DA-820 Windows Embedded Standard 7 User's Manual

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www.moxa.com/product



DA-820 Windows Embedded Standard 7 User's Manual

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Software Components

Thank you for buying Moxa's DA-820 panel computer. The pre-installed Windows 7 Embedded software platform provides users with a simple and familiar development environment for creating a variety of industrial applications.

See below for the list of Windows Embedded Standard 7 software components pre-installed on the DA-820 computer.

Core OS:

- 64-bit support
- Remote Client
- Remote Procedure Call

Applications and Services Development:

- .Net Framework 3.5
- Remote Desktop Protocol 7.1
- COM OLE Application Support
- COM+ Application Support
- MSMQ

Internet Services:

- Internet Explorer 8.0
- IIS 7.0

File Systems and Data Storage:

- Windows Data Access Components
- Windows Backup and Restore

Diagnostics:

- Common Diagnostic Tools
- Problem Reports and Solutions

Fonts: Chinese (Trad. and Simp.), Japanese, Korean, Western, Middle Eastern, South East Asian, and South Asian Fonts

Graphics and Multimedia:

- MPEG DTV-DVD Audio Decoder (MPEG-2, AAC)
- MPEG Layer-3 Audio Codecs(MP3)
- MPEG4 Decoders
- Windows Media Video VC-1 (WMV) Codecs
- DirectX and Windows Device Experience
- Windows Media Player 12
- Create and Play DVDs
- Photo Viewer
- Remote media streaming
- Windows Media Center

International:

- IME Simplified Chinese Support
- IME Traditional Chinese Support
- IME Japanese Support
- IME Korean Support

Management:

- Group Policy Management
- Windows Management Instrument (WMI)
- Windows Update

Networking:

- Extensible Authentication Protocol (EAP)
- Internet Authentication Service
- Telnet Server
- Bluetooth
- Domain Services
- Network Access Protection
- Network and Sharing Center
- Quality of Service
- Remote Access Service (RAS)
- Telephony API Client
- Windows Firewall
- Wireless Networking

Security:

- Credential Roaming Service
- Credentials and Certificate Management
- Windows Authorization Manager (AZMAN)
- Windows Security Center
- Active Directory Rights Management
- Security Base
- Encrypted File System (EFS)
- MS AntiMalware
- Windows Defender
- Bitlocker Secure Startup
- Applocker

Enterprise Features:

- Enterprise Search Scopes
- BranchCache
- DirectAccess
- Windows XP Mode

Embedded Features:

- Enhanced Write Filter (EWF)
- File-Based Write Filter (FBWF)
- Message Box Default Reply
- Registry Filter
- WSDAPI for .NET

Embedded Self-Health Diagnostics: SNMP-based remote scripting layer for monitoring, reporting, and control

System Initialization

In this chapter, we describe how to initialize the system settings on the DA-820 computer when you boot up the computer for the first time.

The following topics are covered in this chapter:

Initializing User Settings

Initializing User Settings

As with most laptop computers, for the embedded computer to work properly, you first need to create a user account with a unique username. Take the following steps to do this:

1. When you boot up the embedded computer for the first time, enter the username you will use to log in to this computer.

🕞 👩 Set Up Windows	
Choose a user num for your account. Your computer's name is managed by your organization's system administrator.	
Convict © 2010 Microsoft Corporation All rights assessed	
Net	

 If you would like your username to be password protected, type a password, and then retype the password. In addition, you may also type a password hint in case you forget your password. If you do not want to set a password, leave all three input fields blank. Click **Next** to continue.

Set Up Windows Set a password is a smart security precaution that helps protect your user account from unameted users. Be ure to remember your password or keep it in a safe place. Type a password (eccommended): Betype your password: Type a password bint: Type a password bint: Choose a word or phrase that helps you remember your password. By you forget your password, Windows will thew you your hint.	
<u>Ret</u>	

3. Select a windows update option.



4. Select the computer's current location. Windows will automatically apply the correct network settings based on the location of the network.

Image: Select your computer's current location Select your computer's current location The computer is connected to a network. Windows will adconatically apply the correct network Select your computer's location. Image: Select your computer is network are at your home, and you recognize them, this is a build home network. Don't choose this for public places that a coffee shops or a sport. Image: Select your computer is not home whom are at your workplace, and you recognize them, this is a tradied work network. Don't choose this for public places such as coffee shops or a sport. Image: Select your computer is not home whom the at your workplace, and you recognize them, this is a tradied work network. Don't choose this for public places such as coffee shops or a sport. Image: Select you don't recognize them, this is a tradied work network. Don't choose this for public places such as coffee shops or a sport. Image: Select you don't recognize them, then the network for example, you'w is as coffee shops or a sport. Image: Select you don't recognize them, then the network for example, you'w is as coffee shops or a tradied por an atopy in a the computer on the network for example, you'w is as coffee shops or a tradied por an atopy in a the computer on the network for example, you'w is as coffee shops or a sport. Image: Select You don't recognize them, then the network for example, you'w is as coffee shops or a tradied base the select you have notible broadband; this is a public network and is not the select you have notible broadband; this is a public network and is not the select you have notible broadband; this is a public network and is not the select	Select your computer's current location Select your computer's current location This computer is incomedia to a network. Windows will automatically apply the correct network sensor the network's location. When network Home network When network If the computer so this network are at your wonsplace, and you recognize them, this is a point. Work network Ta If the computer so this network are at your wonsplace, and you recognize them, this is a trained work metwork. Don't choose this for public places such as coffee shops or apport. Port is not in the network are at your wonsplace, and you recognize them, this is a trained work metwork. Don't choose this for public places such as coffee shops or apport. Port is not in the network are at your wonsplace, and you recognize them, this is a trained work metwork. Don't choose this for public places such as coffee shops or apport. Port is not place to place the computer so the network are at your wonsplace. The shops or apport. Port is not place to place the computer so the network are at your wonsplace. The shops or apport. Port is not place to place the computer so the network are at your wonsplace. The shops or apport. Port is not place to place the shops or apport. Port is not place to place the computer so the network are at your wonsplace. The shops or apport. Port is not place to place the computer so the network are at your wonsplace. The shops or apport. Port is not place to place the computer so the network are at your wonsplace. The shops or apport. Port is not place to place the computer so the network are at your wonsplace. Port is not place to place the computer so the network are at your wonsplace. Port is not place to place the computer so the network are at your wonsplace. Port is not place to place the computer so the network are at your wonsplace. Port is not place to place to place
Select your computer's current location This computer is connected to a network, Windows will automatically apply the correct network iterations is used on the network is location. Image: The computer is connected to a network, Dank to use it you home, and you recognize them, this is a post. Image: The computer is this network are at your home, and you recognize them, this is a post. Image: The computer is this network are at your workplace, and you recognize them, this is a post. Image: The computer is this network are at your workplace, and you recognize them, this is a traded work network. Don't choose this for public places such as coffee shops or is not instead on network. Image: The computer is the computers on the network are at your workplace, and you recognize them, this is a traded work network. Don't choose this for public places such as coffee shops or ison. Image: The computer is the computers on the network (for example, you're in a coffee shops or increde). Image: The computer is the computers on the network (for example, you're in a coffee shops or increde). Image: The computer is the computers on the network (for example, you're in a coffee shops or increde). Image: The computer is the computer is the network (for example, you're in a coffee shops or increde). Image: The computer is the computer is the network (for example, you're in a coffee shops or increde). Image: The computer is the computer is the network (for example, you're in a coffee shops or increde). Image: The computer is the computer is the network (for example, you'	Select your computer's current location This computer is connected to a network. Windows will automatically apply the correct network settings based on the network Section. If the computer is a network we at your home, and you recognize them, this is a bused home network. If the computer is network are at your workplace, and you recognize them, this is a storied. If the computer is network are at your workplace, and you recognize them, this is a trutted work network. If the computer is network are at your workplace, and you recognize them, this is a trutted work network. If the computer is not thin network are at your workplace, and you recognize them, this is a trutted work network. If the computer is not thin network are at your workplace, and you recognize them, this is a trutted work network. If the computer is not thin network are at your workplace, and you recognize them, this is a trutted work network.
stating based on the relevork All the computers on this instructions are at your home, and you recegnize them, this is a topold home network. Where the computers on this instructions are at your workplace, and you recegnize them, this is a topold home network. Work network: a totated owne network: b totated owne network:	settings based on the network's location. Home network Hafte comparison this network are at your home, and you recognize them, this is a based on the network. Work network Work network at he comparison to this network are at your workplace, and you recognize them, this is a tusted work network. Don't choose this for public places such as coffee shops or apports. Public network Public network Public network
Work network Work network If all the computers on this network are at your workplace, and you recognize them, this is studied work, Rehard, Don't choose this for public places such as coffee shops or airports. If you don't recognize all the computers on the network (for sample, you're in a coffee shop or airport, or you have mobile broadband), this is a public network and is not truted. If you aren't sure, select Public network.	Work network I all the computers on this network are at your workplace, and you recognize them, this is a turder work network. Don't choose this for public places such as coffee shops or airports. Public network:
Public network: Byou don't recognize all the computers on the network (for example, you'rs in a coffee shop of import you have mobile breadband), their is a public network and is not breade. If you aren't sure, select Public network.	Public network
If you aren't sure, select Public network.	shop or airport, or you have mobile broadband), this is a public network and is not trusted.
	If you aren't sure, select Public network.

