

Sample Program Guide

Revision 1.0
March 11, 2013

Introduction

This guide explains how to use this sample program.

Usage

Supported camera

D7100

Environment

The sample program is command prompt, runs on these environments.

Supported Environment

OS type	Version
Windows	Windows XP (SP3) (※Professional, Home Edition) Windows Vista (SP2) —— 32bit / 64bit(Compatibility mode) (※Ultimate, Enterprise, Business, Home Premium, Home Basic) Windows 7 (SP1) —— 32bit / 64bit(Compatibility mode) (※Ultimate, Enterprise, Professional, Home Premium, Home Basic) Windows 8 —— 32bit / 64bit(Compatibility mode)
Macintosh	Mac OS X 10.6.8 OS X 10.7.5 OS X 10.8.2

■Restriction of Windows

The windows sample program project file supports “Microsoft Visual Studio 2010”.

■Restriction of Macintosh

- The Macintosh sample program project file is created with Xcode 3.2.4.
- GCC Version is 4.2.

Files

The sample program needs following files. Copy these files on the appropriate folder and use it.

Windows (camera body is set to PTP mode.)

File Name	Folder
Type0010.md3	Same as this sample program
NkdPTP.dll	Same as Type0010.md3

- If you want to change the folder of Type0010.md3, you should modify Search_Module() function of Function.c.

Macintosh (camera body is set to PTP mode)

File Name	Folder
Type0010 Module.bundle	Same as this sample program
libNkPTPDraiver.dylib	SYSTEM/Library/Application Support/Nikon/Camera Control Modules/

- If you want to change the folder of Type0010 Module.bundle, you should modify Search_Module() function of Function.c.
- The meaning of SYSTEM is the directory where OS is installed.

Main Menu

When you start the sample program, it loads module and opens module object. Then main menu is shown.

1) Select Device

If some devices are connected to PC, you can choose which device will be used. Then sub menu 1 is shown.

2) AsyncRate

Show a recommended interval of Command_Async.

(refer to 9.1 kNkMAIDCapability_AsyncRate in MAID3.PDF)

3) IsAlive

Show the status of Module object.

(refer to 9.6 kNkMAIDCapability_IsAlive in MAID3.PDF)

4) Name

Show the name of Module object.

(refer to 9.9 kNkMAIDCapability_Name in MAID3.PDF)

5) ModuleType

Show the type of Module object.

(refer to 9.53 kNkMAIDCapability_ModuleType in MAID3.PDF)

6) Version

Show version of MAID supported by the module.

(refer to 9.57 kNkMAIDCapability_Version in MAID3.PDF)

Sub Menu 1

You can read or write the settings of the source object.

1) Select Item Object

If some pictures are stored in camera, you can choose which item object will be used. Then sub menu 2 is shown. (When this menu returns the message “There is no item” though Capture command is succeeded, please retry this menu until new item object is detected.)

2) Camera settings(1)

You can change some camera settings. Sub menu 3 will be shown.

3) Camera settings(2)

You can change other camera settings. Sub menu 4 will be shown.

4) Shooting Menu

You can change photography settings. Sub menu 5 will be shown.

5) Custom Menu

You can change custom settings. Sub menu 6 will be shown.

6) Async

Send kNkMAIDCommand_Async to detect in camera condition.

(refer to 8.1 kNkMAIDCommand_Async in MAID3.PDF)

7) Autofocus

Perform auto focus.

(refer to 4.27 kNkMAIDCapability_AutoFocus in MAID3Type0010.PDF)

8) Capture

Take a picture.

(refer to 4.17 kNkMAIDCapability_Capture in MAID3Type0010.PDF)

9) TerminateCapture

Terminate bulb exposure shooting and record to SDRAM the image until stopped bulb.

(refer to 3.167 kNkMAIDCapability_TerminateCapture in MAID3Type0010.PDF)

10) PreCapture

Take a picture for presetting white balance.

(refer to 3.141 kNkMAIDCapability_PreCapture in MAID3Type0010.PDF)

Sub Menu 2

You can read or write the settings of the item object.

1) Select Data Object

You can choose data object.

If image object is selected, sub menu 7 will be shown. If movie object is selected, sub menu 8 will be shown. If thumbnail object is selected, sub menu 9 will be shown.

2) Delete

Delete the DRAM image of Item object.

(refer to 3.146 kNkMAIDCapability_DeleteDramImage in MAID3Type0010.PDF)

3) IsAlive

Show the status of this Item object.

(refer to 9.6 kNkMAIDCapability_IsAlive in MAID3.PDF)

4) Name

Show the name of this Item object.

