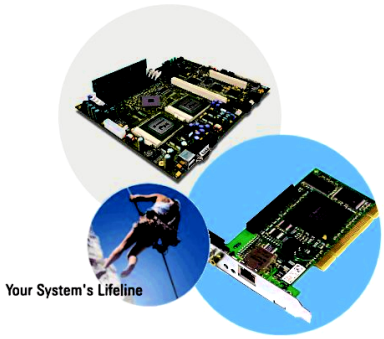
Utilization of Agilent's Remote Management Cards RMC Plus L / LS 1.0 (N2521A-AT1 / N2521A-AT3) in Intel's® Performance Appliance Platform

Product Note



Agilent Technologies offers a complete portfolio of server remote management solutions. The Agilent RMC Plus L 1.0 and RMC Plus LS 1.0 remote management cards are available with firmware pre-configured for the Intel® Performance Appliance Platform. This product note describes how to set up an Intel® Performance Appliance System with an Agilent RMC Plus L/LS 1.0 card and how to utilize its remote management features.

Introduction

Intel® provides building blocks that work together in specific configurations to support simple and fast development of application designs. Reference designs show how these blocks can be utilized to form complete systems. As such a reference design the Intel® Performance Appliance Platform is designed to enable communication appliance solutions for large enterprise and Internet Service Provider (ISP) applications. This reference design is ideal for security, voice, and network management appliances, as well as other applications requiring high I/O bandwidth and increase system memory.

Increased availability and standardized manageability can be achieved with an Agilent add-on remote management card. The reference design provides all necessary infrastructure for Agilent's IPMI-based remote management cards RMC Plus L/LS.

Complete Solutions

The Agilent RMC Plus L 1.0 and RMC Plus LS 1.0 are pre-configured for the Intel® Performance Appliance Platform. Both cards feature an IPMI version 1.5 compliant Baseboard Management Controller and have an embedded Web server to provide remote access to the Performance Appliance Platform for

- power on/off and reset,
- fan failure detection,
- monitoring processor temperatures and system voltages, and
- viewing the Performance Appliance Platform's screen information.

The RMC Plus L/LS 1.0 cards are completely independent systems and run on standby power even when the Performance Appliance Platform is turned off. Events like hardware failures are logged

in an System Event Log (SEL) and trigger notifications by E-mail (L and LS), page (LS only), or to management software using standard SNMP protocol. For more details about the RMC Plus L/LS 1.0 cards please refer to “Related Literature”.

Overview on the Document

The product note describes how to utilize Agilent’s RMC Plus L/LS cards in an Intel® Performance Appliance Platform in three sections. The first section focuses on hardware setup. After that the product note describes how to establish remote access to the RMC Plus L/LS cards. This includes first time setup and specifics on network and Web browser. The third section explains how to utilize the remote management features and the RMC Plus L/LS Web based graphical user interface.

Hardware Setup

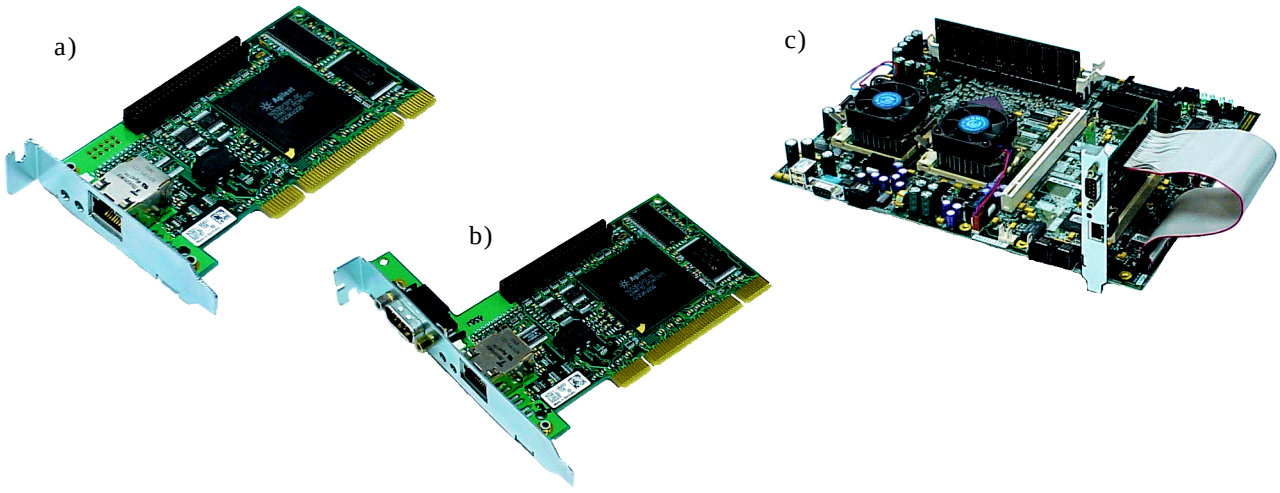
This section describes how to install an Agilent RMC Plus L/LS 1.0 in an Intel® Performance Appliance Platform. For full installation the following equipment is needed:

