is providing one additional sample for every sample of input. This hardware setting affects all DACs; mixed interpolation is not allowed.

## 2.20 PXDAC4800 \_GetDacInterpolationEnableXD48

### Icon



### Summary



Get the DAC interpolation (2X) enable.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Input	bFromCache	If non-zero, the setting will be read from the local device register cache associated with the given PXDAC4800 handle, which will result in no hardware or driver access. If zero, the setting is obtained from the driver which may or may not result in an actual PXDAC4800 device register read.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.  On success, GetDacInterpolationEnableXD48 returns the current DAC interpolation enable setting.

### Remarks

When interpolation is enabled the DACs will interpolate playback data by a factor of 2. When interpolation is enabled, the playback clock rate will be the same but the playback data rate (the rate at which data is consumed) will be halved since the DAC is providing one additional sample for every sample of input. This hardware setting affects all DACs; mixed interpolation is not allowed.

## 2.1 PXDAC4800\_SetPowerUpDefaultsXD48

### Icon



### Summary

Configure the PXDAC4800 to power up defaults settings.

### Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Status	Result code returned by the driver. A negative value indicates an error.

## 2.2 PXDAC4800\_StartDacAutoCalibration

### Icon



Summary

Perform DAC auto-calibration in the PXDAC.

Inputs/Outputs

Direction	Signal	Interpretation
Input	Handle	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Status	Result code returned by the driver. A negative value indicates an error.

Examples

These VIs are used to perform a combination of different VI's.

2.3 Config\_PXDAC4800

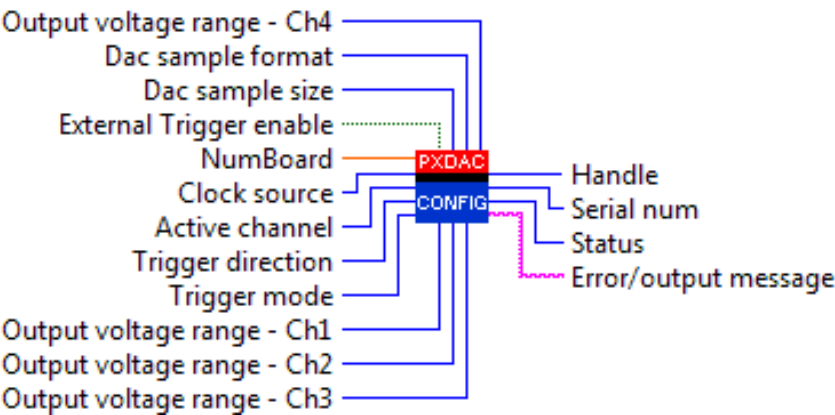
Icon



Summary

This VI creates a connection with the board, configures the main parameters of the PXDAC4800 and disconnect.

Connector Panel



## Labview front panel

NumBoard  
1.00

Clock source  
1200 MHz

Active channel  
Single channel - Ch1

Trigger direction  
Positive (Rising edge)

Trigger mode  
Per trigger

External Trigger enable  
☐

Dac sample size  
14 Bits LSB

Dac sample format  
Unsigned

Output voltage range - Ch1  
0 250 500 750 1023 1023

Output voltage range - Ch2  
0 250 500 750 1023 1023

Output voltage range - Ch3  
0 250 500 750 1023 1023

Output voltage range - Ch4  
0 250 500 750 1023 1023

Handle  
0

Serial num  
0

Status  
0

Error/output message

## Inputs/Outputs

Direction	Signal	Interpretation
Input	Num board	The number of the board [0, N].
Input	Clock source	XD48CLKSRC_INT_1200_MHZ (0) : Internal 1200 MHz oscillator  XD48CLKSRC_INT_900_MHZ (1) : Internal 900 MHz oscillator