(refer to 9.9 kNkMAIDCapability_Name in MAID3.PDF)

5) DataTypes

Show the data types supported by this Item object.

(refer to 9.12 kNkMAIDCapability_DataTypes in MAID3.PDF)

6) DateTime

Show the date and time when this Item was created.

(refer to 9.13 kNkMAIDCapability_DateTime in MAID3.PDF)

7) StoredBytes

Show the file size of this Item in bytes.

(refer to 9.14 kNkMAIDCapability_StoredBytes in MAID3.PDF)

Sub Menu 3

You can read and write the detailed settings (1) of the source object.

1) IsAlive

Show the status of this Source object.

(refer to 9.6 kNkMAIDCapability_IsAlive in MAID3.PDF)

2) Name

Show the name of this Source object.

(refer to 9.9 kNkMAIDCapability_Name in MAID3.PDF)

3) Interface

Show the physical interface of this Source object.

(refer to 9.11 kNkMAIDCapability_Interface in MAID3.PDF)

4) DataTypes

Show the data types supported by this Item object.

(refer to 9.12 kNkMAIDCapability_DataTypes in MAID3.PDF)

5) BatteryLevel

Show battery level.

(refer to 4.47 kNkMAIDCapability_BatteryLevel in MAID3Type0010.PDF)

6) FlashMode

Set the flash mode of this source.

(refer to 9.52 kNkMAIDCapability_FlashMode in MAID3.PDF)

7) LockFocus

Show the status of focus lock.

(refer to 3.125 kNkMAIDCapability_LockFocus in MAID3Type0010.PDF)

8) LockExposure

Show the status of exposure lock.

(refer to 3.124 kNkMAIDCapability_LockExposure in MAID3Type0010.PDF)

9) ExposureStatus

Show the exposure value measured by camera.

(refer to 3.127 kNkMAIDCapability_ExposureStatus in MAID3Type0010.PDF)

10) ExposureMode

Set the exposure mode of camera.

(refer to 3.108 kNkMAIDCapability_ExposureMode in MAID3Type0010.PDF)

11) ShutterSpeed

Set the exposure time of camera.

(refer to 3.103 kNkMAIDCapability_ShutterSpeed in MAID3Type0010.PDF)

12) Aperture

Set the aperture of camera.

(refer to 3.106 kNkMAIDCapability_Aperture in MAID3Type0010.PDF)

13) FlexibleProgram

Set the flexible program of camera.

(refer to 3.104 kNkMAIDCapability_FlexibleProgram in MAID3Type0010.PDF)

14) ExposureComp

Set the exposure compensation of camera.

(refer to 3.109 kNkMAIDCapability_ExposureComp in MAID3Type0010.PDF)

15) MeteringMode

Set the metering mode of camera.

(refer to 3.107 kNkMAIDCapability_MeteringMode in MAID3Type0010.PDF)

16) FocusMode

Show focus mode.

(refer to 3.130 kNkMAIDCapability_FocusMode in MAID3Type0010.PDF)

17) FocusAreaMode

Set focus area mode.

(refer to 3.112 kNkMAIDCapability_FocusAreaMode in MAID3Type0010.PDF)

18) FocusPreferredArea

Change focusing point.

(refer to 3.105 kNkMAIDCapability_FocusPreferredArea in MAID3Type0010.PDF)

19) FocalLength

Show focal length(unit: mm).

(refer to 3.129 kNkMAIDCapability_FocalLength in MAID3Type0010.PDF)

20) ClockDateTime

Adjust internal clock.

(refer to 3.96 kNkMAIDCapability_ClockDateTime in MAID3Type0010.PDF)

Sub Menu 4

You can read and write the detailed settings (2) of the source object.

1) LockCamera

Keep the camera from direct operation(not through host computer).

(refer to 3.151 kNkMAIDCapability_LockCamera in MAID3Type0010.PDF)

2) LensInfo

Show lens information(focal length and aperture).

(refer to 3.138 kNkMAIDCapability_LensInfo in MAID3Type0010.PDF)

3) UserComment

Set characters which will be written in a new picture file.

(refer to 3.93 kNkMAIDCapability_UserComment in MAID3Type0010.PDF)

4) EnableComment

Enable to add UserComment to an image file.

(refer to 3.94 kNkMAIDCapability_EnableComment in MAID3Type0010.PDF)

5) IsoControl

Set whether auto sensitivity control is used when you take a picture.

(refer to 3.38 kNkMAIDCapability_IsoControl in MAIDType0010.PDF)

6) NoiseReduction

Set whether noise reduction is used when you take a picture.

