V2101 Series WinXP Embedded User's Manual

Second Edition, December 2009

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V2101 Series WinXP Embedded User's Manual

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1 Introduction

Thank you for purchasing the Moxa's V2101 series of x86 ready-to-run embedded computers. This manual introduces the software configuration and management of V2101 computers running the Windows Embedded Standard 2009 operating system. For hardware installation, connector interfaces, setup procedures, and upgrading the BIOS, please refer to the V2101 Series Hardware User's Manual.

Microsoft Windows Embedded Standard 2009 is a specialized operating system consisting of componentized Windows XP Professional features that allows you to build a wide range of innovative, small footprint devices. Windows developers will find Moxa's V2101 computer plus Windows Embedded Standard 2009 operating system to be the right solution for a wide range of applications.

In this chapter, we cover the following topics:

- □ Overview
- □ Software Specifications
 - Application Development Environment
 - Networking and Communication Capabilities
 - Supporting Services and Daemons
- □ How to Determine Firmware Build Versions
- □ Inserting a USB Mass Storage Device into the Computer
- **Inserting an SD Card in the Computer**

Overview

V2101 embedded computers are based on the Intel Atom Menlow XL x86 processor and feature 2 serial ports, dual Gigabit LAN ports, 4 USB 2.0 hosts, and an SD socket. The V2100 Series offers both VGA and LVDS outputs, making it particularly well suited for industrial applications, such as SCADA and factory automation.

The V2101's 2 serial ports makes it ideal for connecting a wide range of serial devices, and the dual 10/100/1000 Mbps Ethernet ports offer a reliable solution for network redundancy, promising continuous operations for data communication and management. As an added convenience, the V2101 computers have three DIs and three DOs for connecting digital input/output devices. In addition, the SD and USB ports provide the V2101 computers with the reliability needed for industrial applications that require data buffering and storage expansion.

Pre-installed with Windows Embedded Standard 2009, the V2101 Series provides programmers with a friendly environment for developing sophisticated, bug-free application software at a lower cost.

All V2101 models support a wide operating temperature range of -40 to 85°C for harsh industrial environments.

Software Specifications

The software features of the V2101-XPE embedded computers are listed below:

Application Development Environment

The V2101-XPE is fully compatible with the XP Professional Development Environment.

The V2101-XPE's use of Windows Embedded Standard 2009 with SP3 provides the following common, popular application development features that make programming convenient and easy.

Every application that runs in Windows XP can be executed in the V2101-XPE, so there is no migration cost.

Windows Embedded Standard 2009 is based on the same binary files as Windows XP Professional; Windows Embedded Standard 2009 enables you to rapidly develop reliable and full-featured connected devices.

- **Microsoft .Net Framework 3.5**—This component includes the common language runtime (CLR) and the .NET Framework class library.
- Active Directory Service Interface (ADSI) Core—Provides the basic functionality for ADSI. This component routes any requests to the corresponding provider according to the path it is provided.
- Active Template Library (ATL) Supports ATL applications.
- **ASP.NET 2.0**—A unified Web application platform that provides the services necessary to build and deploy enterprise-class Web applications.
- Certificate Request Client & Certificate Auto enrollment—This component includes the common language runtime (CLR) and the .NET Framework class library.
- **COM Base**—Component Object Model (COM) includes a programming model and a set of application programming interfaces (APIs), and does not include a dedicated user interface.
- Common Control Libraries—(Side by Side) the component provides common user interface (UI) controls.
- Common File Dialogs—Support for common dialog boxes.
- Direct3D—The infrastructure for two-dimensional and three-dimensional graphics.