5. You can now start using your DA-820 embedded computer.



Configuring the Serial Interface

In this chapter, we describe how to configure the DA-820 computer's serial interface.

The following topics are covered in this chapter:

- Overview
- Configuring the Serial Interface Mode

Overview

The DA-820 has two serial ports, labeled COM1 and COM2. Each serial port can be configured to use any of the following serial interface modes: **RS-232**, **RS-485-2-wire**, or **RS-422/RS-485-4-wire**.

Configuring the Serial Interface Mode

Take the following steps to configure a port's serial interface mode.

1. Open device manager and right-click MOXA CP-102E Series (PCI Express Bus) under Multi-port serial adapters.



2. Select Properties.

🚔 Device Manager	- 0 X					
Eile Action View Help						
▲ 🚔 WINDOWS-BLDHH7R						
> 📲 Computer						
🗅 📹 Disk drives						
🔈 📲 Display adapters						
ト 単調 Human Interface Devices						
- Keyboards						
D - Monitors						
MOXA Embedded Drivers						
Multi-port serial adapters						
MOXA CD 102E Series (0) Everyon Public						
- Vetwork a opide bire bire bire bire bire bire bire bir						
A TT MOYA						
Uninstall						
Processory Scan for hardware changes						
Sound, vic Properties						
> - 📲 System devices						
🔉 – 🏺 Universal Serial Bus controllers						
Deens property sheet for the current selection.						

3. Click on the **Ports Configuration** tab, select the COM port whose serial interface you want to configure (e.g., COM1), and then click **Port Setting**.

eneral	Ports Confi	guration Driver	Details Reso	urces	
Port	COM No.	Rx FIFO Level	Tx FIFO Level	Interface	Termination Resistor
1	COM 1	High	High	RS-232	Disable
	<u>H</u> elp			Port Info	Port Setting
					OK Cance

4. Select the serial interface from the **Interface** drop-down box, and then click **OK**.

Port 1
Port Number COM1 (current)
Auto Enumerating COM Number
Rx FIFO Level High
Set the change to all ports
Ix FIFO Level High
✓ Set the change to all ports
Interface RS-232
✓ Set the ch RS-232 RS-422 RS-422
Termination Resistor
$\overline{\mathbf{V}}$ <u>S</u> et the change to all ports
<u>O</u> K Cancel

5. Check to make sure that the serial interface has been changed.

иох	(A CP-	102E Serie	s (PCI Express B	us) Properties		×
Ge	eneral	Ports Confi	guration Driver	Details Reso	urces	
	Port	COM No.	Rx FIFO Level	Tx FIFO Level	Interface	Termination Resistor
	1	COM 1	High	High	RS-422	Disable
	-	00112	r ngu		110 422	
		<u>H</u> elp			Port Info	Port Setting
						OK Cancel

Enabling Embedded Filters

In this chapter, we describe how to use the Enhanced and File-Based Write Filters.

The following topics are covered in this chapter:

Enhanced Write Filter

- > Overview
- > Enabling Enhanced Write Filter

File-Based Write Filter

- > Overview
- > Configuring File-Based Write Filter

Enhanced Write Filter

Overview

Enhanced Write Filter (EWF) provides a means for diverting writes from one disk to another, thereby allowing the operating system (OS) to appear to boot from a write-protected hard disk. All data written to an EWF-protected volume (the hard disk in the following figure) is redirected to an overlay (the EWF volume in the following figure). Because EWF does not write data to the hard disk directly, it can protect the hard disk from sudden power losses. The written data is cached in the overlay and made available (seemingly) as part of the hard disk, giving the appearance that the hard disk is writeable. The overlay is an independent storage location in random access memory (RAM). If desired, data stored in the overlay can be committed to the protected volume at a later time. The following figure gives an overview of the EWF structure.



Enabling Enhanced Write Filter

Take the following steps to enable the Enhanced Write Filter:

1. Right-click the lock icon on the left side.

C: Disabled			
Customize			
🔤 🖻 🙀	())	5:45 PM 6/18/2013	

2. Select the volume from the Volume Information list and then click **Configure**.

Enhanced Write Filte	er: Overview			— ×	
Volume information	1				1
Name	Overlay Type	State	Pending Command		-
C:	RAM (Reg)	Disabled	No command		
			how volume details		
			now volume details		
-HORM information		Overla	y information		
HORM state:	Disabled	Overla	y size:		
		Space	available:		
Configu	Jre	l s	how overlay details		
			<u>_</u> ,		
				se	

3. Select **Enable** from the Pending Command drop-down box.

Enhanced Write Filt	er			×
Configuration				
Name	Overlay Type	State	Pending Command	
C:	RAM (Reg)	Disabled	Enable	
Pending command	Enable		•	
			HORM support	
	ОК	Cancel	Apply	Help

4. Reboot the system.

5. Check to see if the lock icon has changed to locked state, as shown below.



6. Click **Configure**. {{where did this screenshot come from; appears automatically after restarting?}}

7. Select the volume, and then select the command you would like to use from the **Pending command** drop-down list.

nhanced Write Filte	r		ſ	
Configuration				
Name	Overlay Type	State	Pending Command	
C:	RAM (Reg)	Enabled	No command	
Rending command	No command			
Pending command:	No command Disable Commit Commit and di	sable live		
	No command Disable Commit Commit and di	sable live	HORM support	

File-Based Write Filter

Overview

According to Microsoft:

"File-Based Write Filter (FBWF) allows the Windows Embedded platform to maintain the appearance of read and write access on write-sensitive or read-only storage. FBWF makes read and write access transparent to applications.

Writing to storage media may be undesirable or impossible in embedded devices. FBWF redirects all writes targeted for protected volumes to a RAM cache called an overlay. Used in this context, an overlay is similar to a transparency overlay on an overhead projector. Any change made to the overlay affects the picture as seen in the aggregate, but if the overlay is removed, the underlying picture remains unchanged."

FBWF supports an advanced feature not supported by EWF. That is, it lets the user specify which directory on the disk drive data will be written to. The default setting is c:\temp, which means you can read/write the data into disk without commit action.

Configuring File-Based Write Filter

Take the following steps to enable file-based write filtering:

1. Right-click the lock icon on the right side.



2. Click Configure.

Fi	le Based Write Filter:	Overview				×
		Current	After rest	art		
	State Cache compression Cache pre-allocation Cache threshold Protected volumes	Disabled Disabled Disabled 128 MB	Disabled Disabled Disabled 128 MB			
	Show <u>e</u> xclusion l	ist		Confi	gure	
	Show c <u>a</u> che cont	ent]			
	Runtime information:					
	RAM used for directo	ry structur	e:		0 bytes	
	RAM used for file dat	a:			0 bytes	
					Close	2

3. On the configuration tab, checkmark **Filter state enabled** and **Cache pre-allocation enabled**. Next, select **C:** from the Volume configuration list, and then click **Protect** and **Apply**, in that order.

	ile	e l	Based Write Filter					
1		Col	nfiguration	Exclus	ion List Cach	e Content		
2			Viter config Filter sta Cache co Cache pi Cache thres	uration ate enal ompres re-alloc shold:	bled sion enabled ation enabled 128	Currently: Disable Currently: Disable	:d :d	
3			Volume cont	figuratio	on	After reboot		
\square			bbf7129	92-a	Unprotected	Unprotected		
		l	C:		Unprotected	Unprotected		
							Protect	
	L					Canad		5
					OK		у нер	

- 4. Reboot the system.
- 5. Right-click the lock icon.



