SELECTING AN IP RECEIVER
Considerations and Implications

Abstract
This white paper reviews the key aspects that should be considered when selecting an IP receiver, including issues affecting cost effectiveness and business growth opportunities. This paper also introduces the Visonic IPMP as a unique IP receiver solution that offers an unmatched combination of low cost per connected account, flexibility to work with equipment from multiple manufacturers and support for advanced services.

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CONTENTS

1. BACKGROUND – THE CASE FOR IP .................................................. 2
2. KEY SELECTION CONSIDERATIONS ........................................... 2
   2.1 Cost considerations .............................................................. 3
   2.2 Other issues affecting cost .................................................... 3
   2.3 “Room to grow” considerations ............................................. 4
   2.4 The bottom line: consider both current and future needs ............ 4
3. VISONIC IPMP – A UNIQUE IP SERVICE PLATFORM ...................... 5
   3.1 One receiver for all Visonic IP communication modules ............... 5
   3.2 Integrated video alarm verification ......................................... 5
   3.3 End-user message dispatcher ............................................... 5
   3.4 Full grade service management platform .................................. 6
   3.5 Unmatched capacity, functionality and flexibility ....................... 6
4. APPENDIX – VISONIC IPMP FEATURES ....................................... 7

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1. BACKGROUND – THE CASE FOR IP

Increasing numbers of security services companies are migrating from PSTN to IP-based technology for transmission of alarm notification data. The desire to improve supervision frequency and offer more flexibility and control to customers is the main driver of this trend. Additionally, service providers are turning to IP as a way to expand into new, advanced services, such as video alarm and control, alarm notifications via SMS, email and MMS.

2. KEY SELECTION CONSIDERATIONS

Selection of the right IP receiver is not as straightforward as it is for a PSTN receiver, and service providers must consider multiple aspects in order to decide which IP receiver can best meet their needs.

Protocol support: While there are a small number of standard, widely used protocols for PSTN receivers, such as Contact ID and SIA, this is not the case for IP receivers. In the world of IP, there are no widely adopted protocols. As a result, the vast majority of IP receivers and IP communicators, whether GPRS or Broadband, use a proprietary protocol developed by the device manufacturer. This means that the receiver or communicator is incompatible with equipment from any other manufacturer.

Frequency of supervision: PSTN receivers only deal with bursts of sporadic communications since the panels usually call the receiver only when an event occurs. At the most, the panel may call regularly as an auto-test, usually only once every 12 to 24 hours. IP receivers, on the other hand, provide the added value of much frequent supervision of the connected systems – usually every few minutes.

In general, the supervision frequency leads to a dramatic reduction in the amount of systems a receiver can handle. While a single PSTN receiver card is capable of supporting many thousands of accounts, a typical IP receiver is usually not able to deal with more than 1,000 accounts.

These issues – protocol support and the amount of supervised accounts a receiver can handle – directly affect the total cost of purchasing and using IP receivers. Hence, they are the main deciding factors that a central station or service provider should take into consideration when selecting an IP receiver platform.
2.1. Cost considerations

A typical IP receiver (hardware + software) costs about $10,000. Splitting the cost evenly between the connected accounts on a single receiver, the cost per account is easily calculated, as shown in the following table:

<table>
<thead>
<tr>
<th>Receiver Cost ($)</th>
<th>Max. connected accounts</th>
<th>Cost per account ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000</td>
<td>500</td>
<td>20</td>
</tr>
<tr>
<td>10,000</td>
<td>1000</td>
<td>10</td>
</tr>
<tr>
<td>10,000</td>
<td>5000</td>
<td>2</td>
</tr>
<tr>
<td>10,000</td>
<td>10,000</td>
<td>1</td>
</tr>
<tr>
<td>10,000</td>
<td>20,000</td>
<td>0.5</td>
</tr>
</tbody>
</table>

The cost to end-users of the GPRS and Broadband system is set by the market, and the fact that the monitoring service uses IP notification does not change the monthly service fee. Thus, the lower cost per account enabled by a high-capacity receiver translates to higher profits.

2.2. Other issues affecting cost

- The maximum number of connected accounts supported by each IP receiver further impacts costs because once the IP receiver reaches its maximum capacity, the central station must purchase an additional receiver. IP receivers that have a low capacity can carry additional incremental costs because new receivers must be purchased more frequently. For example: every 501st user, vs. every 10,001st user.

- Most central stations use a redundant configuration of receivers. This means that each receiver has its own backup receiver, doubling the cost per account. Extrapolating from the table above, an IP receiver that supports 1,000 connected accounts therefore costs $20 per account when redundancy is factored in, while a receiver that supports 20,000 accounts costs $1 per account using the same calculation.

- IP receivers that support only one IP protocol or use a proprietary protocol can create extra capital costs and complexity by requiring service providers and central stations to purchase a separate IP receiver for every individual manufacturer’s equipment (control panels, video cameras, etc.). Selecting an IP receiver that supports two or more IP protocols or supports an open standard protocol such as SIA over IP enables a central station to save the additional receiver cost per manufacturer.
2.3. “Room to grow” considerations

In addition to protocol support and connected accounts capacity, IP receivers vary in their ability to support advanced services. The ability or inability to support various services can significantly affect a service provider’s competitiveness and business growth over the long-term.

