# Application Note Allen Bradley Micro810/830 PLCs and Connected Components Workbench (CCW)

This document guides you through the setup of proprietary vendor specific software installed on you PC. Your supervisor may provide you with additional or alternative instructions.

The document consists of standard instructions that may not fit your particular solution. Please visit our support website for latest revisions of documentation and firmware:

http://www.secomea.com

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## **Prerequisites for This Guide**

The following guide will assist you to setup a remote and online connection to the Allen Bradley Micro830 PLC placed on the customer site using your Connected Components Workbench software installed on your PC.

Prerequisites for this guide are:

- You have an operational LinkManager installed on your PC with a GateManager certificate that allows you to connect to the SiteManager agents.
- You have the Connected Components Workbench software installed.
- You have the Allen Bradley device agent installed and configured on the SiteManager at the remote site, and there is access between the SiteManager and the PLC.
  - A USB attached Micro830 PLC must be configured with agent device type Allen-Bradley / USB PLC on the SiteManager. Note that this connection type requires a SiteManager model with USB support and minimum SiteManager and LinkManager version 12155.
  - A USB attached Micro810 PLC must be configured with agent device type Allen-Bradley / USB Serial Adapter on the SiteManager. Note that this connection type requires a SiteManager model with USB support and minimum SiteManager and LinkManager version 13094.
  - A USB to DATA converter, such as the 1784-U2DHP USB converter must be configured with a Custom / USB agent, and the parameter field must be set to 14c0:0009.

If any of these prerequisites are not met, you should contact the person / department responsible within your own company or at the company responsible hereof.

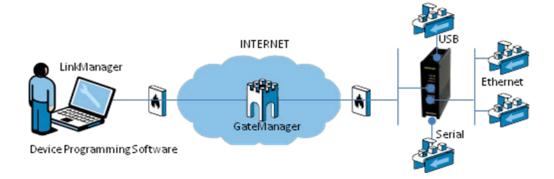
## **System Overview**

The communication path is as follows:

**CCW**  $\rightarrow$  **LinkManager**  $\rightarrow$  GateManager  $\rightarrow$  SiteManager  $\rightarrow$  PLC.

This guide will elaborate on the components marked with **bold**.

The following system overview depicts a SiteManager 1029/3229 at the customer location:





## 1. Connecting Micro830 remotely via USB

**NOTE:** This section applies to an agent configured in the SiteManager by the type **Allen-Bradley / USB PLC**.

The following is verified with CCW version 1.0 and LinkManager version 12155. The procedure may be further streamlined with later version of Link-Manager.

1. Locate the Allen-Bradley Micro830 PLC agent and click on it to establish a connection to it:

LinkManager secimea	
Logout Services GM	Login Sniffer Refresh
jens-test:	gm06.JHS
문 🛔 gm06 Show all Expand all Refresh	<ul> <li>✓ ⊕ SiteManager <connect all=""></connect></li> <li>✓ ⊕ SiteManager <connect all=""></connect></li> <li>✓ ↓ ⊕ ✓ Allen Bradley (SiteManager)</li> <li>Show all Expand all Refresh</li> </ul>

2. First time the connection is opened, a "Found New Hardware" Wizard may pop up. Select to not search for drivers on Windows Update site.

Found New Hardware Wizard				
	Welcome to the Found New Hardware Wizard Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission). Read our privacy policy			
	Can Windows connect to Windows Update to search for software? Yes, this time only Yes, now and every time I connect a device No, not this time			
	Click Next to continue.			
	< <u>B</u> ack <u>N</u> ext > Cancel			

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3. Select "Install the software automatically".

Found New Hardware Wizard			
If your hardware came with an installation CD         If your hardware came with an installation CD         If your want the wizard to do?         Install the software automatically (Recommended)         Install from a list or specific location (Advanced)         Click Next to continue.			
< Back Next > Cancel			

**NOTE:** In the latest LinkManager firmware the text "USB Device Over IP" have changed to reflect the name of device USB driver.

