

# Industrial Networking for Control and Automation

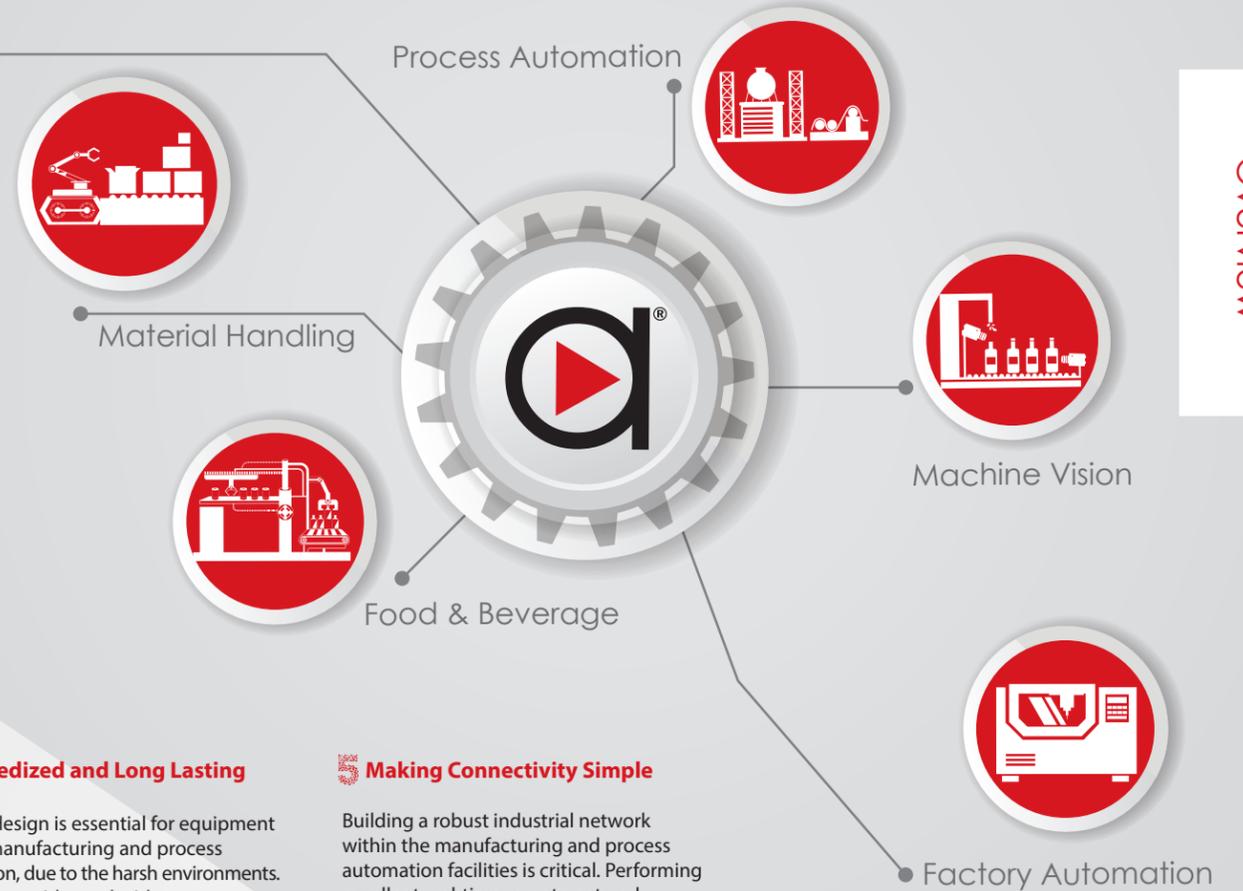
Implementing a Robust Industrial Automation Network

**The Trend of Industrial Networking in Manufacturing and Process Automation**

**Overview**

Manufacturing and process automation is growing exponentially within the industrial automation world, in order to improve productivity and efficiency with minimal human intervention. The most popular benefits of implementing an industrial networking solution is improving real-time remote management, saving future maintenance labor costs, and decreasing production downtime. However, it is also used to assist in saving energy, offer advanced event handling, and improve the production or process quality, accuracy and precision.

Although a number of facilities have already been established as being fully automated, many of the control systems still include legacy equipment in the production areas. Traditional control or monitoring systems can be inflexible and difficult to integrate because many independent machines have limited connectivity to the Ethernet TCP/IP network. The greatest challenge for the industry though, is how to network these legacy devices with new Ethernet-based equipment to meet the demand for increased productivity. Besides growing accuracy expectations, safety and reliability are also becoming extremely important. Antaira provides a wide range of industrial Ethernet networking solution products that support manufacturing and process automation that are easier, safer, and more cost-effective to maintain and operate.



**Antaira's 5 Key Industrial Networking Solutions and Benefits**

**1 Scalability and Flexibility**

The maturity of Ethernet technology has significantly improved data transmission of manufacturing and process automation equipment. This is because data can be accessed anywhere to achieve remote access, control, and monitoring, as well as, manage any real-time response to emergencies.

Antaira provides a wide array of industrial Ethernet networking solution products, including industrial Ethernet switches, Ethernet fiber media converters, industrial wireless devices, and serial-to-Ethernet or wireless device servers. Antaira offers product line solutions integrated with serial, LAN and WLAN (IEEE802.11), and are available in a variety of port configurations with 10/100MB or Gigabit copper, fiber, SFP and PoE technologies.

**2 Reliability**

Reliability is a key factor within the manufacturing and process automation industries. Production network downtime is one of the greatest concerns within these industries, because downtime can result in a variety of unpredicted and defective goods. Networking equipment must be held to the highest industrial standards to ensure damage resistance from vibration or harsh environments and constant operation. Antaira's industrial networking solution products have passed a variety of certifications specifically designed and developed for industrial automation's harsh environment requirements. Plus, Antaira's networking solution product equipment provides built-in high EFT and ESD protection to ensure uninterrupted data transmission between the equipment and the network.

