
DVA224 SDK DLL Version Manual

Version <1.0>

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

Revision History

Date	Version	Description	Author
4-20-2007	1.0	Initial version	Jichao

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

1	INTRODUCTION TO DVA224SDK DLL VERSION.....	4
1.1	INTRODUCTION TO DVA224SDK.....	4
1.2	WHAT 'S NEW IN DVA224SDK.....	4
2	SDK SAMPLES	4
3	STRUCTURE REFERENCE	7
3.1	DEFINE ERROR CODE AND DEVICE STATUS.....	7
3.2	VIDEO CONFIGURATION	7
4	METHOD REFERENCE	8
4.1	SDK INITIALIZE AND CLOSE	8
4.1.1	DVA224_CreateSDKInstance.....	8
4.1.2	DVA224_GetNoOfDevices.....	8
4.1.3	DVA224_InitSDK	9
4.1.4	DVA224_CloseSDK.....	10
4.2	CAPTURE CONTROL	10
4.2.1	DVA224_Start.....	10
4.2.2	DVA224_Stop	11
4.2.3	DVA224_GetCapState	11
4.2.4	DVA224_SetNewFrameCallback.....	11
4.2.5	DVA224_GetCurFrameBuffer	12
4.3	CAPTURE SETTING	13
4.3.1	DVA224_GetVideoFormat.....	13
4.3.2	DVA224_SetVideoFormat	13
4.3.3	DVA224_GetResolution.....	14
4.3.4	DVA224_SetResolution.....	15
4.3.5	DVA224_GetFrameRate.....	15
4.3.6	DVA224_SetFrameRate.....	16
4.3.7	DVA224_GetVideoInput	16
4.3.8	DVA224_SetVideoInput.....	17
4.4	SENSOR CONTROL	17
4.4.1	DVA224_GetBrightness.....	17
4.4.2	DVA224_SetBrightness.....	18
4.4.3	DVA224_GetContrast	18
4.4.4	DVA224_SetContrast.....	19
4.4.5	DVA224_GetHue	19
4.4.6	DVA224_SetHue	20
4.4.7	DVA224_GetSaturation.....	20
4.4.8	DVA224_SetSaturation.....	20
5	CALLBACK FUNCTION DEFINATION	21
5.1	VIDEO CAPTURE CALLBACK	21

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

Manual

1 Introduction to DVA224SDK DLL Version

1.1 Introduction to DVA224SDK

Two versions of DVA224SDK are provided for different applications: DirectShow and DLL. This is the DLL version. It is used for users who are not familiar with Microsoft DirectShow standard programming or get used to programming tools such as Windows API.

DVA224SDK functions include:

Function	描述
Video Standard	PAL/NTSC
Video Resolution	FULLPAL D1 VGA QVGA SUBQVGA
FrameRate	NTSC: 1 ~ 30; PAL: 1 ~ 25;
Sensor Control	Brightness; Contrast; Hue; Saturation;
Video Capture	Acquire real time video data
Snap Shot	Snap Shot

