BACnet/MSTP

Supported series: BACnet/MSTP protocol devices

HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	BACnet/MSTP		
PLC I/F	RS485-2W		
Baud rate	38400	9600,19200, 38400	
Data bits	8		
Parity	None		
Stop bits	1		
Time out (sec)	1.0	0.05 ~ 25.5	
MAC	0	0 ~ 254	
HMI MAC	1	1 ~ 127	
Nmax_master	127	2 ~ 127	
Npoll	50	1 ~ 255	
Device MAC address	1		*Note1
Device ID	0		*Note1
Network Address	0		Use Destination Specifier *Note1
Mac Layer Address Length	1		
Mac(HEX)	0		

Online simulator	NO	Extend address mode	NO

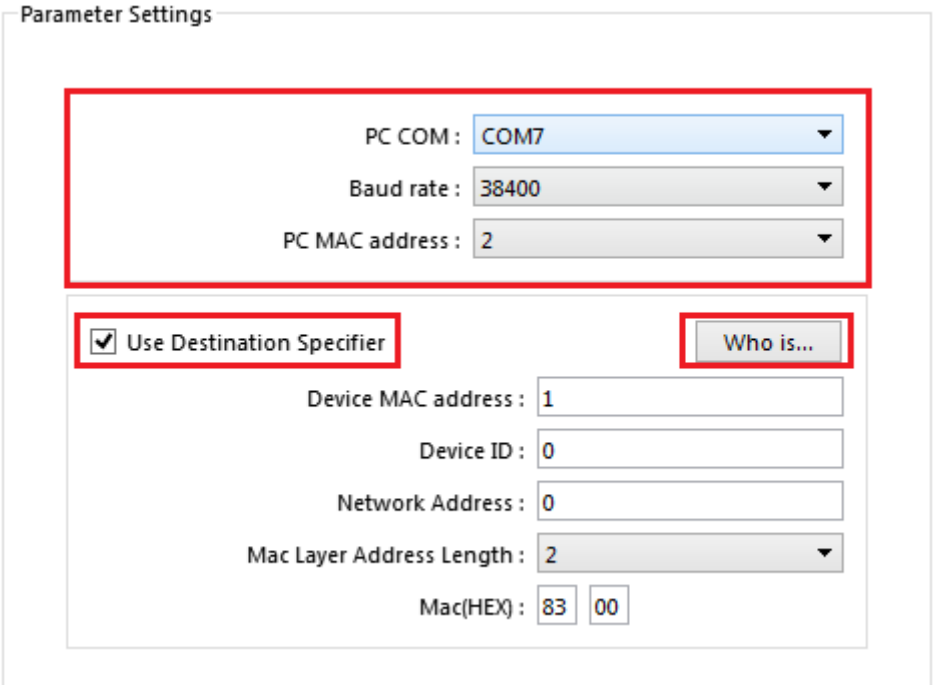
*Note1: Press "Who is" to connect to the device to automatically obtain parameters or enter parameters manually.

Parameter Settings:

Set MSTP parameters of PC

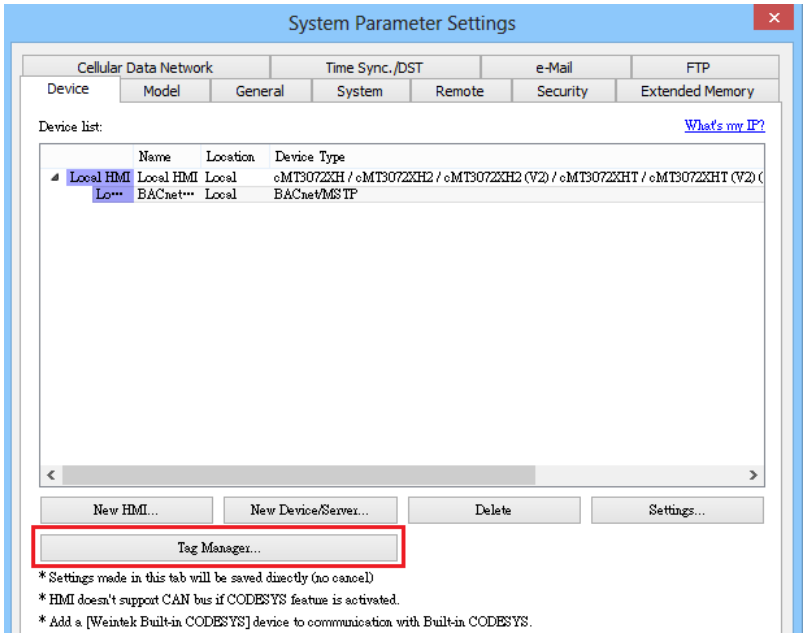
Connect the mstp device to the communication port of the PC. Follow the steps below to retrieve or directly set the communication parameters of the device.