**3 Self-Healing Redundant Network**

Most manufacturing and process automation facilities operate in harsh environments, where unexpected events can cause downtime and/or failure of systems and the network. A robust redundancy network can ensure systems and production are functional at all times. Antaira's industrial managed Ethernet switches and latest serial device servers support various redundancy features to maximize the communication system availability and instantaneous response. A built-in network redundant protocol provides a ring redundancy network topology to re-route data communication to the back path, continuously providing non-stop networking 24/7. Antaira provides optional versions to support the open standard ERPS (Ethernet Ring Protection Switching) and proprietary ring protocols to ensure fast network recovery between <50ms to <10ms.

**4 Ruggedized and Long Lasting**

Rugged design is essential for equipment used in manufacturing and process automation, due to the harsh environments. An ability to withstand wide temperature changes, vibration, and external damage such as chemical corrosion is therefore required. Antaira's industrial networking solution products are designed with IP30/40/50/67 rated weatherproof housing, robust metal casing, wide operating temperature tolerance, and vibration proofing, making them suitable for use in the toughest industrial environments. In addition, all Antaira's industrial networking solution products are designed and developed with high MTBF and EMI noise immunity.

**5 Making Connectivity Simple**

Building a robust industrial network within the manufacturing and process automation facilities is critical. Performing excellent real-time remote network management is a great challenge to many engineers or network planners within these industries. Antaira's industrial managed Ethernet switches, industrial wireless devices, and industrial serial device servers are pre-loaded with a user friendly (ease-of-use) web console interface to allow for easy adoption, as well as, quick setup and deployment to perform real-time and remote network management. Antaira not only provides simple connectivity solutions to support industrial automation applications, but also a lower cost of ownership.

**Industrial Networking Product Solutions**

**Industrial Ethernet Switches**



Managed

Unmanaged

\*\*PoE & Non-PoE Models Available\*\*

**Industrial Wireless (IEEE 802.11)**



Panel Mounts

Pre-Configured Bridge

Outdoor IP67

**Industrial Media Converters**



100Mbps Fiber

Gigabit Fiber

\*\*PoE & Non-PoE Models Available\*\*

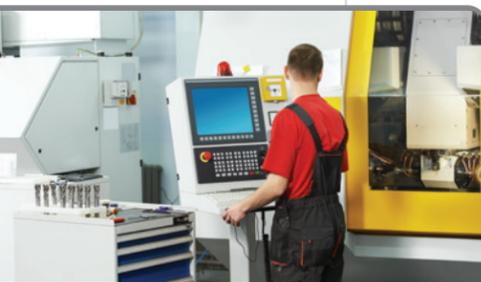
**Serial Connectivity**



Serial Device Servers

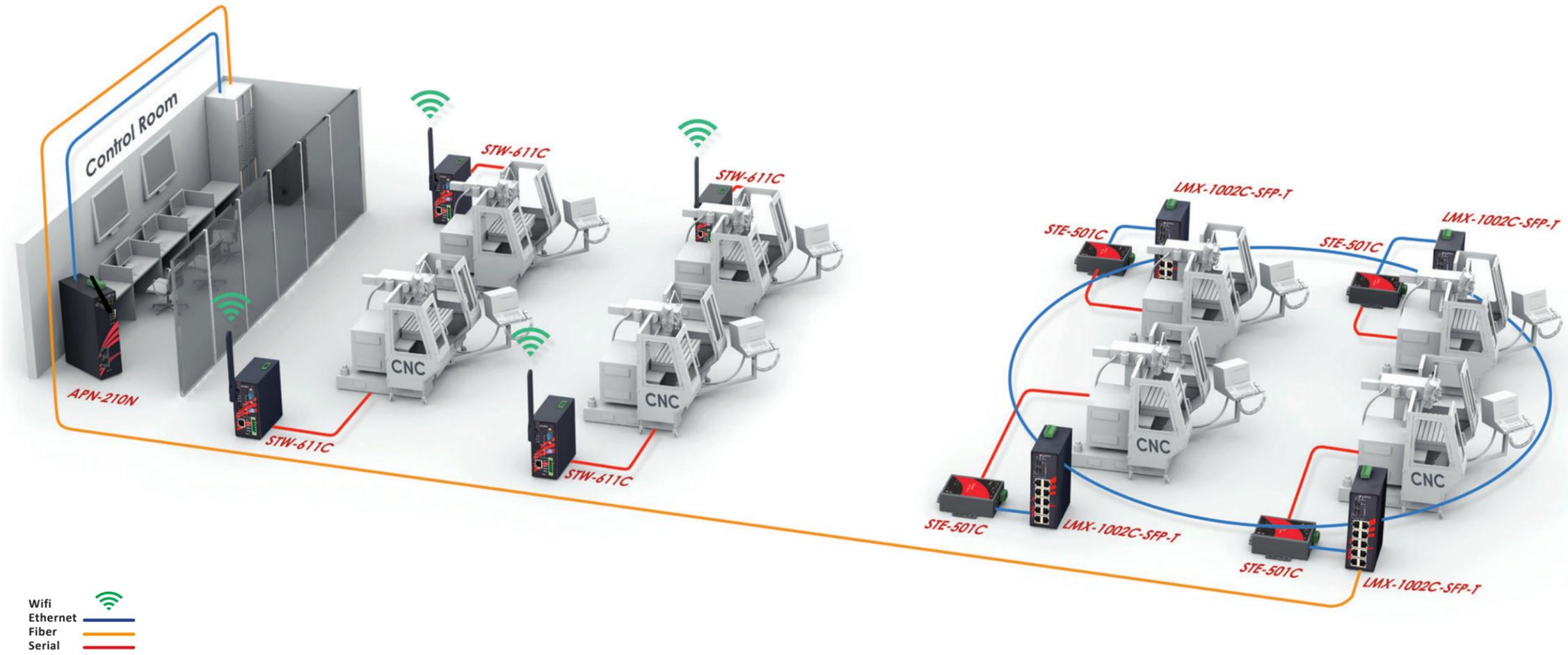
Serial to Wireless Device Servers

USB to Serial Hubs



## Overview

Computer Numerical Controlled (CNC) machines have been the workhorses of manufacturing for more than 50 years because of the high precision and repeatability they offer. Due to the high reliability and large investment cost of CNC machines, most automation facilities are still making use of older equipment. It is not practical to dispose of these legacy working assets. It is also not ideal for a company to leave these older standalone pieces of equipment disconnected from the network. By networking devices together manufacturers gain more control, faster recovery times, greater infrastructure flexibility and an enhanced overview of equipment from the control center.