6. Click Configure.

Fi	le Based Write Filter:	Overview			×
		Current	After restar	rt	
	State Cache compression Cache pre-allocation Cache threshold Protected volumes	Enabled Disabled Enabled 128 MB C:	Enabled Disabled Enabled 128 MB C:		
	Show exclusion	list		Con <u>fig</u> ure	
	Show c <u>a</u> che cont	ent]		
	Runtime information:				
	RAM used for directo	ry structur	e:	8.47 MB	
	RAM used for file dat	a:		13.5 MB	
				Close	e

7. Select the **Exclusion List** tab, and then click the browse button.

File Based Write Filter
Configuration Exclusion List Cache Content
Volume name: C:
Path
Add path: c:\temp + Remove
OK Cancel Apply Help

8. Select which file you would like to exclude from protection, and then click **Open**.

Add exclusion list entry					
Com V Com	puter	r ► OS (C:) ► Windows	► System32 ►		▼ 4 ₇
Organize 🔻 New	Organize 🔻 New folder 📰 🔻 🗍 🔞				
☆ Favorites	-	Name		Date modified	Туре 🔺
🧮 Desktop		🚳 wscapi.dll		11/20/2010 12:21	Applic
〕 Downloads		🚳 wscinterop.dll		7/14/2009 1:16 AM	Applic
🕮 Recent Places		🚳 wscisvif.dll		7/14/2009 1:16 AM	Applic
		🚳 wscmisetup.dll		7/14/2009 1:16 AM	Applic
🥽 Libraries		🚳 wscproxystub.dll		7/14/2009 1:16 AM	Applic
Documents	=	🗃 wscript		7/14/2009 1:14 AM	Applic
a) Music		🚳 wscsvc.dll		7/14/2009 1:16 AM	Applic
Pictures		🚳 wscui.cpl		7/14/2009 1:14 AM	Contro
🛃 Videos		🚳 WSDApi.dll		12/10/2010 6:16 PM	Applic
		🚳 wsdchngr.dll		11/20/2010 12:21	Applic
🖳 Computer		WSDEWSProxy.DLL		7/14/2009 1:16 AM	Applic
		🚳 WSDMon.dll		7/14/2009 1:16 AM	Applic 👻
📬 Network	Ŧ	•			•
F	ile <u>n</u> ai	me: wscript			•
				Open Car	icel

9. Click the + button.

File Based Write Filter			
Configuration Exclusion List Cache Content			
Volume name: C:			
Path			
VRegfdata Excluded until reboot			
Add path: \Windows\System32\wscript.exe + Undo			
OK Cancel Apply Help			

10. Check to make sure that the file path has been added.

File Based Write Filter	×
Configuration Exclusion List Cache Content	
Volume name: C:	
Path	
Regfdata Excluded until reboot	
\Windows\System32\wscript.exe Excluded after reboot	
Add path: \Windows\System32\wscript.exe +	Undo
OK Cancel Apply	Help

11. Select the **Cache Content** tab.

File Based Write Filter		- ×
Configuration Exclusion List Cache Content		
Volume name:		
Path	Cache size	<u>^</u>
\Boot\horm.dat	4.00 KB	E
\inetpub\temp\appPools\APC74D2.tmp	72.0 KB	
\Users\ExplorerStartupLog_RunOnce.etl	16.0 KB	
\1b4dd67f29cb1962.automaticDestina	12.0 KB	
\b3f13480c2785ae.automaticDestinat	28.0 KB	
\V2406WES7_FBWFManagementTool_Oper	4.00 KB	-
Add to exclusion list	Re <u>s</u> tore	Commit
OK Cancel	Apply	Help

12. Select the file you would like to save to physical disk and then click **Commit**.

Con	figuration Exclusion List Cache Content	
Vo	ume name: C: 🔹	
. I	ath	Cache size 🔺
	\V2406WES7_FBWFManagementTool_Oper	4.00 KB
ΙT	\V2406WES7_FBWFManagementTool_Oper	4.00 KB
	\V2406WES7_FBWFManagementTool_Oper	988 KB
	\V2406WES7_FBWFManagementTool_Oper	16.0 KB
	\V2406WES7_FBWFManagementTool_Oper	48.0 KB
	V2406WES7_FBWFManagementTool_Oper	16.0 KB 🚽
•		• //
	Add to exclusion list Restore	Commit

13. Reboot the system to activate the changes.

Moxa SynMap Package

In this chapter, we describe Moxa SynMap, a software package you can use to easily control and monitor your DA-820 computer.

The following topics are covered in this chapter:

- Moxa SynMap Package
 - > Overview
 - Moxa SynMap OIDs List
- Installing Windows SNMP Components
- Installing the Moxa SynMap Package
- Installing MXview
- Configuring MxView
- Loading a Moxa SynMap MIB File
- Loading a Host Resource MIB File
- Using Moxa SynMap OIDs
- Using HOST RESOURCE OIDs

Moxa SynMap Package

Overview

SynMap is Moxa's revolutionary software virtualization, an evolutionary advance in network device control that adapts solid, reliable SNMP into a fully portable remote procedure interface. SynMap allows engineers to automate remote processes using SNMP object identifiers (OIDs) rather than device-specific addresses, making a scripted SynMap procedure fully interoperable with any other SynMap device. This means that a script created for one SynMap device can be directly copied to another, immediately conferring the same functionality. By eliminating the need to rewrite and compile code for newly configured devices, you can significantly reduce the amount of time needed for maintenance and deployment.

SNMP is lightweight and easy-to-configure, and has been used by IT professionals for many years. SNMP also enjoys comprehensive native support in high-level languages, including .NET, Java, Python, and Ruby. The SynMap framework has transformed SNMP into a universal configuration and control interface for remote procedures, adapting it not only to monitor and control device internals like temperature, BIOS parameters, and local interfaces, but also to report on and automate tasks at the process layer as well. Easily integrated into any existing Network Management System (NMS), SynMap devices are a flexible and cost-effective upgrade that returns obvious benefits to any IA network.

SynMap currently allows you to use SNMP for remote monitoring and control of a select set of computer processes, but its list of features is rapidly growing. Using SynMap's fully portable scripts, engineers will soon be able to:

- Access, monitor, control, and report on digital I/O at both the process and hardware layers.
- Use OIDs to monitor, configure, and give process control over serial ports and other interfaces.
- Monitor and control system attributes and process events via any NMS.
- Build automated remote procedures using SynMap OIDs called by simple shell scripts, or a preferred high-level language such as Python, Perl, or VBScript—all without any need for low-level C APIs, or platform-specific libraries.
- Significantly simplify and reduce development times for custom utilities and automated executables.
- Gain scripting and automation independence from OS-dependent libraries.

All of this nan be achieved using SNMP, the simple, reliable, familiar, and easily accessible standard every IT engineer knows. Discover how Moxa is expanding automation frontiers with Moxa's innovative SynMap.

Moxa SynMap OIDs List

Check Appendix A: Moxa SynMap OID Table to review the complete list of Moxa SynMap OIDs.

Installing Windows SNMP Components

{{missing content}}

Installing the Moxa SynMap Package

To use Moxa SynMap on the DA-820 computer, you will first need to install the SynMap package. Take the following steps to install the Moxa SynMap package:

- Double click mxSynMap_setup.msi, which is located in the following folder: <software DVD>\utility\1.mxSynMap\
- 2. Click **Next** to continue.



3. Select the folder in which you would like to install the package, or simply click **Next** to continue if you want to use the default folder.