- **DirectPlay**—Provides a networking API that can enable any application to operate over both a peer-to-peer and client/server topology.
- **DirectShow**—Base filter graph and device enumeration support for all DirectShow applications. This component also provides most DirectShow filters.
- **Distributed Transaction Coordinator (MSDTC)** —A distributed transaction facility for Microsoft Windows systems, which uses transaction-processing technology. MSDTC exploits loosely coupled systems to provide scalable performance.
- Enhanced Write Filter—An upper filter in the storage device driver stack that redirects disk write operations to volatile (RAM) or non-volatile (disk) storage.
- Event Log—A dynamic-link library (DLL) that runs as part of Services.exe. This component stores and retrieves events that can be viewed in the event viewer.
- **Internet Explorer 7**—The Internet Explorer Web browser that allows customers to connect to the Internet or to an intranet (see properties via inetcpl.cpl).
- Mapi32 Libraries—The infrastructure for e-mail support.
- Message Queuing (MSMQ) Core—Message Queuing is a messaging infrastructure and a development tool for creating distributed messaging applications for Microsoft Windows operating systems; it provides guaranteed message delivery, efficient routing, increased security, support for sending messages within transactions, and priority-based messaging.
- **Microsoft Visual C++ Run Time Libraries**—The Microsoft C++ Runtime Library.
- NTFS—The NTFS File System driver (NT File System). Use NTFS instead of FAT for optimum file system security.
- **Power Management**—This component includes a dynamic-link library for power management features in the xpepm.dll file, and a command-line tool for using power management on a run-time image in the xpepm.exe file. **Note:** Instead of using this component, Shutdown.exe is the preferred method to shut down the system.
- **Registry Editor**—The Registry Editor (regedit.exe, regedt32.exe).
- **RPC**—Facilitates local remote procedure calls (RPCs) using the ncalrpc and ncacn_np protocol sequences, and provides support for dynamic endpoint resolution. The RPC name service provides remote procedure call (RPC) named services functionality, such as the RPC Locator. The RPC Named Service component exposes all RpcNs* RPC functions. The RPC server provides a variety of RPC and Component Object Model (COM) services, including RPC Endpoint Mapper, COM Service Control Manager (SCM) and COM Object Resolver.
- Smart Card Cryptographic Service Providers—Supports features such as smart card logon and improved e-mail security. Smart cards must be capable of certain RSA public key cryptographic operations. These functions are exposed by using CryptoAPI and, specifically, through a CSP. Typically, each type of smart card requires a CSP, which is provided by the card vendor.
- USB 2.0—The core drivers needed to communicate with an Enhanced Host Controller Interface (EHCI) that is compliant with USB .95 or 1.0.
- Windows API—User—Provides the user-mode component of the Windows operating system API.
- Windows Media Player 11—Playback functionality for digital media that includes videos, CDs, and DVDs for end users and developers.
- Windows Script Engines—A complete scripting environment for Windows, including command-line scripting, script languages, and the ability to host script engines within your applications.
- WMI—Bundles the features that combine to create the Windows Management Instrumentation (WMI) technologies.

Networking and Communication Capabilities

The V2101-XPE embedded computers provide powerful hardware communication interfaces for network-centric embedded applications, including 2 Ethernet and 2 serial ports, and also support the networking and communications capabilities that are built into Windows Embedded Standard 2009 with SP3 OS. The following features are supported:

- **DHCP Client Service**—Registers and updates Internet Protocol (IP) addresses and Domain Name System (DNS) records for your target system.
- IP Security Services—This component provides IP Security (IPsec) services for all IP traffic.
- **Dial-Up Networking**—Provides the infrastructure necessary to implement a Remote Access Service (RAS) client.
- **Microsoft-Windows-HTTP**—Services that implement the functionality of the HTTP protocol on a server.
- **TCP/IP Networking**—Implements the core TCP/IP protocol stack, which includes the IPv4 version for the following protocols: Transmission Control Protocol (TCP), User Datagram Protocol (UDP), raw, Internet Control Message Protocol (ICMP), Internet Group Membership Protocol (IGMP), and Address Resolution Protocol (ARP). The component also includes Wshtcpip.dll, which is the Winsock provider for TCP/IP to enable socket-level communication over TCP/IP.
- TAPI—A Telephony API (TAPI) Telephony Service Provider (TSP).
- Simple Network Management Protocol (SNMP)—SNMP is an agent service that provides management systems with information about activities that occur at the Internet Protocol (IP) network layer. The SNMP agent monitors network traffic, and retrieves and updates local management information based on the requests from the SNMP manager. The agent also notifies registered managers with traps when significant events occur.
- **Time Service Core**—Synchronizes a workstation's clock with other computers using the Network Time Protocol (NTP) version 3. For increased accuracy, this component also incorporates algorithmic enhancements from NTP 4.
- Windows Firewall/Internet Connection Sharing (ICS)—Windows Firewall provides a barrier between your device and network connections to help reduce attacks by hackers, viruses, and worms across networks. Strongly recommended..
- Wireless Zero Configuration—Support for the Windows implementation of the IEEE 802.11 standard. This component performs automatic configuration and authentication for IEEE 802.11 wireless network adaptors.
- Unimodem—Provides the infrastructure necessary for applications to communicate with a modem.

Supporting Services and Daemons

In addition to development and communication capability, the V2101-XPE embeds the services and daemons shown below. These common and easy-to-use application servers help users migrate industrial communication applications to the V2101-XPE embedded computer very easily and conveniently.

- **COM+ Services**—The next evolution of Microsoft Component Object Model (COM) and Microsoft Transaction Server (MTS).
- **Computer Browser Service**—Computer browsing functionality exposed by Windows through Microsoft Networking. It allows a client machine to browse its network neighborhood for available computers, exposing file and print sharing services.
- Disk Management Services—Support for disk and volume management operations. The component implements a Component Object Model (COM) interface that can be used to query and configure disks and volumes (both basic and dynamic). The component also monitors disk arrivals and removals and other changes in the storage subsystem.
- IIS Web Server—Allows you to create and manage Web sites.
- Terminal Server—Microsoft Terminal Server client application (mstsc.exe).
- Remote Registry Service—Enables remote users to modify registry settings on this computer.
- Telnet Server—Allows users to connect to Telnet servers from remote computers.

How to Determine Firmware Build Versions

Use the **mxver** command to obtain the firmware version of the V2101-XPE embedded computer. This information is particularly important for identifying which features your embedded computer supports.

