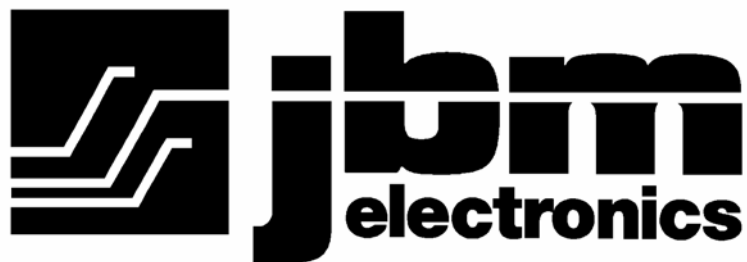


Gateway 500, 530 and 550 Installation Manual



NOTICE

**Specifications described in this manual are
subject to change without notice.**

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Overview

JBM Electronics' Gateway 500 (G500), 530 (G530) and 550 (G550) are designed for users who need to support Legacy protocol devices in an Ethernet network. The G500 converts Legacy protocols to TCP/IP or UDP for connection to a 10/100BaseT network or device. The G530 provides three serial ports for protocol conversion and the G550 provides five serial ports.

The Gateways can also interface IP-only devices to a Legacy protocol network. The Gateways can provide terminal emulation for the IP device, providing a unique migration path for a remote location. This capability allows an IP device to coexist with an older protocol network.

Applications

The Gateways offer several advantages in customer networks, including:

- Converts data from Legacy protocol devices to Ethernet, providing a migration path to an IP-based network.
- Allows TCP/IP devices to access a Legacy protocol network.
- Provides host and terminal emulation for all polled protocols, which allows up to 100 physical devices to be connected to one serial port.
- Provide secure communications with optional Firewall, IPSec encryption and VPN tunneling software.

- Supports several different types of Legacy Protocol data streams in a single unit, with ability to route data between different serial ports within the unit.
- Offers RIP, OSPF and BPG routing for IP data.
- Concentrates multiple Legacy protocol applications from one location without replacing existing devices. Existing applications are supported with protocol conversion; data format manipulation, text manipulation, custom data translation, unique network addressing, or specialized host or terminal messaging.
- Offers custom modifications to handle unique user requirements, such as text or data manipulation, special log-in commands, host application messages, or data translations.

Diagnostics

The Gateways can be configured through Application Commands entered via Telnet interface. The Telnet connection provides command and control of the Gateways. SNMP Traps provide notification of major events in the Gateways. All of the protocol-specific diagnostics, such as LUSTATS, Notify and Status and Sense Bytes are supported. Extensions to the Telnet or SNMP commands are available as a special order.

