



LANTRONIX® EVOLUTION OS™

Machine2Mainstream™

Integrating Machines and Corporate IT Systems

The benefits of integrating 'edge' M2M networked devices into traditional corporate or enterprise network are tremendous.

A unified corporate and M2M network reduces operations costs by more effectively leveraging IT investments. Additionally, this integration differentiates a company's product or service with increased or added value and helps facilitate opportunities such as:

- Asset tracking/accounting (Sarbanes-Oxley compliance)
- Workflow improvement/monitoring/reporting
- Proactive maintenance services
- Preemptive diagnosis
- Fulfillment services

Network-enabled devices increase profits over the lifecycle of equipment, enabling companies to make better use of the most important asset afforded by the networked equipment: the data gathered and information gleaned.

Open Standards; Extensible Technologies

As IT managers are increasingly being asked to integrate M2M edge-networked devices at a corporate level, it is important that the tools, technology and architecture on those edge devices meet current data center equipment standards. It is also important that they are easy to integrate and built on extensible and open software technologies.

The Evolution OS Networking Operating System features key integration capabilities including:

- Cisco-like CLI configurability
- XML data transport and configurability
- RSS information feeds



New Evolution 3.0 delivers:

- AJAX based web manager and HTTP server
- Support for compressed firmware images
 - Allows larger, more complex SDK applications to be written
- SNMP v2c agent with
 - MIBII Support
 - RS232 MIB using SDK
 - Ability to create custom MIB in SDK
- New faster, lightweight kernel
- Flash wear leveling and erase cycle statistics
- PPP works with Windows, Linux, BSD
- Syslog support
- New Software Development Kit (SDK) that exposes more modules

Cisco-like CLI

Making the edge-to-enterprise vision a reality, XPort AR with Evolution OS uses industry-standard tools for configuration, communication and control. It uses Cisco-like command line interface (CLI) with syntax similar to that used by data center equipment such as routers and hubs.

XML-based Architecture and Device Control

A fundamental building block for the future growth of M2M networks, XML is a standard tool for web services, data transfer and rich content management that encapsulates data into a text-based format. XML-based configuration and setup records in XPort AR make the device configuration transparent to users and administrators and easy to edit with a standard text or XML editor. (Microsoft®, for example, already incorporates XML capabilities into the Office software suite.)

RSS

RSS is a rapidly emerging technology used to stream and manage on-line content. RSS support enables users to configure the XPort AR to automatically send back real-time device information over the network to a database. More powerful than simple email alerts, RSS uses XML as an underlying transport and adds intelligence to the networked device while not taxing already overloaded email systems. XPort AR also supports standard SMTP email.

PoE (Power over Ethernet)

XPort AR is the first device server to deliver true IEEE 802.3af compliant pass-through Power over Ethernet (PoE) to edge devices using both Ethernet pairs. Eliminating the need for an external power supply and associated electrician labor costs, XPort AR is ideally suited to add networking functionality in security control, medical, financial, energy metering and building automation applications.

Enterprise-grade Security

Without the need to disable any features or functionality, Evolution's hardened OS provides XPort AR the highest level of security possible. This 'data center grade' protection ensures that each device on the M2M network carries the same level of security as traditional IT networking equipment.

With built in SSH and SSL, XPort AR has robust defenses to hostile Internet attacks such as denial of service (DoS) and port mapping that can be used to take down the network. XPort AR also cannot be used to bring down other devices on the network. SSH includes powerful key management algorithms that:

- Verify the data received came from the proper source
- Validate that the data transferred from the source over the network is unchanged when it arrives at its destination (shared secret and hashing)
- Provide the ability to run popular M2M protocols over a secure SSH connection

The XPort AR supports a variety of popular cipher technologies including AES, 3DES and RC4 and hashing algorithms such as SHA-1 and MD5. Additionally, SSL ensures secure web-based communications.

Ease of Use and Flexibility

XPort AR is ideal for companies where networking is not a core competency. The network-enabled programmable module allows designers to focus their attention on code and hardware that serve to differentiate their product.

Accelerating the OEM development process and reducing associated cost, XPort AR features built-in manufacturing testing. With pre-loaded tests, engineers do not need to create them or load them individually. This can dramatically slash development time. The new hardware also features the flexibility of external interrupts (including one non-maskable) and timer input.