- Performance Appliance Platform,
- Agilent RMC Plus L or Agilent RMC Plus LS card, and
- an Agilent Management Connector (AMC) cable.

According to Intel’s® reference design the Performance Appliance Platform holds PCI-X, PCI, and Agilent Management Connector (AMC) slots. For system setup a free PCI slot and the AMC slot are needed. Before installation, please identify these slots.

For proper system setup, please follow the steps below in the given order:

1. Turn off system power and unplug AC connector.
2. Plug the RMC Plus L or RMC Plus LS card into a free PCI or PCI-X slot.
   If you have a VGA card based on the ATI Rage IIc or ATI Rage XL in the system and want to use the Advanced Video Redirection (AVR) feature, either plug both cards into a PCI or PCI-X slot.
   Please note that if you plug a standard 33MHz PCI card like the RMC Plus L/LS into a PCI-X bus, this could limit the speed of other devices on the PCI-X bus.
3. Install the AMC cable.
   The AMC holds all signals needed for baseboard management. The ribbon cable establishes all necessary connections between the Performance Appliance Platform and the RMC Plus L/LS 1.0.
   Note If you do not have the AMC cable installed the RMC Plus L/LS 1.0 is disabled.



Pictures of Agilent low-profile RMC Plus L 1.0 card (a), Agilent RMC Plus LS 1.0 card (b), and Intel® Performance Appliance Platform with Agilent RMC Plus LS 1.0 card and AMC cable installed (c).

Establish the Remote Connection

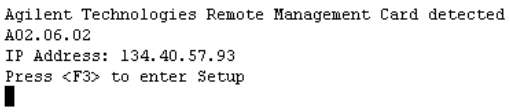
This section describes how to establish a remote connection to the RMC Plus L/LS card in using 10/100 Base-T Ethernet. It briefly focuses on network installation, on first time setup of the RMC Plus L/LS card, and on configuration of the client software.

Factory default network settings of the RMC Plus L/LS cards are Auto negotiation and DHCP enabled. I.e. the card automatically detects the network speed and obtains further network configurations like IP address from a DHCP server. If manual network settings are preferred or no DHCP server is available, it'll be necessary to use the first time setup menu. This can be invoked during BIOS startup.

After finishing the hardware setup described in the previous section follow step 4 to 6:

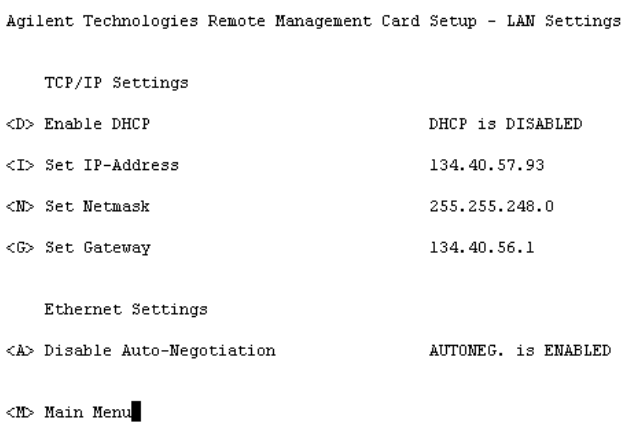
4. connect Ethernet to the RMC Plus L/LS card,
5. connect AC to the system,
6. and power up the Performance Appliance Platform.