🖞 Moxa SynMap
Select Installation Folder
The installer will install Moxa SynMap to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C: VFrogram Files VMOAA VMoxa SynMap V Disk Cost
Install Moxa SynMap for yourself, or for anyone who uses this computer:
<u> </u>
⊚ Just <u>m</u> e
Cancel < <u>B</u> ack Next >

4. Click **Next** to continue.



5. Click **OK** to continue.

Net-SNMF	Agent 💌
i	Net-SNMP Agent successfully registered as a service
	ОК

6. When finished, click **Close** to complete the installation.

波 Moxa SynMap	
Installation Complete	
Moxa SynMap has been successfully installed.	
Click "Close" to exit.	
Please use Windows Update to check for any critical updates to the .NET Frame	work.
Cancel < <u>B</u> ack	Close

7. You will need to restart the computer to start using SNMP on your DA-820 computer. Click **Yes** to reboot the system.

🛃 Moxa SynMap
You must restart your system for the configuration changes made to Moxa SynMap to take effect. Click Yes to restart now or No if you plan to manually restart later.
Yes No
Yes <u>N</u> o

Installing MXview

In this section, we demonstrate how to use the MIB browser mxView to monitor and control Moxa SynMap OIDs. If have you already installed your own MIB browser, you can skip this section.

Take the following steps to install the MxView package:

- 1. Double click **MXView_Trial_V2.3.exe**, located in the following folder: <software DVD>\utility\4.mxViewTrial
- 2. Click **OK** to continue.



3. Click **Next** to continue.

13 Setup - MXview	
	Welcome to the MXview Setup Wizard
	This will install MXview on your computer.
	It is recommended that you close all other applications before continuing.
	Click Next to continue, or Cancel to exit Setup.
	Next > Cancel

4. Select "I accept the agreement" and then click **Next**.



5. Click Next to continue

j Setup - MXview		
MXview Trail Version License License		
MXview license (20 Devices)		
	< Back Next >	Cancel

6. Click **Next** to continue.

j Setup - MXview	_ 🗆 🗙
Select Destination Location Where should MXview be installed?	
Setup will install MXview into the following folder.	
To continue, click Next. If you would like to select a different folder, click B	rowse.
c:\Program Files\Moxa\MXview	B <u>r</u> owse
At least 77.9 MB of free disk space is required.	
< Back Next >	Cancel

7. Click **Next** to continue.

j Setup - MXview	_ _ x
Select Start Menu Folder Where should Setup place the program's shortcuts?	
Setup will create the program's shortcuts in the following Start	Menu folder.
To continue, dick Next. If you would like to select a different folder, did	k Browse.
Moxa	Browse
< <u>Back</u> Next >	Cancel

8. Click **Next** to continue.



9. Click Install to continue.

15 Setup - MXview	X
Ready to Install Setup is now ready to begin installing MXview on your computer.	
Click Install to continue with the installation, or click Back if you want to re- change any settings.	riew or
Destination location: c: \Program Files \Moxa \MXview	*
Start Menu folder: Moxa	
Additional tasks: Additional icons: Create a desktop icon	
٠	*
< <u>B</u> ack Install	Cancel

10. Wait while the program is being installed.



11. Change the HTTP port to the appropriate number for your setup (e.g., 81), and then click **Next** to continue.

j⊕ Setup - MXview		
Set Service Parameters Please specify the server port settings.		
<pre>✓ Enable HTTP Server IP 127.0.0.1 ▼ HTTPS Port 443</pre>	HTTP Port 81	
	Next >	

12. Select "Yes, restart the computer now" and then click **Finish** to reboot the system.



13. After rebooting, the MXview shortcut will appear on your desktop.



Configuring MxView

Take the following steps to configure MXview:

1. Double click the **MXview Service** shortcut on the desktop.



2. Click **Start** to continue.

MXview ver 2.3
Ver 2.3 Industrial Network Management Software Moxa Inc. All rights reserved 2013.
Service Info
HTTP Port 81 Disable HTTP port Start HTTPS Port 443 Stop System Status: Stop
OK Launch Client Stop & Quit

3. Wait for System Status to be running, and then click Launch Client.

Ver 2.3 Industrial Network Management Software Moxa Inc. All rights reserved 2013. Service Info HTTP Port 81 HTTP SPort 443
Moxa Inc. All rights reserved 2013. Service Info HTTP Port 81 Disable HTTP port Start HTTPS Port 443
HTTP Port 81 Disable HTTP port Start
System Status: Running 2
OK Launch Client Stop & Quit

- 4. MXview will invoke Internet Explorer.
- **NOTE** You will need to configure Internet Explorer the first time you launch MXview. Continue with Step 5 below to complete the configuration.
5. Click **Next** to continue.



6. Select the "No, don't turn on" option, and then click Next to continue.

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🖕 Favorites 🛛 👍 🖸	Suggested Sites 👻 🙋 Web Slice Galler	ry ▼			
🏉 MXview			🏠 🔹 🔝 📼 🚔	▼ Page▼ Safety	🔹 Tools 👻 🔞 🗸
N S	et Up Windows Internet Explorer 8				re
	Turn on Suc	agested Sites			
		39			
V					-
Inc	Do you want to discover	websites vou migh	t like based on website	s .	
	you've visited?	n obortoo you ringir			
	Yes, turn on Suggeste	d Sites			/
	💿 No, don't turn on				
Copyrid					
All righ Other I					
	Suggested Sites is an online	service that uses your br	owsing history to make persor	alized	
	website suggestions. You ca	in turn off Suggested Site	is at any time.		
	Read the Internet Evaluater Driver of Stat	tament online			
	Read the Internet Explorer Privacy star		<u>B</u> ack <u>N</u> ext	Cancel	

7. Select the "Use express settings" option, and then click **Finish** to complete the configuration.



 To log in, type the default username (admin) in the Username field, and leave the password field blank. Click Login to continue



9. If you see the popup message "You should refresh this page after successful install the JRE." you will need to install the java runtime environment. Click **OK** to continue.



10. Click the "Click here for options..." bar and select **File Download Blocked** → **Download File** to continue.



11. Click Run to download and install the Java Runtime Environment.



12. Click **Run** to continue.

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😭 Favorites 🛛 🚔 🔁 Suggested Sites 🔻 🖉 Web Slice Gallery 👻			
🌈 http://localhost81/index.htm 🎽 🔻 🖾 👻 Page 🗸 S	afety 👻 T	ools 🔻	
Intranet settings are now turned off by default. Intranet settings are less secure than Internet settings. Click for options			×
Internet Explorer - Security Warning			^
Do you want to run this software?			
Name: Java(TM) SE Runtime Environment 6.0 Update 29			
Publisher: Sun Microsystems, Inc.			
X More options Run Don't Run			
While files from the internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. <u>What's the risk?</u>			
Upen Folder Cancel			
🕐 Done	 • • 	100%	•

13. Click **Install** to continue.

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http://localhost:81/index.htm	🟠 🔻 🔂 👻 🚍 🖶 🍷 Pag	e 🕶 Safety 🕶 Tools 👻 🔞
Intranet settings are now turned off	av default. Intranet settings are less secure than Internet settings. Click for ontions	x)
	javar ORACL	£
	Welcome to Java™	
	Java provides safe and secure access to the world of amazing Java conter From business solutions to helpful utilities and entertainment. Java makes your internet experience come to life.	nt.
	Note: No personal information is gathered as part of our install process. Click here for more information on what we do collect.	
	Click Install to accept the license agreement and install Java now.	
	Change destination folder	

14. Wait while Java is installed.



15. Click **Close** to complete the installation process.

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Intranet settings are now turned of	by default. Intranet settings are less secure than Internet settings. Click for ontions	×
	Sava Setup - Complete Sava Sava ORACLE [®] ORACLE [®] Vou have successfully installed Java	P
	Java updates will automatically be downloaded to provide you with the latest features and security improvements. To change this, see http://java.com/autoupdate	
	Close	
🕖 Done	Internet Protected Mode: Off	🖓 🔻 🔍 100% 💌 💡

16. Click the "Click here for options..." button and then select **Enable Intranet Settings**.



17. Click Yes to continue.

nttp://localhost:81/index.htm - Windows Internet Explorer	_ 🗆 X
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🖕 Favorites 🛛 🍰 Suggested Sites 🔻 🔊 Web Slice Gallery 👻	
🍘 http://localhost:81/index.htm	Safety 🔻 Tools 👻 🕢 🔻
Intranet settings are now turned off by default. Intranet settings are less secure than Internet settings. Click for options	×
Internet Explorer Intranet settings use a less secure level than the Internet. If you only go to Internet websites, you should not turn on intranet-level security settings? Yes No	
😻 Done 👹 Internet Protected Mode: Off	📲 🕶 💐 100% 👻

18. Click Run to continue.

Warning - Secur	ity	x			
The application's digital signature cannot be verified. Do you want to run the application?					
Name: Publisher:	UI.MxViewUI UNKNOWN				
From:	http://localhost:81				
Aways u	rust content from this publisher.	Run Cancel			
This a your trust	application will run with unrestricted access which may put personal information at risk. Run this application only if you the publisher.	More Information			

19. Click **Next** to use the Setup Wizard to configure some basic settings, or click **Cancel** to immediately launch MXview first, and then configure the settings without using the Setup Wizard.