• Execute the **mxver.exe** command line utility.

C:\> mxver Model Name: V2100-XPE Build Date: 09110915 Version: V1.0

Inserting a USB Mass Storage Device into the Computer

Inserting a USB mass storage device will generate a new drive on the V2101-XPE. The new drive should be visible in the File Explorer.

💈 My Computer			_ 🗆 🔀
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools	Help		1
🕝 Back - 🕥 - 🏂 🔎 Se	earch 😥 Folders 🔢 🕌		
Address 😼 My Computer			💌 🄁 Go
System Tasks	Files Stored on This Computer		
System Tasks View system information Add or remove programs Change a setting	Shared Documents	Administrator's Documents	
	Hard Disk Drives		
Other Places	New Volume (C:)		
Shared Documents	Devices with Removable Storage		
Details			
My Computer System Folder			
System rolder			

Inserting an SD Card in the Computer

The V2101-XPE computer is equipped with an SD slot for SD card storage expansion support. Please make sure to turn off the computer before inserting the SD card into the SD slot on the front panel. When you insert an SD card, you will see a new disk is detected in **My Computer**.

💈 My Computer			_ 🗆 🖂
<u>File Edit View Favorites Tools</u>	Help		#
🕝 Back 🔹 🕥 🗧 🏂 🔎 See	arch 🥟 Folders 🔢 🕶		
Address 🚽 My Computer			🗙 🄁 Go
System Tasks 🕆	Files Stored on This Computer		
View system information	Shared Documents	Administrator's Documents	
Grange a second	Hard Disk Drives		
Other Places My Network Places My Documents	New Volume (C:)		
🛅 Shared Documents	Devices with Removable Storage		
Control Panel Details	USB_DISK (D:)	REMOVABLE (E:)	
My Computer System Folder			
System Polder			

The V2101-XPE supports SD "Plug and Play" and "Hot Swap", so you may start using this SD card as soon as it is detected. However, if you have inserted a new SD card, we suggest you restart your computer to ensure that the new SD card has been successfully installed. Click **Yes** to do so.

System S	ettings Change
?	Windows has finished installing new devices. The software that supports your device requires that you restart your computer.You must restart your computer before the new settings will take effect. Do you want to restart your computer now? Yes No

Software Configuration

In this chapter, we explain how to operate a V2101-XPE computer directly or from a PC. Instructions are given on how to adjust the system time, troubleshoot network connectivity, and manage other functions. Some of these operations can be done with system commands after gaining access to the computer, and others can be done from the "Control Panel," which is described in a later chapter.

In this chapter, we cover the following topics:

- □ Starting Your V2101-XPE Computer
- □ Resetting Your V2101-XPE Computer
- **Changing the LVDS Settings**
- **Changing the Network Settings**
- **Operating Your V2101-XPE Computer with a Telnet Client**
- □ Adjusting the System Time
- **General Starting and Stopping Services**
- □ Simple Network Management Protocol (SNMP)
- **Remote Desktop (RDP)**
- **Gerial Ports**
- **Enhanced Write Filter**

Starting Your V2101-XPE Computer

Connect the CRT monitor or LCD monitor to the target computer, and then power it up by connecting it to the power adaptor. It takes about 30 to 40 seconds for the system to boot up. Once the system is ready, the Desktop will appear on your monitor.



Resetting Your V2101-XPE Computer

• Reset Button

A **Reset** button is located on the front panel of V2101-XPE. Press the reset button to shut down your computer, just as you would do with a standard PC.

• Software Shutdown / Reboot Click Start → Turn Off Computer to reboot or shutdown the V2101-XPE computer.

Changing the LVDS Settings

The V2100-XPE computer comes with an LVDS connector, allowing users to connect an LVDS display. Before you connect your LVDS panel to the embedded computer, be sure the display settings match your LVDS panel. Use the following steps to adjust LVDS settings.

- 1. Select [Advanced] tab in the BIOS Menu.
- 2. Select [Advanced Chipset Features] and then select the [LCD Panel Type] and [Panel Data Format] compatible with your LVDS panel.
- 3. Double-click the display icon at the bottom right of the screen
- 4. Select **Graphics Properties**. (Ex. Intel(R) Dual Display Clone mode for both CRT and LVDS output)

Intel [®] Graphics Media Accelerator Driver for ultra mobile	Monitor and MID	
Display Devices	Single Display	C Monitor
Display Settings		
Color Correction	Multiple Display Intel(R) Dual Display Clone 	Primary Device
Hot Keys	Cione	Monitor 🔹
(intel)	⊂ Extended Desktop	Secondary Device MID
Information	Options	OK Cancel Apply

-

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5. Select the **Color Quality** (32 bit or 18 bit), **Screen Resolution**, and **Refresh Rate** compatible with your LVDS display. You may also select the **Enable Rotation** checkbox if you need rotation functions.