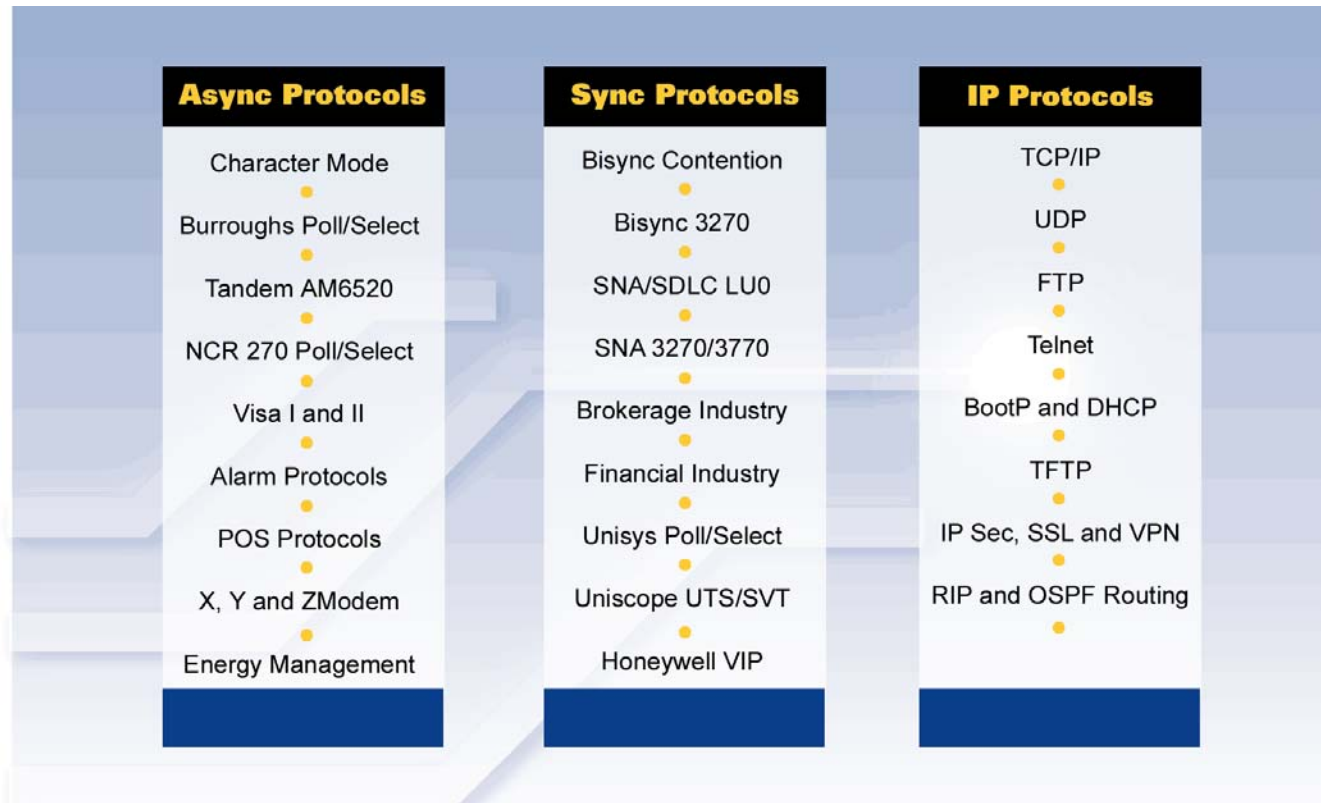
Benefits

The Gateways simplify network design by eliminating the need for network changes to handle Legacy protocols. This can save money by using Ethernet ports on the network device instead of serial ports. The conversion also eliminates the need for a separate network for the legacy protocol. The configuration management provides enhancement support for the Legacy devices. The Gateways can help protect the investment in Legacy devices when moving to an IP network.

The Gateway’s security software can be used to protect attached devices from unauthorized access or establish a Virtual Private Network (VPN) to connect separate locations into a secure network using Internet connections.