4. The wizard will now search for the driver.

ard
3
< Back Next > Cancel



5. After the wizard is complete, the driver is installed, and you can click Finish.

Found New Hardware Wizard			
Found New Fland	Completing the Found New Hardware Wizard The wizard has finished installing the software for: Rockwell Automation USB CIP		
	Click Finish to close the wizard.		
	< Back Finish Cancel		

6. To establish a connection to the PLC from the Connected Components Workbench (CCW), you first need to open a project where the PLC is present. Then, double click on the **Micro830** under Project Organizer.



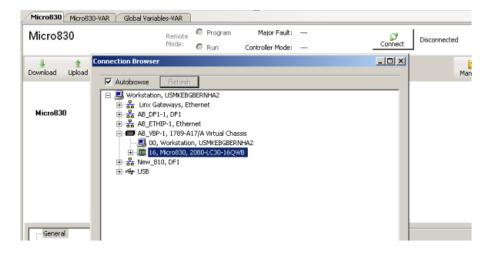


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#### 7. Click on the **Connect** button

Micro830 - My_	Processor	Remote Mode:	Program Run	Major Fault: Controller Mode:		Connect	Disconnected
ik 🟦 👔 Download Upload	Variables Program	,			2080-LC30-1	6QWB	-
My_Processor Micro830		0	Q				

8. Browse and Select the controller from the Connection Browser screen



 Click OK and the status on the device toolbar will indicate "Connected". If successfully connected, the button changes to Disconnect and the Controller Mode is displayed. Being Connected means the CCW is now connected and/or communicating via USB with the Micro830.

Micro830 - My_	Processor	Remote Mode:	C Program	Major Fault: Controller Mode:	Not Faulted Run (Remote)	Disconnect	Connected
Download Upload	Variables Program				2080-LC30-1	6QWB	T
My_Processor	C Alex Bully	00000	00000				
Micro830		O	0				

## 2. Connecting Micro810 remotely via USB

**NOTE:** This section applies to an agent configured in the SiteManager by the type **Allen-Bradley / USB-Serial Adapter**.

The following description refers to the CCW version 4.0. CCW version 2.0 should also work, but has not been verified in the Secomea test labs.

#### 2.1. Fixing the CCW installation to use a working USB driver

The CCW 4.0 installation will install two drivers on the PC: The original and updated driver from Silicon Labs (version 6.3a) and a newer and presumably proprietary Rockwell driver (version 1.1). Only the Silicon Labs drivers works in relation to LinkManager. Unfortunately the .inf file installed with CCW 4.0 contains the ID of the proprietary Rockwell driver, which means Windows will automatically select the non-working driver.

The working Silicon Labs driver is installed as the last step of the general CCW 4.0 installation:

👘 Connected Components W	'orkbench Setup 4.00.00				
Silicon Laboratories CP210x VCP Drivers for Windows					
InstallShield Wiza	M Port Device Driver Setup Connected Components Workbench 4.00.00				
😽 😽 Silicon Laboratories CP210x USB to UART Bridge Driver Installer 🛛 🗧					
Silicon Laboratories Silicon Laboratories CP210x USB to UART Bridge Installation Location: Driver Version 6.3 C:\Program Files\Silabs\MCU\CP210x\	lity v1.00.06 r v3.18.02 6)				
Change Install Location Install Cancel h v4.00.00					
Virtual COM Port Device Driver v6.3a					

The following steps describes how to verify which driver is installed, and how to install the Silicon driver:

- 1. First <u>ensure that CCW and RSLinx are NOT active</u>. If these are running during the verification, you may risk Windows to hang!
- 2. Start LinkManager and locate the Micro810 PLC. Click it to establish a connection to it:

LinkManager sectmea	
Logout Services GM	_ogin Sniffer Refresh
SecomeaStaff-gm06-test: g	m06.Routeco.Routecodemo
<b>⊞</b> —)– gm06	
Show all Expand all Refresh	Show all Expand all Refresh



3. You should now see some traffic on the agent



4. Start Windows Device Manager, and unfold the **Ports (COM & LPT)** item. You should see a driver called "2080-USBADAPTER" that was automatically started as result of the LinkManager connection.