After following these steps, it is possible to launch the RMC Plus L/LS' Web based graphical user interface using any computer that has access to the network where the RMC Plus L/LS card is in. This is done in providing the card's IP address as a URL to the Web browser.



Message during BIOS startup.

During BIOS startup you can see a message of the RMC Plus L/LS card with it's current IP address. If DHCP is used, it'll be necessary to remember the IP address. In order to change the network configurations a user can press "F3" to invoke the first time setup menu. The LAN Settings menu can be selected in the main menu.



LAN Settings menu.

The LAN Settings menu allows to customize TCP/IP and Ethernet settings. In order to set an IP address manually DHCP has to be disabled first.

In specific environments it might be necessary to change Web browser settings or carefully select network settings:

- If a Web browser is configured to use a Proxy server, it might be possible that the Proxy cannot access the RMC Plus L/LS card. This can be resolved by disabling the use of a Proxy server or to specify to bypass the Proxy for the RMC Plus L/LS's IP address.
- If a crossover LAN cable is used to access the RMC Plus L/LS card, IP settings of the RMC Plus L/LS card and the management client computer have to be made carefully. Both addresses should be selected in a way that no Gateway is needed. Further DHCP cannot be used.

Utilize Remote Management Features

This section describes the functionality of the RMC Plus L/LS's Web-based Graphical User Interface (GUI). It can be accessed in providing a card's IP address as an URL to a Web browser.

When the RMC Plus L/LS's Web-based GUI opens, a login screen appears first. To access the remote management features a user has to provide valid login and password information. Factory default users are:

- "ADMIN", password "ADMIN", and
- "USER", password "USER".

After successful login the GUI is separated in different tabs where the server management tab is activated initially.

Each item of the GUI is described in an online help. In the following the most important features are highlighted.

The Manage Tab

The Manage tab allows control the Performance Appliance Platform from the remote location. This includes power on/off and reset the system. Further, the Performance Appliance Platform can be booted with a remote floppy image. For this boot from floppy has to be in the Performance Appliance Platform's BIOS and a TFTP server with an appropriate image of a bootable floppy has to be set up.

The System Event Log stores critical sensor information as well as RMC Plus L/LS related events.

If the Performance Appliance Platform is operated with only one CPU installed, the RMC Plus L/LS will always generate a non recoverable fan speed to slow event for the second CPU. If paging is enabled, this event will also be paged.

If a supported VGA card is installed like described above, Advanced Video Redirection (AVR) will show the Performance Appliance Platform's screen. Interaction in using keyboard or mouse is not supported.

The Sensor Tab

The sensor tab can be used to monitor actual sensor values from the Performance Appliance Platform. The tab provides different areas where sensors values can be illustrated in a graphical way.

If the Performance Appliance Platform is operated with only one CPU installed, the temperature and fan speed sensors for the second CPU will display their minimum values. Minimum value for CPU temperature is 0° celcius and minimum value for CPU fan is approximately 2649 RPM.

Please note that after power up of the Performance Appliance Platform it might take up to several minutes until sensors can be selected.

The Card Configuration Tab

The card configuration tab holds all settings which relate to the RMC Plus L/LS card. This includes LAN and modem configuration. Further a contact person and location can be specified which will be displayed in the login screen.

For event paging necessary settings can be done in the card configuration tab. For E-mail paging and SNMP Traps the IP addresses of an E-mail server and SNMP Trap receivers can be specified in "SMTP/SNMP Settings". While via SNMP all events are paged "Paging Severity Settings" allows to setup a filter for the events paged via E-mail or modem (RMC Plus LS only). Further paging via E-mail and modem is user specific, i.e. for each user an individual E-mail address and individual pager settings can be specified in the user configuration tab described later.

