MEIKYO ELECTRIC CO., LTD.
WATCHBOOT provider

Version 1.1.1

User's guide

August 08, 2022

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Remarks:
This document is translated from Japanese into English by the machine translation.
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【 revision history 】

Version	Date	Content
1.0.0	2017-04-25	First edition.
1.1.0	2019-06-11	RPC-M4LS compatible.
1.1.1	2022-08-08	Correction of internal processing.

【 hardware 】

Model	Version	Notes
RPC-M4L	-	
RPC-M4LS	1.1.0	

Contents

1. Introduction

This book is an user's guide of the ORiN provider (MEIKYO WATCHBOOT provider) for WATCH BOOT L-zero RPC-M4L/RPC-M4LS made of MEIKYO ELECTRIC.

This book explains the function of this MEIKYO WATCHBOOT provider and the mounting method.

2. Outline of provider

2.1. Outline

The MEIKYO WATCHBOOT provider acquires data by using the Telnet communication from the device. The file format of this provider is DLL(Dynamic Link Library), and table 2.1 shows the details.

Table 2-1 MEIKYO WATCHBOOT provider

File name	CaoProvMEIKYOWATCHBOOT.dll
ProgID	CaoProv.MEIKYO.WATCHBOOT
Registry registration	regsvr32 CaoProvMEIKYOWATCHBOOT.dll
Blotting out of registry registration	regsvr32 /u CaoProvMEIKYOWATCHBOOT.dll

2.2. Method property

2.2.1. CaoWorkspace::AddController method

When the Controller object is generated, a necessary option is specified by the above-mentioned communicate mode and each communicate mode.

The specification of AddController is shown as follows.

Format

    AddController
    (
            "< controller name >",   // Controller name (arbitrariness)
            "CaoProv.MEIKYO.WATCHBOOT",   // Provider name (fixation)
            "< machine name >",   // Provider execution machine name (unused)
            "< option >"   // Optional character string
)

The character string specified for an optional character string is shown as follows.

Table 2-2 Optional character string of CaoWorkspace::AddController

Option	Indispensability	Explanation	Range of value	Default value
CONN=< connection option>*1	✓	Parameter in communication tools is specified. About the specification method, Please refer to 2.2.1.1.	–	–
TIMEOUT=< Response standby time >	–	The response standby time is specified (ms). It becomes a default value when it is not specified or a specified value is outside the range.	0 – 65535	500
PASSWORD=< Log in password >	–	The password to connect it with the device is	–	magic

		specified. It becomes a default value when not specified.		
ID=<Log in id>*2		The id to connect it with the device is specified. It becomes a default value when not specified.	-	admin

*1 Either ETH optional connection or TCP optional connection can be specified about optional CONN.

`Usage example`

  CONN=ETH:192.168.10.1

*2 The ID is an option of PRC-M4LS. Even if specified by RPC-M4L, it is ignored.

2.2.1.1. Conn is optional.

Connected parameter character string of optional Conn is shown as follows. It is shown to omit it here in the brace) and the underlined part under the explanation of each parameter shows the default value when the option is not specified respectively.

The line shows the default value in case of Ethernet.

  "Conn=ETH:<IP>[:<Port>[:<Local IP>:<Local Port>]]]"

    <IP>   : Connection destination Internet Protocol address.

    <Port>   : Connection destination port. (23)

    <Local IP>   : Local Internet Protocol address.

    <Loacal Port> : Local port.

2.2.2. CaoController::AddVariable method

The CaoVariable object is generated from CaoController. Please refer to Table 2-4 variable list for the variable identifier that can be specified.

The specification of AddVariable is shown as follows.

`Format`

```
AddVariable
(
        "< variable identifier >",      // Variable identifier
        ""                              // Optional character string
)
```


2.2.3. CaoController::get_VariableNames method

It acquires the variable identifier list shown in Table 2.4.

2.2.4. CaoController::Execute method

The data of the device can acquisition/be set by using the Execute method.

Please refer to Table 2-3 for details.

Format

```
Execute
(
        <bstrCommand:BSTR>            // command name
        [,<vntParam:VARIANT>]         // parameter
        [,<pVal:VARIANT>]])           // execution result
)
```

2.2.5. CaoVariable::get_Value method

Data is acquired from the device according to the specified variable identifier.