The various added-value capabilities of an IP receiver, such as support for video notification and home control, do not have an immediate affect on the cost per account. However their existence can save a heavy investment down the road when a central station decides to exploit the opportunities that IP infrastructure opens up to offer additional, recurring revenue-generating services to end-users, for example:

- **Video alarm verification at the central station** – Requires the addition of IP cameras that are capable of capturing pre- and post-alarm images once an event occurs. In addition to providing end users with enhanced peace of mind, video alarm notification can enable the central station to quickly ascertain the nature of the incident and immediately respond appropriately. This service can also assist in post-event investigations.

- **End-user event notifications** – Notifications are sent to the end-user as email or mobile phone messages with immediate event notifications and even alarm time image recordings. This can be used to identify the person at the premises, allowing near-real-time decisions regarding whether that person is authorized to be on the premises. This capability makes end users feel more connected to the system and it makes them value the service more, which in turn raises customer loyalty and retention.

- **Full web service** – By providing an end user with a web portal for the security system, a user can control the system, watch live feeds from the IP cameras and even control home automation devices.

It is important to note that IP receivers that offer some of these added-value capabilities are not necessarily more expensive than more simple IP receivers.

2.4. The bottom line: consider both current and future needs

An IP receiver should be an investment not just for the short term, but also for the long-term growth of the service provider or central station. Proper evaluation of the available IP platforms will eventually lead to a wise platform selection for today and for tomorrow.
3. VISONIC IPMP – A UNIQUE IP SERVICE PLATFORM

Visonic IPMP is an IP receiver and much more. It actually is a unique service management platform that offers security service providers a complete solution for managing their IP-based services.

3.1. One receiver for all Visonic IP communication modules

Visonic’s IPMP serves as the all-in-one IP receiver for all Visonic PowerLink, Broadband and GPRS equipped systems. It is capable of handling up to 20,000 accounts on a single system – making it the highest capacity IP receiver currently on the market. The IPMP supervises the systems and forwards all events received to the central station software, using a standard protocol.

**Standard protocol:** Visonic IPMP uses the open standard SIA over IP protocol for IP communication with the control panels. As SIA/IP is essentially manufacturer-agnostic, the IPMP is potentially capable of being a receiver for any third party IP communicator that uses SIA/IP.

3.2. Integrated video alarm verification

In addition, the IPMP has integrated video verification receiver functionality. In conjunction with Visonic PowerLink, Visonic IPMP provides the central station operator with the ability to track an alarmed system quickly, and to view the alarm-time recorded images received from the PowerLink-attached IP cameras.

3.3. End-user message dispatcher

In today’s IP communications era, customers expect to be more connected with the services they are registered to and to receive more frequent and rich updates from the services. Visonic IPMP has a built-in message dispatcher application that enables service providers to forward event notifications and alarm time recorded images to selected customers – to their email and/or mobile phones.
3.4. Full-grade service management platform

The IPMP provides service providers with a full-grade service management platform for customers with PowerLink-equipped systems. Each PowerLink unit is separately controlled by the IPMP so the service administrator has unlimited abilities to control it. This includes blocking the service to a non-paying customer, enabling and disabling services such as security system control, IP camera surveillance and home control, managing customers passwords, etc. In addition, an advertisement engine built into the IPMP and the PowerLink web portal enables the service provider to advertise new products to existing customers.

3.5. Unmatched capacity, functionality and flexibility

The following table summarizes the available information on single line IP receivers that are currently on the market in terms of account capacity and added-value features:

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Receiver Model</th>
<th>Account Capacity</th>
<th>IP Protocol</th>
<th>Video Alarm Verification</th>
<th>End-User Messaging</th>
<th>End-User Web</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visonic</td>
<td>IPMP</td>
<td>20,000</td>
<td>SIA/IP</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>DSC Sur-gard</td>
<td>System II</td>
<td>1,024 (512 Supervised)</td>
<td>DSC Proprietary</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Paradox</td>
<td>IPR512</td>
<td>512</td>
<td>Proprietary</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Osborne Hoffman</td>
<td>IP Receiver</td>
<td>10,000</td>
<td>Proprietary</td>
<td>○</td>
<td>Email</td>
<td>○</td>
</tr>
<tr>
<td>Honeywell</td>
<td>7810IR</td>
<td>1,000</td>
<td>Proprietary</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

1 The information about competitive products is taken from the manufacturers’ websites. It is the reader’s responsibility to verify the information.
4. APPENDIX – VISONIC IPMP FEATURES

The following list describes the key features of Visonic IPMP. For more information, please see the Visonic IPMP datasheet, available from Visonic.

IPMP features:

- Supports all of Visonic’s IP communication modules - GPRS, Broadband and PowerLink
- Highly stable Linux-based server platform
- Supports up to 20,000 concurrent customers at a 2 min. supervision frequency
- Events are AES 128bit encrypted, SIA/IP protocol-based
- Includes a built-in web interface application for the operator and administrator of the service provider, enabling full management of the connected systems
- Sold as a complete software and hardware package, with a certified 19" server machine
- Optional fully redundant configuration of two servers
- Does not require installation of any software on the operator or end-user PCs
- Integrated application for panel remote programming over IP
- Built-in billing reports engine
- Built-in messaging dispatcher application supports event-triggered email, SMS and MMS messages to end-users
- Built-in DDNS service to provide PowerLink users with a fixed address in order to connect to the PowerLink web site without the need for a fixed IP
- Supports grouping of control panels for easy management
- Enables remote firmware upgrade of all broadband modules
- Built-in PowerLink login screen advertisement management tool
- Logs the last 256 events (including recorded images) for each connected system
- Enables the operator with the ability to block the PowerLink end-user service and remotely reset a PowerLink user password