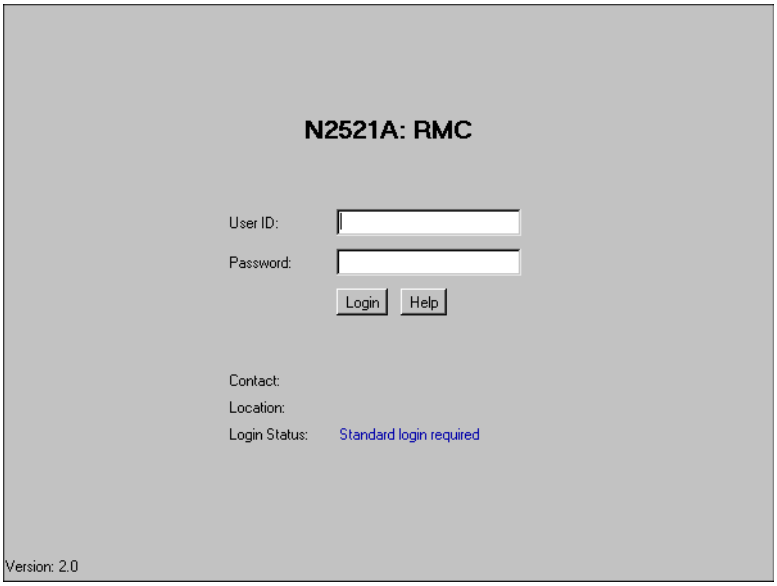
The Server Configuration Tab

The server configuration tab allows to specify some unique details on the specific Performance Appliance Platform server system where the card is in. This information is attached to notifications.

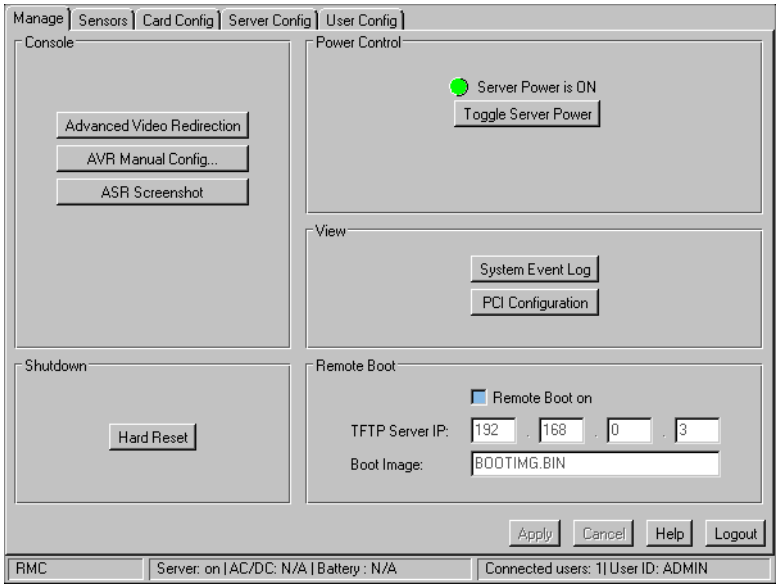
The User Configuration Tab

The user configuration tab allows to administrate user of the RMC Plus L/LS card. This includes login, password, and notification settings.