## Application

To improve efficiency and remote management on the CNC shop floor, industrial networking is required from both device level and infrastructure level. Implementing an industrial serial device server can replace the front-end PC, eliminate manual monitoring processes, and provide remote management. A Virtual COM Driver, provided with most serial device servers today, can provide continued use of existing application software found on the shop floor. For network infrastructure, there are two types of connectivity solutions: hardwiring or wireless. A hardwired setup can incorporate network redundancy through a ring topology to ensure that connectivity and data will not be lost. A wireless setup can be beneficial if the locations of the machines require relocation regularly.

## Challenges

- Factory environment with harsh conditions
- Legacy serial equipment networking capability
- Cable installation time
- Cable distance restrictions
- Reliable data communication
- Long lasting MTBF networking equipment
- Flexible network layout

## Application Requirements

- Harsh environment industrial grade networking devices
- Capability to connect legacy serial devices to TCP/IP network
- Seamless and reliable data transmission
- Redundant network with fiber link
- Rapid deployment
- Ease of use network configuration user interface
- Shock & vibration resilience
- High MTBF and wide operating temperature range support

## Antaira's Solutions & Benefits

- **Antaira's Serial Device Server Series** provides single or multiple RS232/422/485 connections bridging legacy serial CNC controllers and transmitting data back to a remote control room via a hardwired or wireless solution.
- **Antaira's Industrial Managed Ethernet Switch Series** provides data routing management and network redundancy features with fiber-optic solutions to implement a reliable non-stop network and prevent any electronic noise concerns.
- **Antaira's Industrial Wireless (IEEE.802.11) Series** provides rugged wireless access point solutions for a wireless network infrastructure. It allows the CNC machines with serial-to-wireless device servers to continuously transmit data wirelessly to the main network.

## Key Products

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**STW-611C**  
1-Port (RS-232/422/485) IEEE 802.11b/g/n Serial Device Server

  - Shock, free fall and vibration resistant
  - Configuration: web console, serial console, windows utility or telnet
  - Operation modes: virtual COM, TCP/UDP, server/client, tunneling
- 

**STE-501C**  
1-Port (RS-232/422/485) Serial Device Server

  - Shock, free fall and vibration resistant
  - Configuration: web console, serial console, windows utility or telnet
  - Operation modes: virtual COM, TCP/UDP, server/client, tunneling
- 

**LMX-1002C-SFP-T**  
10-Port Industrial Managed Ethernet Switch

  - 8\*10/100Tx + 2\*Gigabit combo (2\*10/100/1000Tx / 2\*100/1000 SFP)
  - Network redundancy: STP/RSTP/MSTP and G.8032 ring protection <50ms
  - Network management: SNMP, QoS, VLAN and IGMP support
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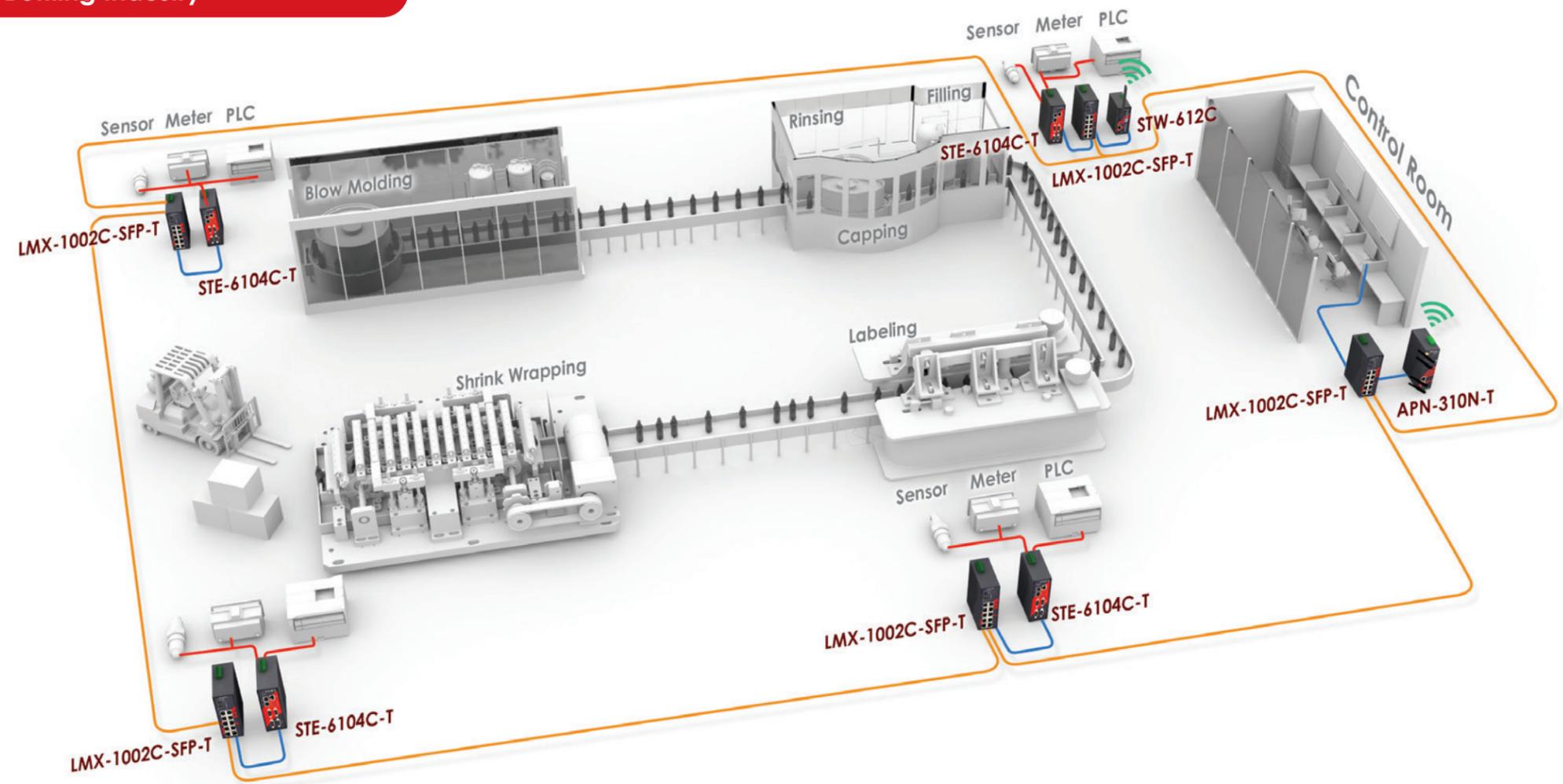
**APN-210N**  
Industrial 802.11b/g/n Wireless LAN AP/Bridge/Repeater