1.2 What 's New in DVA224SDK

New functions:
Initial version

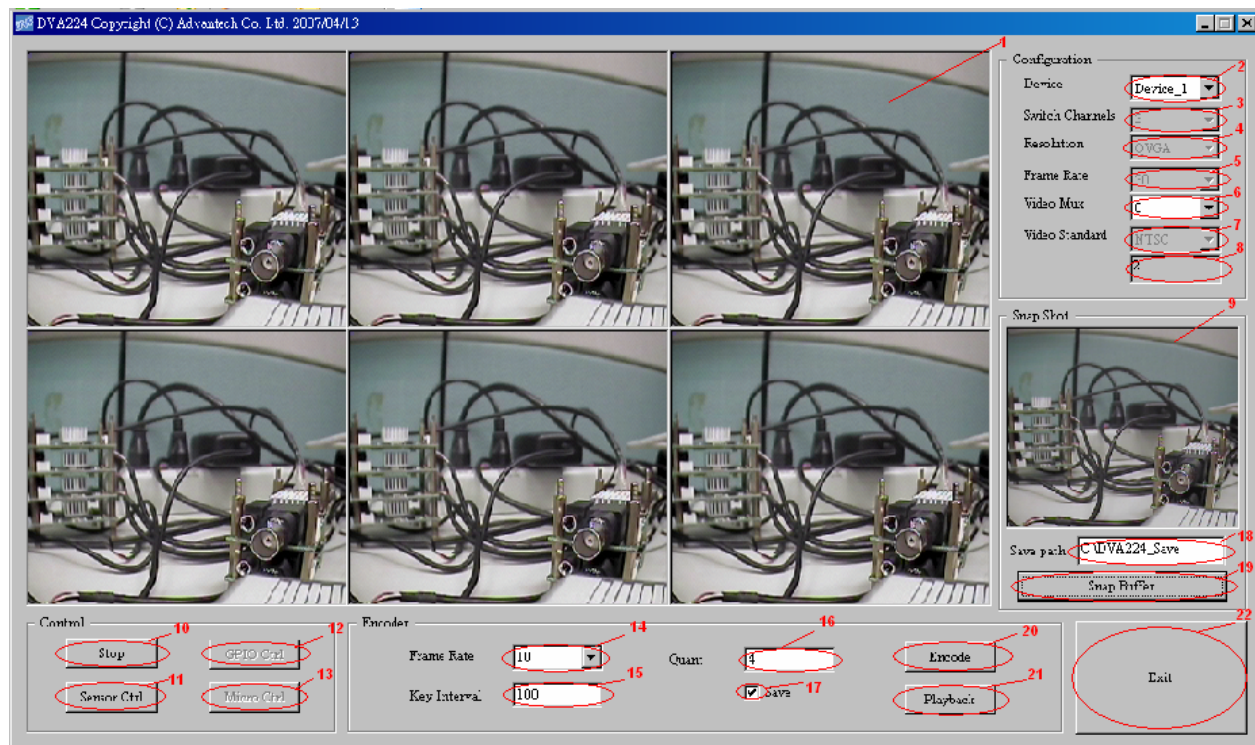
2 SDK Samples

Example Description:

The following is a list of example programs we offer, which can be used for the reference of software development.

Example Name	Description
DVA224EXE	Demonstrates all SDK supported function.

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	



Item1: Preview area.

Item2: Selects the device corresponding to the Device Number.

Item3: Sets the Switch Channel. This item configures the channel count of the current chip. The maximum is 3.

Item4: Sets the resolution.

Item5: Sets the preview Frame Rate.

Item6: Selects Video Mux. It is valid only when the Switch Channel is set to "1".

Item7: Selects Video Standard.

Item8: Indicates the maximum number count is BT878.

Item9: Display area of the snapshot.

Item10: The start/stop button for preview.

Item11: The sensor control button.

Item12: Reserved.

Item13: Reserved.

Item14: Sets the encode frame rate.

Item15: Sets the save path for the snapshot.

Item16: Button that initiates the snapshot.

Item17: The save option.

Item18: Sets the save path for the snapshot.

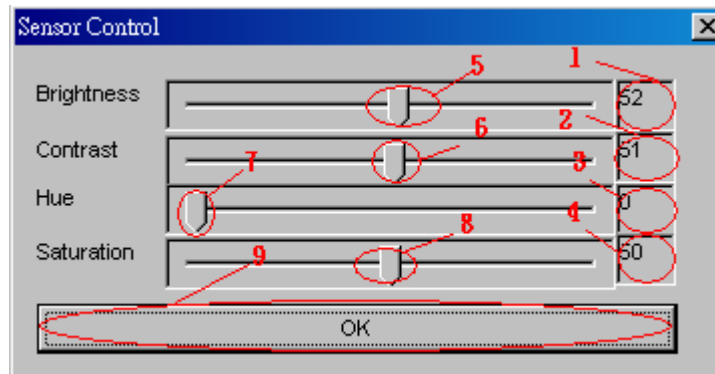
Item19: The snapshot button.