Protocol Support

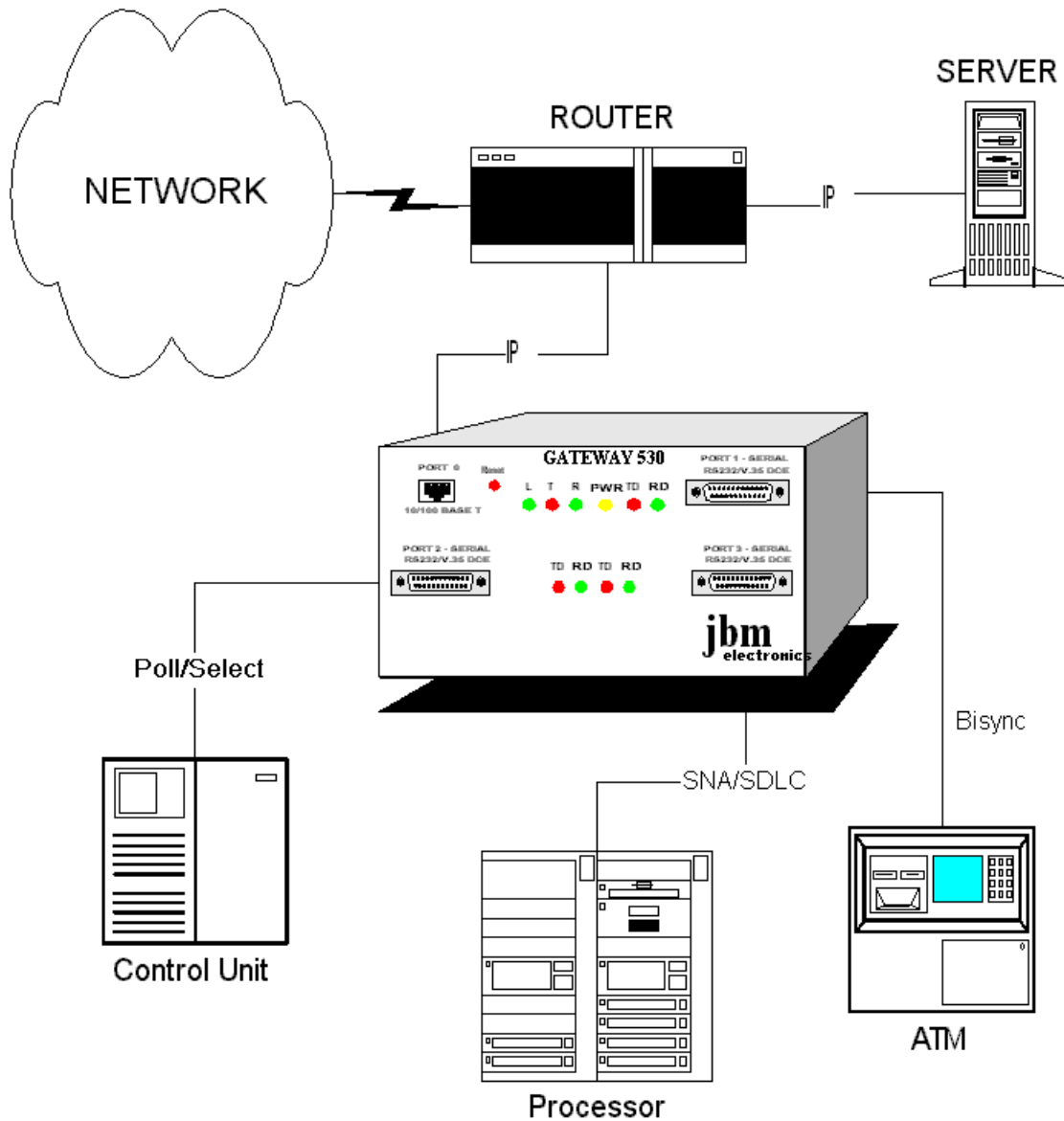
The Gateways support many standard LAN and serial protocols, including the following:



The Gateways’ protocol support includes local polling (spoofing) of attached devices and Client and Server support for the IP protocols.

Network Diagram

This drawing illustrates a configuration using a G530. All of the Gateways provide the same IP connectivity. The G500 and 550 provide the same connection options with the only difference being the number of available ports.



The Gateways can be ordered with Frame Relay connections using an internal or external DSU. With the frame card, the Gateways provide a complete router replacement with full protocol conversion.

Installation

The manuals used with the Gateways are:

| Manual | Usage |
|--------------|--------------------------------------|
| Installation | Unpacking and installing the Gateway |
| Setup | Defining the Gateway's configuration |
| Operations | Controlling the Gateway |
| Cables | Cable Wire Lists |

The Configuration and Operations Manuals are on the CD supplied with the Gateway.

1. Remove the JBM Electronics Gateway 500, 530 or 550 from the shipping carton.
2. Inspect the Gateway for shipping damage. If any damage is found, retain the carton and contact the carrier.
3. Connect the cables according to the following table:

| Port | Description | Connector |
|--------|--|-----------|
| Port 0 | Ethernet Port - supports IP protocols on a 10/100BaseT port. | RJ-45 |
| Port 1 | Serial Port - supports Legacy protocols at speeds up to 56 KB. The serial interface is RS-232C/V.35 DCE with DTE enabled through a cable adapter (G50-adapter). | DB-25 |
| Port 2 | Serial Port (G530 or G550) - supports Legacy protocols at speeds up to 56 KB. The serial interface is RS-232C/V.35 DCE with DTE enabled through a cable adapter (G50-adapter). | DB-25 |
| Port 3 | Serial Port (G530 or G550) - supports Legacy protocols at speeds up to 56 KB. The serial interface is RS-232C/V.35 DCE with DTE enabled through a cable adapter (G50-adapter). | DB-25 |
| Port 4 | Serial Port (G550 only) - supports Legacy protocols at speeds up to 56 KB. The serial interface is RS-232C DCE with DTE enabled through a cable adapter (G50-adapter). | DB-25 |
| Port 5 | Serial Port (G550 only) - supports Legacy protocols at speeds up to 56 KB. The serial interface is RS-232C DCE with DTE enabled through a cable adapter (G50-adapter). | DB-25 |
| Port 6 | Console Port (on back) – supports async at 115.2 KB. The serial Interface is RS-232C DTE with DCE selectable through a cable adapter. | DE-9 |