  - Security management: WEP / WPA / WPA2 / WPA2-PSK / IEEE 802.1x / RADIUS / HTTPS and SSH
  - Daisy chain support to reduce usage of switch ports
  - Temperature range: -40 to 75 °C



**Overview**

Beverage manufacturing is one of the most efficient manufacturing processes in the world, and bottling facilities are on the top of that list. However, bottling facilities differ from many other beverage processes because of the types of bottling lines they operate, and the types of products they use. Most facilities are incorporated with a complete line of processes from bottle stretch blow molding, water treatment, bottling stations, labeling and packaging lines. All processes have different types of legacy or Ethernet based equipment that aid in production, and require networking to exchange real-time data between each process and the control room.



**Application**

Today, equipment suppliers are providing new Ethernet-based equipment and IP based application software and no longer provide further support for legacy serial-based devices. With this mixture of serial and Ethernet based equipment, it is difficult to monitor production processes. A serial-to-Ethernet device server can provide Real COM drivers or socket tunneling for legacy equipment connection in TCP/IP format. A reliable Ethernet network has become a critical part of a bottling plant's infrastructure, due to harsh environments. Industrial managed Ethernet switches with fiber-optic solutions can be used to overcome this concern, because of their reliability, long lasting industrial grade design, and data transmission immunity. Layer 2 managed switches with data routing software can also increase the determinism of a bottling plant's control network. A built-in ring redundancy feature eliminates any downtime concerns, and event handling software functions can send out alert emails to improve real-time monitoring and management. Furthermore, some production areas in the facility might have cabling restrictions. In these instances, industrial wireless (IEEE 802.11) equipment can be considered, not only for its flexibility but also for its rugged wireless network signal sharing and built-in data management software.

**Challenges**

- Extreme temperature and humidity concerns
- Open network technology standard
- Legacy equipment
- Real-time data transmission
- EMI (Electromagnetic Interference) environment
- Redundant network for 24/7 operation
- Long lasting MTBF equipment

**Application Requirements**

- Harsh environment industrial grade networking equipment
- Capability to connect legacy serial devices to the TCP/IP network
- Fiber optics to prevent EMI
- Rugged wireless communication solution
- Reliable data routing with built-in network management software
- Self-healing redundant network support
- Shock & vibration resilience
- High MTBF and wide temperature range support

**Antaira's Solutions & Benefits**

- **Antaira's Serial Device Server Series** provides single or multiple RS232/422/485 connections bridging legacy serial measurement equipment to transmit data back to the CMMS (Control Management Maintenance Software) by Real COM or socket tunneling via a hardwired or wireless connection.
- **Antaira's Industrial Managed Ethernet Switch Series** provides Layer 2 network management software and fiber connection support. The built-in ring redundant feature allows users to build self-healing network architectures to eliminate any network downtime concerns. Plus, the event handling functions allow users to have immediate event notices to improve remote monitoring and management.
- **Antaira's Industrial (IEEE 802.11) Wireless Series** provides rugged wireless access point solutions for a wireless network infrastructure. Legacy measurement equipment networked with serial-to-wireless device servers can continuously communicate wirelessly with the main factory network.

**Key Products**



**STW-612C**  
**2-Port RS-232/422/485 Serial to Wireless Device Server**  
 • 3-way communication allows any serial & ethernet device to connect to a wireless network simultaneously  
 • Supports virtual COM, TCP/UDP & tunneling modes  
 • Configuration via web console, telnet or windows utility



**STE-6104C-T**  
**4-Port Serial Device Server**  
 • 4\*RS232/422/485 (software selectable)  
 • Dual LAN for network or data redundant application  
 • Supports virtual COM, TCP/UDP server or client, and tunneling modes



**APN-310N-T**  
**Industrial Wireless AP/Client/Bridge/Repeater**  
 • Built-in 2\*10/100Tx for or daisy chain application  
 • IEEE 802.11a/b/g/n link up to 300Mbps  
 • Wireless security support: WEP/WPA/WPA-PSK/WPA2/IEEE 802.1x authentication/RADIUS