Item20: The encode button.

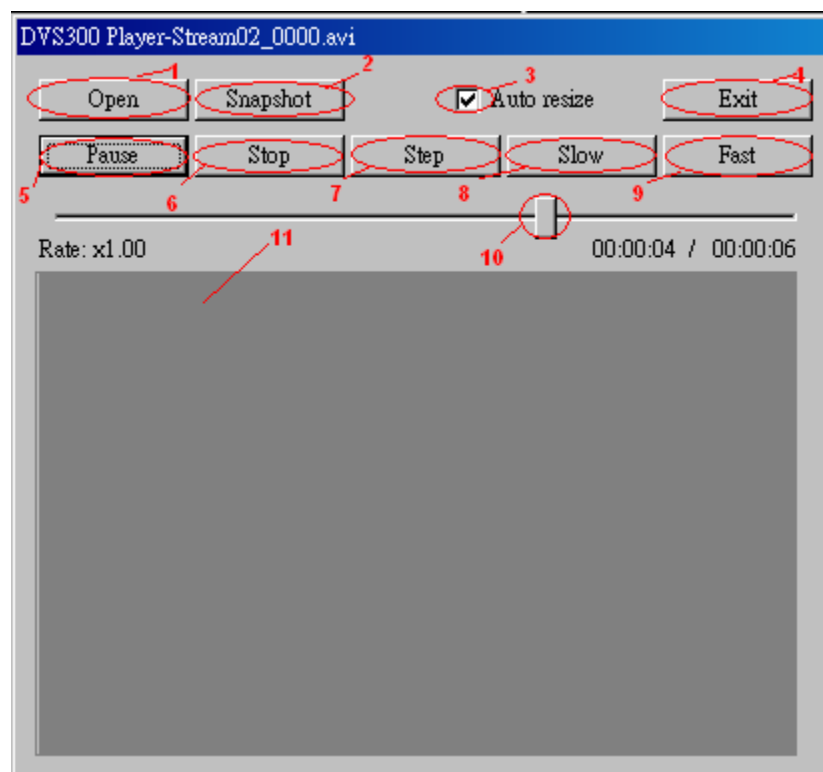
Item21: The playback button.

Item22: The exit button.

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	



- Item1: Shows the brightness value.
- Item2: Shows the contrast value.
- Item3: Shows the hue value.
- Item4: Shows the saturation value.
- Item5: Slider that adjusts the brightness value.
- Item6: Slider that adjusts the brightness value.
- Item7: Slider that adjusts the hue value.
- Item8: Slider that adjusts the saturation value.
- Item9: The confirmation button.



- Item1: Selects the file to be played.
- Item2: The snapshot function.
- Item3: Selects whether to automatically resize the display area according to video resolution.
- Item4: The exit button.
- Item5: The pause button.
- Item6: The stop button.

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

Item7: Button to play a single frame.
Item8: Button to slow down the play.
Item9: Button to speed up the play.
Item10: Slider that indicates the playing progress.
Item11: Display area.

3 Structure reference

3.1 Define error code and device status

```
typedef enum
{
    SUCCEEDED          = 1,
    FAILED              = 0,
    SDKINITFAILED      = -1,
    PARAMERROR         = -2,
    NODEVICES          = -3,
    NOSAMPLE            = -4,
    DEVICENUMERROR     = -5,
    INPUTERROR         = -6,
} Res;
```

```
typedef enum
{
    STOPPED            = 1,
    RUNNING             = 2,
    UNINITIALIZED      = -1,
    UNKNOWNSTATE       = -2
} CapState;
```