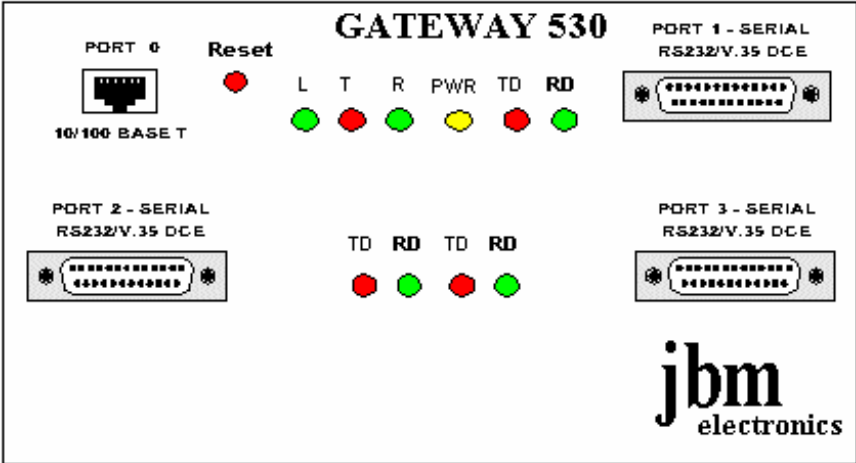
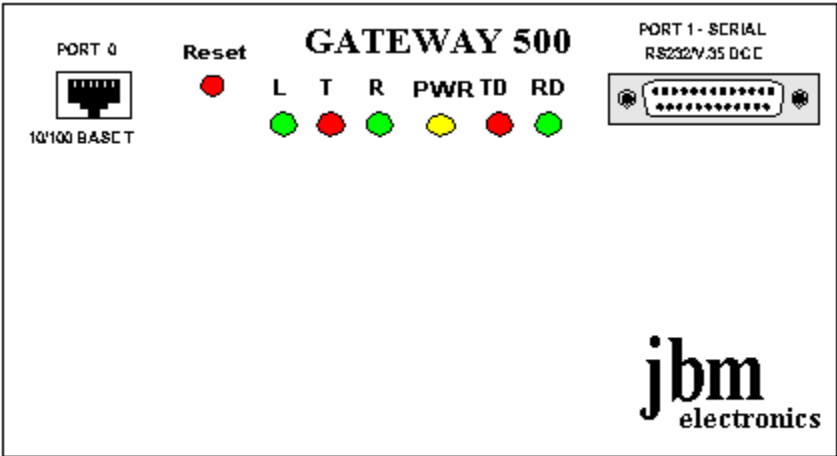
4. Connect the Ethernet cable to the Ethernet port (Port 0). Verify the cable is connected to a network.

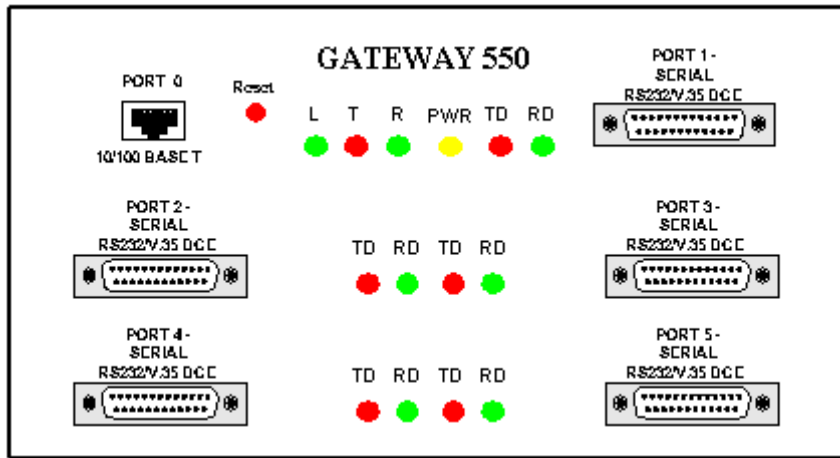
WARNING: RJ-45 Port. These are shielded RJ-45 data socket. They cannot be used as standard traditional telephone sockets, or to connect the unit to a traditional PBX or public telephone network. Only connect RJ-45 data connectors, network telephony systems, or network telephones to these sockets. Either shielded or unshielded data cables with shielded or unshielded jacks can be connected to these data sockets.