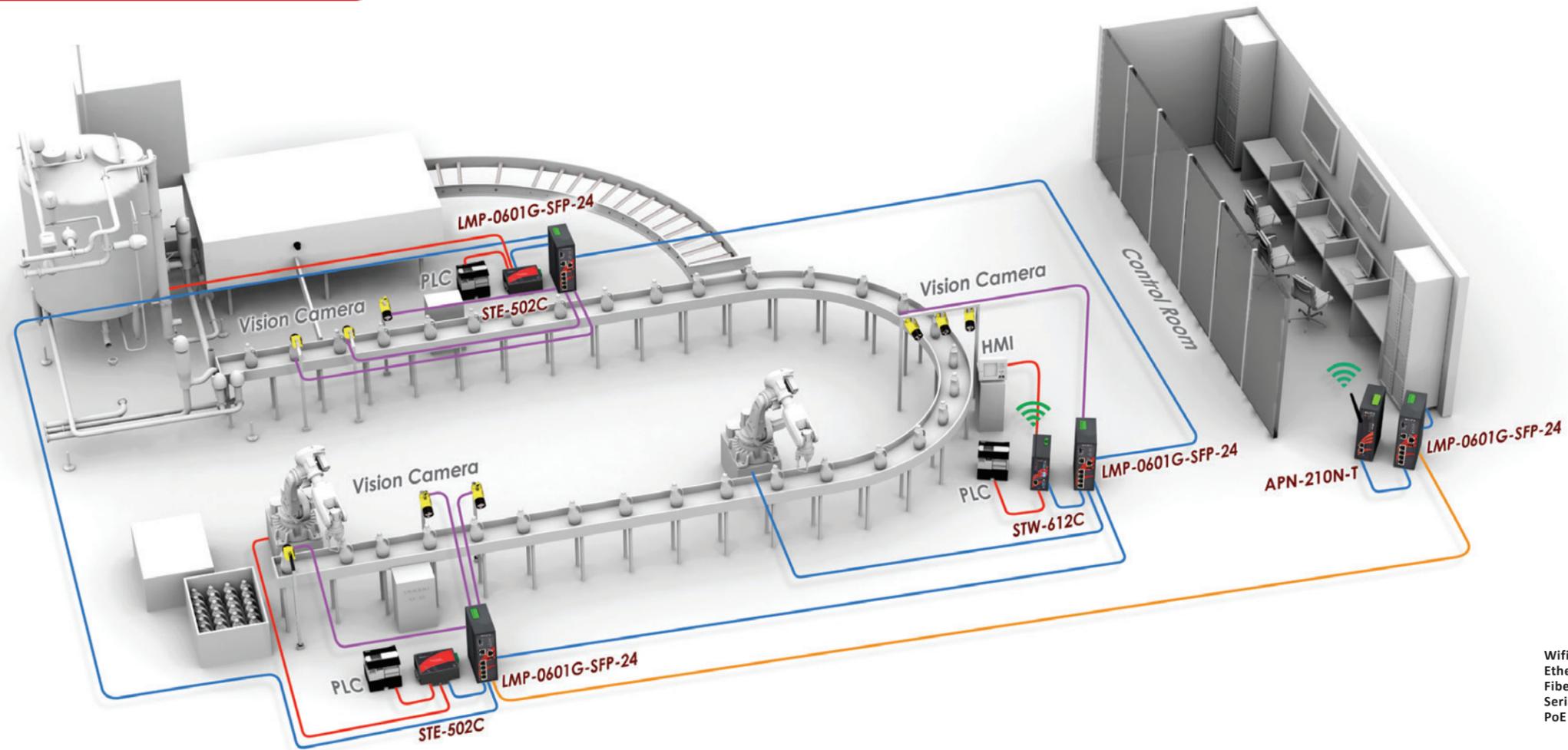


**LMX-1002C-SFP-T**  
**10-Port Industrial Managed Ethernet Switch**  
 • 8\*10/100Tx + 2\*Gigabit combo (2\*10/100/1000Tx / 2\*100/1000 SFP)  
 • Network redundancy: STP/RSTP/MSTP and G.8032 ring protection <50ms  
 • Network management: SNMP, QoS, VLAN and IGMP support



**Overview**

Machine vision is the technology and method used to provide image-based automatic inspection and analysis for applications that have been implemented in industrial automation for years. Manufacturing inspection processes such as sub-assembly qualification, component verification, object positioning, or packaging inspection can trigger mechanisms to execute a pass or fail decision. Machine vision systems will employ one or multiple units of higher resolution cameras for single object high-speed image data processing. It is critical for a manufacturer to network mixed-interface equipment together to execute real-time data exchange for machine vision applications.



**Application**

The latest generation of machine vision systems offer substantial improvements by providing Ethernet connectivity and tools to communicate directly with PLCs, robot controllers, PCs and human machine interfaces (HMIs). However, there is still serial-based equipment such as sensors, readers, cameras, and vision systems that are not easily networked. Also, production processes may need to network multiple machine vision systems together to distribute images throughout the production line. Building an industrial network infrastructure will increase flexibility, scalability, and reliability in harsh environments, commonly found on the production line, to allow mixed-model processing within machine vision systems.

Industrial device networking solution products with network redundancy features allow manufacturers to perform not only 24/7 operation, but also excellent remote management of machine vision equipment. In addition, user-friendly network communication and management software can support high image data processing pertinent to machine vision applications.

**Challenges**

- Harsh environment
- Mixed measurement devices and communication interfaces
- Bandwidth for high-level image data processing
- Automatic pass/fail inspection
- Cabling restrictions
- Remote access, control, and monitoring

**Application Requirements**

- Harsh environment industrial grade networking devices
- Capability to connect legacy serial devices to the TCP/IP network
- High bandwidth connectivity with Jumbo Frame support
- Low power voltage input support
- Fiber optics to prevent EMI
- Rugged wireless communication
- Reliable data routing with built-in network management software
- Self-healing redundant network support
- High MTBF and wide temperature range support
- Ease of use and rapid deployment

**Antaira's Solutions & Benefits**

- **Antaira's Serial Device Server Series** provides single or multiple RS232/422/485 connections allowing legacy serial measurement equipment to exchange data with machine vision systems by Real COM, socket or tunneling via a hardwired or wireless connection.
- **Antaira's Industrial PoE Gigabit Managed Ethernet Switch Series** provides Layer 2 network management software and fiber connection support and allows users to build a self-healing redundant network to eliminate any network downtime concerns, and increase determinism within the control network. The built-in event handling functions allow users to have immediate event notices to improve remote monitoring and management.
- **Antaira's Industrial (IEEE 802.11) Wireless Series** provides access point/client/bridge/repeater functions to allow users to have the flexibility to implement wireless infrastructure networks to connect measurement devices.

