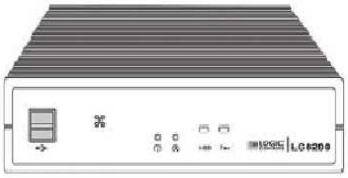
LC8200 Series

Logic Controls Industrial Computer

USER MANUAL



LOGIC® CONTROLS

NOTICE

The manufacturer of the Industrial Computer makes no representations or warranties, either expressed or implied, by or with respect to anything in this manual, and shall not be liable for any implied warranties of fitness for a particular purpose or for any indirect, special or consequential damages. Information in this document is subject to change without notice and does not represent a commitment on the part of the manufacturer.

FCC NOTICE

This device complies with Part 15 of FCC Rules. Operations are subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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OVERVIEW

The Logic Controls LC8200 provides unparalleled reliability by being a fanless unit with no moving mechanical parts. It is an ideal computer for use in harsh environments with high levels of dust or oil when fan noise is not desirable. For mass storage, compact flash memory provides true no-moving-part operation. In addition, all components and connectors reside on one PC board, thus no internal cables (sources of common loose connections) are required. The computer is housed in a rugged die cast case for extra protection. The LC8200 has a very compact form factor - only 2"H x 8"W x 6"L. Two mounting brackets enable these units to be mounted almost anywhere – on a wall, ceiling, table top or under a counter.

The LC8200 uses Intel Celeron-M processors, so it can run Windows and Linux-based applications. Whether your application runs on Windows XP, Windows XP embedded, Windows 2000, Windows CE, Windows Embedded for POS or any flavor of Linux, your operating system needs are supported by the LC8200. This enables the unit to be used in a wide variety of applications – in a restaurant's kitchen system, in a POS workstation, in an auto ID workstation, etc. The LC8200 also provides a very impressive compliment of up-to-date I/O ports – Ethernet, parallel, PS/2 and multiple USB 2.0, RS232, and SVGA ports are all included.

SAFETY INSTRUCTIONS

Read these instructions carefully. Save these instructions for future reference.

1. Follow all warnings and instructions marked on the product.

2. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

3. Do not use this product near water.

4. This product should be operated from the type of power indicated on the power adaptor. If you are not sure of the type of power available, consult your dealer or local power company.

5. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

6. If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.

7. Allow at least 6 inches of space from the top of the unit and 3 inches from the sides to allow proper ventilation.

8. We recommend all servicing done on this product be done by qualified service personnel. Aside from upgrades or swapping out the compact flash or hard-drive please refer all other servicing to the Logic Controls RMA Dept.

9. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    a) When the power cord or plug is damaged or frayed

    b) If liquid has been spilled into the product

    c) If the product has been exposed to rain or water

    d) If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.

    e) If the product has been dropped or the cabinet has been damaged

    f) If the product exhibits a distinct change in performance, indicating a need for service.

CARE AND HANDLING

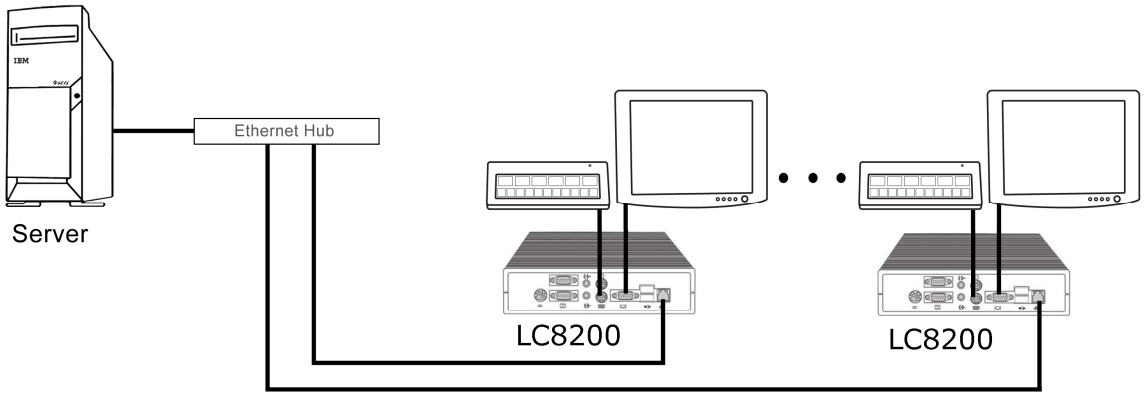
The following tips will help keep your LC8200 functioning at the optimal level.