AVERTISSEMENT: Points d'accès RJ-45. Ceux-ci sont protégés par des prises de données. Ils ne peuvent pas être utilisés comme prises de téléphone conventionnelles standard, ni pour la connexion de l'unité à un réseau téléphonique central privé ou public. Raccorder seulement connecteurs de données RJ-45, systèmes de réseaux de téléphonie ou téléphones de réseaux à ces prises.

Il est possible de raccorder des câbles protégés ou non protégés avec des jacks protégés ou non protégés à ces prises de données.

5. Connect the cable from the serial device (for example: computer) to the DB-25 port (Port 1). If the Gateway will be connected to a modem, then the special DTE Cable (JBM Electronics part number G50-Adapter) must be used. The RS-232C and V.35 cables and adapters are listed in the Cables Manual on the CD supplied with the unit.
6. If you are installing a G530 or G550, continue to connect the remaining serial devices to open ports.
7. Plug the Gateway into a power outlet.
8. Configure the Gateway through a stand-alone Configuration Program. This program builds a configuration file that is subsequently transferred to the Gateway. Information and operating instructions for the Configuration Program are available in the Configuration Program Manual. Refer to this manual for instructions to create and transfer the configuration file.
9. Transfer the configuration file to the Gateway using the instructions in the Configuration Program Manual.
10. The Gateway is now ready for use.





Operation

The Gateways are designed for unattended operation. The Gateways can be controlled through the Console Port (Port 6) or via Telnet (if the Gateway’s IP Address is known). The connection provides access through a variety of Application Commands.

Follow these instructions to access the Gateway through the Console Port:

1. Verify your system is connected to the COM Port on the Gateway. This can be accomplished through the supplied cable.
2. Start an async terminal emulator on your system or use an async terminal with the following parameters:

| Parameter | Value |
|----------------|----------------|
| Protocol Type | Serial |
| Port | Com 1 or Com 2 |
| Baud Rate | 9600 |
| Data Bits | 8 |
| Parity | None |
| Stop Bits | 1 |
| Flow Control | RTS/CTS |
| Emulation Type | VT100 |

3. The Gateway will display the Login Screen (Screen 1 – page 8).

Reset Function

The Gateways have a Reset Button that can be used to perform the following function:

| Function | Action |
|----------|--|
| Restart | Press and release the switch. The Gateway will clear its buffers and restart the program. All current sessions will be closed. |

LED Status Indicators

The Gateways have LED indicators that can be used to isolate problems. The LEDs indicate the following activity:

| LED | COLOR | FUNCTION | NORMAL STATUS |
|----------|--------|--|---------------------------------|
| POWER | Yellow | Signifies that power is always on available to the Gateway | Always On |
| TD | Red | Indicates that data is being transmitted from the attached device | Blinks during data transmission |
| RD | Green | Indicates that data is being received from the attached device | Blinks during data reception |
| Link | Green | Indicates there is a Link with the Ethernet network. | On when connected |
| Transmit | Red | Indicates that data is being transmitted to the Ethernet connection. | Blinks during data transmission |
| Receive | Green | Indicates that data is being transmitted by the Ethernet connection. | Blinks during data reception. |

Gateway 500, 530 and 550 Specifications

| | | |
|-----------------|-----------------------------------|---|
| Serial Port: | Baud Rate: | 110-56,000 bps |
| | Interface: | One Female DB-25 connector (G500), Three Female DB-25 connectors (G530), Five Female DB-25 connectors (G550), RS-232C/V.35, DCE mode, DTE mode with adapter cable |
| LAN Port: | Ethernet: | One 10/100BaseT Female RJ-45 connector |
| LED Indicators: | Serial Port(s): | TD and RD (each port) |
| | LAN Port: | Link, Transmit, Receive |
| | Power: | On/Off State |
| Console Port: | Baud Rate: | Up to 115,200 bps |
| | Interface: | One Male DE-9, RS-232C DTE mode DCE mode with adapter cable |
| Management: | Console Port: | CLI Access through async connection |
| | IP Protocol | SNMP and Telnet |
| Power: | 120-240 VAC, 50/60 Hz (Internal) | |
| Physical: | Size: | 6.5" W x 3.5" H x 10" L |
| | Weight: | 5 pounds |
| Processor: | 486DX-100 | |
| Memory: | 32 MB RAM, 128 K BRAM, 16MB Flash | |
| Warranty: | 1 Year Parts and Labor | |