(refer to 3.39 kNkMAIDCapability_NoiseReduction in MAIDType0010.PDF)

Sub Menu 5

You can read and write settings concerned with photography.

1) CompressionLevel

Set compression level of the image file created by camera.

(refer to 3.2 kNkMAIDCapability_CompressionLevel in MAID3Type0010.PDF)

2) ImageSize

Set the compression level of picture.

(refer to 3.1 kNkMAIDCapability_ImageSize in MAID3Type0010.PDF)

3) WBMode

Set white balance mode(auto/Incandescent/...).

(refer to 3.3 kNkMAIDCapability_WBMode in MAIDType0010.PDF)

4) Sensitivity

Set sensitivity of camera.

(refer to 3.4 kNkMAIDCapability_Sensitivity in MAIDType0010.PDF)

5) WB TuneAuto

Adjust white balance in Auto mode.

(refer to 3.7 kNkMAIDCapability_WBTuneAuto in MAIDType0010.PDF)

6) WB TuneIncandescent

Adjust white balance in Incandescent mode.

(refer to 3.9 kNkMAIDCapability_WBTuneIncandescent in MAIDType0010.PDF)

7) WB FluorescentType

Set the fluorescent type when the WBMode is "Fluorescent".

(refer to 3.10 kNkMAIDCapability_WBFluorescentType in MAIDType0010.PDF)

8) WB TuneFluorescent

Adjust white balance in Fluorescent mode.

(refer to 3.11 kNkMAIDCapability_WBTuneFluorescent in MAIDType0010.PDF)

9) WB TuneSunny

Adjust white balance in Sunny mode.

(refer to 3.12 kNkMAIDCapability_WBTuneSunny in MAIDType0010.PDF)

10) WB TuneFlash

Adjust white balance in Flash mode.

(refer to 3.13 kNkMAIDCapability_WBTuneFlash in MAIDType0010.PDF)

11) WB TuneShade

Adjust white balance in Shade mode.

(refer to 3.14 kNkMAIDCapability_WBTuneShade in MAIDType0010.PDF)

12) WBTuneCloudy

Adjust white balance in Cloudy mode.

(refer to 3.15 kNkMAIDCapability_WBTuneCloudy in MAIDType0010.PDF)

13) WBPresetCode

Set white balance preset data to camera.

When you set preset data to camera, you have to name the file "PresetData.jpg" and put the file in this application folder in windows, or put the file in home directory in Macintosh.

(refer to 3.32 kNkMAIDCapability_WBPresetCode in MAIDType0010.PDF)

14) PictureControl

Set and get current Picture Control.

(refer to 3.43 kNkMAIDCapability_PictureControl in MAIDType0010.PDF)

15) PictureControlData

Set and get Picture Control data.

When you set Picture Control data to camera, you have to name the file "PicCtrlData.dat" and put the file in this application folder in windows, or put the file in home directory in macintosh.

(refer to 3.45 kNkMAIDCapability_PictureControlData in MAIDType0010.PDF)

16) GetPicCtrlInfo

Get Picture Control information. The Picture Control information is saved as like "PicCtrlInfo.dat" in application folder in windows, or saved in home directory in macintosh.

(refer to 3.46 kNkMAIDCapability_GetPicCtrlInfo in MAIDType0010.PDF)

17) DeleteCustomPictureControl

Delete Custom Picture Control.

(refer to 3.47 kNkMAIDCapability_DeleteCustomPictureControl in MAIDType0010.PDF)

18) LiveViewProhibit

Get the Live view prohibition condition.

(refer to 3.119 kNkMAIDCapability_LiveViewProhibit in MAIDType0010.PDF)

19) LiveViewStatus

Start or stop Live view, and get current status of Live view.

(refer to 3.118 kNkMAIDCapability_LiveViewStatus in MAIDType0010.PDF)

20) LiveViewImageZoomRate

Set the zoom rate of Live view image.

(refer to 3.120 kNkMAIDCapability_LiveViewImageZoomRate in

MAIDType0010.PDF)

21) GetLiveViewImage

Live view data will be got. Display information will be saved as like “LiveView001_H.dat” and Live view image will be saved as like “LiveView001.jpg” in application folder in windows, or in home directory in Macintosh.
(refer to 3.149 kNkMAIDCapability_GetLiveViewImage in MAIDType0010.PDF)

22) LiveViewImageSize

This will set the size of “Live View image”.
(refer to 3.166 kNkMAIDCapability_LiveViewImageSize in MAIDType0010.PDF)

23) MovRecInCardProhibit

Get the Movie record prohibition condition.
(refer to 3.156 kNkMAIDCapability_MovRecInCardProhibit in MAIDType0010.PDF)