Please refer toTable 2-4 for details.

2.2.6. CaoVariable::put_Value method

Data is set to the device according to the specified variable identifier.

Please refer toTable 2-4 for details.

2.3. Execute command list

The Execute command list that can be used in controller class is described.

Table 2-3 Execute command list

Command name	Explanation	Details
WritePower	The state of the power supply is written.	WritePower
ReadPower	The state of the power supply is acquired.	ReadPower
InvertPower	The state of the power supply is reversed.	InvertPower
RebootOutlet	The outlet is reactivated.	RebootPower
ReadStatus	Status is acquired.	ReadStatus
ReadVersion	The version is acquired.	ReadVersion

WritePower

It is a writing command as for the state of the power supply.

Item	Type explanation			Remarks
vntParam	VT_ARRAY | VT_VARIANT			
	i	VT_ARRAY | VT_UI1		
		i.0	Outlet number (0-255)	
		i.1	Writing value 0: Power supply OFF 1: Power supply ON	
pVal	None			

ReadPower

It is a command to acquire the state of the power supply.

Item	Type explanation		
vntParam	VT_UI1	Acquired outlet number 0: All outlet number 1-255: Specified outlet number	
pVal	VT_ARRAY | VT_VARIANT		
	i	VT_ARRAY | VT_UI1	
		i.0	Outlet number (0-255)

		i.1	Writing value 0: Power supply OFF 1: Power supply ON

InvertPower

It is a command that reverses the state of the power supply.

Item	Type explanation	
vntParam	VT_UI1	Acquired outlet number 0: All outlet number 1-255: Specified outlet number
pVal	None	

RebootPower

It is a command that reactivates the outlet.

Item	Type explanation	
vntParam	VT_UI1	Acquired outlet number 0: All outlet number 1-255: Specified outlet number
pVal	None	

ReadStatus

It is a command to acquire status.

Item	Type explanation				
vntParam	VT_UI1			Acquired outlet number 0: All outlet number 1-255: Specified outlet number	
pVal	VT_ARRAY | VT_VARIANT				
	i	VT_ARRAY | VT_VARIANT			
		i.0	VT_UI1	Outlet number	
		i.1	VT_UI1	State of power supply 0: OFF 1: ON	
		i.2	VT_UI1	State 1: Normality 2: Abnormality 3: It is recovering.	
		i.3	VT_UI4	Action execution frequency	
		i.4	VT_UI1	Response just before address 1 1: Normality 2: Abnormality	
		i.5	VT_UI4	Unresponse frequency of address 1	
		i.6	VT_UI2	Response time of address 1 (ms) 0: Unsetting 1 - 9998: Response time 9999: Unresponse	
		i.7	VT_UI1	Response just before address 2 1: Normality 2: Abnormality	
		i.8	VT_UI4	Unresponse frequency of address 2	
		i.9	VT_UI2	Response time of address 2 (ms) 0: Unsetting 1 - 9998: Response time 9999: Unresponse	

		i.10	VT_UI1	Response just before address 3 1: Normality 2: Abnormality
		i.11	VT_UI4	Unresponse frequency of address 3
		i.12	VT_UI2	Response time of address 3 (ms) 0: Unsetting 1 - 9998: Response time 9999: Unresponse
		i.13	VT_UI1	Response just before address 4 1: Normality 2: Abnormality
		i.14	VT_UI4	Unresponse frequency of address 4
		i.15	VT_UI2	Response time of address 4 (ms) 0: Unsetting 1 - 9998: Response time 9999: Unresponse

ReadVersion

It is a command to acquire the version.

Item	Type explanation	
vntParam	None	
pVal	VT_BSTR	Version character string

2.4. Variable list

The variable list that can be used in controller class is described.