		<p>XD48CLKSRC_EXTERNAL (2) : Externally provided clock</p>
Input	Active channel	<p>Selects the channel(s) that will be digitized for all subsequent data generation. Can be any of the following:</p> <p>XD48CHANMASK_4_CHANNEL (0xF) - Four channel: channels 1, 2, 3 and 4</p> <p>XD48CHANMASK_2_CHANNEL_1_2 (0x3) - Dual channel: channels 1 and 2</p> <p>XD48CHANMASK_2_CHANNEL_3_4 (0xC) - Dual channel: channels 3 and 4</p> <p>XD48CHANMASK_1_CHANNEL_1 (0x1) - Single channel: channel 1</p> <p>XD48CHANMASK_1_CHANNEL_2 (0x2) - Single channel: channel 2</p> <p>XD48CHANMASK_1_CHANNEL_3 (0x4) - Single channel: channel 3</p> <p>XD48CHANMASK_1_CHANNEL_4 (0x8) - Single channel: channel 4</p>
Input	Trigger dir	<p>XD48TRIGDIR_POS (0): Positive-going (rising) edge (power-up default)</p> <p>XD48TRIGDIR_NEG (1) : Negative-going (falling) edge</p>
Input	Trigger mode	<p>XD48TRIGMODE_PLAY_PER_TRIGGER (0) : Single start trigger runs memory data once</p> <p>XD48TRIGMODE_CONTINUOUS (1): Single start trigger runs memory data repeatedly (power up default)</p> <p>XD48TRIGMODE_SINGLE_SHOT (2) : Trigger runs memory data once; subsequent triggers ignored</p>
Input	Dac sample format	<p>XD48SAMPFMT_UNSIGNED (0) : Data samples are interpreted as unsigned 14 bits: [0, 16383], 8 bits: [0, 256] (power up default)</p> <p>XD48SAMPFMT_SIGNED (1) : Data samples are interpreted as signed 14 bits: [-8192, 8191], 8 bits: [-128, 127]</p>

Input	Dac sample Size	<p>XD48SAMPSIZE_8BIT (0) : 8-bit (0xFF)</p> <p>XD48SAMPSIZE_14BIT_MSBPAD (1) : 14-bit, 16-bit aligned with MSB zero-padded (0x3FFF)</p> <p>XD48SAMPSIZE_14BIT_LSBPAD (2) : 14-bit, 16-bit aligned with LSB zero-padded (0xFFFC) (power-up default)</p>
Input	Output voltage Range 1	An integer in the range of [0, 1023] that represents the output voltage range for the channel. A value of 0 is equivalent to the minimum output voltage range and value of 1023 is equivalent to the maximum output voltage range.
Input	Output voltage Range 2	An integer in the range of [0, 1023] that represents the output voltage range for the channel. A value of 0 is equivalent to the minimum output voltage range and value of 1023 is equivalent to the maximum output voltage range.
Input	Output voltage Range 3	An integer in the range of [0, 1023] that represents the output voltage range for the channel. A value of 0 is equivalent to the minimum output voltage range and value of 1023 is equivalent to the maximum output voltage range.
Input	Output voltage Range 4	An integer in the range of [0, 1023] that represents the output voltage range for the channel. A value of 0 is equivalent to the minimum output voltage range and value of 1023 is equivalent to the maximum output voltage range.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Serial num	Serial number of the present board
Output	Error message	Output result in text