🚔 Device Manager
<u>File Action View H</u> elp
🔺 🛁 Secomea-demo-PC
🖟 📲 Computer
, ⊳ Disk drives
🖕 🖳 Display adapters
▶ 📲 DVD/CD-ROM drives
🔉 🕼 Human Interface Devices
IDE ATA/ATAPI controllers
,
Mice and other pointing devices
Monitors
🗼 👷 Network adapters
b - 🜆 Other devices
🖌 🖓 Ports (COM & LPT)
Printer Port (LPT1)
▷ - 🛄 Processors



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 Right click the driver, and select Driver > Driver Details. If the file silabenm.sys does not have a provider listed and is version 1.0, you will need to update the drivers.

2080-USBADAPTER (COM3) Propertie	
General Port Settings Driver Deta	Driver File Details
2080-USBADAPTER (COM3	) 2080-USBADAPTER (COM3)
i Driver Provider: Rockwe Driver Date: 19-11-20 Driver Version: 5.2.1.1 Digital Signer: Rockwe	C:\Windows\system32\DRIVERS\silabenm.sys C:\Windows\system32\DRIVERS\silabser.sys C:\Windows\system32\WdfCoinstaller01005.dll
Driver Details To view de	tails a
Update Driver To update	he dr Provider: Not available
Roll Back Driver If the device back to the	
Disable Disables th	e sele Digital Signer: Not digitally signed
Uninstall To uninstal	the c
	ОК

- 6. Disconnect the LinkManager again,
- 7. Locate the files in the following folder, which were installed with CCW:

C:\SiLabs\MCU\CP210x\Windows\_XP\_S2K3\_Vista\_7\x86 or ..x64

🕒 🕞 💌 🕌 « Acer (C:) 🕨 SiLabs	► MCU ► CP210x ► Windows_XP_	52K3_Vista_7 ▶ x86	<b>-                                    </b>
File Edit View Tools Help Organize  Include in library	Share with ▼ Burn New	folder	8
Favorites	Name	Date modified	Туре
Desktop Downloads	<ul> <li>silabenm.sys</li> <li>silabser.sys</li> <li>WdfCoInstaller01009.dll</li> </ul>	08-02-2011 13:13 08-02-2011 13:13 08-02-2011 13:13	System file System file Application extens.

8. Copy the above files into the this folder (Copy and Replace)

 $C:\Mindows\System32\drivers$ 

9. Connect with LinkManager to the agent again

LinkManager sectmea	ch l
Logout Services	GM Login Sniffer Refresh
secomeastarr-gmu	ortest: gm00.kouteco.koutecodemo
œ gm06 Show all Expand all Refresh	✓ ⊕ sm3239 <connect all=""></connect>
Show all Expand all Refresh	Show all Expand all Refresh



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10. If checking the Driver in the device manager, you should see that the **silabenm.sys** now shows Silicon Laboratories as Provider, and version 1.1.0.0

2080-USBADAPTER (COM3) Properties	
General Port Settings Driver Details Po	Driver File Details
2080-USBADAPTER (COM3)	2080-USBADAPTER (COM3)
Driver Provider: Rockwell Autom Driver Date: 19-11-2010 Driver Version: 5.2.1.1 Digital Signer: Rockwell Autom	Driver files: C:\Windows\system32\DRIVERS\silabenm.sys C:\Windows\system32\DRIVERS\silabser.sys C:\Windows\system32\WdfCoinstaller01005.dll
Driver Details To view details abo	
Update Driver To update the drive	Provider: Silicon Laboratories
Roll Back Driver If the device fails a back to the previou	File version: 1.1.0.0 Copyright: © 2010 Silicon Laboratories
Disable Disables the select	Digital Signer: Not digitally signed
Uninstall To uninstall the driv	
	ОК

#### 2.2. Connect to the Micro810 with CCW

**NOTE:** The following assumes you have activated the correct USB driver according to the procedure described above. If not, your PC may hang when starting the CCW or RSLinx programs.