[PC COM]: Set up the PC and device to connect to the com port
[Baud rate]: Set the Baud rate of the device
[PC MAC Address]: Set the BACnet MSTP MAC parameters of the PC. This setting item cannot be repeated with the device
[Who is]: Retrieve the parameters of the MSTP Device connected to the PC. If it cannot be retrieved, please check the above parameter settings.
[Use Destination Specifier]: Some MSTP devices will use **[Destination Specifier]**, and the communication parameters need to be filled in **[Network Address]**, **[Mac Layer Address Length]** and **[MAC].**
[Device MAC address]: Set the MAC address of MSTP Device
[Device ID]: Set the ID of the MSTP Device

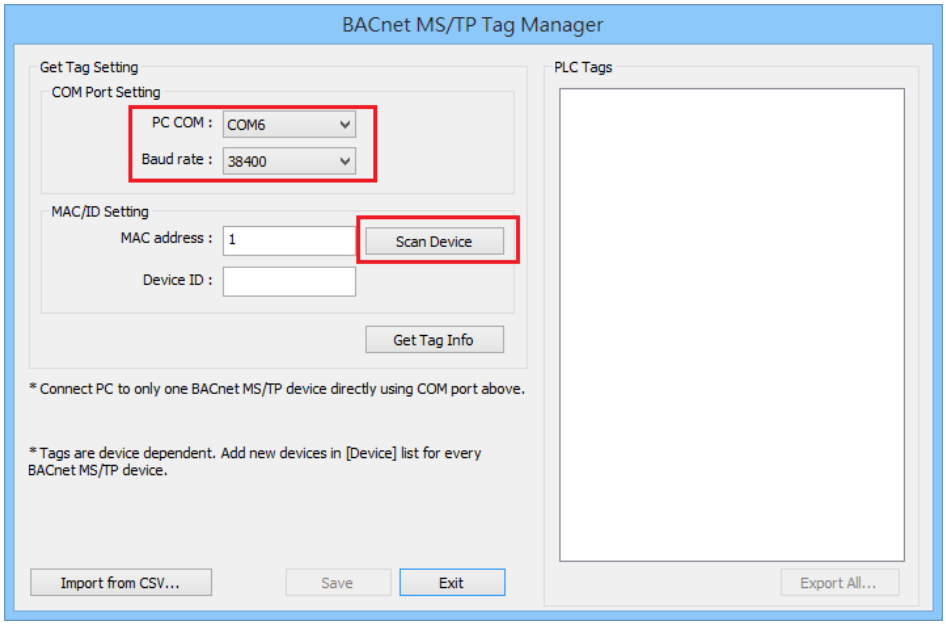


How to Import Tags:

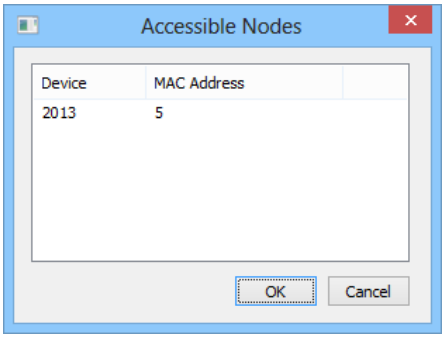
1. In EasyBuilder **System Parameter Settings** add **BACnet/MSTP** driver, set the communication parameters, and then click **Tag Manager** button.