**Key Products**



**STE-501C/502C**

- 1/2 Port RS232/422/485 Serial Device Server**
- Supports virtual COM, TCP/UDP server or client, and tunneling modes
  - Configuration via web console, telnet, or windows utility
  - Shock, free fall and vibration resistant



**STW-612C**

- 2-port RS-232/422/485 Serial to Wireless Device Server**
- Built in 3-way communication to simultaneously connect serial & Ethernet devices over a wireless network
  - Supports virtual COM, TCP/UDP server or client, and tunneling modes
  - Configuration via web console, telnet, or windows utility



**APN-210N-T**

- IEEE 802.11 b/g/n AP / Client / Bridge / Repeater (Software Selectable)**
- Built-in 2\*10/100Tx for client device or daisy chain application
  - Wireless security support: WEP/WPA/WPA-PSK/WPA2/IEEE 802.1x authentication/RADIUS
  - Redundant power input: 12~48VDC



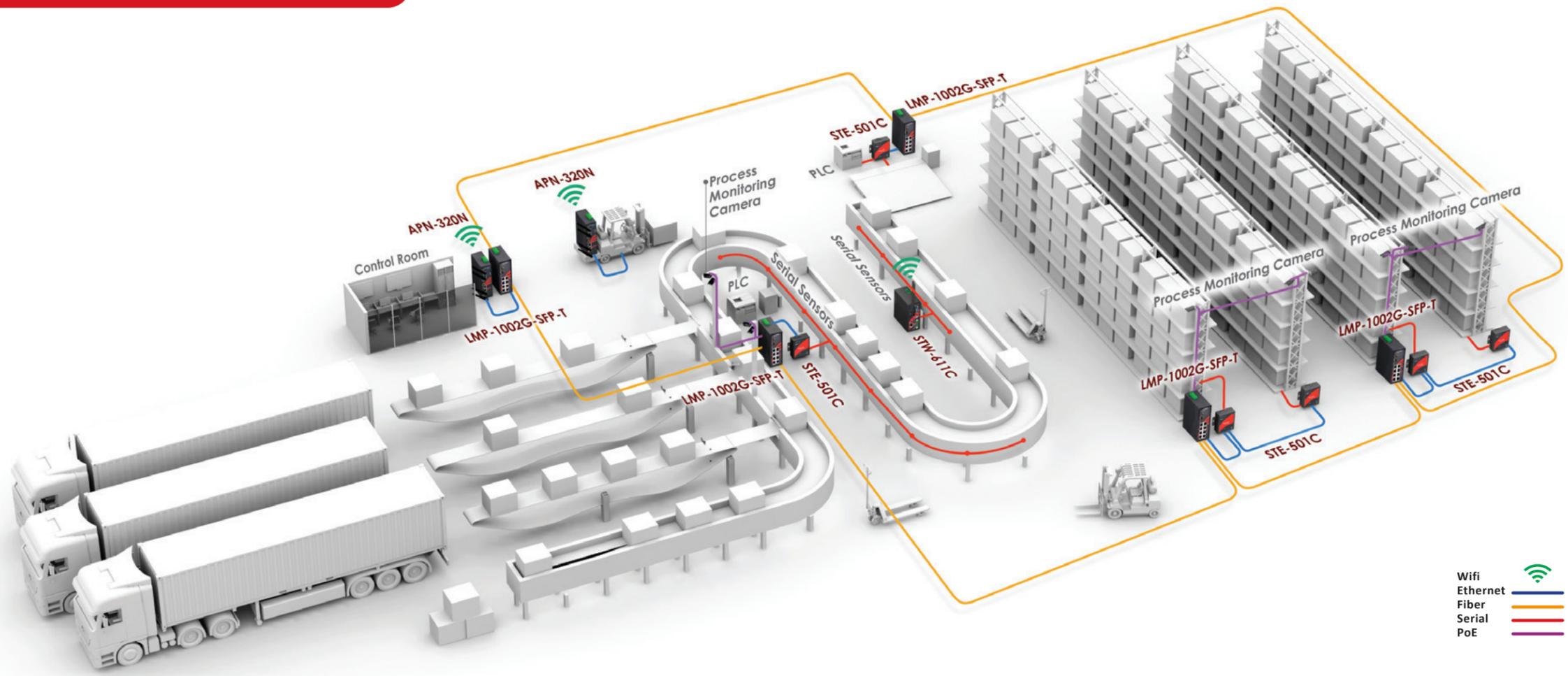
**LMP-0601G-SFP-24-T**

- 6 - Port Industrial PoE+ Gigabit Managed Switch**
- 4\*10/100/1000Tx (30W/Port) + 1\*10/100/1000Tx + 1\*100/1000 SFP slots for fiber
  - Redundant ring network support: STP/RSTP or ERPS ring <50ms
  - Layer 2 network management software support: SNMP, VLAN, IGMP, and QoS
  - Redundant low power input 12~36VDC (w/voltage booster)



## Overview

Material handling consists of pallet rack systems, shelving systems, complex conveyor belts, automated storage and retrieval systems (AS/RS), sortation systems, picking systems, and automatic guided vehicles, all of which help to interconnect different processes to achieve a final product. Due to the automated nature of the whole production process, material handling systems must respond with timeliness and fulfill all requirements of each process and system. A robust Ethernet network is a major criterion to ensure all the process areas can have peak efficiency and real-time data exchange on the material handling network.



## Application

It is critical for manufacturers to implement a proficient network, because most material handling systems, machines, and equipment come with mixed communication interfaces, stand-alone processes, and are not efficiently networked. For example, AS/RS systems rely on a networked front-end computer terminal for status reports, and it is difficult for a control room to monitor field device status if downtime occurs. A serial-to-Ethernet device server can be networked instantly with field legacy equipment to improve the efficiency and real-time monitoring. Due to the scope of the material handling facility, PoE or IP-based video cameras can be networked for safety and real-time process monitoring. Network downtime is also a major concern for process data exchange. A redundant ring network provides fast network recovery if any unexpected link failure occurs. Instead of a hardwired infrastructure, a wireless solution for device networking can be considered to overcome the immense facility or cabling restrictions.