SAFETY INFORMATION

Please read the following safety information carefully before installing the Gateway.

WARNING: Installation and removal of the unit must be carried out by qualified personnel only.

- The unit must be connected to an earthed (grounded) outlet to comply with international safety standards.
- Do not connect the unit to an A.C. outlet (power supply) without an earth (grounded) connection.
- If the Gateway is provided with an IEC320 plug, the appliance coupler (the connector to the unit and not the wall plug) must have a configuration for mating with an EN60320/IEC320 appliance inlet.
- The socket outlet must be near to the unit and easily accessible. You can only remove power from the unit by disconnecting the power cord from the outlet.
- This unit operates under SELV (Safely Extra Low Voltage) conditions according to IEC 60. The conditions are only maintained if the equipment to which it is connected also operates under SELV conditions.

France and Peru only

This unit cannot be powered from IT[†] supplies. If your supplies are of IT type, this unit must be powered by 230V (2P+T) via an isolated transformer ration 1:1, with the secondary connection point labeled Neutral, connected directly to earth (ground).

[†] Impédance à la terre

Power Cord Set

This must be approved for the country where it will be used, for example:

U.S.A. and Canada

- The cord set must be UL-approved and CSA certified.
- The minimum specifications for the flexible cord are:
 - No. 18 AWG
 - Type SV or SJ
 - 3-conductor
- The cord set must have a rated current capacity of as least 10A.
- The attachment plug must be an earth-grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.

Denmark

- The supply plug must comply with Section 107-2-D1, Standard DK2-1a or DK2-5a.

Switzerland

The supply plug must comply with SEV/ASE 1011.

UK

- The supply plug must comply with BS1363 (3-pin 13-amp) and be fitted with a 5 A fuse which complies with BS1362.
- The mains cord must be <HAR> or <BASEC> marked and be of type HO3VVF3G0.75 (minimum).

Europe

- The supply plug must comply with CEE7/7 ("SCHUKO")
- The main cords must be <HAR> or <BASEC> marked and be of type HO3VVF3G0.75 (minimum).

L'INFORMATION DE SÉCURITÉ IMPORTANTE

Veillez lire à fond l'information de la sécurité suivante avant d'installer le Baseline Dual Speed Hub.

Avertissement: L'installation et la dépose de ce groupe doivent être confiés à un personnel qualifié.

- Ne branchez pas votre appareil sur une prise secteur (alimentation électrique) lorsqu'il n'y a pas de connexion de mise à la terre (mise à la masse).
- Vous devez raccorder ce groupe à la terre (mise à la masse) afin de respecter les normes internationales de sécurité.
- Le coupleur d'appareil (le connecteur du groupe et non pas la prise murale) doit respecter une configuration qui permet un branchement sur une entrée d'appareil EN60320/IEC 320.
- La prise secteur doit se trouver à proximité de l'appareil et son accès doit être facile. Vous ne pouvez mettre l'appareil hors circuit qu'en débranchant son cordon électrique au niveau de cette prise.
- L'appareil fonctionne à une tension extrêmement basse de sécurité qui est conforme à la norme IEC60950. Ces conditions ne sont maintenues que si l'équipement auquel il est raccordé fonctionne dans les mêmes conditions.

France et Pérou uniquement:

Ce groupe ne peut pas être alimenté par un dispositif à impédance à la terre. Si vos alimentations sont du type impédance à la terre, ce groupe doit être alimenté par une tension de 230 V (2 P+T) par le biais d'un transformateur d'isolement à rapport 1:1, avec un point secondaire de connexion portant l'appellation Neutre et avec raccordement direct à la terre (masse).

Cordon électrique

Il doit être agréé dans le pays d'utilisation.

