Sample Program Guide

Revision. 1.3

November 14, 2022

Introduction

This guide explains how to use this sample program.

Usage

Supported camera

Z 50

Environment

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

For the operating environment and development environment of the sample program, refer to the following chapter of ReadMe_Eng.txt.

- Environment of operation
- Contents - [Windows] - Sample Program
- Contents - [Macintosh] - Sample Program

Files

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

Windows

File Name	Folder
Type0025.md3	Same as this sample program
NkdPTP.dll	Same as Type0025.md3
dnssd.dll	Same as this sample program
NkRoyalmile.dll	Same as this sample program

- If you want to change the folder of Type0025.md3, you should modify Seach_Module() function of Function.cpp.

Macintosh

File Name	Folder
Type0025 Module.bundle	Same as this sample program
libNkPTPDriver2.dylib	SYSTEM/Library/Application Support/Nikon/Camera Control Modules/
Royalmile.framework	Same as libNkPTPDriver2.dylib

- If you want to change the folder of Type0025 Module.bundle, you should modify Search_Module() function of Function.cpp.
- 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) **Movie Menu**

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

5) **Shooting Menu**

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

6) **Live View**

You can change Live View settings. Sub menu 7 will be shown.

7) Custom Menu

You can change custom settings. Sub menu 8 will be shown.

8) SB Menu

You can change flash settings. Sub menu 9 will be shown.

9) Async

Send kNkMAIDCommand_Async to detect in camera condition.

(refer to 8.1 kNkMAIDCommand_Async in MAID3.PDF)

10) Capture

Take a picture. If you try to transfer images to PC, you must change 20)SaveMedia of Sub Menu 3 to SDRAM. When you set it to Card, the module does not notify of the addition of the item object.

(refer to 4.17 kNkMAIDCapability_Capture in MAID3Type0025.PDF)

11) TerminateCapture

Terminate bulb exposure shooting and record to SDRAM the image until stopped bulb.(refer to 3.122 kNkMAIDCapability_TerminateCapture in MAID3Type0025.PDF)

12) PreCapture

Take a picture for presetting white balance.

(refer to 3.200 kNkMAIDCapability_PreCapture in MAID3Type0025.PDF)

13) CaptureAsync

Take a picture. The result of this Capability is confirmed by 15) DeviceReady. If you try to transfer images to PC, you must change 20)SaveMedia of Sub Menu 3 to SDRAM. When you set it to Card, the module does not notify of the addition of the item object.

(refer to 3.175 kNkMAIDCapability_CaptureAsync in MAID3Type0025.PDF)

14) AFCaptureAsync

This will take a picture after auto focus. The result of this Capability is confirmed by 15) DeviceReady. If you try to transfer images to PC, you must change 20)SaveMedia of Sub Menu 3 to SDRAM. When you set it to Card, the module does not notify of the addition of the item object.

(refer to 3.176 kNkMAIDCapability_AFCaptureAsync in MAID3Type0025.PDF)

15) DeviceReady

This will check the operating status of 13) CaptureAsync, 14) AFCaptureAsync.

(refer to 3.177 kNkMAIDCapability_DeviceReady in MAID3Type0025.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 10 will be shown. If movie object is selected, sub menu 11 will be shown. If thumbnail object is selected, sub menu 12 will be shown.

2)　Delete

Delete the DRAM image of Item object.

(refer to 3.109 kNkMAIDCapability_DeleteDramImage in MAID3Type0025.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 MAID3Type0025.PDF)

6)　FlashMode

Set the flash mode of this source.

(refer to 4.51 kNkMAIDCapability_FlashMode in MAID3Type0025.PDF)

7) LockFocus

Show the status of focus lock.

(refer to 3.91 kNkMAIDCapability_LockFocus in MAID3Type0025.PDF)

8) LockExposure

Show the status of exposure lock.

(refer to 3.90 kNkMAIDCapability_LockExposure in MAID3Type0025.PDF)

9) ExposureStatus

Show the exposure value measured by camera.

(refer to 3.93 kNkMAIDCapability_ExposureStatus in MAID3Type0025.PDF)

10) ExposureMode

Set the exposure mode of camera.

(refer to 3.74 kNkMAIDCapability_ExposureMode in MAID3Type0025.PDF)

11) ShutterSpeed

Set the exposure time of camera.

(refer to 3.70 kNkMAIDCapability_ShutterSpeed in MAID3Type0025.PDF)

12) Aperture

Set the aperture of camera.

(refer to 3.72 kNkMAIDCapability_Aperture in MAID3Type0025.PDF)

13) FlexibleProgram

Set the flexible program of camera.