Table 2-4 Controller class variable list

Variable identifier	Explanation	Type	Attribute get	put	Details
@MAKER_NAME	The manufacturer name is acquired.	VT_BSTR	-	--	-----
@VERSION	The device version is acquired.	VT_BSTR	-	--	-----
POWER ＜ outlet number ＞	The state of the power supply acquisition/is set. Outlet number: 1 ? 255	VT_UI1	-	-	POWER
JUDGE ＜ outlet number	The judgment is acquired. Outlet number: 1 - 255	VT_UI1	-	--	JUDGE
ACTIONCOUNT ＜ outlet number ＞	The Action execution frequency is acquired. Outlet number: 1 - 255	VT_UI4	-	--	-----
LASTPING ＜ address number of outlet number ＞_＜ ＞	The response just before the address is acquired. Outlet number: 1 ? 255 Address number: 1: 4	VT_UI1	-	--	LASTPING
ECHOCOUNT ＜ address number of outlet number ＞_＜ ＞	The address and the unresponse frequency are acquired. Outlet number: 1 ? 255 Address number: 1: 4	VT_UI4	-	--	-----
ECHOTIME ＜ address number of outlet number ＞_＜ ＞	Response time (ms) with the address is acquired. Outlet number: 1 ? 255 Address number: 1: 4	VT_UI2	-	--	ECHOTIME

POWER ＜ outlet number ＞

POWER acquisition/sets the state of the power supply of the outlet. Please specify the outlet number that becomes an object for ＜ outlet number ＞ by the integer of 0-255.

POWER return value specification

Type	Value	Explanation
VT_UI1	0	It is shown that it is a state of power supply OFF.
	1	It is shown that it is a state of power supply ON.

POWER setting value specification

Type	Value	Explanation
VT_UI1	0	The power supply is turned off.
	1	The power supply is turned on.
	2	The state of the power supply is reversed.
	3	The power supply is reactivated.

JUDGE < outlet number >

JUDGE is a variable to acquire the state of the outlet. Please specify the outlet number that becomes an object for < outlet number > by the integer of 0-255.

JUDGE return value specification

Type	Value	Explanation
VT_UI1	0	It is shown that it is normal.
	1	It is shown that it is abnormal.
	2	It is shown to be recovering.

LASTPING < address number of outlet number >_< >

LASTPING is a variable to acquire the response just before the address that the outlet specified. Please specify the outlet number that becomes an object in < outlet number > and specify the address number that becomes an object for < address number > by the integer of 1-4 in the integer of 0-255.

LASTPING return value specification

Type	Value	Explanation
VT_UI1	0	It is shown that it is normal.
	1	It is shown that it is abnormal.

ECHOTIME < address number of outlet number >_< >

ECHOTIME is a variable to acquire response time (ms) of the address that the outlet specified. Please specify the outlet number that becomes an object in < outlet number > and specify the address number that becomes an object for < address number > by the integer of 1-4 in the integer of 0-255.

LASTPING return value specification

Type	Value	Explanation
VT_UI2	0	It is shown that it is a unsetting.
	1 - 9998	Response time (ms)
	9999	It is shown that it is a unresponse.

2.5. Error code

In this provider, the following original error codes in which the mask is done with 0x8011**** exist. About a common error of ORiN2, please refer to the chapter of the error code of "ORiN2 programming guide".

Table 2-5 Original error code table

Error number	Explanation
0x80110001	The CONN specification is illegal.
0x80110002	Log in failure
0x80110003	The outlet number outside the range is specified.
0x80110004	The address number outside the range is specified.
0x80110005	A packet outside assumption is received.
0x80110006	Command failure

3. Sample program

An easy sample to acquire the state of the power supply of outlet number 1 from the device is shown as follows.

Precondition:

・The address of the device is adjusted to 192.168.10.1.

・The log in password is assumed to be magic.

| List 3-1 | Sample.frm |

```
Dim eng As CaoEngine
Dim ctrl As CaoController
Dim var As CaoVariable
Private Sub Form_Load()
        Set eng = New CaoEngine
        ' mkae controller object
        Set ctrl = eng.Workspaces(0).AddController(
                "",
                "CaoProv.MEIKYO.WATCHBOOT",
                "",
                "CONN=TCP:192.168.10.1:23, TIMEOUT=500, ID=admin, PASSWORD=magic")
        ' make controller variable object
        Set var = ctrl.AddVariable("POWER1", "")
End Sub


' get value
Private Sub GetValue_Click()
        ' getcontrol variable value
        Dim value As Variant
        Set value = ctrl.Value
End Sub
```