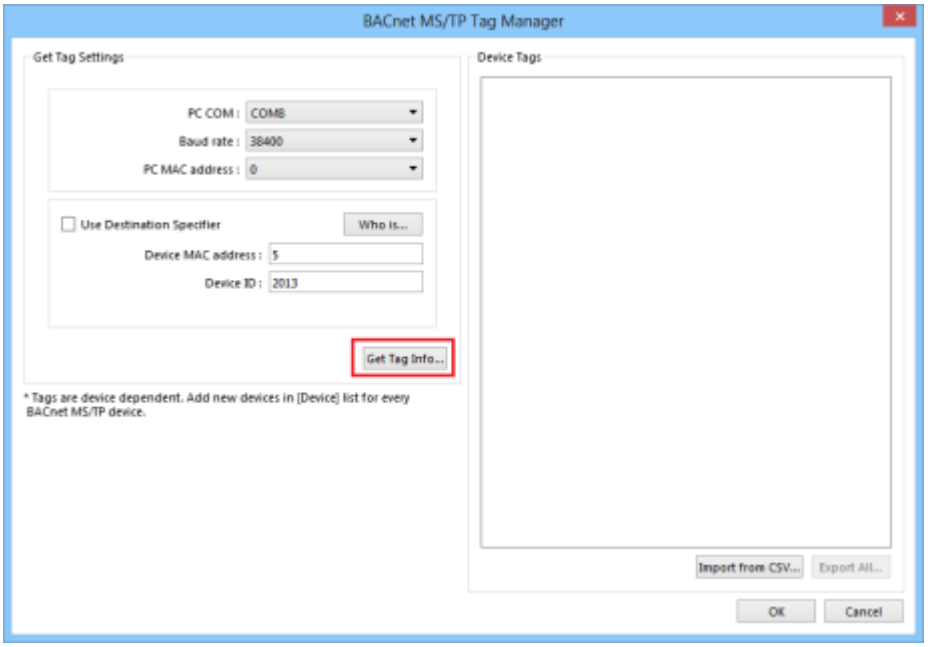
2. Use a RS-232/RS-485 converter to connect the BACnet MS/TP unit with PC. Only one BACnet MS/TP unit is allowed. Set **PC COM** and **Baud rate**, click **Who is** button to find the **MAC address** and **Device ID** of the BACnet MS/TP unit.



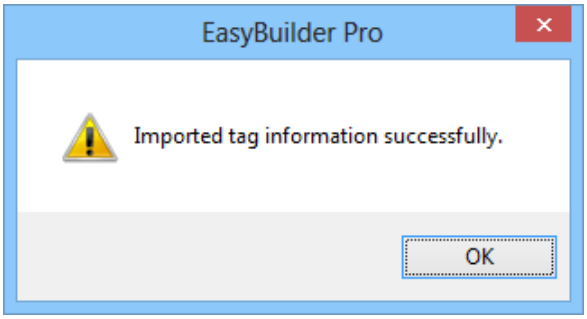
3. If the device is found, the following message shows, click **OK**.



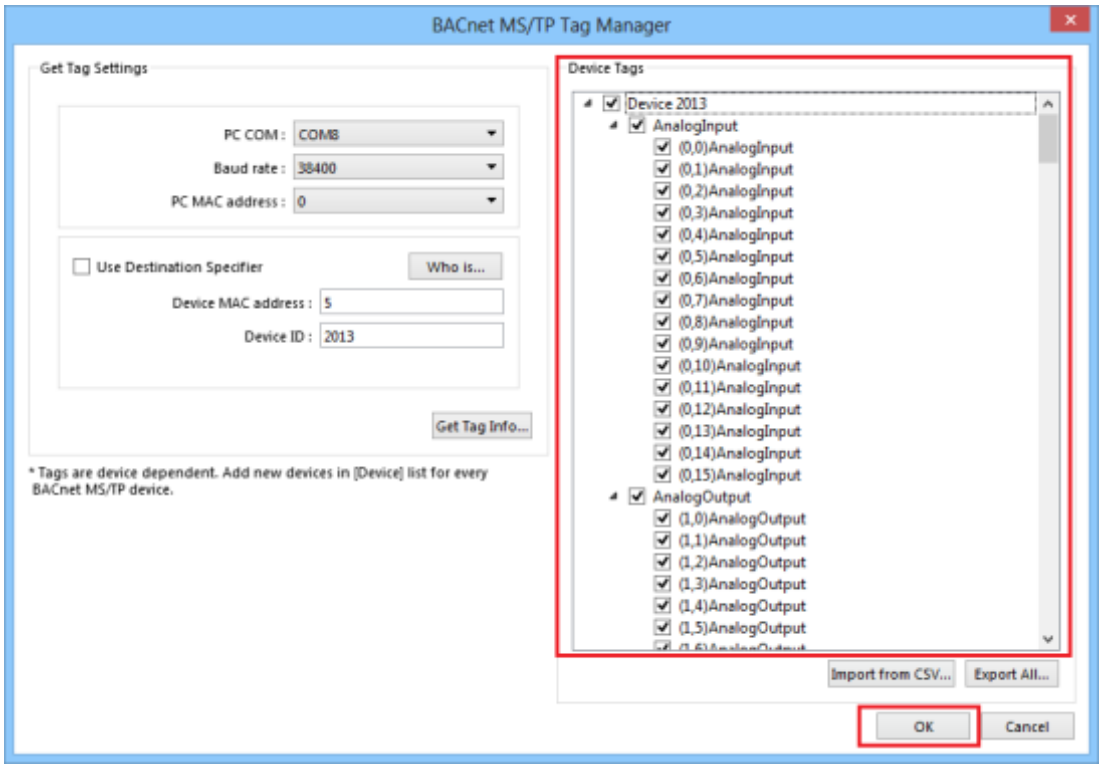
4. After getting the **MAC address** and **Device ID**, click **Get Tag Info** button to get the address tags.