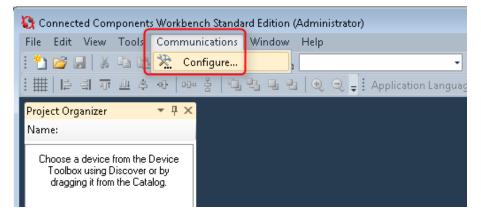
1. Locate the Allen-Bradley USB PLC agent and click on it to establish a connection to it:

Linkl	Mari a	nager									5
			Disconnect Logout		Services	s	niffer				
			gm06.l	Reco Real	fac offe						
			Micro	810 (sm	3239)						
		Agent	Address	Connects Status		nects	Pac	kets	Bytes		
		ngene	Thui Coo	otatas	ok	fail	tx	۳x	tx	۳x	
		Micro810	10.0.0.1:3240> 127.0.0.1	UP:1	2	0	74	77	3,600	4,337	



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2. Start the CCW and select **Communications > Configure**.



3. You should now see that the COM driver is running.

Configure Drivers	? 💌
Available Driver Types:	<u>C</u> lose <u>H</u> elp
Name and Description     Status       12PtM810_30001 DF1 Sta: 1 COM3: RUNNING     Running	Configure Startup Start Stop Delete

4. You should now be able to Connect to the PLC and perform the actions you would normally do when connected directly to the PLC.

File Edit View Build Debug	s Workbench Standard Edition (Administrato Tools Communications Window Help 한 - 윤 - 윤 - 윤 - 윤 홈 - 윤 - 윤 - 윤 - 윤 - 윤 - 윤 - 윤 - 우 - 윤 Applica	• 🖀 X 📲 📇 🕨 💷 🧌 🍓 🖕
Project Organizer + 9 × Name: Project2* Micro810	Micro810 Micro810	Remote Program Major Fault: Mode: Run Controller Mode:
Global Variables	2080-LC10-12QWB	Connection Browser  Connection Browser  Autobrowse Refresh  G. Workstation, SECOMEA-DEMO-PC  G. Autobrowse, Ethernet
	Atcost?	



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## 3. USB connection via Windows XP under VMWare

You can run the Connected Components Workbench (CCW) software inside a VMWare engine, to an Allen Bradley PLC that is USB attached to a SiteManager.

**Important:** LinkManager must run inside the virtual machine also and must be version 12155 or later (It is highly recommend to upgrade to minimum 13094)

The following illustrates VMWare Player, which can be downloaded from <a href="http://www.vmware.com/support/product-support/player/">http://www.vmware.com/support/product-support/player/</a>, and for LinkManager running outside the virtual machine (i.e. on the host system)

1. Locate your Windows XP that has CCW installed, and enter **Edit virtual ma**chine settings.

😵 VMware Player File + VM + Help +	- ×
Home Windows XP Professional 2	
	Windows XP Professional 2
	State: Powered Off OS: Windows XP Professional Version: Workstation 5.x virtual machine RAM: 1024 MB
	<ul> <li>Play virtual machine</li> <li>Edit virtual machine settings</li> </ul>
	( <b>m</b> ware)

2. Make sure that USB Controller has been added as Hardware component:

Hardware Options
Device       Summary         Image: Memory       S12 MB         Image: Processors       1         Image: Hard Disk (IDE)       4 GB (Persistent)         Image: CD/DVD (IDE)       Auto detect         Image: CD/DVD (IDE)       Auto detect         Image: Network Adapter       NAT         Image: Statistical Port       Using drive A:         Image: Statistical Port       Using port COM8
OK Cancel Help

- 3. Start the VMWare engine and the LinkManager inside the VMWare engine.
- 4. Follow the procedure of the previous sections to connect to the PLC via LinkManager



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