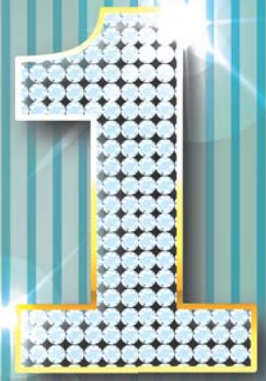


Introduction

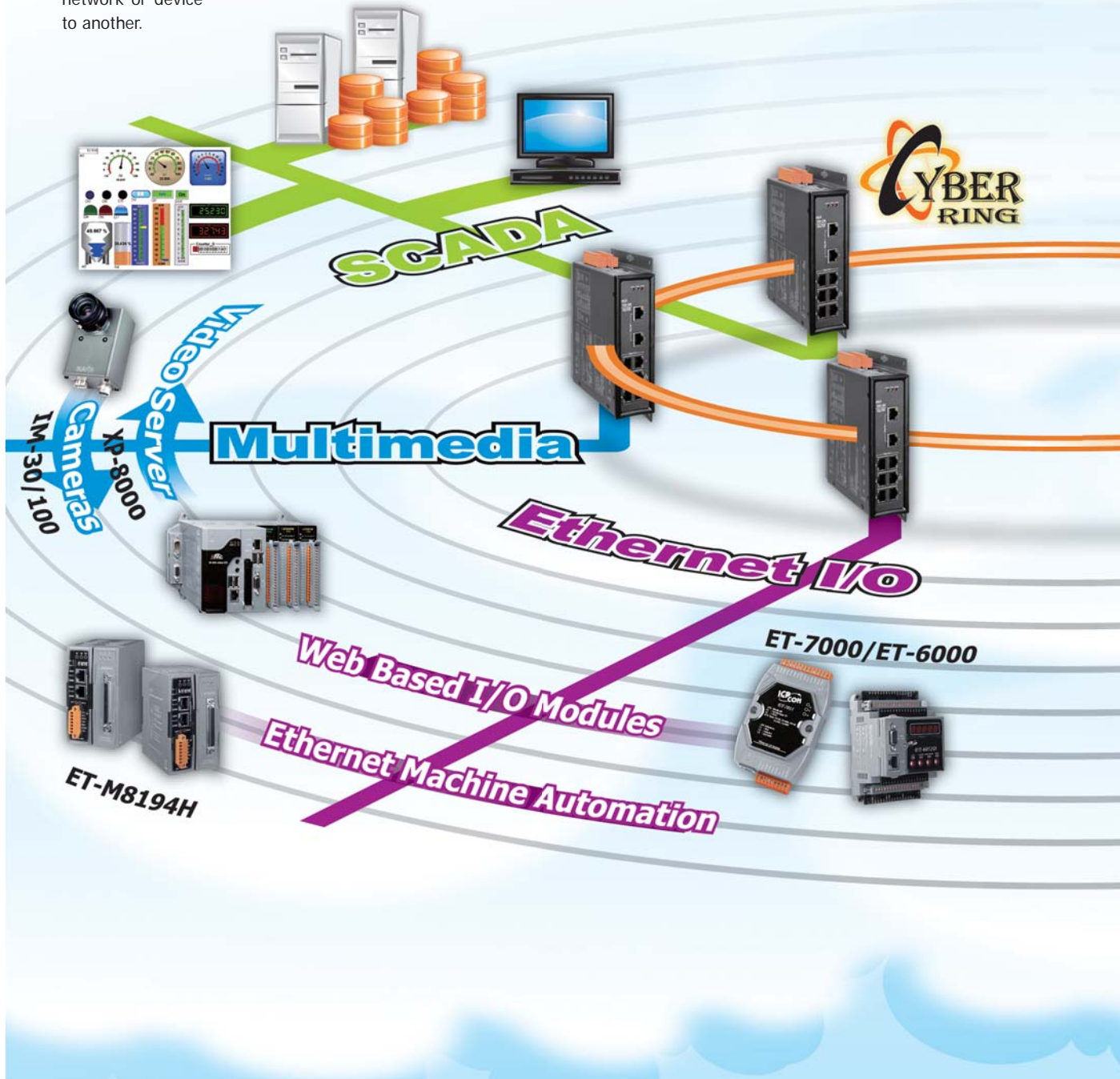


Introduction

Ethernet is an ideal medium to transport large volumes of data, at speed, across great distances. Previously, multiple networks carrying specific protocols were installed side by side to carry out unique tasks. This inevitably led to project costs increasing as additional fiber optic or copper cables were installed to deal with the increasing volume of data. Using Ethernet a single fiber optic cable can carry multiple protocols. Furthermore, manufacturers are exporting their legacy protocols onto Ethernet, designing new IP based communication protocols and providing embedded Web-Pages within devices that offer real-time information using simple tools like Internet Explorer and Mozilla Firefox.