3.2 Video Configuration

```
typedef enum tagAnalogVideoFormat
{
    Video_None        = 0x00000000,
    Video_NTSC_M      = 0x00000001,
    Video_NTSC_M_J    = 0x00000002,
    Video_PAL_B       = 0x00000010,
    Video_PAL_M       = 0x00000020,
    Video_PAL_N       = 0x00000040,
    Video_SECAM_B     = 0x00001000
} AnalogVideoFormat;
```

```
typedef enum
{
    SIZEFULLPAL       = 0,
    SIZED1             = 1,
```

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

```

    SIZEVGA      = 2,
    SIZEQVGA     = 3,
    SIZESUBQVGA  = 4
} VideoSize;

```

4 Method reference

4.1 SDK Initialize and close

4.1.1 DVA224_CreateSDKInstance

Description:

The method create SDK instance and initializes DVA224 capture devices in the system, including 2 bt878 chips.

Syntax:

```
int DVA224_CreateSDKInstance (
    void ** pp );
```

Parameters:

[OUT] pp: Return a pointer to SDK.

Return:

SUCCEEDED: Function succeeded.
 PARAMERROR: Parameter error.
 FAILED: Failed to create SDK instance.

Remarks:

1) This API returns a pointer that points to SDK instances. The user could call other APIs by using this pointer.

4.1.2 DVA224_GetNoOfDevices

Description:

This function gets number of BT878 of DVA224 Capture Device inserted the system.

Syntax:

```
int DVA224_GetNoOfDevices ( int * pnNoOfDevs );
```

Parameters:

[OUT] pnNoOfDevs: A pointer to get number of BT878.

Return:

SUCCEEDED: Function succeeded.
 FAILED: Function failed.
 SDKINITFAILED: SDK not initialized.

Remarks:

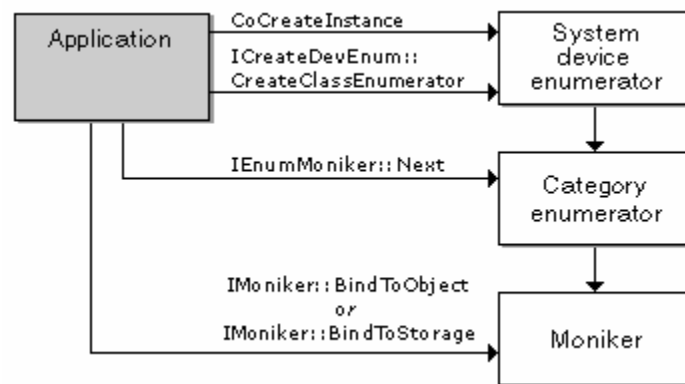
The method use the system Device Enumerator to capture device counts. The System Device Enumerator provides a uniform way to enumerate, by category, the filters registered on a user's system. Moreover, it differentiates between individual hardware devices, even if the same filter supports them. This is particularly useful for devices that use the Windows Driver Model (WDM) and the KSPProxy filter. For example, the user might have several WDM video capture devices, all supported by the same filter. The System Device Enumerator treats them as separate device instances.

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

To use the System Device Enumerator, do the following:

1. Create the system device enumerator by calling CoCreateInstance. The class identifier (CLSID) is CLSID_SystemDeviceEnum.
2. Obtain a category enumerator by calling ICreateDevEnum::CreateClassEnumerator with the CLSID of the desired category. This method returns an IEnumMoniker interface pointer. If the category is empty (or does not exist), the method returns S_FALSE rather than an error code. If so, the returned IEnumMoniker pointer is NULL and dereferencing it will cause an exception. Therefore, explicitly test for S_OK when you call CreateClassEnumerator, instead of calling the usual SUCCEEDED macro.
3. Use the IEnumMoniker::Next method to enumerate each moniker. This method returns an IMoniker interface pointer. When the Next method reaches the end of the enumeration, it also returns S_FALSE, so again check for S_OK.
4. To retrieve the friendly name of the device (for example, to display in the user interface), call the IMoniker::BindToStorage method.
5. To create and initialize the DirectShow filter that manages the device, call IMoniker::BindToObject on the moniker. Call IFilterGraph::AddFilter to add the filter to the graph.