- Remember to unplug the display unit from the power outlet before cleaning.
- Do not use alcohol (methyl, ethyl or isopropyl) or any strong dissolvent. Do not use thinner or benzene, abrasive cleaners or compressed air.
- To clean the LC8200 unit cabinet, use a cloth lightly dampened with a mild detergent. Do not immerse unit in water.
- Put the cleaner on the rag and wipe the LC8200. Never apply the cleaner directly on the LC8200.
- Avoid getting liquids inside the LC8200. If liquid does get inside, have a qualified service technician check it before you power it on again.

PRODUCT FEATURES

- Fanless operation
- Intel Celeron-M CPU 800 MHz to 1 GHz
- Ultra compact – only 2”H x 8”W x 6”L
- Mass storage: Compact flash (no moving parts) or/and hard disk drive
- Enclosed in rugged die cast case
- 128MB to 1GB SODIMM DDR memory
- No internal connecting cables with all components mounted on single PC board for high reliability
- Large number of available I/O ports: 4 USB 2.0, max 4 serial, 2 SVGA, 1 Ethernet, 1 PS/2 keyboard/mouse, 1 LPT, speaker out, microphone in
- Multimedia: 1280 x 1024 max resolution with 24-bit color, AC97 Audio CODEC, optional 2nd VGA port
- System boot from compact flash, hard-drive, network, or USB floppy drive/CD-ROM drive
- Power: Wide range of input voltages, 9 to 24VDC, suitable for mobile applications
- Custom configurations available
- Universal input (100 to 240VAC, 47 to 63Hz) switching power supply

HARDWARE INSTALLATION



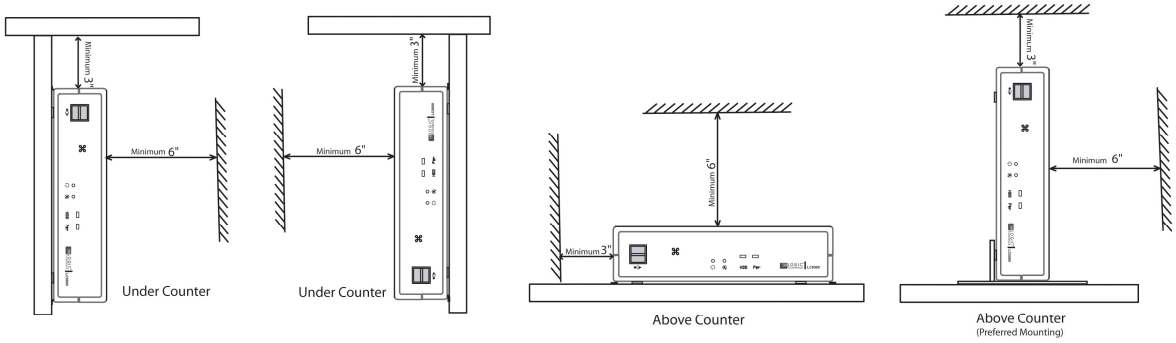
Component Placement

The following is recommended when you plan the LC8200 setup:

- Place the LC8200 so that :
    1. You can use the mounting brackets located at the bottom of the unit.
    2. The RESET button is accessible.
    3. The beeps from the speakers can be heard.
    4. The LED indicator on the front panel can be seen.
- Place the LC8200 above grill/counter level, out of the way of possible spills.

Mounting Instructions

Mounting brackets are provided to facilitate mounting the LC8200 to a wall, ceiling or display monitor mounting arm. The installer should insure that the wall anchors used with the mounting brackets have the capacity to support 5.5 kg (12 lb.). This weight is determined by adding a safety margin weight to the weight of the unit. Wall anchors with specified weight capacity are available commercially.
The LC8200 is a fanless unit and heat is dissipated through the metal case. So, allow at least 6 inches of space from the top of the unit and 3 inches from the sides to allow proper ventilation. It's recommended to mount the unit vertically to maximize ventilation effect. Vertical mounting stands are available from Logic Controls.