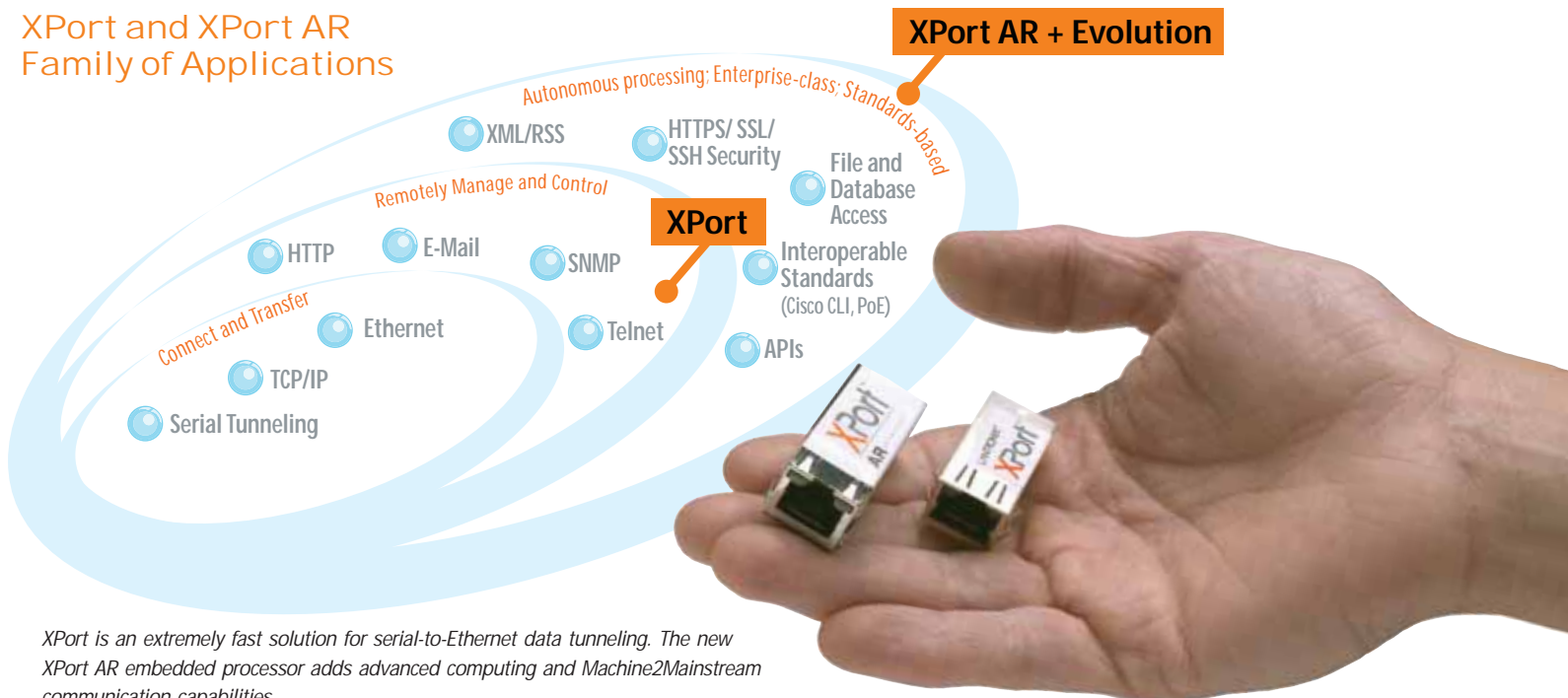


XPort AR with Evolution

Example Applications

- > **Real-time asset tracking**
 - Integration with enterprise ERP
- > **Secure metering**
 - SSH
- > **Networked PoE Access Control**
 - Save power supply and installation costs
- > **POS Transaction Automation Terminal**
 - Central processor managing system and I/O

XPort and XPort AR Family of Applications



XPort is an extremely fast solution for serial-to-Ethernet data tunneling. The new XPort AR embedded processor adds advanced computing and Machine2Mainstream communication capabilities.