24) MovRecInCardStatus

Start or stop Movie record, and get current status of Movie record.
(refer to 3.155 kNkMAIDCapability_MovRecInCardStatus in MAIDType0010.PDF)

25) SpotWBMode

Set the ON / OFF state of waiting to acquire SpotWB.
(refer to 3.168 kNkMAIDCapability_SpotWBMode in MAIDType0010.PDF)

26) SpotWBMeasure

This capability to obtain information SpotWB.
(refer to 3.169 kNkMAIDCapability_SpotWBMeasure in MAIDType0010.PDF)

27) SpotWBChangeArea

This Capability is used to change the SpotWB area while waiting for SpotWB acquisition.
(refer to 3.170 kNkMAIDCapability_SpotWBChangeArea in MAIDType0010.PDF)

28) SpotWBResultDispEnd

This capability to release the results of retrieving display the SpotWB.
(refer to 3.171 kNkMAIDCapability_SpotWBResultDispEnd in MAIDType0010.PDF)

Sub Menu 6

You can read and write a custom setting of source object.

1) EVInterval

Select an interval of exposure value.

(refer to 3.76 kMAIDCapability_EVInterval in MAIDType0010.PDF)

2) BracketingVary

Select a Bracketing variation.

(refer to 3.89 kMAIDCapability_BracketingVary in MAIDType0010.PDF)

Sub Menu 7

You can read and write a setting of image object.

1) IsAlive

Show the status of this image object.

(refer to 9.6 kNkMAIDCapability_IsAlive in MAID3.PDF)

2) Name

Show the name of this image object.

(refer to 9.9 kNkMAIDCapability_Name in MAID3.PDF)

3) StoredBytes

Show the file size of this image file in bytes.

(refer to 9.14 kNkMAIDCapability_StoredBytes in MAID3.PDF)

4) Pixels

Show the image size of this image in pixels.

(refer to 9.40 kNkMAIDCapability_Pixels in MAID3.PDF)

5) RawJpegImageStatus

Show whether this image has raw and jpeg or not.

(refer to 3.147 kNkMAIDCapability_RawJpegImageStatus in MAIDType0010.PDF)

6) Acquire

Get an image file. The image is saved as like "Image001.jpg" in application folder in windows, or saved in home directory in macintosh.

(refer to 9.19 kNkMAIDCapability_Acquire in MAID3.PDF)

Sub Menu 8

You can read and write a setting of movie object.

1) IsAlive

Show the status of this image object.

(refer to 9.6 kNkMAIDCapability_IsAlive in MAID3.PDF)

2) Name

Show the name of this image object.

(refer to 9.9 kNkMAIDCapability_Name in MAID3.PDF)

3) StoredBytes

Show the file size of this image file in bytes.

(refer to 9.14 kNkMAIDCapability_StoredBytes in MAID3.PDF)

4) Pixels

Show the image size of this image in pixels.

(refer to 9.40 kNkMAIDCapability_Pixels in MAID3.PDF)

5) GetVideoImage

Get a movie file. The movie is saved as like "MovieData001.mov" in application folder in windows, or saved in home directory in Macintosh.

(refer to 3.150 kNkMAIDCapability_GetVideoImage in MAIDType0010.PDF)

Sub Menu 9

You can read and write a setting of thumbnail object.

1) IsAlive

Show the status of this thumbnail object.

(refer to 9.6 kNkMAIDCapability_IsAlive in MAID3.PDF)

2) Name

Show the name of this thumbnail object.

(refer to 9.9 kNkMAIDCapability_Name in MAID3.PDF)

3) StoredBytes

Show the size of this thumbnail data in bytes.

(refer to 9.14 kNkMAIDCapability_StoredBytes in MAID3.PDF)

4) Pixels

Show the image size of this thumbnail image in pixels.

(refer to 9.40 kNkMAIDCapability_Pixels in MAID3.PDF)

5) Acquire

Get a thumbnail image data. The thumbnail is saved as like "Thumb001.raw" in application folder in windows, or saved in home directory in Macintosh.

(refer to 9.19 kNkMAIDCapability_Acquire in MAID3.PDF)

Appendix

Restriction

- This sample program doesn't provide all of the capability Type0010 module support. About usage of the other capability, please refer the document, "MAID3Type0010(E).pdf".
- This sample program doesn't care of changes in camera condition. If you want to check the camera status, you should send kNkMAIDCommand_Async to module object periodically. If this command is carried out, change of the state of a camera will be notified by MAIDEventProc.

History

- Rev.1.0 March 11, 2013 First version