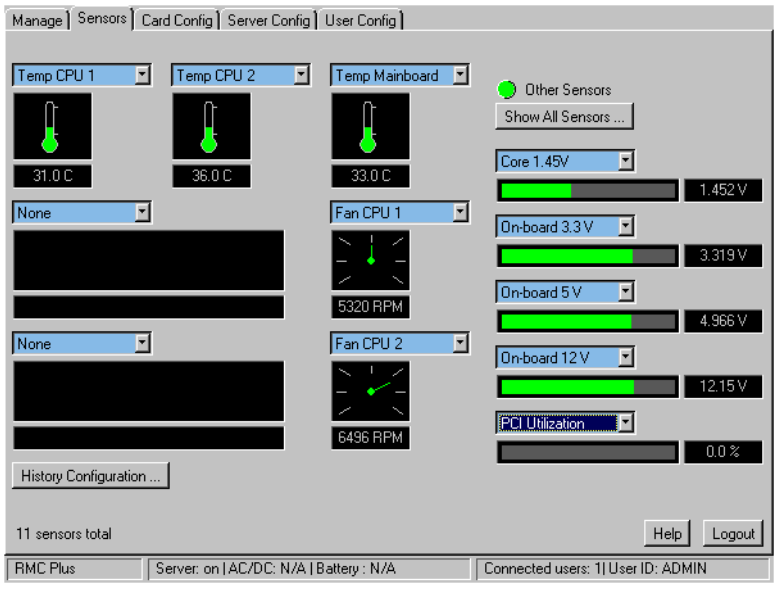
Login Screen.



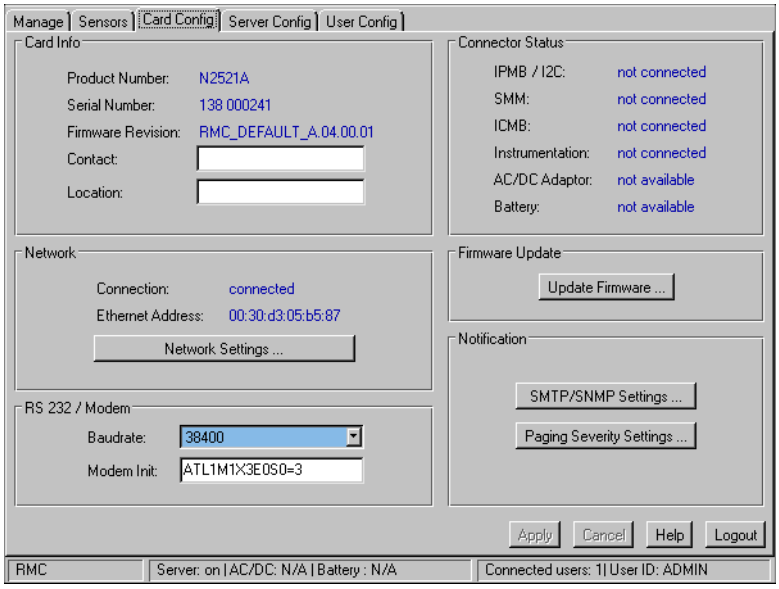
Server Management Tab.



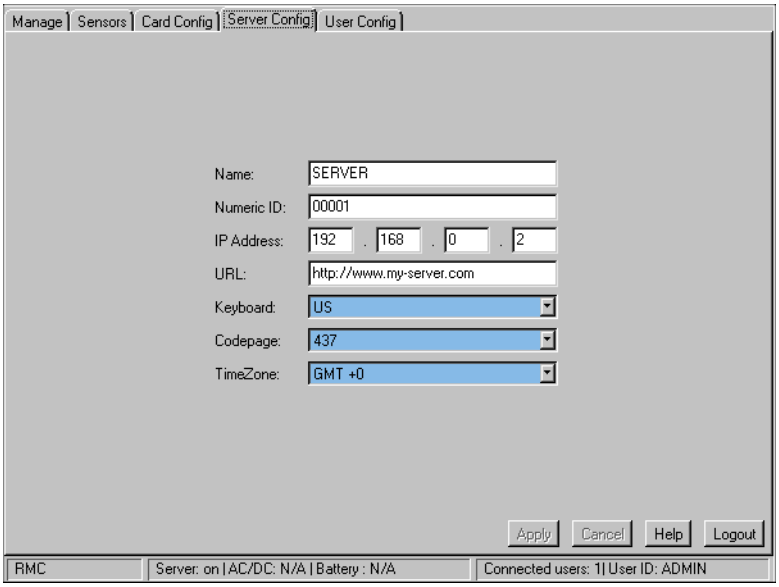
Server Sensor Tab.