## Challenges

- Temperature or humidity concerns
- Wide area coverage
- Cabling restrictions
- Mixed communication interface equipment
- Real-time data transmission among individual process sections
- EMI (Electromagnetic Interference) environment
- Redundant network for 24/7 operation
- High MTBF network equipment

## Application Requirements

- Harsh environment industrial grade networking devices
- Capability to connect legacy serial devices to the TCP/IP network
- Rugged wireless communication
- Reliable data routing with built-in network management software
- Self-healing redundant network support
- Shock & vibration resilience
- High MTBF and wide temperature range support

## Antaira's Solutions & Benefits

- **Antaira's Serial Device Server Series** provides single or multiple RS232/422/485 connections bridging legacy serial measurement equipment to transmit data back to the remote control center by Real COM, socket or tunneling operation modes.
- **Antaira's Industrial Managed Ethernet Switch Series** provides Layer 2 network management software with fiber connection support and allows users to build a self-healing redundant network to eliminate any network downtime concerns. The built-in event handling functions allow users to have immediate event notices to improve remote monitoring and management.
- **Antaira's Industrial (IEEE 802.11) Wireless Series** provides access point/client/bridge/repeater functions to allow users to have flexibility when implementing a wireless infrastructure for video networking, picking and sorting systems, or mobile applications.

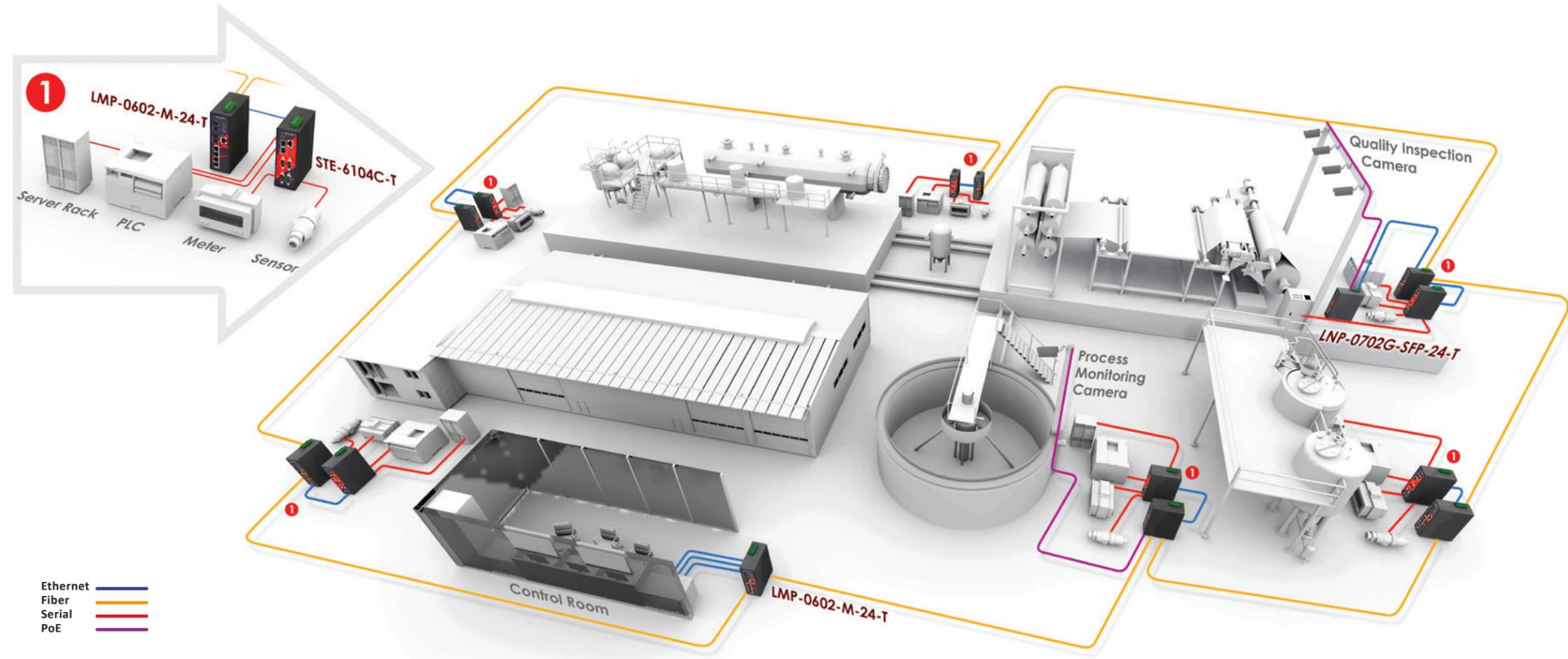
## Key Products

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**STE-501C/502C**  
**1/2-Port RS-232/422/485 (Software Selectable) Serial Device Server**
  - 1-Port 10/100Tx LAN for network
  - Supports virtual COM, TCP/UDP server or client, and tunneling modes
  - Configuration via web console, telnet, or windows utility
- 
**STW-612C**  
**2-Port RS-232/422/485 Serial Wireless (IEEE 802.11 b/g/n) Device Server**
  - Built-in 3-way communication to simultaneously connect serial & Ethernet devices over a wireless network
  - Supports virtual COM, TCP/UDP server or client, and tunneling modes
  - Configuration via web console, telnet, or windows utility
- 
**APN-320N-T**  
**Industrial Wireless IEEE 802.11 a/b/g/n AP/Client/Bridge / Repeater**
  - Features dual independent radios
  - Built-in 4\*10/100Tx for client device or daisy chain application
  - Supports WEP/WPA/WPA-PSK/WPA2/IEEE 802.1x authentication/RADIUS
- 
**LMP-1002G-SFP-T**  
**Industrial PoE+ Gigabit Managed Switch**
  - 8\*10/100/1000Tx (30W/Port) + 2\*100/1000 SFP Slot
  - Redundant ring network support: STP/RSTP or ERPS ring <50ms
  - Layer 2 network management software support: SNMP, VLAN, IGMP, and QoS



## Overview

Today, about 10% of paper pulp is created from recycling worldwide. In paper mills, the process of pulping consists of mixing raw materials with water and chemicals. A variety of processes including high and low consistency slag-removal, sorting, floating, filtering, heat dispersion and bleaching all contribute to creating new recycled paper. Each process sector is equipped with heavy machines, measurement devices, and process monitoring cameras in order to continually transmit data, report results to the plant's remote control SCADA system, and provide 24/7 real time monitoring. In order to provide a smooth production process with real-time data transmission and perform remote monitoring and control, building a rugged Ethernet network is extremely important.