The following diagram illustrates this process.



4.1.3 DVA224_InitSDK

Description:

This function initializes DVA224 capture devices in the system, including 2 bt878 chips.

Syntax:

```
int DVA224_InitSDK( void );
```

Parameters:

NULL

Return:

SUCCEEDED: Function succeeded.
PARAMERROR: Parameter error.

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

FAILED: Failed to create SDK instance.

Remarks:

- 1) Initialize BT878 chip, and create filter graph for capture and preview functions.

4.1.4 DVA224_CloseSDK

Description:

This function cleans all instances of capture devices and closes up the SDK.

Syntax:

```
int DVA224_CloseSDK();
```

Parameters:

NULL

Return:

SUCCEEDED: Function succeeded.

SDKINITFAILED: SDK not initialized.

Remarks:

- 1) Stop and close device, at last release all resources.

4.2 Capture control

4.2.1 DVA224_Start

Description:

Start the hardware and build filter graph, including Preview, Record, Audio and so on. This function starts video capturing on a specified capture port. The capture state would be set as "RUNNING" after a successful start. If the channels share frames (i.e. SwitchingChans > 0), the video input mux will be set 0.

Syntax:

```
int DVA224_Start(
    int nDevNum,
    int nSwitchingChans,
    HWND hMain,
    HWND hwndPreview );
```

Parameters:

[IN]nDevNum: Specifies the device number(0~1).

[IN]nSwitchingChans: Single video input or switching between video muxes.
 0: single channel.
 1: two channels (mux0, mux1).
 2: three channels (mux0, mux1, mux2).

[IN]hMain: A main window handle.

[IN]hwndPreview: A windows handle for display area. This parameter is only valid, when the "SwitchChans" is zero. When the value of this parameter is NULL, the video will not be rendered.

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

SDKINITFAILED: SDK not initialized.

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

PARAMERROR: Parameter error.

Remarks:

1) .

4.2.2 DVA224_Stop

Description:

This function stops video capturing on a specified capture board. The capture state would be set as "STOPPED" after a successful stop

Syntax:

```
int DVA224_Stop (
    int nDevNum);
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

Return:

SUCCEEDED:	Function succeeded.
FAILED:	Function failed.
DEVICENUMERROR:	Invalid device number.
SDKINITFAILED:	SDK not initialized.

Remarks:

4.2.3 DVA224_GetCapState

Description:

This function gets capture state of a specified capture port.

```
typedef enum {
    STOPPED           = 1,
    RUNNING           = 2,
    UNINITIALIZED     = -1,
    UNKNOWNSTATE     = -2
} CapState;
```

Syntax:

```
int DVA224_GetCapState (
    int nDevNum );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

Return:

DEVICENUMERROR:	Invalid device number.
SDKINITFAILED:	SDK not initialized.

Remarks:

1) .

4.2.4 DVA224_SetNewFrameCallback

Description:

This function sets a callback function to SDK. When new frame arrived, messages and frame information will be sent to callback function.

Syntax:

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

```
int DVA224_SetNewFrameCallback (
    int nDevNum,
    int nCallback );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] nCallback: Callback function.

Callback function type:

```
typedef int (*CAPCALLBACK)( int nID, int nDevNum, int nVMux, int nBufsize,
    BYTE* pbyBuf);
```

nID: Single video input ID or the video mux ID. The value of IDs is showed as following:

```
#define ID_NEW_FRAME 37810
```

```
#define ID_MUX0_NEW_FRAME 37800
```

```
#define ID_MUX1_NEW_FRAME 37801
```

```
#define ID_MUX2_NEW_FRAME 37802
```

nDevNum: Specifies the device number(0~1).

nVMux: Specifies the video mux number(0~2).

nBufsize: An integer pointer of the frame buffer size.

pbyBuf: A BYTE pointer of the frame buffer.

Return:

SUCCEEDED: Function succeeded.

DEVICENUMERROR: Invalid device number.

SDKINITFAILED: SDK not initialized.

Remarks:

1) .

4.2.5 DVA224_GetCurFrameBuffer

Description:

This function gets current frame buffer of a specified capture port. Start capturing before the function is called.

Syntax:

```
int DVA224_GetCurFrameBuffer (
    int nDevNum,
    int nVMux,
    long * pIBufSize,
    BYTE * pbyBuf );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] nVMux: Video mux.

[OUT] pIBufSize: Frame buffer size.

[OUT] pbyBuf: Frame buffer.

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

NOSAMPLE:

No buffer sample.

Remarks:

- 1) Firstly *bufSizer* is an input parameter, if it is not same size with real buffer, then return PARAMERROR, and *bufSizer* is set as valid size output.

4.3 Capture setting

4.3.1 DVA224_GetVideoFormat

Description:

This function gets video input format of a specified capture port.

Syntax:

```
int DVA224_GetVideoFormat(
    int nDevNum,
    AnalogVideoFormat * pVFormat );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[OUT] pVFormat: A pointer to get video format.

```
typedef enum tagAnalogVideoFormat
{
    Video_None           = 0x00000000,
    Video_NTSC_M         = 0x00000001,
    Video_NTSC_M_J       = 0x00000002,
    Video_PAL_B          = 0x00000010,
    Video_PAL_M          = 0x00000200,
    Video_PAL_N          = 0x00000400,
    Video_SECAM_B        = 0x00001000
} AnalogVideoFormat;
```

Return:

SUCCEEDED:	Function succeeded.
FAILED:	Function failed.
DEVICENUMERROR:	Invalid device number.
PARAMERROR:	Invalid parameter.
SDKINITFAILED:	SDK not initialized.

Remarks:

- 1) .

4.3.2 DVA224_SetVideoFormat

Description:

This function sets video standard of a specified capture board.

Syntax:

```
int DVA224_SetVideoFormat (
    int nDevNum,
    AnalogVideoFormat vFormat);
```

Parameters:

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] vFormat: video format.

```
typedef enum tagAnalogVideoFormat
{
    Video_None           = 0x00000000,
    Video_NTSC_M         = 0x00000001,
    Video_NTSC_M_J       = 0x00000002,
    Video_PAL_B          = 0x00000010,
    Video_PAL_M          = 0x00000200,
    Video_PAL_N          = 0x00000400,
    Video_SECAM_B        = 0x00001000
} AnalogVideoFormat;
```

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

BOARDIDERROR: Invalid board ID.

SDKINITFAILED: Failed to initialize SDK.

PARAMERROR: Parameter error.

Remarks:

1) .

4.3.3 DVA224_ GetResolution

Description:

This function gets video resolution of a specified capture port.

Syntax:

```
int DVA224_ GetResolution (
    int nDevNum,
    VideoSize * pVSize );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[OUT] pVSize: A pointer to get video resolution.

```
typedef enum
{
    SIZED1=0,           // (NTSC: 720x480, PAL: 720x576)
    SIZEVGA,            // (640x480)
    SIZEQVGA,           // (320x240)
    SIZESUBQVGA         // (160x120)
} VideoSize;
```

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Remarks:

1) .

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

4.3.4 DVA224_ SetResolution

Description:

This function sets video resolution of a specified capture board. This function should be called before "DVA224_Start".