## 2.4 File\_PlayBack\_PXDAC4800

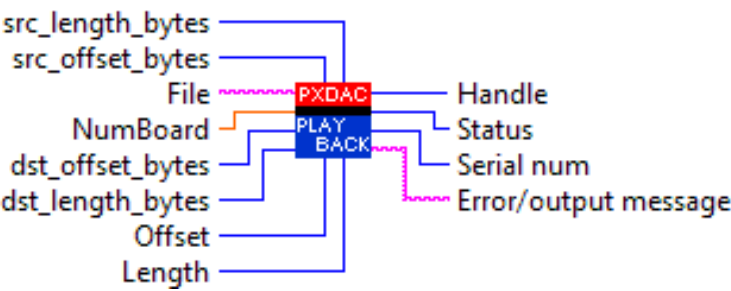
### Icon



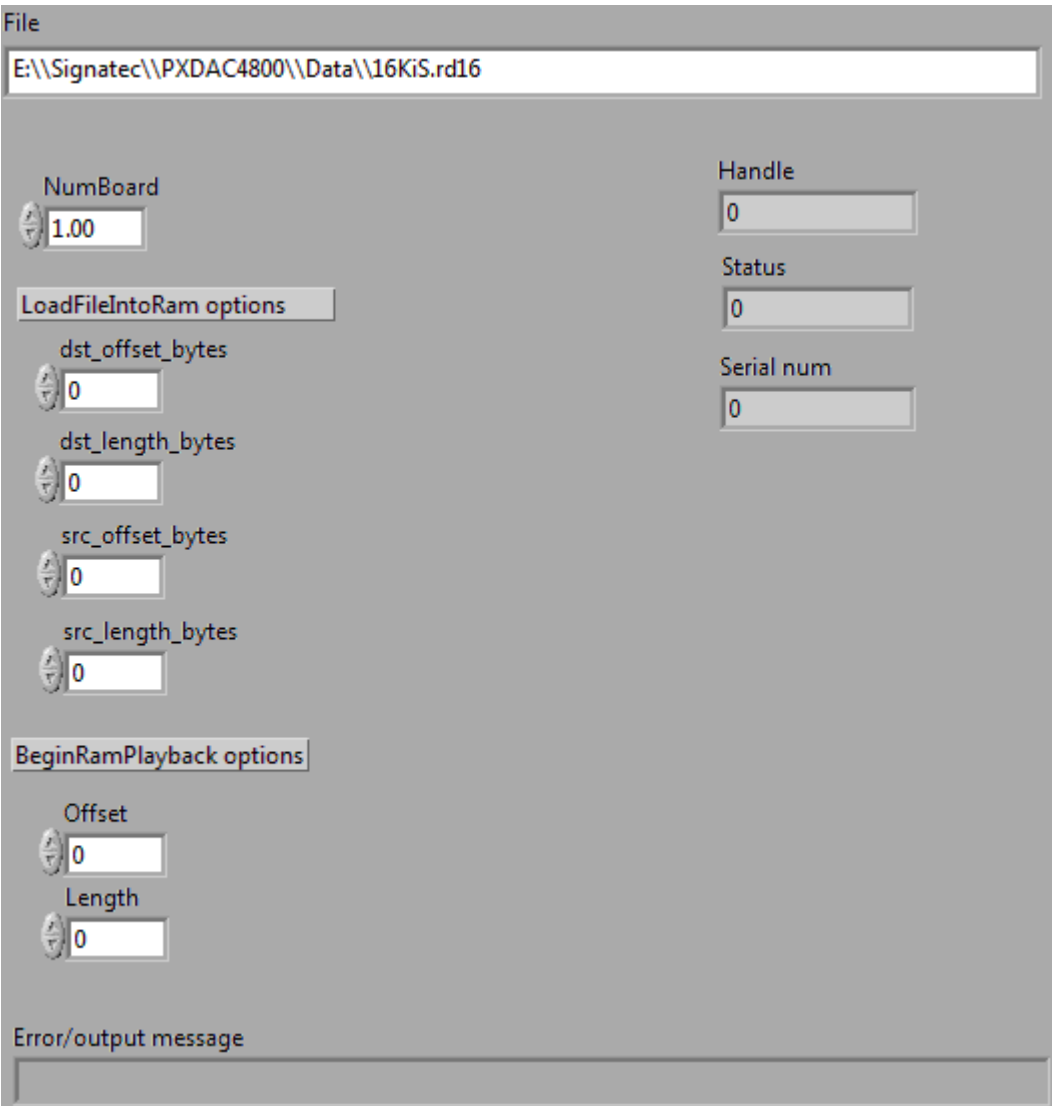
### Summary

This VI creates a connection with the board, load a file, start a playback and disconnect.

Connector Panel



Labview front panel



Inputs/Outputs

Direction	Signal	Interpretation
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Input	Num board	The number of the board [0, N].
Input	dst_offset_bytes	The offset, in bytes, into PXDAC4800 RAM at which to begin loading playback data. This parameter must be an integer multiple of 16384.
Input	dst_length_bytes	The number of bytes to load from the file.
Input	File	A string containing the pathname of the file to load.
Input	src_offset_bytes	The offset, in bytes, into the source file at which to begin copying.
Input	src_length_bytes	The number of bytes to copy from the file. If this parameter is zero then the file size (minus src_offset_bytes) will be used.
Output	Handle out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Error out	See <a href="#">Common VI Inputs/Outputs</a> section.
Output	Serial num	Serial number of the present board.
Output	Error message	Output result in text.

## Remarks

This VI uses a software trigger to simplify the process.