## Application

Each local process section in the pulp & paper industry is still integrated with a large amount of legacy serial-based equipment that is not equipped for an Ethernet network. In order to provide networking capabilities, an industrial serial device server can convert serial data into TCP/IP data to transmit through the Ethernet network. Due to the influx of various measurement devices being incorporated into every process section, having a layer 2 industrial managed Ethernet switch can assure data routing within the local network. Built-in fiber optics can provide an efficient Ethernet infrastructure solution to cover large area distance concerns, prevent EMI, and provide network redundancy. In addition, some process areas can benefit from the latest high resolution PoE (Power-over-Ethernet) cameras. Industrial PoE gigabit managed switches can have built-in PoE features and high bandwidth capabilities to perform real-time video streaming.

## Challenges

- Extreme temperature and humidity concerns
- Restricted process control areas
- Real-time data transmission
- Unpredictable EMI (Electromagnetic Interference) environment
- High resolution PoE cameras for production monitoring
- Low power voltage requirements
- Extensive redundant network implementation

## Application Requirements

- Harsh environment industrial-grade networking devices
- Capability to connect legacy serial devices to TCP/IP network
- High Ethernet port counts and bandwidth support
- Fiber optics to prevent EMI and distance limitations
- Reliable data routing with built-in network management software
- Self-healing redundant network support
- Shock & vibration resilience
- High MTBF and wide temperature range support

## Antaira's Solutions & Benefits

- **Antaira's Serial Device Server Series** provides multiple RS232/422/485 connections bridging legacy serial measurement equipment to transmit data back to the pulp & paper SCADA system either by Real COM, socket or tunnel.
- **Antaira's Industrial Gigabit PoE Unmanaged Ethernet Switch Series** provides wide gigabit bandwidth, Jumbo Frame support, and power-over-Ethernet functionality to connect and power up any high resolution gigabit PoE cameras to perform remote monitoring in the production process or final quality inspection locations.
- **Antaira's Industrial Gigabit PoE Managed Ethernet Switch Series** comes with Layer 2 network management software and fiber connections that allow users to build a self-healing redundant network, eliminate network downtime concerns, and increase determinism within the control network. Built-in SFP slots provide flexibility for any SFP transceiver fiber mode and distance solution.

## Key Products



- IMC-1000A-SFP-T**  
**10/100/1000Tx to Gigabit Ethernet Media Converter**
- 1\*10/100/1000Tx fast Ethernet, with full duplex and auto negotiation
  - 1\*100/1000 dual rate SFP slots for fiber connection
  - Extended operating temperature support - 40 to 75C



- STE-6104C-T**  
**4-Port Serial Device Server**
- 4\*RS232/422/485 software selectable
  - Dual LAN for network or data redundant application
  - Supports virtual COM, TCP/UDP server or client, and tunneling modes



- LNP-0702G-SFP-24-T**  
**7-Port Industrial PoE+ Unmanaged Ethernet Switch**
- 4\*10/100/1000Tx (PSE:30W/port) + 1\*10/100/1000Tx + 2\*100/1000X SFP slots
  - Supports jumbo frames: 9.6Kbytes
  - Redundant low power input 12~36VDC (w/voltage booster)



- LMP-0602-M-24-T**  
**6-Port Industrial PoE+ Managed Ethernet Switch**
- 4\*10/100Tx (PSE:30W/Port), 2\*100Fx (SC/ST) multi-mode 2Km, single-mode 30Km
  - Redundant ring network support with RSTP or ERPS (ITU-G.8032)
  - Layer 2 network management software support: SNMP, VLAN, IGMP, and QoS



## About Antaira

**Antaira Technologies** is a leading developer and manufacturer of high-quality industrial networking and communication product solutions. Since 2005, Antaira has offered a full spectrum of product lines that feature reliable Ethernet infrastructures, extended temperature tolerance, and rugged enclosure designs. Our product lines range from industrial Ethernet switches, to, industrial wireless devices, Ethernet media converters, industrial serial communications. Our vast professional experience has allowed us to deploy a wide array of products worldwide in mission-critical applications across various markets, such as, automation, transportation, security, oil and gas, power/utility and medical.

## Mission Statement

As a leader and trusted partner in the industrial device networking field, Antaira is committed to providing quality products and value-added service to its customers and channel partners to create solutions that deliver a worldwide advancement for a wide array of applications.

## Our Commitment



### Product Warranty

All Antaira products are backed with a warranty of up to 5 years. We warrant products against defects in material and workmanship for up to 5 years from the date of purchase. This means that Antaira will happily repair or replace the defective products within warranty, provided the products were installed and used within specification. Antaira is committed and will stand behind all of its products assuring customers will receive the highest quality and most reliable products possible.



### Customer Service & Tech Support

Antaira's dedicated and competent team takes pride in delivering high-quality and prompt service to our customers. We go one step further when it comes to service. All incoming calls are routed to a live representative who can answer all inquiries quickly, whether it be pre-sales, post-sales or technical services. Antaira's technical support and RMA team have elite industry knowledge to ensure all issues are professionally and thoroughly resolved.



### Satisfaction Guarantee

At Antaira, we strive to meet our customers' needs by going above and beyond industry standards. Every sale is backed by our 45-day satisfaction guarantee. If for any reason our customers are unsatisfied with their experience or their expectations were not met, Antaira will provide a full refund within 45 days of the purchase date. Our friendly customer service representatives are available to help clarify any questions, comments or concerns regarding all transactions.



### RoHS Directive

Antaira recognizes its environmental responsibility as a manufacturer and is dedicated to preserving the environment for future generations. We make it a priority to ensure that all our products are environmentally friendly. At Antaira, we not only make sure that our products are RoHS 2.0 compliant, but also all of our packing materials used to ship our products are compliant as well.



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