Syntax:

```
int DVA224_ SetResolution (
    int nDevNum,
    VideoSize vSize );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[in] vSize: A value to set video resolution..

typedef enum

```
{
    SIZED1=0,           // (NTSC: 720x480, PAL: 720x576)
    SIZEVGA,            //(640x480)
    SIZEQVGA,           //(320x240)
    SIZESUBQVGA         //(160x120)
} VideoSize;
```

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

SDKINITFAILED: SDK not initialized.

Remarks:

1) .

4.3.5 DVA224_ GetFrameRate

Description:

This function gets frame rate of a specified capture port.

Syntax:

```
int DVA224_ GetFrameRate (
    int nDevNum,
    int * pnFrameRate );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[OUT] pnFrameRate: A pointer to get video frame rate.

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Remarks:

1) .

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

4.3.6 DVA224_ SetFrameRate

Description:

This function sets frame rate of a specified capture port. This function should be called before "DVA224_Start". If the channels share frames (i.e. SwitchingChans>0), the frame rate must be set 30. Otherwise, the function will return PARAMERROR.

Syntax:

```
int DVA224_ SetFrameRate (
    int BoardID,
    FrameRate Framerate );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] nSwitchingChans: Single video input or switching between video muxes(0~2).

0: single channel.

1: two channels (mux0, mux1).

2: three channels (mux0, mux1, mux2).

[IN]FrameRate: A value to set frame rate. (0<FrameRate<=30, Default value is 30)

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Remarks:

1) .

4.3.7 DVA224_ GetVideoInput

Description:

This function gets video input mux of a specified capture port. It returns "FAILED" when argument "SwitchingChans" of DVA224_Start was set nonzero. And, the video input mux will be set 0 automatically when argument "SwitchingChans" of DVA224_Start was set nonzero.

Syntax:

```
int DVA224_ GetVideoInput (
    int nDevNum,
    int * pnInput );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[OUT] pnInput: A pointer to get video input mux.

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

SDKINITFAILED: SDK not initialized.
Remarks:
1) .

4.3.8 DVA224_SetVideoInput

Description:

This function sets video input mux of a specified capture port.
It returns "FAILED" when argument "SwitchingChans" of DVA224_Start was set nonzero. And, the video input mux will be set 0 automatically when argument "SwitchingChans" of DVA224_Start was set nonzero.

Syntax:

```
int DVA224_SetVideoInput (
    int nDevNum,
    int nInput );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).
[IN] nInput: A value to set video input mux(0 ~ 2).

Return:

SUCCEEDED: Function succeeded.
FAILED: Function failed.
DEVICENUMERROR: Invalid device number.
PARAMERROR: Invalid parameter.
SDKINITFAILED: SDK not initialized.

Remarks:

1) .

4.4 Sensor Control

4.4.1 DVA224_GetBrightness

Description:

This function gets brightness value of a specified capture port.

Syntax:

```
int DVA224_GetBrightness (
    int nDevNum,
    int nInput,
    long * pValue );
```

Parameters:

[IN] nDevNum: Specifies the device number (0 ~ 1).
[IN] nInput: Specifies the video input mux(-1 ~ 2). This value must be set -1 when no switching channels.
[out] pValue: A long pointer to get brightness value.

Return:

SUCCEEDED: Function succeeded.
FAILED: Function failed.
DEVICENUMERROR: Invalid device number.
PARAMERROR: Invalid parameter.

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

SDKINITFAILED: SDK not initialized.

Remarks:

1) .

4.4.2 DVA224_ SetBrightness

Description:

This function sets brightness value of a specified capture board.

Syntax:

```
int DVA224_ SetBrightness (
    int nDevNum,
    int nInput,
    long lValue );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] nInput: Specifies the video input mux(-1 ~ 2). This value must be set -1 when no switching channels.

[IN] plValue: A value to set Saturation(0 ~ 100).

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Remarks:

2) .

4.4.3 DVA224_ GetContrast

Description:

This function gets contrast value of a specified capture board.