Welcome to MXview Industrial Network Management Software Setup Wizard	
Welcome to the setup wizard.	
This wizard will help you:	
1. Add scan range	
2. Draw Topology (with devices that support LLDP)	
3. Set SNMP trap server	
Next	Cancel

20. When MXview is launched, it should appear similar to what's shown in the following screenshot.

http://iocalhost81/index.htm - Windows Internet Explorer					★ 1 + × × 3 ang
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Project View Device Link Information Event Tools M	IB Help				
MX view Industrial Network Man	nagamant Software				MOXA
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Device List					A
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	Art D Source	Pourse IB Device Alige	Generite	Description	Time leaved
	2 Mixiew Server	0.000	System Information	Mixiew server started	2013-05-05 17:51:54
Q Default Q					
No Message	5:58:47 PM	Managed Devices (Current/Mar): 07	10		
Done					💊 Local intranet Protected Mode: Off 🛛 🖓 = 🔍 100% 📼

Loading a Moxa SynMap MIB File

Take the following steps to load a Moxa SynMap MIB file:

1. Click the $\ensuremath{\text{MxView Service}}$ shortcut on the desktop.



2. Click Start.

MXview ver 2.3
Ver 2.3 Industrial Network Management Software Moxa Inc. All rights reserved 2013.
Service Info
HTTP Port 81 Disable HTTP port Start HTTPS Port 443 Stop System Status: Stop
OK Launch Client Stop & Quit

3. Wait for **System Status** to be running, and then select **Launch Client** to continue.

	MXview ver 2.3
	MXview
	ver 2.3 Industrial Network Management Software Moxa Inc. All rights reserved 2013.
<u> </u>	Service Info
Ľ	HTTP Port 81 Disable HTTP port Start
	A TPS Port 443 Stop
	System Status: Running
	OK Launch Client Stop & Quit

4. Click Cancel.

Welcome to MXview Industrial Network Management Software Setup Wizard
Welcome to the setup wizard.
This wizard will help you:
1. Add scan range
2. Draw Topology (with devices that support LLDP)
3. Set SNMP trap server
Next Cancel

5. On the toolbar, click **MIB** → **MIB** Browser.

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6 http://localhost81/index.htm	🟠 🔻 🖾 👻 🖶 🕈 F	Page ▼ Safety ▼ Tools ▼ 🔞 ▼
Project View Device Link Information Event Tools MIB Help		*
Trap Import Manager		
Q- Search Dewices		
Device List		
The Root		
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No Message 11:37:27 PM Managed Devices (Current / Max) : 0 / 20		
		*
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		▲ 🔽 🎲 11:37 PM 5/23/2013

6. In the MIB Browser popup window, click **File → Load MIB**.

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Root	Language			
	Exit	Get Get Next Get Subtree Walk	Set	
		Name/OID Value		
L				
No Message 11:37:42				
			Close	
Done		Q L	ocal intranet Protected Mode: Off	4 + 100% +
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7. Navigate to c:\usr\share\snmp\mibs\MOXA-SYS-MIB.txt.

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€ http://localhost:81/index.htm		🐴 🔻 🖾 👻 🖶 🕈 Pag	e ▼ Safety ▼ Tools ▼ 🕢 ▼
Project View Device Link Information Event To	s MIB Help		*
MXview Industr			
Q- Search Devices	Agent IP 127.0.0.1	SNMP v1	
Device List	© Open		
	Look in: mibs	A Comment	
No Message 11:38:15	IANA-LANGUAGE-MIB MOXA-SYS IANA-RTPROTO-MIB MTA-MBB IANA-RTPROTO-MIB MTA-MBB IANA-RTPROTO-MIB NET-SNMP- IANA-RTPROTO-MIB NET-SNMP- IDExtract NET-SNMP-	MIB AGENT-MIB EXAMPLES-MIB EXAMPLES-MIB EXTEND-MIB MONITOR-MIB PERIODIC-NOTIFY-MIB PERIODIC-NOTIFY-MIB PERIODIC-NOTIFY-MIB PERIODIC-NOTIFY-MIB DN-LOG-MIB Cancel	
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8. Check if Moxa SynMap MIB appears in MIB Browser.

File MOXA-SYS-MIB Agent IP 127.0.0 Get Get Next Get Get Next Name/OID Value	MIB Browser		
Agent IP 127.0.1 SNMP v1 OID Get Get Next Get Subtree Walk Set Name/OID Value	File		
Get Get Next Get Subtree Walk Set Name/OID Value	MOXA-SYS-MIB	Agent IP 127.0.0.1 SNMP v1	
		Get Get Next Get Subtree Walk	Set
		Name/OID Value	

Loading a Host Resource MIB File

Take the following steps to load a Moxa SynMap MIB file:

1. Click the **MxView Service** shortcut on the desktop.



2. Click Start.

MXview ver 2.3
Ver 2.3 Industrial Network Management Software Moxa Inc. All rights reserved 2013.
Service Info
HTTP Port 81 Disable HTTP port Start HTTPS Port 443 Stop System Status: Stop
OK Launch Client Stop & Quit

3. Wait for System Status to be running, and then select Launch Client to continue.

	MXview ver 2.3
	MXview
	ver 2.3 Industrial Network Management Software Moxa Inc. All rights reserved 2013.
$\left[\right]$	1 Service Info
	HTTP Port 81 Disable HTTP port Start
	ATPS Port 443 2 Stop
	System Status: Running
	OK Launch Client Stop & Quit

4. Click Cancel.



5. On the toolbar, click **MIB** \rightarrow **MIB** Browser.

http://localhost:81/index.htm - Windows Internet Explorer		
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MIB Browser		
Trap Import Manager		
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No Message 11:37:27 PM Managed Devices (Current / Max) :	0/20	
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6. In the MIB Browser popup window, click **File → Load MIB**.

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Q- Search Devices	Load MIB	Agent IP 127.0.0.1 SNMP v1		
Device List	Language	OID		
	Exit	Get Get Next Get Subtree Walk	Set	
		Name/OID Value		
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7. Navigate to c:\usr\share\snmp\mibs\HOST-RESOURCES-MIB.txt.

🕑 開啟						×
查看:	🕕 mibs			•	ø 🕫 🛄	
Æ	AGENTX	(-MIB.txt		IANA-LAN	GUAGE-MIB.	txt
	BRIDGE-	MIB.txt		IANA-RTPF	ROTO-MIB.tx	t 🛛
最近的項目	DISMAN	I-EVENT-MIB.txt		IANAifType	e-MIB.txt	
	DISMAN	I-EXPRESSION-N	1IB.txt	IF-INVERT	ED-STACK-M	IIB.txt
	DISMAN	I-NSLOOKUP-MI	B.txt	📄 IF-MIB.txt		
	DISMAN	I-PING-MIB.txt		INET-ADD	RESS-MIB.txt	t i
点面	DISMAN	I-SCHEDULE-MIE	l.txt	📄 IP-FORWA	RD-MIB.txt	
	DISMAN	-SCRIPT-MIB.txt		P-MIB.txt		
	DISMAN	I-TRACEROUTE-I	MIB.txt	IPV6-FLOW	V-LABEL-MIB	.txt
	EtherLike	e-MIB.txt		IPV6-ICMP	-MIB.txt	
我的又件	HCNUM	-TC.txt		IPV6-MIB.t	xt	
	HOST-R	ESOURCES-MIB.	txt	IPV6-TC.txt	t	
	HOST-R	ESOURCES-TYPE	S.txt	IPV6-TCP-I	MIB.txt	
電腦		DRESS-FAMILY-	NUMBERS-MIB.tx	t 📄 IPV6-UDP-	MIB.txt	
~	•	III				Þ
	檔案名稱:	HOST-RESOURC	ES-MIB.txt			開啟
網路	檔案類型:	所有檔案			•	開啟選取的

8. Check if HOST-RESOURCES MIB appears in MIB Browser.

IIB Browser		
File		
RFC1213-MID MOVA_SVS.MID HOST-RESOURCES-MID HOST-RE	Agent IP 127.0.0.1 SNMP v1 OID Get Get Next Get Subtree Walk Name/OID Value	Set
name HOST-RESOURCES-MIB OID description		
		Close

Using Moxa SynMap OIDs

Take the following steps to use Moxa SynMap OIDs.