Display Devices Color Quality 32 Bit Display Settings Screen Resolution 1024 × 768 Color Correction Refresh Rate 60 Hertz	Rotation Fnable Rotation O
Display Settings Refresh Rate 60 Hertz	• 0
UU HUIL	•
	90 c 🔽 c 270
Hot Keys	C 180
intel	

6. You can also use hot keys to change your display settings. When finished, click **Apply** and then **OK**.

raphics Media ccelerator Driver or ultra mobile	Hot Keys	
Display Devices	🔽 Enable Hot Keys	
Display Settings	Action Enable Monitor Enable MID Aspect Ratio Options	Hot Keys <ctrl><alt>F1 <ctrl><alt>F3 <ctrl><alt>F1</alt></ctrl></alt></ctrl></alt></ctrl>
Color Correction	Open Graphics Property Application Rotate to Normal Rotate 90 Degrees	<ctrl><alt>F12 <ctrl><alt>Up <ctrl><alt>Left</alt></ctrl></alt></ctrl></alt></ctrl>
Hot Keys	Rotate 180 Degrees Rotate 270 Degrees	<ctrl><alt>Down <ctrl><alt>Right</alt></ctrl></alt></ctrl>
(intel)		Restore Defaults

Changing the Network Settings

The V2101-XPE computer comes with two network interfaces. Both of the default IP addresses are DHCP. Choose **Start** \rightarrow **Control panel** \rightarrow **Network Connections** to enter the network settings page. Select the connection and choose **Properties** on the pop-up menu by right-clicking. You can specify the IP address manually or by DHCP. In addition, you can disable or enable either one or both connections with the pop-up menu.

e Edit View Favorites Tools	Advanced Help	
) Back - 🕥 - 🏂 🔎 S	iearch 🜔 Folders 💠	
ress 🔕 Network Connections		~
Network Tasks 🏾 🖇	LAN or High-Speed Internet	
Create a new connection Set up a home or small office network	Local Area Connection	ion 2
Change Windows Firewall settings	↓ Local Area Connection Properties ?	Internet Protocol (TCP/IP) Properties ?
Oisable this network device Repair this connection	General Advanced	General Alternate Configuration
Rename this connection	Connect using:	You can get IP settings assigned automatically if your network supports
View status of this connection	Bealtek RTL8168B/8111B Family PC Configure	this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Change settings of this connection	This connection uses the following items:	
Other Places Image: Control Panel My Network Places My Documents My Computer Details Connected LAN or High-Speed Internet Connected PL-Ce GBE NIC6 IP Address: 192-168, 1127 Subnet Mask: 255, 255, 255, 255, 00 Manually Configured Hwith Family	ST-WuLink NetBIOS Sompatible Transport Prot ST-WuLink NetBIOS Compatible Transport Prot ST-Internet Protocol (TCP/P) Install. Uninstall Properties Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks. Show icon in notification area when connected Notify me when this connection has limited or no connectivity OK Cancer	Uge the following IP address: P address: Subnet mask: Default gateway: O Diptain DNS server address automatically O Use the following DNS server addresses: Preferred DNS server: Alternate DNS server: Adternate DNS server: Adternate DNS server: C Cancel OK Cancel

Operating Your V2101-XPE Computer with a Telnet Client

Use a crossover Ethernet cable to connect your development workstation directly to the target computer, or use a straight-through Ethernet cable to connect the computer to a LAN hub or switch. Next, use a telnet client on your development workstation to connect to the Telnet console utility of the target computer. After a connection has been established, type the login name and password as requested to log on to the computer.

After logging in through the Telnet client, a list of commands will be available for operating the computer. Use *HELP* to display all of the commands, or type *HELP* [command name] to display extended help for the selected command. Some of these commands, such as *DATE* and *TIME*, are very useful for managing the computer's system time. Other commands, such as *DIR* and *MKDIR*, are good utilities for file management. For example, to inspect the file structure of the root directory, type *DIR*.

NOTE: The default user id is "administrator" and the default password is not set; you need to create a new password for this account to use this telnet client.

NOTE: There is a connection limitation on using Telnet clients. You are only allowed to create connections with two Telnet clients at the same time.





Adjusting the System Time

- Setting the System Time Manually: Use the date/time command line utility to query the current system date/time or set a new system date/time.
- Date/Time Control panel: Go to the Control Panel and double click the Date and Time icon.

ate				02204011	Trice	ernet Time	Time	
love	embe	r 🗸	•	2009)		<u></u>	
5	М	Ť	W	T	F	S		1
1	2	3	4	5	6	7		
8	9	10	11	12	13	14		
15	16	17	18	19	20	21	•	
22	23	24	25	26	27	28		
29	30							17.000.00
								4:14:09 PM 🔷 📚

• SNTP: In the Date and Time Properties window, you can see the NTP server setting.

te and Time	e Properties)		?
Date & Time	Time Zone	Internet Time		
🔽 Automal	tically <u>s</u> ynchr	onize with an Internet I	time server)	
Serv	/er: time.w	indows.com	V Update	Now
No. 4 ave als		1/20/2000 -t-4-22 DM		
		1/20/2009 at 4:23 PM		35.33
		ur only when your com bout <u>time synchronizatio</u>		

Starting and Stopping Services

Select Start \rightarrow Control Panel \rightarrow Administrative Tools and double click Services. Select and right-click on the service name, and then choose to stop or start.