Syntax:

```
int DVA224_ GetContrast (
    int nDevNum,
    int nInput,
    long * plValue );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] nInput: Specifies the video input mux(-1 ~ 2). This value must be set -1 when no switching channels.

[out] plValue: A long pointer to get contrast value.

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Remarks:

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

3) .

4.4.4 DVA224_ SetContrast

Description:

This function sets contrast value of a specified capture board.

Syntax:

```
int DVA224_ SetContrast (
    int nDevNum,
    int nInput,
    long lValue );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] nInput: Specifies the video input mux(-1 ~ 2). This value must be set -1 when no switching channels.

[IN] plValue: A value to set contrast (0 ~ 100).

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Remarks:

4) .

4.4.5 DVA224_ GetHue

Description:

This function gets hue value of a specified capture board.

Syntax:

```
int DVA224_ GetHue (
    int nDevNum,
    int nInput,
    long * plValue );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] nInput: Specifies the video input mux(-1 ~ 2). This value must be set -1 when no switching channels.

[out] plValue: A long pointer to get hue value.

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Remarks:

5) .

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

4.4.6 DVA224_ SetHue

Description:

This function sets hue value of a specified capture board.

Syntax:

```
int DVA224_ SetHue (
    int nDevNum,
    int nInput,
    long lValue );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] nInput: Specifies the video input mux(-1 ~ 2). This value must be set -1 when no switching channels.

[IN] plValue: A value to set hue (0 ~ 100).

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Remarks:

6) .

4.4.7 DVA224_ GetSaturation

Description:

This function gets saturation value of a specified capture board.

Syntax:

```
int DVA224_ GetSaturation (
    int nDevNum,
    int nInput,
    long * plValue );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).

[IN] nInput: Specifies the video input mux(-1 ~ 2). This value must be set -1 when no switching channels.

[out] plValue: A long pointer to get saturation value.

Return:

SUCCEEDED: Function succeeded.

FAILED: Function failed.

DEVICENUMERROR: Invalid device number.

PARAMERROR: Invalid parameter.

SDKINITFAILED: SDK not initialized.

Remarks:

7) .

4.4.8 DVA224_ SetSaturation

Description:

Advantech Automation	Version: <1.0>
Manual	Date: <3/12/2007>
DVP1412SDK DLL Version Phase I manual	

This function sets saturation value of a specified capture board.

Syntax:

```
int DVA224_ SetSaturation (
    int nDevNum,
    int nInput,
    long lValue );
```

Parameters:

[IN] nDevNum: Specifies the device number(0 ~ 1).
 [IN] nInput: Specifies the video input mux(-1 ~ 2). This value must be set -1 when no switching channels.
 [IN] plValue: A value to set saturation (0 ~ 100).

Return:

SUCCEEDED:	Function succeeded.
FAILED:	Function failed.
DEVICENUMERROR:	Invalid device number.
PARAMERROR:	Invalid parameter.
SDKINITFAILED:	SDK not initialized.

Remarks:

5 Callback function Definition

5.1 Video capture callback

```
typedef int ( * CAPCALLBACK )(
    int IParam,
    int nID,
    int nDevNum,
    int nVMux,
    int nBufsize,
    BYTE * pbyBuf );
```

Parameters:

IParam: reserved;
 nID: Single video input ID or the video mux ID. The value of IDs is showed as following:

```
#define ID_NEW_FRAME 37810
#define ID_MUX0_NEW_FRAME 37800
#define ID_MUX1_NEW_FRAME 37801
#define ID_MUX2_NEW_FRAME 37802
```


 nDevNum: Specifies the device number(0~1).
 nVMux: Specifies the video mux number(0~2).
 nBufsize: An integer pointer of the frame buffer size.
 pbyBuf: A BYTE pointer of the frame buffer.

Remarks:

1. The nVMux parameter is useless when single Video input;
2. It is not recommended to use the Callback function for video analysis. The user should backup the information and make analysis when this function is terminated.