



### **Application Note:**

## **Protocol & Interface Conversion For Legacy ATMs & POS Terminals**

*The Gateway products provide tremendous cost savings with the capability to convert Legacy ATMs and POS devices to IP for transport over any type of IP Network.*

### **IP Connectivity Solution**

Financial institutions and retailers continue to consolidate, merge and grow; and with this, comes the complicated nightmares of interconnecting dissimilar networks. The IT groups at these companies are continually challenged to reduce their capital cost, operating expenses, and training costs, often by integrating their incompatible data networks. Today, most companies will operate separate networks for ATMs/POS devices and normal IP applications. This is an extremely expensive way to communicate when companies have many locations.

As the world moves to IP, it's a difficult and expensive decision to replace or upgrade older terminals with serial interfaces that use protocols like Bisync, Poll-Select, and SNA/SDLC. Carrying these protocols over an IP network can be a difficult task even for the well-trained engineer.

Today, there are only four choices available for IT managers to convert legacy terminals and each one has its benefits and downfalls. Lets examine each one:

1. **Replace the terminal** – Replacing a terminal can be the most expensive solution of all. Of course, this gets you a nice new terminal with all the new bells and whistles, but imagine what it might cost if you have to replace 100 of those terminals with new ones. Replacing just one in-the-wall ATM at a bank could cost \$25,000 - \$50,000 or more. The biggest question might be does the old terminal still do the job?
2. **Upgrade the terminal** – Depending on how old the terminal is will really determine how expensive it is to upgrade. Upgrading a terminal that is more than five years old can cost as much as \$20,000 and upgrading a terminal less than five years old can be a few thousand dollars. Upgrading a terminal will most likely require the vendor to take the terminal down for an extended period.
3. **Protocol Encapsulation or IP Tunneling**– Many routers can support protocol encapsulation or tunneling but the end result is that you still have the legacy protocol back at the data center. The downfall to this approach is if you are upgrading your host to IP or adding a transaction switching system to your network, you still have to convert the protocol to IP. The other drawback to encapsulation is that most legacy protocols are polled. This means that the polling has to take place over the IP backbone, which uses additional bandwidth. Polled protocols are extremely time sensitive so if you have any congestion or latency in your network this can cause terminals to timeout or increase transaction times.

4. **Protocol Conversion** – Converting the legacy protocol at the terminal is undoubtedly the best solution economically and technically. Using a low-cost JBM Gateway at the terminal is certainly less expensive than replacing or upgrading a terminal. The other benefits of using a JBM Gateway are that the Gateways provide protocol spoofing and conversion. Protocol spoofing means that the Gateway emulates the host by polling the terminal locally and not over the network. This has three major benefits:
- a. Polling doesn't have to take place over the IP backbone which means your using less bandwidth
  - b. Transaction times are drastically decreased because of the local spoofing
  - c. The protocol is truly converted to IP making the terminal appear to the host that it's an IP based terminal

## Operation

Installation of the JBM Gateway is a simple process; just drop it in between the legacy terminal and the IP network. On the terminal side of the Gateway, an RS232 serial port is provided to interface into the terminal. On the network side an Ethernet port is provided to interface into the branch router. The Gateway is assigned an IP address, which it converts to the polling address of the ATM. At the host you reconfigure it to recognize the ATM as an IP based terminal and assign it the same IP address as the Gateway.

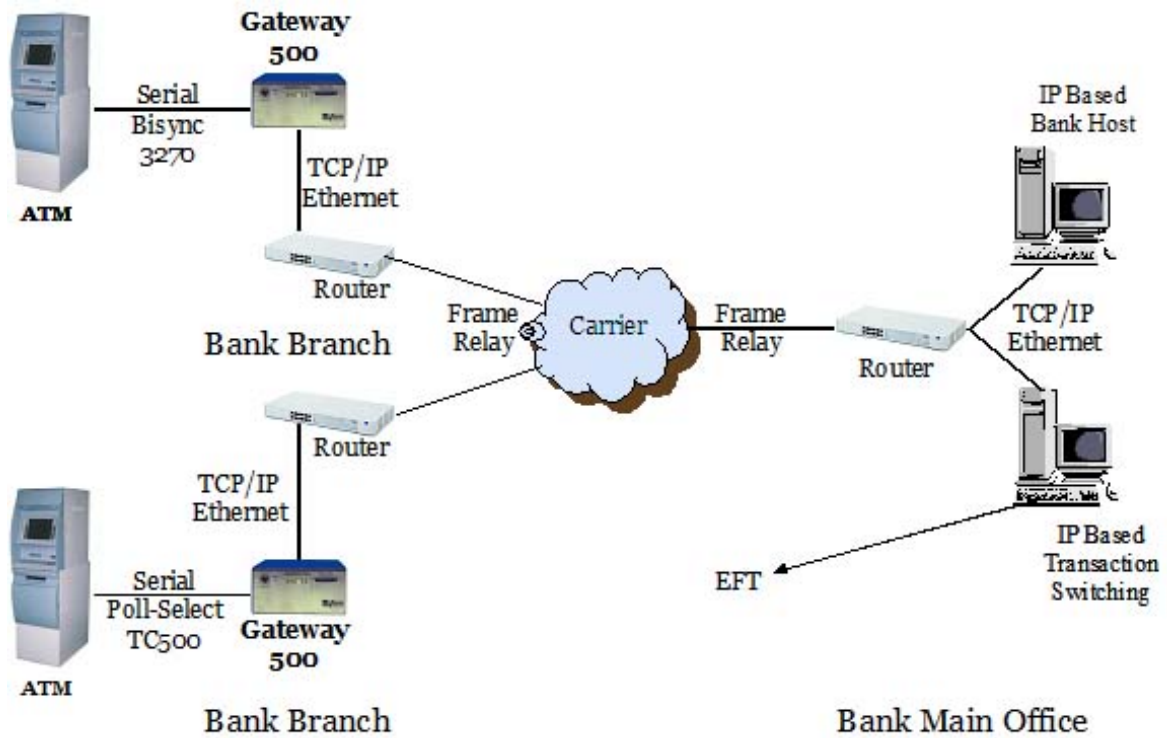
The transaction process is as follows:

1. The Gateway polls the terminal with the proper polling address as if it were the host
2. The Gateway will convert the terminal polling address to an IP address and TCP port
3. When the terminal has a transaction, it will send the data to the Gateway
4. The Gateway strips off the legacy protocol and encapsulates the native ATM protocol into TCP/IP packet
5. The Gateway then sends the transaction out as a properly formatted IP packet for the IP-based host to understand

*JBM's cost-effective solution helps to eliminate parallel circuits, decreases transaction times, reduce bandwidth over an IP backbone, and gives IT managers the flexibility to interface into any type of network.*

## Key Benefits and Features of Using a JBM Gateway For Protocol Conversion

- Eliminate expensive Leased Line & Dial-Up circuits
- Decrease transaction times
- Secure transaction with VPN and 3DES encryption
- Support multiple POS devices with one Gateway
- Full Router functionality with Static, RIP, OSPF, and BGP routing
- No need to Replace or Upgrade existing ATM/POS device
- Remote management and statistics
- Compatible with all standard routers and VPN devices
- Seamless and non-intrusive installation
- Access to Wireless networks
- Full protocol conversion
- Fallback & Dial Backup routing
- Reduce Bandwidth over Backbone



## Converting & Routing Legacy Terminals Over an IP Network

*When using a JBM Gateway you can be assured that your conversion will go smoothly since JBM Electronics is the Industry leader in protocol conversion. Converting any legacy protocol to IP is a straightforward process for JBM.*

### Features and Functionality of the Gateway Products

#### Security Features

ATMs and POS devices are open for attack by hackers and JBM realizes this, so we have added additional security by incorporating VPN capabilities with Firewall functionality into our products. We provide a Linux based hardware solution, which is a secure way of preventing hackers from retrieving critical transaction data. Our Gateway products are easy to install; and in most cases, no reconfiguration of the ATM or POS device is required. The Gateways include:

- Stateful Inspection Firewall
- VPN Client/Server
- SSL Client/Server
- 3DES Encryption
- Dynamic Keys
- DHCP Client/Server
- PAT for IPSec
- NAT
- PPP and PPPoE
- Transparent Bridging Capability

## Router Functionality

The Gateway Series offers full IP routing functionality supporting Static, RIP, OSPF, and BGP routing. The Gateway also supports DHCP, DHCP client, PPP, and PPPoE for broadband users.

## Compatibility

Compatibility is never an issue with the Gateway since JBM uses all standards based protocols. Interoperability between JBM and other router/VPN vendors is fully supported.

## Dial Backup

The V.92 modem can be used for dial backup in case the primary link goes down. This feature provides reliability for a customer's most important data. Also, the V.92 Modem can be used as a primary dial out circuit.

## Management

The JBM Gateways can be configured through CLI Command entered via console port or Telnet. The Telnet connection provides command, control, and monitoring of the Gateways. SNMP is supported with SNMP Traps providing notification of major events in the Gateways. SSH is also supported for security of the management connection. Extensions to the Telnet or SNMP commands are available as a special order

## Fallback Routing

One of the Gateway's key features is the ability to perform fallback routing. Fallback routing enables a user to configure alternate paths to the host or to several hosts for disaster recovery. The fallback path can be to a different IP server or with a properly equipped Gateway, through a different connection such as a cell or dial modem.

## Wireless Support

Some of the Gateways provide an integrated cell modem for CDMA or GSM/GPRS wireless communications. The wireless connections provide simple, low-cost communications to the network. All that is required to get connected is a carrier account and the Gateway.

## CO-Modem Support

All of the modems support both async Legacy protocols and async PPP. The CO-Modem provides a dial tone for dial-only async devices. This dial tone simulator and associated modem allows for a simple, non-disruptive connection of these devices. The Gateway can route the connection based upon the data or phone number (DTMF recognition). The V.92 modem component of the CO-Modem can also be used as a normal async modem.

## Frame Relay

The Gateway expansion cards provide the option for a 56K DSU or T1/E1 DSU with full Frame Relay or X.25 support. The software supports up to 100 Logical Channels (DLCIs) with flow control using individual Committed Information Rate (CIR) for each DLCI. Our Frame Relay support is certified to ISO and ITU standards by major network laboratories and is compliant with ANSI T1.617 Annex D, Q.933 or LMI Link Management. The ROLAND Laboratory certifies the X.25 to European NET2 standards.

## Protocol Conversion

All of the JBM Gateway products support protocol conversion, and when it comes to protocol conversion, JBM is the industry leader with over 50 different protocols in our software library. Protocol conversion is necessary when converting a host to IP or introducing a new Transaction Switching System. Our Gateway products provide our customers with an efficient and non-disruptive migration to IP. The Gateways support conversion of most financial protocols. In addition, the Gateways support Data and Header manipulation allowing seamless access into many host systems. Below is a list of the most Common Protocols Converted to TCP/IP:

- Bisync 3270
- SNA/SDLC
- Poll Select TC500
- Uniscope
- Bisync 2780/3780
- Visa I & II

For more information, please contact us.