(refer to 3.71 kNkMAIDCapability_FlexibleProgram in MAID3Type0025.PDF)

14) ExposureComp

Set the exposure compensation of camera.

(refer to 3.75 kNkMAIDCapability_ExposureComp in MAID3Type0025.PDF)

15) MeteringMode

Set the metering mode of camera.

(refer to 3.73 kNkMAIDCapability_MeteringMode in MAID3Type0025.PDF)

16) FocusMode

Show focus mode.

(refer to 3.96 kNkMAIDCapability_FocusMode in MAID3Type0025.PDF)

17) FocusAreaMode

Set focus area mode.

(refer to 3.78 kNkMAIDCapability_FocusAreaMode in MAID3Type0025.PDF)

18) FocalLength

Show focal length(unit: mm).

(refer to 3.95 kNkMAIDCapability_FocalLength in MAID3Type0025.PDF)

19) ClockDateTime

Adjust internal clock.

(refer to 3.66 kNkMAIDCapability_ClockDateTime in MAID3Type0025.PDF)

20) SaveMedia

This will set the recording media.

(refer to 3.121 kNkMAIDCapability_SaveMedia in MAID3Type0025.PDF)

21) InternalFlashComp

Set the flash compensation amount.

(refer to 3.187 kNkMAIDCapability_InternalFlashComp in MAID3Type0025.PDF)

22) EffectMode

Set the effect mode.

(refer to 3.201 kNkMAIDCapability_EffectMode in MAID3Type0025.PDF)

23) SceneMode

Set the scene mode.

(refer to 3.202 kNkMAIDCapability_SceneMode in MAID3Type0025.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 3.114 kNkMAIDCapability_LockCamera in MAID3Type0025.PDF)

2) LensType

Shows the lens type about CPU lens.

(refer to 3.116 kNkMAIDCapability_LensType in MAID3Type0025.PDF)

3) LensInfo

Show lens information(focal length and aperture).

(refer to 3.102 kNkMAIDCapability_LensInfo in MAID3Type0025.PDF)

4) UserComment

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

(refer to 3.64 kNkMAIDCapability_UserComment in MAID3Type0025.PDF)

5) EnableComment

Enable to add UserComment to an image file.

(refer to 3.65 kNkMAIDCapability_EnableComment in MAID3Type0025.PDF)

6) IsoControl

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

(refer to 3.34 kNkMAIDCapability_IsoControl in MAIDType0025.PDF)

7) NoiseReduction

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

（refer to 3.35 kNkMAIDCapability_NoiseReduction in MAIDType0025.PDF）

　8)　FlashISOAutoHighLimit

Set the auto ISO sensitivity control with flash.

（refer to 3.57 kNkMAIDCapability_FlashISOAutoHighLimit in MAIDType0025.PDF）

　9)　FlickerReductionSetting

Set flicker reduction setting.

（refer to 3.180. kNkMAIDCapability_FlickerReductionSetting in MAIDType0025.PDF）

　10)　DiffractionCompensation

Set diffraction compensation.

（refer to 3.189. kNkMAIDCapability_DiffractionCompensation in MAIDType0025.PDF）

　11)　ShootingMode

Set "Release mode" from the Photo shooting menu.

（refer to 3.76. kNkMAIDCapability_ShootingMode in MAIDType0025.PDF）

　12)　UserMode1

Shows the shooting mode of the U1 positions on the mode dial.

（refer to 3.51. kNkMAIDCapability_ UserMode1 in MAIDType0025.PDF）

　13)　UserMode2

Show the shooting mode of the U2 positions on the mode dial.

（refer to 3.52. kNkMAIDCapability_ UserMode2 in MAIDType0025.PDF）

　14)　VibrationReduction

Set the vibration reduction.

（refer to 3.190. kNkMAIDCapability_VibrationReduction in MAIDType0025.PDF）

　15)　CameraType

Get camera type.

（refer to 3.115. kNkMAIDCapability_CameraType in MAIDType0025.PDF）

　16)　HDRSaveIndividualImages

Set "HDR - Save individual images(NEF)".

（refer to 3.56. kNkMAIDCapability_HDRSaveIndividualImages in MAIDType0025.PDF）

　17)　SaveCameraSetting

You can save camera settings.

（refer to 3.185. kNkMAIDCapability_SaveCameraSetting in MAIDType0025.PDF）

Sub Menu 5

You can read and write settings concerned with movie.

　1)　MoviePictureControl

Set and get current Picture Control for movie.

（refer to 3.166 kNkMAIDCapability_MoviePictureControl in MAIDType0025.PDF）

　2)　MoviePictureControlDataEx2

Set and get Picture Control data for movie.