Etats-Unis et Canada

- Le cordon doit avoir reçu l'homologation des UL et un certificat de la CSA.
- Le cordon souple doit respecter, à titre minimum, les spécifications suivantes:
 - Calibre 18 AWG
 - Type SV ou SJ
 - à 3 conducteurs
- La cordon doit être en mesure d'acheminer un courant nominal d'au moins 10A.
- La prise femelle de branchement doit être du type à mise à la terre (mise à la masse) et respecter la configuration NEMA 5-15P (15 A, 125 V) ou NEMA 6-15P (15 A, 250 V).

Danemark

- La prise mâle d'alimentation doit respecter la section 107-2 D1 de la norme DK2 1a ou DK2 5a.

Suisse

- La prise mâle d'alimentation doit respecter la norme SEV/ASE 1011.

Europe

- La prise secteur doit être conforme aux normes CEE 7/7 ("SCHUKO")
- Le cordon secteur doit porter la mention <HAR> ou <BASEC> et doit être de type H03VVF3GO.75 (minimum).

Technical Information**Related Standards**

The Gateway 500, 530 and 550 have been designed to the following standards:

EMC

FCC PART 15, SUBPART B, Class A
CISPR 22/EN 55022, Class A
IEC 61000-4-2/EN 61000-4-2
IEC 61000-4-3/EN 61000-4-3, ENV 50204
IEC 61000-4-4/EN 61000-4-4
EN 61000-4-5
IEC 61000-4-6/EN 61000-4-6
ITU-T-K.20
IEC 61000-3-2/EN 61000-3-2
IEC 61000-3-3/EN 61000-3-3
ETSI EN 300 386 V1.2.1 (1998-11)

CE Statement (Europe)

This product complies with the European EMC Directive 89/336/EEC.

Regulatory Notices**FCC Statement**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy; and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference to radio communications, in which case the user will be required to correct the interference at their own expense.

Information To The User

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Move the equipment away from the receiver.
- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

How to Identify and Resolve Radio-TV Interference Problems

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

In order to meet FCC emissions limits, this equipment must be used only with cables with comply with IEEE 802.3.

CSA Statement

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Warranty

JBM Electronics provides a limited warranty for the Gateway, which consists of the following:

- ◆ This warranty is effective for one year from the delivery date of the Gateway to the purchaser.
- ◆ The purchaser is responsible for returning the defective unit to our factory, freight prepaid.
- ◆ If the Gateway is under warranty, we will repair it at our cost and return it, freight prepaid, via UPS ground service.
- ◆ If the Gateway is not covered by the warranty, we will notify you of the repair charges. We will not repair the Gateway without your permission.
- ◆ All repairs are guaranteed for 90 days or the remainder of the warranty, whichever is longer.

Except for the express warranty set forth herein, JBM Electronics Co. grants no warranties, either express or implied, of merchantability and fitness. The stated express warranty is in lieu of all liabilities or obligations of JBM Electronics Co. for damages including but not limited to consequential damages occurring out of or in connection with the delivery, use or performance of JBM products.

Buyer's remedies for breach of warranty shall be limited to repair or replacement subject to adjustment as stated herein, or full or partial adjustment to purchase price.

Software Terms

Software supplied with each JBM Electronics' product remains the exclusive property of JBM Electronics. JBM grants with each unit a perpetual license to use this software with the express limitation that the software may not be copied or used in any other product for any purpose. It may not be reverse engineered, or used for any other purpose other than in and with the computer hardware sold by JBM Electronics.

Extended Warranty Program

JBM offers an extended warranty for the Gateway. This program extends the original warranty on a yearly basis. In addition to extending the original warranty, the emergency replacement program is included for the cost of freight only. The extension must be purchased before the original warranty expires. Please contact JBM Electronics for further information.

Return for Repair

If you want us to repair the Gateway, contact JBM for a Return Authorization Number (RA). Once you have the RA number, carefully pack the defective unit, and return it freight prepaid. Do not use Parcel Post. Repair charges are a flat fee for units outside of the warranty.

Please include a letter with the RA number, your name and address, and details of the difficulty experienced. The letter is important since the shipping material is discarded. Units should be sent to:

JBM Electronics Co.
4645 LaGuardia
St. Louis, MO 63134
Attention: RA #