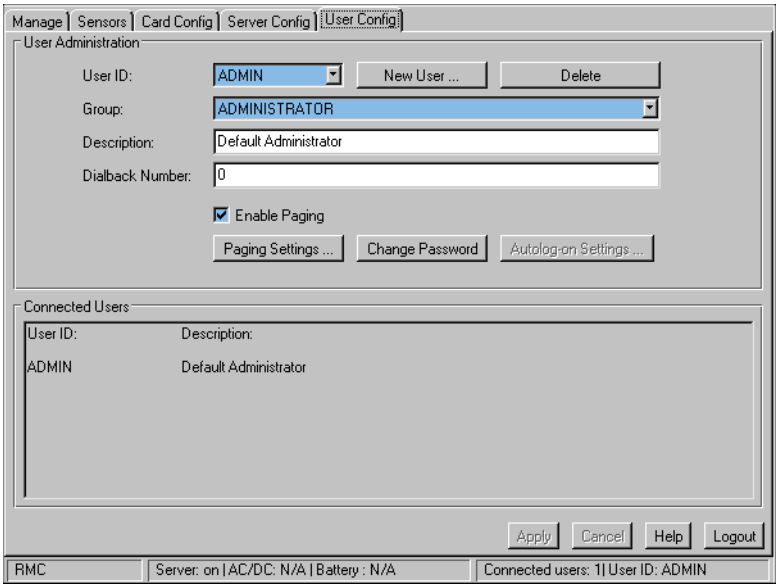
Card Configuration Tab.



Server Configuration Tab.



User Configuration Tab.



Summary

The RMC Plus L/LS cards are optional PCI cards which complement the Intel® Performance Appliance Platform with IPMI version 1.5 compliant baseboard and Web based remote management features. As an independent subsystem the RMC Plus L/LS monitor the Performance Appliance Platform's on board sensors and trigger notifications when deteriorating conditions are detected. A Web based graphical user interface allows easy and convenient setup of the RMC Plus L/LS and Performance Appliance Platform system management. The product note has described how to install and setup the RMC Plus L/LS in an Intel® Performance Appliance Platform and how the RMC Plus L/LS' feature set is utilized.

Glossary

AMC stands for Agilent Management Connector. It is a proprietary connector, which holds all necessary signals to manage a server motherboard.

AVR stands for Advanced Video Redirection. This feature allows to view the server screen remotely when a VGA card is installed in the system.

BMC stands for Baseboard Management Controller. This term is defined by IPMI and refers to an unit which controls the server hardware. It is part of the Agilent RMC Plus L/LS 1.0.

GUI stands for Graphics User Interface.

IPMI stands for Intelligent Platform Management Interface. The IPMI standard defines interfaces and methods for server hardware management.

RMC stands for Agilent Remote Management Card. It is used for out of band hardware management of a server from a remote location.

SEL stands for System Event Log. It is used to store system events as defined by IPMI.

SNMP stands for Simple Network Management Protocol.

SMTP stands for Simple Mail Transfer Protocol.

TFTP stands for Trivial File Transfer Protocol.

Related Literature

Technical Specifications on Agilent Technologies Remote Management Cards
RMC Plus L 1.0
RMC Plus LS 1.0
p/n 5988-4068EN
(available at http://cp.literature.agilent.com/litweb/pdf/5988-4068EN.pdf)

Agilent N2521A RMC Plus L Hardware Reference

Agilent N2521A RMC Plus LS Hardware Reference

(Please note that above related literature describes the RMC Plus L/LS 1.0 cards in general. Differences are result of the dedicated firmware configuration for the Intel® Performance Appliance Platform.)

For details on the Intel® Performance Appliance Platform please refer to the following Web site:

http://developer.intel.com/platforms/applied/eiacomm/perform2/perform2.htm

For more information please visit us at:
www.agilent.com/find/rmc

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