Services					
File Action View ← → 💽 😭 🖸	Help				
🎇 Services (Local)	Services (Local)				
	Application Layer Gateway Service	Name /	Description	Status	
	Stop the service Restart the service	NET Runtime Opti	Microsoft Notifies sel		
	Description: Provides support for 3rd party protocol plug-ins for Internet Connection Sharing and the Windows Firewall	Application Lawar G Appli ASP, I Backy ClipB COM COM COM COM All Tasks COM COM All Tasks COM COM COM All Tasks COM COM COM COM COM COM COM COM COM COM	brovides s ivides s ivides s ports S ports S nages t intains a ivides k ivides la nages n ordinate	Started Started Started Started Started	~

Simple Network Management Protocol (SNMP)

To check SNMP agent capabilities on a target V2101-XPE (e.g., suppose the network IP is 192.168.3.127) computer, log on to the workstation computer on which the SNMP manager resides and then type:

\> snmpwalk -v 2c -c public 192.168.3.127 system

You will see a series of messages from the SNMP agent on the V2101-XPE computer that allow you to monitor and manage the computer.

Remote Desktop (RDP)

You can connect to the target V2100-XPE computer remotely by using **Remote Desktop**. Right-click **My Computer** on your desktop, and select **Properties**. Click the **Remote** tab for further configuration.

System Properties ?	×
General Computer Name Hardware Advanced Remote	
Select the ways that this computer can be used from another location.	
Remote Assistance	
Allow <u>Remote</u> Assistance invitations to be sent from this computer	
What is Remote Assistance?	
Ad <u>v</u> anced	
Remote Desktop	
Allow users to connect remotely to this computer	
Full computer name:	
OEM-8TXU6EWP8GY	
What is Remote Desktop?	
Select Remote Users	
For users to connect remotely to this computer, the user account must have a password.	
Windows Firewall will be configured to allow Remote Desktop connections to this computer.	
OK Cancel Apply	

Make sure that the **Allow users to connect remotely to this computer** checkbox is selected. Next, click **Select Remote Users**, and add the users allowed to connect to your desktop. When finished, click **OK**.

Remote Desktop Users	? 🔀
The users listed below can connect to this computer, and any r the Administrators group can connect even if they are not listed	
Administrator already has access.	
To create new user accounts or add users to other groups, go I Panel and open <u>User Accounts</u> .	to Control
ок	Cancel

Serial Ports

V2101-XPE embedded computers have 2 serial ports on the back panel. These ports are designed to provide reliable, high-speed, 3-in-1 (RS-232, RS-422, and RS-485) operation. Each of the ports supports baudrates up to 115,200 bps.

Ports 1 and 2 are the embedded serial ports of the CPU chipset. They are standard 16550 UART ports, and support a baudrate maximum Baudrate of 115,200 bps. Note that these two ports do not support **Hardware Flow Control**.

The command line utility "SetInterface.exe" is for users to view and set the current operation mode.

CIN Com	mand Prompt		- 0	×
	oft Windows XP [Version 5. pyright 1985-2001 Microsof			-
COM1 -	uments and Settings\Admini -> RS232 -> RS232	strator>setinterface		
Usage :		de] ; Port=1~2 Mode=0,1,2		
e.g.	SetInterface 1 0 ; (SetInterface 2 2 ; (hange the COM1: to RS232 Change the COM2: to RS422/RS485-4W		
C:\Doc	uments and Settings\Admini	strator>_		
				•

Enhanced Write Filter

The "Enhanced Write Filter" protects the contents of a volume on the target media volume by redirecting all writes to another storage location called on overlay. Use the following steps to enable the Enhanced Write Filter.

- 1. Type EWFMGR C: to check if the state of the Enhanced Write Filter is Disabled.
- 2. To enable the filter, type **EWFMGR C: -enable**.
- 3. Reboot the system to activate the change.
- 4. Delete a file on your protected volume and reboot the system; the file you just deleted will appear.

n32\cmd.exe	- 0	×
2-44-1		-
RAM (REG)		
DISABLED		
NO_CMD		
0		
Ø		
87 34 0E 72 00 02 00 00 00 00 00 00 00 00 00 00		
"\Device\Harddisk0\DP(1)0-0+1"		
1		
512		
N/A		
data Ø bytes		
mapping Ø bytes		
	Cettings Administrator > EWFMGR c: Configuration RAM (REG> DISABLED NO_CMD 0 87 34 0E 72 00 02 00 00 00 00 00 00 00 00 00 "\Device \larddisk0\DP<1>0-0+1" 1 512 N/A data 0 bytes	Cettings Administrator>EWFMGR c: Configuration RAM (REG) DISABLED NO_CMD 0 87 34 0E 72 00 02 00 00 00 00 00 00 00 00 00 "\Device \Harddisk0\DP(1)0-0+1" 1 512 N/A data 0 bytes

3

Management Tools

The V2101-XPE ready-to-run embedded computers are shipped with the Windows Embedded Standard 2009 operating system already installed. This network-centric platform is designed to serve as a front-end for data acquisition and industrial control applications. A set of Windows XP management tools are installed on the V2101-XPE computer to resolve management issues.