1. Try to get the disk status:

Double-click

MOXA-SYS-MIB\VALUES\moxa\embeddedComputer\moxaSystem\peripheralMgmt\perHddS mart.

 Click GetSubTree to display the information. If you can get the information, your MxView settings are correct.



Using HOST RESOURCE OIDs

Take the following these steps to use **HOST RESOURCE OIDs**.

1. Try to get the disk usage:

Double-click HOST-RESOURCES-MIB\VALUES\host\hrStorage\hrStorageTable\hrStorageEntry.

2. Select **GetSubTree** to display the information. If you can get the information, your MxView settings are correct.

MIB Browser			
File			
213-MIB A-SYS-MIB -RESOURCES-MIB	Agent IP 192.168.30.139	SNMP v2c	
ALUES host (25) host (25)	OID 136.1.2.1.25.2.3.1.7.3	Walk Set	
hiStorage (2) Historage Types (1) historage Types (2)	Name/OID	Value Cor	
hrstorageTable (3)	hrStorageIndex.1 hrStorageIndex.2 brStorageIndex.2	1 2 2	
hrStorageIndex (1) hrStorageType (2) NrStorageDescr (3)	hustorage Type .1 hustorage Type .2	13612125214 13612125213	
- NrStorageAllocationUnits (4) - VrStorageSize (5) - NrStorageUsed (6)	nrstorage 1 ype.3 hrStorageDexr.1 hrStorageDexr.2	1.3.0.1.2.1.25.2.1.2 CALabel: Serial Number 3620e9a1 Virtual Memory	
hrStorageAllocationFailures (7) hrDevice (3) hrSWR un (4)	hrStorageDexr.3 hrStorageAllocationUnits.1 hrStorageAllocationUnits.2	Physical Memory 4096 65536	
hrSWRunPerf (5) hrSWInstalled (6)	hrStorageAllocationUnits.3 hrStorageSize.1 brStorageSize 2	65536 14384127 87279	
	hrstorageSize.3 hrstorageUsed.1	43653 3325567	
4 III >	hrStorageUsed.2 hrStorageUsed.3 hrStorageAllocationFailures.1	12750 13139 0	
name hrStorageEntry (1) OID 1.3.6.1.2.1.25.2.3.1	hrStorageAllocationFailures.2 hrStorageAllocationFailures.3	0 0	
NTEGER, hrStorageType OBJ ECT IDENTIFIER, hrStorageDe scr OCTET STRING, hrStorage eAllocationUnits INTEGER, hr			
StorageSize INTEGER, hrStor ageUsed INTEGER, hrStorage AllocationFailures INTEGER (0 4294967295)]			
access VALUE hrStorageEntry OBJEC T-TYPE (
geIndex INTEGER, hrStorageT ype OBJECT IDENTIFIER, hrS		Close	

- 3. Get the hrStorageAllocationUnits.1 value (4096 in the example shown above).
- 4. Get the hrStorageSize.1 value (14384127 in the example shown above).
- 5. Multiply the above two values together to obtain the total disk size: total disk size = hrStorageAllocationUnits x hrStorageSize = 4096 x 14384127 = 58917384192 = 60 GB

 (Johnny: How did you get 60 GB? I calculated 54.87 GB>
- Try to get the disk usage: Double-click HOST-RESOURCES-MIB\VALUES\host\hrStorage\hrStorageSize

7. Click Get.

MIB Browser		
File		
RFC1213-MIB MOXA-SYS-MIB HOST-RESOURCES-MIB HOST-RESOURCES-MIB Host (25) Host (25) Host (25) Host (25) Host (26) Host (27) Host (27) Hos	Agent IP 192.168.30.139 OID 1.3.6.1.2.1.25.2.2.0 Get Get Next ver our int Name/OID Value hr/MemorySize 27938	SNMP v2c Walk and 36
name hr/MemorySize (2) OID 1.3.6.1.2.1.25.2.2 syntax INTEGER (02147483647) access read-only VALUE hr/MemorySize OBJECT-T YPE (Syntax: INTEGER (0214748364 7) Access: read-only Status: mandatory Description: The amount of physi cal main memory contained by the host.		
		Close

8. Check the physical memory size when the Device Manager window opens.

TE 選項(Q) 相	≝員 食視(⊻) 說明(Э			
程式 處理程序	服務 效	龍 網路功能	使用者		
CPU 使用率	-CPU 使用率	記錄			
3 %					
記憶體	- 実體記憶體	使用記錄			
862 MB					
審體記憶體 (MB) 總共 央取的 可用 未使用	2728 1774 1866 116	条統 控制代碼 執行緒 處理程序 存留時間	19728 655 62 4:06:47:09		
该心記憶體 (MB) 己分頁 非分頁	134 60	認可 (MB) 資源監護	838 / 5454 現器(R)		

9. Try to get the disk usage:

Double-click HOST-RESOURCES-MIB\VALUES\host\hrProcessorTable\hrProcessorEntry

10. Click Get SubTree.

MIB Browser		
File		
RFC1213-MIB MOXA-SYS-MIB HOST-RESOURCES-MIB	Agent IP 192.168.30.139 SNMP v2c OID 1.3.6.1.2.1.25.3.3.1.2.6 Image: Contract of the second	
	Get Get Next Get Subtree Walk	וארי
hrDevice (3) hrDevice Table (2) hrProcessorTable (3)	Name/OID Value hrProcessorFrwID.3 0.0 hrProcessorFrwID.4 0.0	
hrProcessorEntry (1) hrProcessorFrwID hrProcessorFrwID hrProcessorLoad (hrProcessorFrwID.5 0.0 hrProcessorFrwID.6 0.0 hrProcessorLoad.3 3	
hrNetworkTable (4) hrPrinterTable (5) hrDiskStorageTable (6)	hrProcessorLoad.4 0 hrProcessorLoad.5 0 hrProcessorLoad.6 3	
huPartitionTable (7) huFNTable (8) huFNTypes (9) hnSWRmn (4)		
• · · · · · · · · · · · · · · · · · · ·		
name hrProcessorEntry (1) OID 1.3.6.1.2.1.25.3.3.1		
Spate Control		
ACCESS not-accessible VALUE hrProcessorEntry OBJE CT-TYPE (
Syntax: SEQUENCE [hrProces sorFrwID OBJECT IDENTIFIER, hrProcessorLoad INTEGER]		
Access: not-accessible Status: mandatory		Guse

11. Check the CPU loading corresponding to each CPU core when Device Manager opens.



In this chapter, we give examples of using some of the DA-820 computer's various functions.

The following topics are covered in this chapter:

Watchdog

- > Enabling the Watchdog Function
- LED Test Program

Watchdog

The DA-820 computers provide example for users to enable the watchdog function. The Watchdog example is under <Software DVD>\examples\Projects\WatchDog and the executable file Watchdog.exe is under <Software DVD>\examples\Release. {{are there 2 files or only 1?}}

You can follow the steps below to test the watchdog function with executable file.

Enabling the Watchdog Function

- 1. Create c:\programs\example folder and copy the **Watchdog.exe** into the folder.
- 2. Execute Watchdog.exe.
- 3. You need to press Enter in every 10 seconds or the system will reboot.
- 4. To stop the watchdog function, press **q** to exit the program.