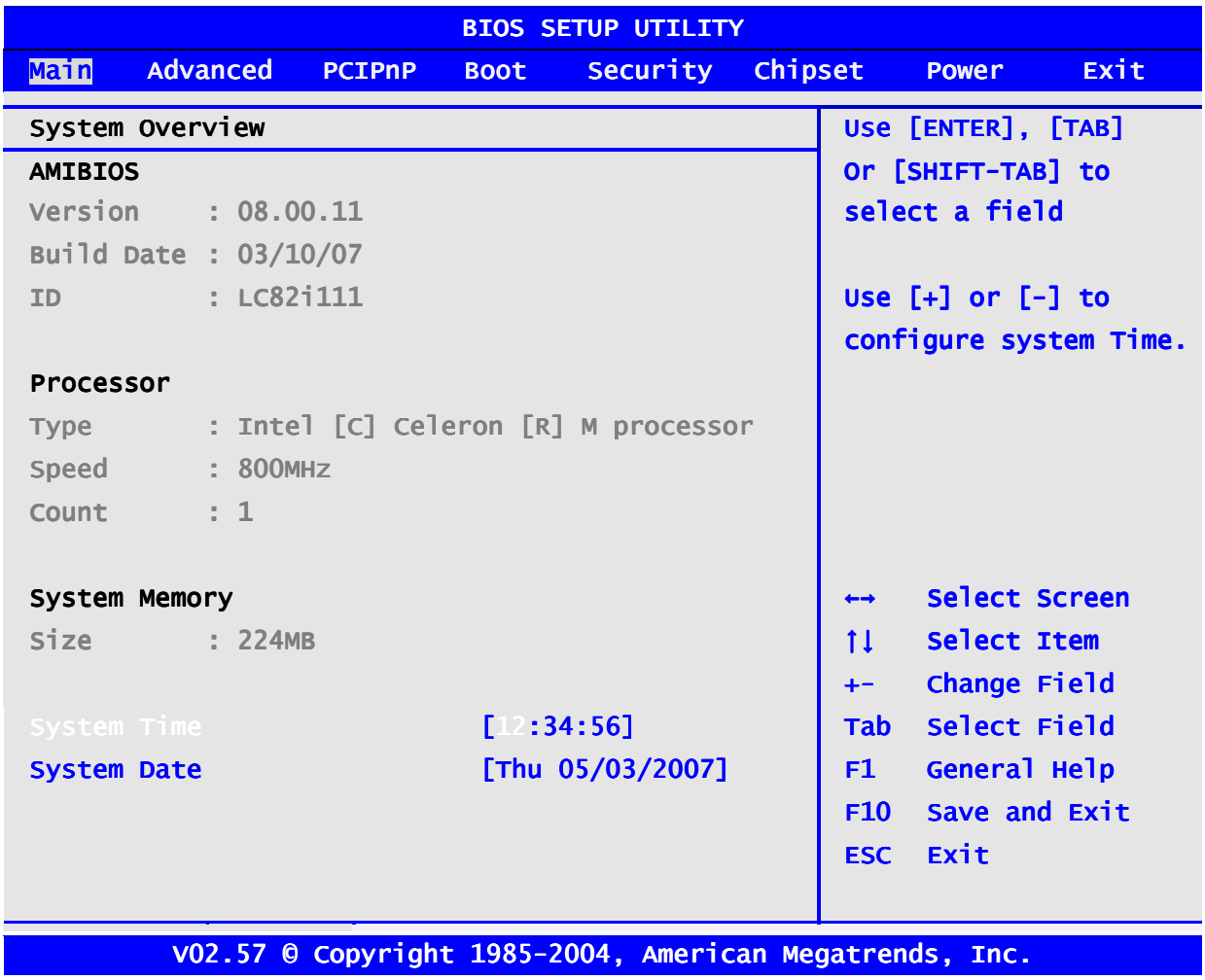
Connections and Turning on Power

Make sure that all systems are powered off before making or removing any connections to the LC8200 unit. Follow the steps below in connecting the devices:

1. Connect the VGA cable of the display monitor to the LC8200.
2. Connect the RS232 cables of serial devices to the LC8200.
3. Connect the parallel cable of parallel device to parallel port of LC8200.
4. Connect the PS/2 keyboard (or bump bar) and mouse to the LC8200. Note that the bump bar cable connector has connector locking feature to prevent connector from being pulled out by pulling the cable. When plugging in the connector, grab the connector at the end of the plug and push in tightly until it is fully snapped into the socket.
5. Connect the Ethernet cable from Ethernet hub or switch to the LC8200.
6. Connect other peripherals such as speakers and USB devices to the LC8200.
7. Connect power to all peripheral devices and turn on power.
8. Connect power adapter to the LC8200. Make sure that the flat side of power plug is oriented upwards. Reversing the orientation and forcefully plugging into the power socket will result in damage to the connector. (When unplugging power adapter from LC8200, do not pull on the cable. The connector has a locking function that is released by holding the plug and pulling backwards. If the connector is forced out by pulling the cable, it may result in damage to the connector.)
9. Connect power cord to the power adapter and plug the power cord into AC power outlet. (The power adapter must be connected to the LC8200 first before it is connected to AC power outlet. Do not connect AC power before connecting to LC8200).
10. By default, the unit is set to turn on power automatically when power is connected. If it does not power up, press the on/off switch on the front panel to turn on power and check for correct CMOS configuration settings.
11. (If the LC8200 had been shutdown from the operating system, it may be restarted by using a pen-tip to press the on/off switch on the front panel of the LC8200.)

BIOS SETTING

Each time the LC8200 is powered on, it will run a self diagnostic and continue booting from storage media. BIOS settings are stored in a CMOS memory. To enter BIOS setup, as soon as the system LCI logo splash screen appears, quickly press the [Delete] key on the keyboard.



There are 8 setup menus: Main, Advanced, PCIPnP, Boot, Security, Chipset, Power, Exit. The menu currently displayed has the menu name highlighted in reverse video on the menu bar across the top of screen. Use left and right arrows to select the menu. Use up and down arrows to select menu items. Menu items that can be configured are shown in blue color and will be highlighted in white when selected. Use -/+ keys to change the field value or press [Enter] to go to sub screen. When configuration is finished, press [F10] key to save the settings and exit setup.

In most of the applications, parameters are detected automatically the default configuration will be suitable. There are only a few parameters that might need to be customized for some applications. Examples of such cases are shown below:

Boot Device Priority Sequence

To specifies the boot sequence from available devices, select menu [Boot] -> [Boot Device Priority]. Then select [1st Boot Device] or [2nd Boot Device] and select from the available boot device options. The list of devices shows all the devices detected during boot up. This will include network boot, IDE hard disk drives (and compact flash), and USB boot devices (flash drives, CD-ROM and floppy disk drives).

Selecting HDD as Boot Device

If there is more than one Hard Disk Drive in the system, only one of the HDD can be selected as boot device. The selected HDD will appear in the available boot device list when setting up Boot Device Priority Sequence.

To set up a HDD as boot device, select menu [Boot] -> [Hard Disk Drives] -> [1st Drive]. Then select the HDD from the list.

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Restore on Power Loss

After power loss (power disconnected), when power is restored, the system can be set to react in one of the following way:

Power Off – Unit remain in power off state. Need to push power button to turn on.

Power On – Unit turns on power automatically. This is the default setting.

Last State – Power state depends on last state before power loss.

To change this option select menu [Chipset] -> [SouthBridge Configuration] -> [Restore on AC Power Loss]. Then change to the required option.

TROUBLESHOOTING

There are no user serviceable components inside the LC8200. Service should be performed only by Logic Controls or qualified personnel certified by Logic Controls. The following guide lines will help in identifying the source of a problem:

VGA monitor display is blank

1. If the power LED on the monitor is off, check that the monitor is properly connected to it's power supply and the power supply is properly plugged into a functioning AC outlet.
2. Adjust the contrast controls on the monitor display.
3. Check that the VGA cable is plugged in properly on both the monitor and the LC8200.
4. If the power LED on LC8200 is off, check that the LC8200 is properly connected to its power supply adapter and the power adapter is properly plugged into a functioning AC outlet.
5. If the LC8200 is connected to a power supply but the power LED is off, press the power button to turn on the unit. If it does not turn on, try replacing the power supply.
6. Replace the LC8200 if necessary.

VGA monitor display is blue or frozen

1. Reset the LC8200 and check the system information on the screen during boot up.
2. If unit reboots correctly, try running application again. If same problem occurs, try reinstalling the application software.
3. If unit cannot reboot correctly, try replacing the hard disk drive (or compact flash).

Station is not communicating with server application

1. Check that the LC8200s' IP addresses are correct and unique (no conflict) and the port number matches application software setup.
2. Check the Ethernet cable connections at the problem LC8200s and at the Ethernet hub or switch.
3. Check that host server IP address matches the LC8200 IP address group. Try pinging one of the LC8200 IP address from the host.
4. Check host server application software setup. Restart software if necessary and test again.
5. Reboot the host server and test again.
6. Replace Ethernet hub or switch and test again.