In this chapter, we cover the following topics:

- **Computer Management**
- **Component Services**
- **D** Event Viewer
- □ Internet Information Services (Web/FTP)
- **ODBC Data Source Administrator**
- **D** Performance Monitor
- □ Services

Computer Management

[Control Panel] → [Administrative Tools] → Computer Management.

You can use the tools for a variety of tasks, such as disk partition, disk mount/dismount, and create/remove users.

You can also check services in the Computer Management window.



Component Services

[Control Panel] → [Administrative Tools] → Component Services.

You can install/view/remove COM components with this tool.



Event Viewer

[Control Panel] → [Administrative Tools] → Event Viewer.

Every V2101-XPE event, including system, applications, and security events are logged in this event database.



Internet Information Services (Web/FTP)

[Control Panel] \rightarrow [Administrative Tools] \rightarrow Internet Information Services.

If you need to set up Web or FTP, you must use this tool for configuration purposes, and you can also start/stop HTTP/FTP services.



A default web page is located in the directory **c:\Inetpub**. Use this default page to test your web server.

Follow the steps shown below to create the virtual directory.

1. Create a virtual directory by selecting **Default Web Site** \rightarrow **New** \rightarrow **Virtual Directory.**

🍓 Internet Informatio	n Services		-	
File Action View	Help P 🖸 🗟 🔗			
Internet Information COM-8TXU6EWP8 Com-8TXU	8GY (local comp	ame IISHelp MSMQ Scripts Printers aspnet_client help.gif iisstart.asp localstart.asp mmc.gif	Path c:\windows\help\iishelp C:\WINDOWS\system32\msmq\web C:\Inetpub\Scripts C:\Windows\web\printers	Status
	New All Tasks View Rename Refresh Export List Properties Help	 Virtual Directory printing warning.gif web.gif winxp.gif 		
<	>	रा	ш	>
Create new Web Virtual D	Pirectory			

Virtual Directory Creation Wi	zard
	Welcome to the Virtual Directory Creation Wizard
	This wizard will help you create a new Virtual Directory on this Web site.
	< Back Next > Cancel
Type the alias you want to us	etory a short name, or alias, for quick reference.
	< <u>B</u> ack <u>N</u> ext > Cancel

2. Follow the virtual directory creation wizard and complete the steps to create the virtual directory **c:\Inetpub**.

Type the alias into the text box. Click **Next** to continue.



🔋 Internet In	formation Services	- 🗆 ×
File Action	View Help	
⇔ → 🗈	Virtual Directory Creation Wizard	
Internet Ir	Access Permissions What access permissions do you want to set for this virtual directory?	Status
	Allow the following:	
E	I✔ Read	
Ŧ	✓ Run scripts (such as ASP)	
E 🦲 FT	Execute (such as ISAPI applications or CGI)	
🗄 🌭 De	☐ Write	
	I Browse	
	Click Next to complete the wizard.	
	Kart Cancel	
		>
irtual Dire	ectory Creation Wizard	
	You have successfully completed the Virtual Directory Creation Wizard.	
	Click Finish to continue.	
	< Back Finish Cance	el

internet Information Services			- 🗆 🔀
		П	
 Internet Information Services OEM-8TXU6EWP8GY (local comp Web Sites Default Web Site MSMQ Scripts Printers aspnet_client Web AdminScripts ftproot iissamples mailroot Scripts FTP Sites Default SMTP Virtual Server 	Name AdminScripts ftproot issamples mailroot Scripts www.root Default.htm	Path	Status
<	<	III	>

- 3. When you complete the steps, the virtual directory **WEB** will appear under **Default WEB** Site.
- On your desktop, type [IP Address]/WEB/Default.htm (e.g., 192.168.1.127/WEB/Default.htm). The following message will appear. The steps are indicated in the following sequence of diagrams.



If you need to use the FTP server, you must create the default password for your account and turn on the write permission on your home directory located in c:\intepub\ftproot. Select FTP Site \rightarrow Default FTP Site \rightarrow Properties \rightarrow Home Directory, and checkmark the Write checkbox. You should now be able to transmit files through the ftp server.



When connecting	to this resource, the con		
- FTP Site Directo		200	
L <u>o</u> cal Path:	c:\inetpub\ftproot		Browse
	<mark>I B</mark> ead <u>W</u> rite Log <u>v</u> isits		
Directory Listing	Style		
	0		

ODBC Data Source Administrator

[Control Panel] → [Administrative Tools] → Data Sources (ODBC)

This database source configuration tool is for users to add, delete, or set up the data source, and then display information about the installed ODBS drivers. You can create a new data source or trace the calls to ODBC functions.

Name	Driver	A <u>d</u> d
		Remove
		<u>Configure</u>
	An ODBC User data source stores information about	

Performance Monitor

[Control Panel] \rightarrow [Administrative Tools] \rightarrow Performance. You can use this tool to monitor system and network resources.