## 2.1 File\_Streaming\_PXDAC4800

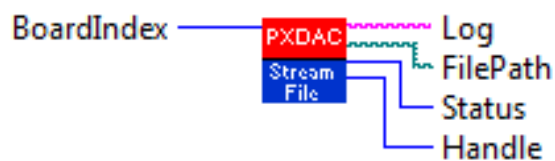
### Icon



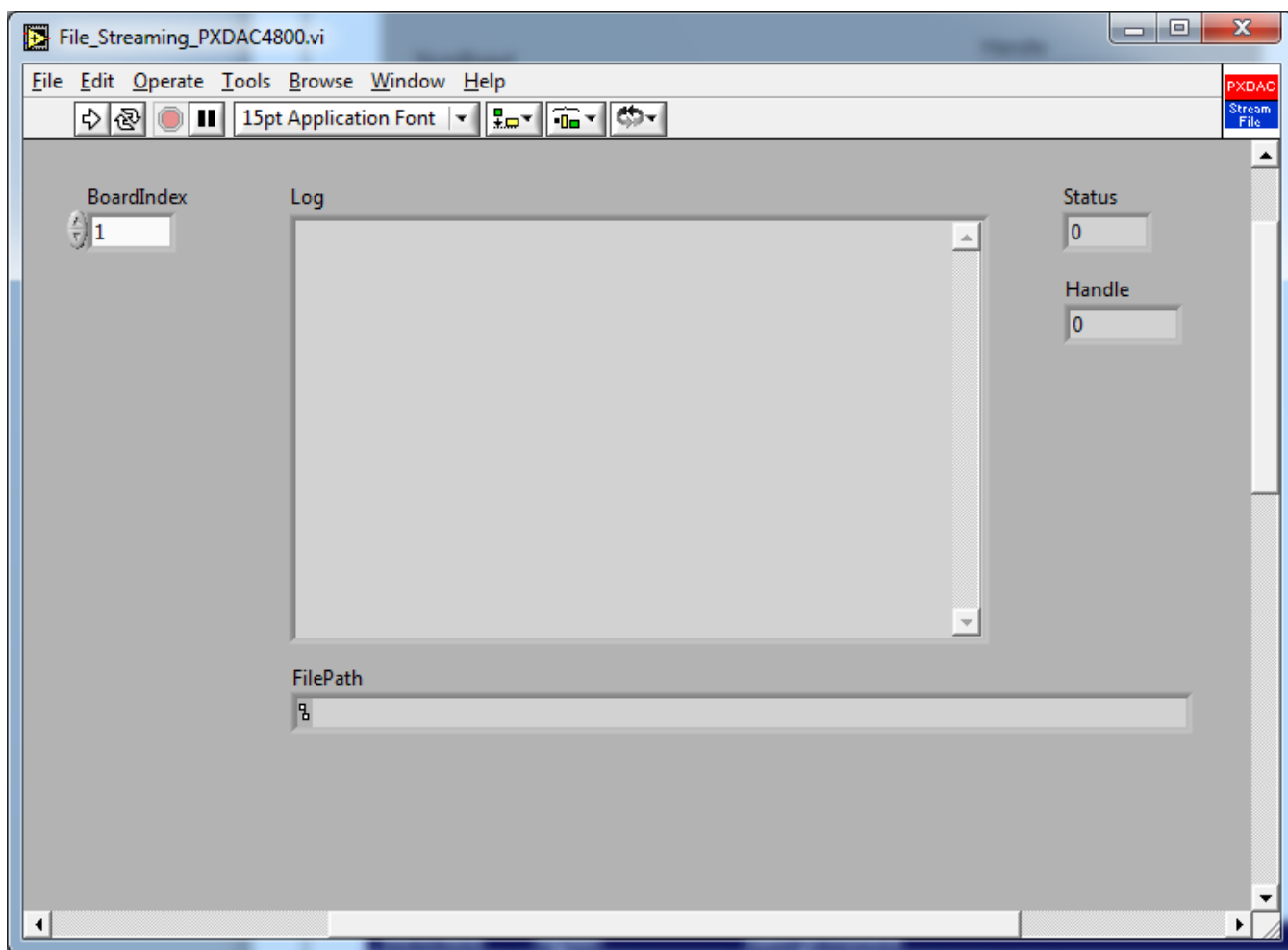
### Summary

This VI creates a connection with the board, load a file, start a playback and disconnect.

### Connector Panel



### Labview front panel



### Inputs/Outputs

Direction	Signal	Interpretation
Input	BoardIndex	The number of the board [0, N].
Output	Log	A string indicator displaying all the operations covered by the streaming process.
Output	FilePath	Path indicator returning the path of the file to stream.
Output	Status	Numeric indicator returning the status code returned by the last operation.
Output	Handle	Numeric indicator returning the handle used to configure the PXDAC.

### Remarks

This VI automatically creates a file of data and uses it. This way, the VI works the first time and your installation folder doesn't contain a big file of raw data. You can easily change this VI to use your file.



## **3 APPENDIX 1 – REVISION HISTORY**

Revision 0.1 – Beta internal initial release

Revision 1.0 – Initial release

Revision 1.1 – Added Streaming

Revision 1.2 – Added DC related VIs to hardware settings section.

Revision 1.21 – Copyright Vitrek LLC.