When you set Picture Control data to camera, you have to name the file "MovPicCtrlData.dat" and put the file in this application folder in Windows, or put the file in home directory in Macintosh.
(refer to 3.136 kNkMAIDCapability_Movie PictureControlDataEx2 in MAIDType0025.PDF)

3) DeleteMovieCustomPictureControl

Delete Custom Picture Control for movie.
(refer to 3.137 kNkMAIDCapability_DeleteMovieCustomPictureControl in MAIDType0025.PDF)

4) MovieMeteringMode

Set the metering mode of camera for movie.
(refer to 3.168 kNkMAIDCapability_MovieMeteringMode in MAIDType0025.PDF)

5) MovieActive_D_Lighting

Set Active D-Lighting for movie.
(refer to 3.179 kNkMAIDCapability_MovieActive_D_Lighting in MAIDType0025.PDF)

6) MovieAttenuator

Set attenuator for movie.
(refer to 3.184. kNkMAIDCapability_MovieAttenuator in MAIDType0025.PDF)

7) MovieAutoDistortion

Set auto distortion control for movie.
(refer to 3.191. kNkMAIDCapability_MovieAutoDistortion in MAIDType0025.PDF)

8) MovieDiffractionCompensation

Set diffraction compensation for movie.
(refer to 3.196. kNkMAIDCapability_MovieDiffractionCompensation in MAIDType0025.PDF)

9) MovieFileType

Set the movie file type.
(refer to 3.186. kNkMAIDCapability_MovieFileType in MAIDType0025.PDF)

10) StillCaptureModeSaveFrame

Set the release mode (save frame)
(refer to 3.205. kNkMAIDCapability_StillCaptureModeSaveFrame in MAIDType0025.PDF)

11) MovieFocusMode

Set focus mode for movie
(refer to 3.194. kNkMAIDCapability_MovieFocusMode in MAIDType0025.PDF)

12) MovieScreenSize

Set frame size / frame rate for movie.
(refer to 3.46. kNkMAIDCapability_MovieScreenSize in MAIDType0025.PDF)

13) MovieVibrationReduction

Set vibration reduction for movie.
(refer to 3.193. kNkMAIDCapability_MovieVibrationReduction in MAIDType0025.PDF)

14) MovieVignetteControl

Set vignette control for movie.
(refer to 3.195. kNkMAIDCapability_MovieVignetteControl in MAIDType0025.PDF)

15) MovieAfAreaMode

Set AF-area mode for movie.

(refer to 3.192. kNkMAIDCapability_MovieAfAreaMode in MAIDType0025.PDF)

16) ElectronicVR

Select electric VR of Movie shooting menu.

(refer to 3.178 kNkMAIDCapability_ElectronicVR in MAID3Type0025.PDF)

Sub Menu 6

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 MAID3Type0025.PDF)

2) ImageSize

Set the image size for JPEG.

(refer to 3.1 kNkMAIDCapability_ImageSize in MAID3Type0025.PDF)

3) WBMode

Set white balance mode(auto/Incandescant/…).

(refer to 3.3 kNkMAIDCapability_WBMode in MAIDType0025.PDF)

4) Sensitivity

Set sensitivity of camera.

(refer to 3.4 kNkMAIDCapability_Sensitivity in MAIDType0025.PDF)

5) WBTuneAuto

Adjust white balance in Auto mode.

(refer to 3.6 kNkMAIDCapability_WBTuneAuto in MAIDType0025.PDF)

6) WBTuneIncandescent

Adjust white balance in Incandescent mode.

(refer to 3.8 kNkMAIDCapability_WBTuneIncandescent in MAIDType0025.PDF)

7) WBFluorescentType

Set the fluorescent type when the white balance is "Fluorescent".

(refer to 3.9 kNkMAIDCapability_WBFluorescentType in MAIDType0025.PDF)

8) WBTuneFluorescent

Adjust white balance in Fluorescent mode.

(refer to 3.10 kNkMAIDCapability_WBTuneFluorescent in MAIDType0025.PDF)

9) WBTuneSunny

Adjust white balance in Sunny mode.

(refer to 3.11 kNkMAIDCapability_WBTuneSunny in MAIDType0025.PDF)

10) WBTuneFlash

Adjust white balance in Flash mode.

(refer to 3.12 kNkMAIDCapability_WBTuneFlash in MAIDType0025.PDF)

11) WBTuneShade

Adjust white balance in Shade mode.

(refer to 3.13 kNkMAIDCapability_WBTuneShade in MAIDType0025.PDF)

12) WBTuneCloudy

Adjust white balance in Cloudy mode.