File Action View Favgrites Window Help Console Root System Monitor Performance Logs and Alerts	i Performance		_ 🗆 🔀
Performance Logs and Alerts		<u>Window</u> Help	<u>_ 8 ×</u>
	- 📬 System Monitor	100 80 60 40	
Last 0.000 Average 16.142 Minimum 0.000 Maximum 135.013 Duration 1:40 Color Scale Counter Instance Parent Object Computer 1.000 Pages/sec Memory \\OEM-8TX 100 Avg. Disk QuTotal Physic \\OEM-8TX 1.000 % ProcessorTotal Proces \\OEM-8TX		Last 0.000 Average 16.142 Minimum Maximum 135.013 Duration Color Scale Counter Instance Parent Object 1.000 Pages/sec Memory 100 Avg. Disk QuTotal Physic	1:40 Computer \\OEM-8TX \\OEM-8TX

Services

[Control Panel] → [Administrative Tools] → Services

You can use this utility to start/stop/restart services.

(e.g. If you do not need telnet service you can stop it and set the "startup option" to "manual".)


4 System Recovery

The V2101-XPE ready-to-run embedded computers are a Windows Embedded Standard 2009 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**

Recovery Environment

The environment includes a V2101-XPE embedded computer and a bootable USB disk with the recovery programs and system image file.

Hardware

The hardware used includes a PC, a V2101-XPE computer and a USB disk with the recovery programs. (Note: The USB disk should be at least 2GB.).



Recovery Procedure

Step 1: Install XPE Disk Recovery

Insert the software CD (in your package) into your computer and find **XPeRecovery.msi** in the **recovery** folder. Double-click **XPeRecovery.msi** to start the setup process and click **Next**.



Click Browse and select the folder you wish to install to and then click Next.

🗑 XPeRecovery	
Select Installation Folder	
The installer will install XPeRecovery to the following folder.	
To install in this folder, click "Next". To install to a different fo	lder, enter it below or click "Browse".
<u>F</u> older:	
C:\Program Files\XPeRecovery\	Browse
	Disk Cost
Install XPeRecovery for yourself, or for anyone who uses the	nis computer:
E veryone	
◯ Just me	
Cancel	< Back Next >

Click Next to start the installation.

Recovery	
Confirm Installation	
The installer is ready to install XPeRecovery on your computer. Click "Next" to start the installation.	
Cancel	<back next=""></back>

Click Close to finish.



Step 2: Extract Recovery Image from PC to USB disk

After the installation is complete, you will see the **XPeRecovery** shortcut on your desktop. You can start the USB disk recovery utility by opening this shortcut. Double-click the shortcut then click **OPEN** to select the image file. This file is located on the software CD in the **recovery** folder, and the filename is **V2101_V1.0_Build_09110915.wim**. You may also copy this file to your PC. In the following example, we have already copied the image file to the D drive of the PC.

XPeRecovery		
Select Image File		
Select Disk to restore ima Progress 0 % 0% Apply	ge Format USB Disk Renew 100% Remain : Mins Secs Cancel	
Open		? 🛛
Look in: New Volume My Recent Documents Documents My Documents My Documents My Computer		
File name: My Network Files of type: Places	winpe ✓ WIM File (*.wim) ✓ Open as read-only	Open Cancel

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Click the drop-down list and select your USB disk drive letter (in this example, it is the E drive), and check **Format USB Disk**.

Select Image File			
D:W2101_W1.0_Build_C	19110915.wim	OPEN	
Select Disk to restore im		1	
E:\ 💌 🔽	Format USB Disk	Renew	
Progress 11 %			
Progress 11 %			100%
	Remain : 1	Mins 26 Secs	100%

Click Apply to start the process; the utility will display the progress and time remaining

Select Image File	2.28		
D:\V2101_V1.0_	Build_09110915.wim	OPEN	
Select Disk to rest	ore image Format USB Disk %	Renew	
0%		Ains 26 Secs	100%
	Nondini, 1 i	-mns 20 5005	

Гhis	message	will	appear	when	the	process	is	complete.	Click	OK.	
						r		rr			

XPeRecovery		
Select Image File		
D:\V2101_V1.0_B	uild_09110915.wim	OPEN
Select Disk to restor	e image	
E:\ 💌	Recovery	Renew
Progress 100	Apply image completed.	100%
Apply		Cancel

Step 3: Change the BIOS Settings

On the V2101-XPE computer, you need to change the BIOS settings to boot from USB disk. Turn on the computer and press **DEL** to enter the BIOS setup menu. Select **Hard Disk Boot Priority** and press **Enter**.

Phoenix - AwardBIOS CMOS Setup Utility Main Advanced Peripherals Power HW Monitor Defaults Exit			
 Hard Disk Boot Priority First Boot Device Second Boot Device Third Boot Device Boot Other Device Advanced BIOS Features Advanced Chipset Featur PnP/PCI Configurations 	[CDROM] [Hard Disk] [Removable] [Enabled]	Item Help Menu Level ► Select Hard Disk Boot Device Priority	
↑↓→+:Move Enter:Select + F5:Previous Values F		ESC:Exit F1:General Help F7:Turbo Settings	

Select USB disk and then press "+" to make it the first boot device. Warning: Incorrect boot disk priority will lead to recovery failure.