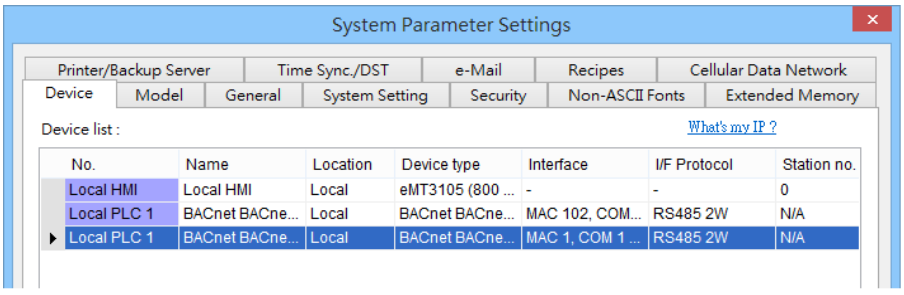
5. If the tags are obtained successfully, the following message shows, click **OK**.



6. In the **Device Tags** field, the tags with its check box selected can be imported. Click **OK** to complete the address import.
   Click **Export All**, to save the address tags as CSV file. If tag infomation cannot be obtained when creating a project, use **[Import from CSV]** to obtain tag information.



7. To connect another BACnet/MSTP unit, please add the **BACnet/MSTP** driver in EasyBuilder System Parameter Settings again. The communication parameters will follow the settings of the firstly added unit. The way to get tag information is the same as illustrated in the preceding steps. Another way to get tag information is to click **[Import form CSV]** button in Tag Manager.



Notes:

1. The MAC address and Device ID of certain BACnet MS/TP units can be gained by clicking [Scan Device] only at the first time the unit is powered up. To get this information in the same way again, please power up the unit again.
2. Certain BACnet MS/TP units do not support [Scan Device] and [Get Tag Info].

3. If the MAC address gained by clicking [Scan Device] does not match the one specified in EasyBuilder Pro Device Properties settings, a message shows as a reminder when [Get Tag Info] is clicked.

MSTP Model:

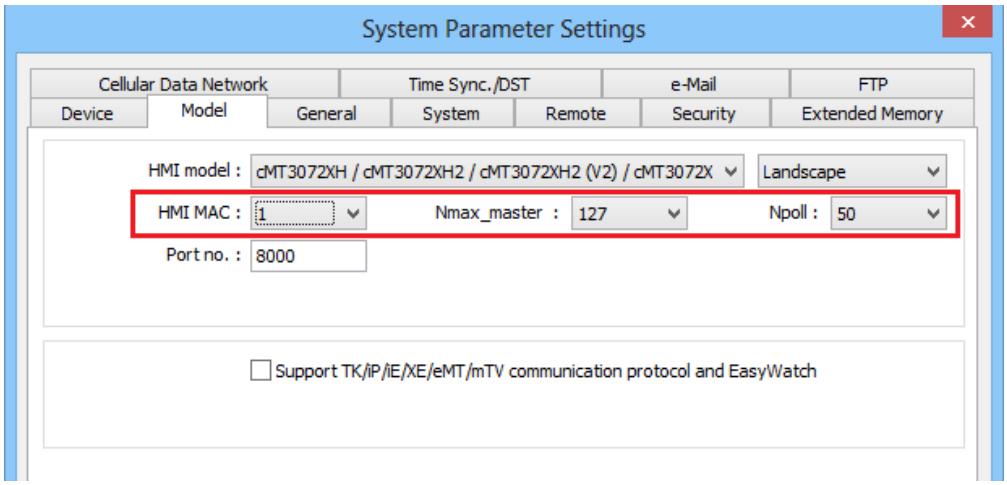
After adding the driver and importing the tag, the user needs to set the MSTP Model. The setting path is as follows:

[System Parameter Settings] -> **[Model]**

-[HMI MAC]: Set BACNET MSTP MAC parameters for HMI

-[Nmax_master]: Set the maximum MAC in the domain

-[Npoll]: Set the interval for sending polling packets (50 means that after receiving 50 tokens, polling will continue)



Default Object Model:

Object ID	Object Name	Object Structure
0	Analog Input	ObjectName ObjectIdentifier ObjectType PresentValue PresentValue Array EventState OutOfService Units SubscribeCovTime HighLimit LowLimit DeadBand NotificationClass LimitEnable EventEnable NotifyType TimeDelay AckedTransitions
1	Analog Output	ObjectName ObjectIdentifier ObjectType PresentValue PresentValueArray EventState OutOfService Units Priority PriorityReset PriorityArray RelinquishDefault HighLimit LowLimit DeadBand NotificationClass LimitEnable EventEnable

Object ID	Object Name	Object Structure
		NotifyType TimeDelay AckedTransitions
2	Analog Value	ObjectName ObjectIdentifier ObjectType PresentValue PresentValueArray EventState OutOfService Units Priority PriorityReset PriorityArray RelinquishDefault HighLimit LowLimit Dead Band NotificationClass LimitEnable EventEnable NotifyType TimeDelay AckedTransitions
3	Binary Input	ObjectName ObjectIdentifier ObjectType PresentValue PresentValueArray EventState OutOfService Polarity AlarmValue NotificationClass EventEnable NotifyType TimeDelay AckedTransitions

Object ID	Object Name	Object Structure
4	Binary Output	ObjectName ObjectIdentifier ObjectType PresentValue PresentValueArray EventState OutOfService Priority PriorityReset PriorityArray Polarity AlarmValue NofificationClass EventEnable NotifyType TimeDelay AckedTransitions RelinquishDefault
5	Binary Value	ObjectName ObjectIdentifier ObjectType PresentValue PresentValueArray EventState Priority PriorityReset PriorityArray OutOfService AlarmValue NotificationClass EventEnable NotifyType TimeDelay AckedTransitions RelinquishDefault
7	Command	ObjectName ObjectIdentifier ObjectType

Object ID	Object Name	Object Structure
		InProcess AllWritesSuccessful
8	Device	ObjectName ObjectIdentifier ObjectType SystemStatus VendorName VendorIdentifier ModelName FirmwareRevision ApplicationSoftwareVersion ProtocolVersion ProtocolRevision MaxAPDUlengthAccepted SegmentationSupported ApduTimeout NumberOfAPDUretries DataBaseRevision MaxSegmentsAccepted UtcOffset DaylightSavingsStatus ApduSegmentTimeout BackupFailureTimeout
10	File	ObjectName ObjectIdentifier ObjectType FileType FileSize Archive ReadOnly
13	Multi State Input	ObjectName ObjectIdentifier ObjectType PresentValue EventState OutOfService NumberOfStates AckedTransitions

Object ID	Object Name	Object Structure
14	Multi State Output	ObjectName ObjectIdentifier ObjectType PresentValue EventState OutOfService NumberOfStates Priority PriorityReset PriorityArray AckedTransitions RelinquishDefault
16	Program	ObjectName ObjectIdentifier ObjectType
18	Averaging	ObjectName ObjectIdentifier ObjectType MinimumValue AverageValue MaximumValue AttemptedSamples ValidSamples Window nterval WindowSamples
19	Multi State Value	ObjectName ObjectIdentifier ObjectType PresentValue EventState OutOfService NumberOfStates Priority PriorityReset PriorityArray AckedTransitions RelinquishDefault
20	Trend Log	ObjectName

Object ID	Object Name	Object Structure
		ObjectIdentifier ObjectType Enable StopWhenFull BufferSize RecordCount TotalRecordCount
21	Life Safety Point	ObjectName ObjectIdentifier ObjectType PresentValue TrackingValue EventState Reliability OutOfService Mode Silenced
22	Life Safety Zone	ObjectName ObjectIdentifier ObjectType PresentValue TrackingValue EventState Reliability OutofService Mode Silenced
23	Accumulator	ObjectName ObjectIdentifier ObjectType PresentValue PresentValueArray EventState OutOfService Scale Units
24	Pulse Converter	ObjectName ObjectIdentifier

Object ID	Object Name	Object Structure
		ObjectType PresentValue EventState OutOfService Units ScaleFactor AdjustValue Count

Note : Object name can not include “#”.

Wiring Diagram:

RS-485 2W

The serial port pin assignments may vary between HMI models, please click the following link for more information.