LED Test Program

The DA-820 software DVD includes two dll files and one exe file that can be used to test the functionality of the DA-820's LEDs. To do this, take the following steps:

- Copy the following files from the product software DVD. {{copy from where to where??}} mxgpio.dll: \DVDDA820-W7E V1.0\examples\lib\mxgpio\ mxGeneralIo.dll: \DVDDA820-W7E V1.0\examples\lib\MxGeneralIo\ LED.exe: \DVDDA820-W7E V1.0\examples\Release\
- 2. Type led and then enter to execute LED.exe. {{how do you set the value of the current LED??}}



3. Type **1** and then enter to get the current LED value. In the example shown here, LED 0 is the current LED.



4. To set the LED value (or state) of the current LED, type 2 and then enter, and then type 0 to disable {{does this mean turn off the LED light??}} or 1 to enable {{does this mean turn on the LED light??}} the LED and the value.



{{NOTE: The text in these windows is a bit strange. Can we it bel updated?}}

System Recovery

The DA-820 ready-to-run embedded computers are a Windows Embedded Standard 7 platform. This chapter describes the recovery process in the event of system instability.

The following topics are covered in this chapter:

- Recovery Environment
- Recovery Procedure
 - > Step 1: Prepare your USB drive
 - > Step 2: Change the BIOS Settings
 - > Step 3: Restore the system from USB drive
 - > Step 4: Change BIOS Settings to Boot from the Original Disk
 - > Step 5: Reboot the Computer
- Saving the System to a USB Drive

Recovery Environment

The recovery environment includes the DA-820 panel computer and a bootable USB disk that has the recovery programs and system image file in on it.

The hardware used includes a PC, a DA-820 computer and a USB disk with the recovery programs. (Note: The USB disk should be at least 2GB.).



Recovery Procedure

Step 1: Prepare your USB drive

 Execute tuxboot-windows-23.exe from the <Software DVD>\recovery\DA-820-W7E, then select Pre Download, and then click "...".



 Select the ISO file from <Software DVD>\recovery\ DA-820-W7E \ClonezillaFactory_2013-02-21-14\.

• • • • • • • • • • • • • • • • • • •	. • cio		y_2015-02-21	• • • • • • • • • • • • • • • • • •	Je Jeuren Clone	2mai actory	_2013
Organize 🔻 New 🕯	folder					•	
🔆 Favorites	^ P	Vame	^		Date modif	ied	Туре
📃 Desktop		🤞 clonezilla	live-2.0.1-15	-i686-pae-moxa-2	6/24/2013 4	:37 PM	Disc Ima
Downloads							
Documents	Ш						
 Music Pictures Videos 							
 Music Pictures Videos Computer Local Disk (C:) 							
Music Pictures Videos Computer Local Disk (C:) Removable Disk							
Music Pictures Videos Computer Local Disk (C:) Removable Disk	 + + [111			

3. Select **USB Drive** type, select a **Drive**, and then click **OK** to continue.

Tuxboot	
On-Line Distribution donezilla_live_stable	▼ Update
Clonezilla	
Homepage: http://clonezilla.org/ Description: CloneZilla live is a distribution used for disk backup and imaging. The stable brar are based on Debian	nch of Clonezilla live
Install Notes: CloneZilla live is booted and run in live mode; no installation is required to use Download Path: <u>CloneZilla Live Stable at SourceForge</u>	it.
Pre Downloaded ISO ISO	.0.iso
Show All Drives (Use with Care)	1
<u>Type:</u> USB Drive ▼ Dri <u>v</u> e: D:\ ▼ OK	Cancel

4. The boot files will be copied to your USB drive.



5. When finished, click **Exit** to stop the program.

Tuxboot		
1. Downloading Files (Done)		
2. Extracting and Copying Files (Done)		
3. Installing Bootloader (Done)		
4. Installation Complete, Reboot (Current)		
After rebooting, select the USB boot option in the BIOS boo Reboot now?	t menu.	Exit

 Manually copy the os_image directory from the <Software DVD>\ DA-820-W7E \recovery folder to \home\partimag\ on the USB drive.

Step 2: Change the BIOS Settings

You will need to change the BIOS settings to boot from the USB disk.

 Turn on the computer and press F2 when you hear the beep sound to enter the BIOS setup menu. Select Boot and then select Legacy. Press Enter to continue.

	InsvdaH20 Satur Utility	Dav 35
Main Advanced Security	Power Boot Exit	NEV. 0.0
		Enable/Disable UEEL Boot
JEEL Boot	<enabled></enabled>	Function
Quick Boot	<enabled></enabled>	
PXF Boot to LAN	<disabled></disabled>	
LISB Boot	<enabled></enabled>	
000 000 0		
NEEL		
Menary		
v Loguey		
El Halp ti Salast Itam	E5/E6 Change Values	EQ Satur Dafaulte
Free Exit And Select Menu	Enter Select N SubMonu	F10 Save and Exit
	i Enter Serect 💌 Subhenu	

2. Select Boot Type Order.

	InsydeH20 Setup Utility	Rev. 3.5
	Boot	
Boot Device Priority		Select Normal Boot Option Priority or
Normal Boot Menu	<normal></normal>	Advance Boot Option Priority
►Boot Type Order ►Hard Disk Drive		
▶U2B		
F1 Help 1 Selecti	tem F5/F6 Change Values	F9 Setup Defaults
Esc Exit ↔ SelectM	lenu 👘 Enter Select 🕨 SubMenu	F10 Save and Exit

- 3. Select USB disk and then press "+" to move it to the first boot device position.
 - Warning: An incorrect boot priority will lead to recovery failure.

	InsydeH2O Setup Utility					Rev.				
				Boo	t					
Boot	t Type Or	der								
Hard Othe	d Disk Dr ers	ive								
	Jala – 1	Salact	Itom	C5/C6-0	hange	Values	_	0 Cotup	Dofault	
Esc E	Exit +	+ Select	Menu	Enter S	elect	► SubMenu	F	10 Save a	nd Exit	3

4. Press **F10** and then press **Enter** to save and exit BIOS setup.

Step 3: Restore the system from USB drive

Connect the USB disk to any of the DA-820's USB ports and then reboot the computer. The system will boot from the USB disk and the Pre-installation Environment and the recovery utility will appear.

1. Select clonezilla live restore disk.



2. Wait for the USB drive boot process to finish.



3. Enter y to continue the restore process.

```
he jobs in /etc/ocs/ocs-
etting the TERM as linux
                   ocs-live.d∕ are finished. Start "ocs-live-restore"
          Clonezilla image dir: /home/partimag
Shutting down the Logical Volume Manager
No volume groups found
No volume groups found
Finished Shutting down the Logical Volume Manager
 ctivating the partition info in /proc... done!
xpe_savedisk
imag/xpe_savedisk" -> "sda sda1"
MARNING!!! WARNING!!! WARNING!!!
MARNING! THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
 *****
Machine:EXPC-1319
sda (2.1GB_V80X_HARDDISK__ata-V80X_HARDDISK_V81c64a0a3-c9f7523d)
re you sure you want to continue? ?
u/n] u
```

4. Enter **y** to confirm again.



5. Wait for the process to finish.

Partclone v0.2.56 http://partclone.org Starting to restore image (-) to device (/dev/sda2) Calculating bitmap Please wait done! File system: NTFS Device size: 31.9 GB = 7790335 Blocks Space in use: 5.8 GB = 1407788 Blocks	
Free Space: 26.1 GB = 6382547 Blocks Block size: 4096 Byte	
Elaspsed: 00:00:18 Remaining : 00:02:31 Rate: 2.0 Curreing Block: 149660 Total Block: 7790335	94GB/min
Data Block Process:	
	10.60%
Total Block Process	
	1.92%

6. Select (0) Poweroff to power off the computer.



7. Remove the USB drive after the computer has been powered off.

Step 4: Change BIOS Settings to Boot from the Original Disk

Now you will need to change the boot priority so that it can boot from the original disk. As the system reboots, press **F2** to enter the BIOS setup menu.