Phoenix - AwardBIOS CMOS Setur	p Utility
Advanced	
Hard Disk Boot Priority	Item Help
1. <mark>USB-HDD0 : SD∕MMC Card Reader</mark> 2. Ch0 M. : AFAYA MDM 1G 3. Ch0 S. : AFAYA CF 256M 4. Bootable Add-in Cards	Menu Level ► Use <f> or <4> to select a device , then press <+> to move it up , or <-> to move it down the list. Press <esc> to exit this menu.</esc></f>
↑↓:Move PU/PD/+/-:Change Priority F1 F5:Previous Values F6:System Defaults	10:Save ESC:Exit F7:Turbo Defaults

Press F10 and then press Enter to save and leave the BIOS setup.



ATTENTION

Please note that some USB disks will be regarded as the **Removable Device**. If it happens, see the following steps.

a. Select Removable Device Priority.

Phoenix - AwardBIOS CMOS Setup Utility				
Main Advanced Peripheral	s Power HW Monitor Def	aults Exit		
 Removable Device Priorit Hard Disk Boot Priority First Boot Device Second Boot Device Third Boot Device Advanced BIOS Features Advanced Chipset Feature 	[Removable] [Hard Disk] [Removable] S	Item Help Menu Level ► Select Removable Boot Device Priority		
↑↓→+:Move Enter:Select +/ F5:Previous Values F6		ESC:Exit F1:General Help F7:Turbo Settings		

b. Make sure that the USB disk has been detected. Press Esc to exit.

	Phoenix - AwardBl	OS CMOS Setup Uti	lity
Advanced			
Remo	vable Device Priority	l .	Item Help
1. <u>USB-21P0</u>	: JetFlashTranscend	4GB	Menu Level ► Use <f> or <↓> to select a device , then press <+> to move it up , or <-> to move it down the list. Press <esc> to exit this menu.</esc></f>
↑↓:Move F5:Previous	PU/PD/+/-:Change Pri Values F6:System		ive ESC:Exit ':Turbo Defaults

c. Make sure that the **First Boot Device is Removable**. If not, select **First Boot Device**, press **Enter** and select it from the list.

Phoenix -	AwardBIOS CMOS Setup Ut:	ility
Main Advanced Peripherals	Power HW Monitor Defa	aults Exit
▶ Removable Device Priority ▶ Hard Disk Boot Priority		Item Help
First Boot Device	[Removable] [Hard Disk]	Menu Level ►
Third Boot Device	[Removable]	Select Removable Boot Device Priority
 Advanced BIOS Features Advanced Chipset Features 		
· ·		
- ↑↓→+:Move Enter:Select +/- F5:Previous Values F6:		ESC:Exit F1:General Help ?7:Turbo Settings

- d. Select **Exit** \rightarrow **Save & Exit Setup** and then press **Enter**.
- e. Choose **Y** to save to the CMOS and then exit.

Step 4: Reboot the Computer and Start Recovery

Insert the USB disk on any USB port of the V2101-XPE, and then reboot the computer. The system will boot from the USB disk and the Windows Pre-installation Environment and the recovery utility will appear. Click **Recover** to start system recovery.



		nedded Computer Fa	amily A Second
Progre	Apply image co	ompleted.	
0%	ecover	Kemain: U Pinns	0 Secs

Click OK when the recovery process is complete and system will reboot.

Step 5: Change the BIOS Setting to Boot from Original Disk.

Now, you need to change the boot priority so that it can boot from the original disk. As the system reboots, press **DEL** to enter BIOS setup menu. Select **Hard Disk Boot Priority** and press **Enter**. Make sure that the hard disk has first boot priority.

Phoenix - AwardBIOS CMOS Setup Utility			
Advanced			
Hard Disk Boot Priority	Item Help		
1. <mark>Ch0 M. : AFAYA MDM 1G</mark> 2. USB-HDD0 : SD∕MMC Card Reader 3. Ch0 S. : AFAYA CF 256M 4. Bootable Add-in Cards	<pre>Menu Level ► Use <1> or <4> to select a device , then press <+> to move it up , or <-> to move it down the list. Press <esc> to exit this menu.</esc></pre>		
↑↓:Move PU/PD/+/-:Change Priority F10 F5:Previous Values F6:System Defaults	:Save ESC:Exit F7:Turbo Defaults		

Press F10 and then press Enter to save and leave the BIOS settings.

Step 6: Reboot the Computer.

Remove the USB disk from the USB port before restarting and rebooting the V2101-XPE. You need to wait for about ten to fifteen minutes while the system recovers. **DO NOT power off or shut down the computer** during this time or the IIS service will be terminated. When the operating system has successfully launched, you need to restart your computer so that the new settings can be activated.