(refer to 3.14 kNkMAIDCapability_WBTuneCloudy in MAIDType0025.PDF)

13) PictureControl

Set and get current Picture Control.

(refer to 3.38 kNkMAIDCapability_PictureControl in MAIDType0025.PDF)

14) PictureControlDataEx2

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 3.39 kNkMAIDCapability_PictureControlDataEx2 in MAIDType0025.PDF)

15) DeleteCustomPictureControl

Delete Custom Picture Control on Photo shooting menu.

(refer to 3.40 kNkMAIDCapability_DeleteCustomPictureControl in MAIDType0025.PDF)

16) WBAutoType

Set white balance Auto type in Auto mode.

 (refer to 3.7 kNkMAIDCapability_WBAutoType in MAIDType0025.PDF)

17) WBTuneNatural

Adjust white balance in Natural mode.

(refer to 3.17 kNkMAIDCapability_WBTuneNatural in MAIDType0025.PDF)

Sub Menu 7

You can read and write settings concerned with Live View.

1) LiveViewProhibit

Get the Live view prohibition condition.

(refer to 3.86 kNkMAIDCapability_LiveViewProhibit in MAIDType0025.PDF)

2) LiveViewStatus

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

(refer to 3.85 kNkMAIDCapability_LiveViewStatus in MAIDType0025.PDF)

3) LiveViewImageSize

This will set the size of "Live View image".

 (refer to 3.169 kNkMAIDCapability_LiveViewImageSize in MAIDType0025.PDF)

4) 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 3.112 kNkMAIDCapability_GetLiveViewImage in MAIDType0025.PDF)

5)　LiveViewImageStatus

Get the state of the live view image to be acquired with kNkMAIDCapability_GetLiveViewImage.

(refer to 3.197 kNkMAIDCapability_LiveViewImageStatus in MAIDType0025.PDF)

6)　MovRecInCardProhibit

Get the Movie record prohibition condition.

(refer to 3.119 kNkMAIDCapability_MovRecInCardProhibit in MAIDType0025.PDF)

7)　MovRecInCardStatus

Start or stop Movie record, and get current status of Movie record.

(refer to 3.118 kNkMAIDCapability_MovRecInCardStatus in MAIDType0025.PDF)

8)　LiveViewZoomArea

Set the zoom area of live view image.

(refer to 3.198 kNkMAIDCapability_LiveViewZoomArea in MAIDType0025.PDF)

9)　TrackingAFArea

The tracking operation is started at Auto-area AF. Also change the selected face.

(refer to 3.199. kNkMAIDCapability_TrackingAFArea in MAIDType0025.PDF)

Sub Menu 8

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

1)　EVInterval

Select an interval of exposure value.

(refer to 3.59 kMAIDCapability_EVInterval in MAIDType0025.PDF)

2)　BracketingVary

Select a Bracketing variation.

(refer to 3.61 kMAIDCapability_BracketingVary in MAIDType0025.PDF)

3)　HighlightBrightness

Set Highlight brightness.

(refer to 3.183 kNkMAIDCapability_HighlightBrightness in MAID3Type0025.PDF)

Sub Menu 9

You can change flash settings.

1) SBIntegrationFlashReady

Get the information about the ready state of the external flash displayed in the flash info of the

INFO display.

(refer to 3.181 kNkMAIDCapability_SBIntegrationFlashReady in MAID3Type0025.PDF)

Sub Menu 10

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 3.110 kNkMAIDCapability_RawJpegImageStatus in MAIDType0025.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 11

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) **GetVideoImageEx**

Get a movie file. The movie is saved as like "Movie001.jpg" in application folder in Windows, or saved in home directory in Macintosh.

(refer to 3.113 kNkMAIDCapability_GetVideoImageEx in MAIDType0025.PDF)

6)　GetRecordingInfo

Get movie record information.

(refer to 3.188 kNkMAIDCapability_GetRecordingInfo in MAID3Type0025.PDF)

Sub Menu 12

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

About sample program(Macintosh)

- When you switch between release and debug binaries, you change "Build Configuration" of "Edit Scheme" menu from Type0025CtrlSample.xcodeproj.

Restriction

- This sample program doesn't provide all of the capability Type0025 module support. About usage of the other capability, please refer the document "MAID3Type0025(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.1.3　November 14, 2022
  - Files [Windows]…Added "dnssd.dll" and "NkRoyalmile.dll".

- Rev.1.2　October 29, 2021
  - Environment…Update the environment.

- Rev.1.1　February 26, 2020
  - Environment…Update the environment of Windows.
  - Environment…Update the environment of Macintosh.

- Rev.1.0　November 1, 2019　First version