LC8200 does not respond to keyboard commands

1. Check the keyboard cable connections at both the keyboard and the LC8200. Unplug the cable and re-insert fully. Check whether it snaps in correctly. Note that it's necessary to hold the back end of the PS2 connector near the cable exit and push in hard to get the locking connector into place.
2. Test with known good keyboard and cable. If it works, replace the cable and/or keyboard.

Attached RS-232 device is not working

1. Check that the device and LC8200 have power.
2. Check RS-232 connections at the device and LC8200.
3. Check whether baud rate and data format settings of application is matching with the device.
4. Attach the wrap plug to the device end of the RS-232 cable and run an RS232 port test program. If the test passes, replace the serial device. If the test fails, go to step 5.
5. Attach a wrap plug to the RS-232 port of the LC8200 and rerun the RS-232 loop test. If the test passes, replace the RS-232 cable. If the test fails, replace the LC8200.

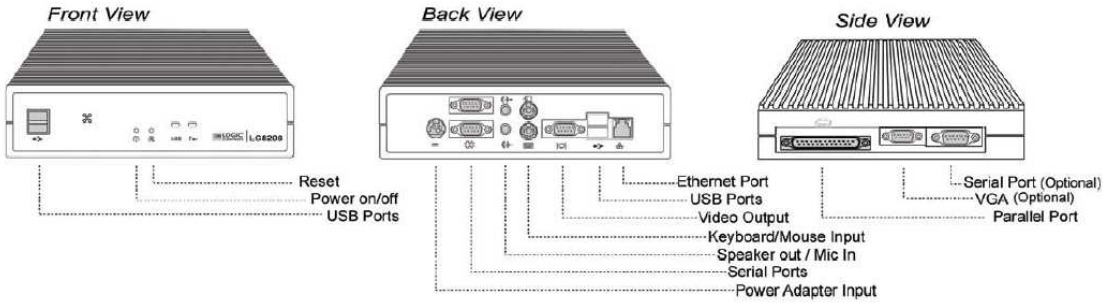
LC8200 does not boot from internal compact flash

1. Check in BIOS setting whether the [Boot Device Priority] is set to boot from the compact flash

2. Check in BIOS setting under [PCIPnP] menu and make sure that [PCI IDE Bus master] is disabled.

3. Check if the operating system on the compact flash is corrupted. If so, try reinstalling the operating system or replace the compact flash.

SPECIFICATIONS



SYSTEM	
Processor	Intel ULV Celeron-M 800MHz to 1.2GHz
Memory	128MB to 1.0GB DDR SODIMM
Hard Drive	Internal Compact Flash, 64 MB to greater than 4GB Optional internal IDE 2.5" hard drive (40GB up)
Primary Video	1920x1440 pixels max, 32-bit color, MPEG-2, 128-bit 2D graphics engine, 64MB max shared video memory
Secondary Video (optional)	1024x768 pixels max, 24-bit color, 4MB video memory
Network Interface	10/100 Base-T Ethernet, Network boot capable
Keyboard/Mouse	PS/2
USB Port	4 USB 2.0 ports
Serial Port	COM1, COM2, Optional COM3 (external side connector), COM4 (internal connector)
Parallel Port	LPT1
Audio	Speaker-out and Mic-in, AC97 Audio CODEC

ELECTRICAL (External Switching Power Adapter - included)	
Input voltage	100 to 240VAC
Input frequency	47 to 63 Hz
Input current	<1.5A @ 120VAC
Output voltage	+12VDC / 5.0A LC8200 can accept an input Voltage range from 9 to 24VDC
Ripple voltage	< 120mVp-p

MECHANICAL	
Weight	3.0lbs
Dimension (inches)	8.0W x 6.3D x 2.0H
Housing	Die Cast

ENVIRONMENT	
Operating temperature	5°C to 40°C
Relative humidity	8 to 80%, non-condensing
Storage temperature	0°C to 60°C
Relative humidity	5 to 80%, non-condensing

CONNECTORS	
SVGA	Standard, DB15 male connector
Keyboard & Mouse	PS2 mini-DIN6 female connectors
RS232	Standard DB9 male connectors
USB	Standard USB type-A connectors
Ethernet	RJ45 8 pin female connector
Audio	Speaker-out / Mic-in phone jacks
Parallel	Standard DB25 female connector
DC Power	Shielded snap lock mini-DIN with EMI/RFI suppression, 3-pin female connector