1. Select **Hard Disk Boot Priority** and then press + to move to the first boot device position, and then press **Enter.** Make sure the hard disk has first boot priority.

	InsydeH20 Setup Utility	Rev. 3.5			
Boot					
Boot Type Order Hard Disk Drive CD/DVD-ROM Drive USB Others		+: Move Up -: Move Down			
F1 Help î↓Selectite Esc Exit ↔SelectMen	m F5/F6 Change Values u Enter Select ► SubMenu	F9 Setup Defaults F10 Save and Exit			

2. Press F10 and then press Enter to save and exit BIOS settings.

Step 5: Reboot the Computer

You need to wait about 10 to 15 minutes for the system to restart two times automatically, since the system configuration files will be initiated while booting up for the first time. **Do not turn off the computer or shut down the computer** while the system is restarting; otherwise, the IIS service will be terminated. When the operating system has successfully launched, you will need to restart your computer so that the new settings can be activated.

🕞 🧃 Set Up Windows	
Choose a user name for your account. Your computer's name is managed by your organization's system administrator.	
Copyright © 2010 Microsoft Corporation. All rights reserved.	

Saving the System to a USB Drive

You may also save the current system to the USB drive for system recovery in case the system crashes. Before saving the system to the USB drive, we suggest you remove all files under **\home\partimag** on the USB drive. In addition, change the BIOS settings to make the USB drive the first boot priority.

When the system has been launched, take the following steps.

1. Select clonezilla live save disk.



2. Wait for the USB drive boot process to finish.

1 State of the Observerse of the stage of the stage

3. Enter **y** to continue.



4. Wait for the process to finish.

5. Select (0) Poweroff so that the computer will power off when the process is finished.
A Moxa SynMap OID Table

In this appendix, we describe the Moxa $\ensuremath{\mathsf{SynMap}}$ OID Table.

The following topics are covered in this appendix:

- Moxa SynMap OID Table
- HOST RESOURCE OID Table

Moxa SynMap OID Table

The following table shows the full list of the Moxa SynMap OID.

Item Name	OID	MAX-Access	Description	Supported
productName	1.3.6.1.4.1.8691.17.1.1.1	read-only	product name	\checkmark
productDesc	1.3.6.1.4.1.8691.17.1.1.2	read-only	short product description	\checkmark
productVersion	1.3.6.1.4.1.8691.17.1.1.3	read-only	product version	\checkmark
productBuildDate	1.3.6.1.4.1.8691.17.1.1.4	read-only	product's last build date	\checkmark
			(YYMMDDHH)	
biosVersion	1.3.6.1.4.1.8691.17.1.4.1	read-only	BIOS version	
biosSaveSetting	1.3.6.1.4.1.8691.17.1.4.2	read-write	Write 1 to save the bios	
			setting; if you read 0, the	
			"save bios" request has	
			been applied.	
biosSettingStatus	1.3.6.1.4.1.8691.17.1.4.3	read-only	Shows a comparison of	
			the bios CMOS setting	
			and bios new setting.	
bootDeviceStatus	1.3.6.1.4.1.8691.17.1.4.4.1	read-only	current support boot	
			device	
firstBootDevice	1.3.6.1.4.1.8691.17.1.4.4.2	read-write	read show current first	
			boot device, write set	
			boot device.	
pwrOnAfterPwrFail	1.3.6.1.4.1.8691.17.1.4.8.1	read-write	Select "power on" after	
			power fails.	
pwrLanWakeUp	1.3.6.1.4.1.8691.17.1.4.8.3	read-write	Enable/Disable wake on	
			LAN functionality.	
tempSensorsIndex	1.3.6.1.4.1.8691.17.1.5.1.1	read-only	Reference index for each	\checkmark
	.1.1		observed device.	
tempSensorsDevice	1.3.6.1.4.1.8691.17.1.5.1.1	read-only	Name of the temperature	\checkmark
	.1.2		sensor being read.	
tempSensorsValue	1.3.6.1.4.1.8691.17.1.5.1.1	read-only	Temperature of this	\checkmark
	.1.3		sensor, in mC.	
voltSensorsIndex	1.3.6.1.4.1.8691.17.1.5.1.2	read-only	Reference index for each	\checkmark
	.1.1		observed device.	
voltSensorsDevice	1.3.6.1.4.1.8691.17.1.5.1.2	read-only	Name of the device being	\checkmark
	.1.2		read.	
voltSensorsValue	1.3.6.1.4.1.8691.17.1.5.1.2	read-only	Voltage in mV.	\checkmark
	.1.3			
ioDiNumber	1.3.6.1.4.1.8691.17.1.6.1.1	read-only	Number of digital input	
	.1		pins in the current	
			system.	
diIndex	1.3.6.1.4.1.8691.17.1.6.1.1	read-only	Reference index for each	
	.2.1.1		digital input pin.	
diPort	1.3.6.1.4.1.8691.17.1.6.1.1	read-only	The port number of a	
	.2.1.2		digital input pin.	
diValue	1.3.6.1.4.1.8691.17.1.6.1.1	read-only	The digital input status	
	.2.1.3		(0 is low, 1 is high).	
diTrapEnable	1.3.6.1.4.1.8691.17.1.6.1.1	read-write	When this object is	
	.2.1.4		enabled, agent will send	
			trap message when	
			digital input pin status is	
			changed.	
ioDoNumber	1.3.6.1.4.1.8691.17.1.6.1.1	read-only	Number of digital output	

	.3		pins in the current	
			system.	
doIndex	1.3.6.1.4.1.8691.17.1.6.1.1	read-only	Reference index for each	
	.4.1.1		digital output pin.	
doPort	1.3.6.1.4.1.8691.17.1.6.1.1	read-only	Port number of a digital	
	.4.1.2		output pin.	
doValue	1.3.6.1.4.1.8691.17.1.6.1.1	read-write	Digital output status (0 is	
	.4.1.3		low, 1 is high).	
uartNumber	1.3.6.1.4.1.8691.17.1.6.3.1	read-only	Number of internal	\checkmark
			UARTs in the current	
			system.	
uartIndex	1.3.6.1.4.1.8691.17.1.6.3.2	read-only	Reference index for each	\checkmark
	.1.1		UART port.	
uartType	1.3.6.1.4.1.8691.17.1.6.3.2	read-write	UART mode (0 is RS232,	\checkmark
	.1.2		1 is RS485 2 wires, 2 is	
			RS422, 3 is RS485 4	
			wires)	
usbNumber	1.3.6.1.4.1.8691.17.1.6.4.1	read-only	Number of ports,	
	.1		regardless of their	
			current state in the usb	
			general port table.	
usbDeviceIndex	1.3.6.1.4.1.8691.17.1.6.4.1	read-only	This index is identical to	
	.3.1.1		usbPortIndex for the	
			corresponding USB port.	
usbDeviceVendorID	1.3.6.1.4.1.8691.17.1.6.4.1	read-only	USB device port vendor,	
	.3.1.2		HEX-formatted string, as	
			provided to the USB host	
			by the USB device.	
usbDeviceProductID	1.3.6.1.4.1.8691.17.1.6.4.1	read-only	Product ID,	
	.3.1.3		HEX-formatted string, as	
			provided to the USB host	
			by the USB device.	
usbDeviceActiveClass	1.3.6.1.4.1.8691.17.1.6.4.1	read-only	This object returns the	
	.3.1.4		USB Device Class type of	
			the active configuration.	
usbPlugTrapEnable	1.3.6.1.4.1.8691.17.1.6.4.1	read-write	When this object is	
	.4		enabled, agent will send	
			trap message when a	
			USB device is inserted.	
moxaSystemTrapIP	1.3.6.1.4.1.8691.17.1.9.1	read-write	Set Trap IP address.	\checkmark
moxaSystemTrapCo	1.3.6.1.4.1.8691.17.1.9.2	read-write	Trap community.	\checkmark
mmunity				

HOST RESOURCE OID Table

The following table shows the Host Resource OID.

Item Name	OID	MAX-Access	Description	Supported
hrProcessorTable	1.3.6.1.2.1.25.3.3	read-only	CPU usage	\checkmark
hrStorageTable	1.3.6.1.2.1.25.2.3	read-only	Disk and memory usage	\checkmark