Early Ethernet were based on a hub or repeater. These units have no intelligence and therefore are unable to identify any information contained within the Header frame of an Ethernet packet. This means that it is not capable of determining which port to send the frame to. Therefore, every frame is sent to every port.

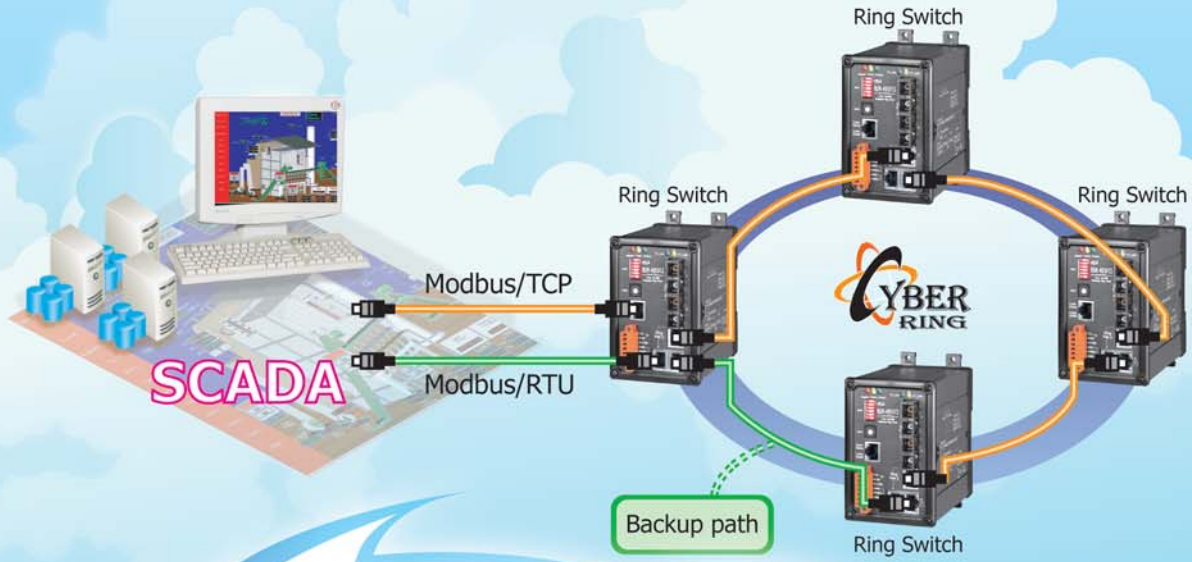
A switch, like a hub, has to forward and receive packets from one network or device to another. The switch could forward all packets, but if this was the case it would have similar behavior to a hub. It would be more intelligent if the switch only forwarded packets which needed to travel from one network or device to another.



There are many poorly designed switches existing in the market, and most of them are fragile, easy to collapse, and always suffer from transmission delay and unreliable communication conditions due to packet collisions or other issues. Users who have bad experiences with those poor switches should try our high quality ones. ICP DAS's switches only choose "REAL INDUSTRIAL" grade switch chips that are temperature tolerant and highly reliable. They are all well-designed by skilled engineers and passed very strict communication and environment tests. All our switches can serve for a long life and guarantee to function perfectly under harsh environment.

Industrial Ethernet/Automation





Real-time Redundant Ring Switch

The Real-time Redundant Ring Switch offers fault-tolerant industrial Ethernet with ring network topology. The built-in ICP DAS proprietary Cyber-Ring technology detects and recovers from a fiber or copper link failure within approximately 20 ms – for the majority of applications, it is seamless. Modbus/TCP, Modbus/RTU and OPC supported, SCADA application can monitor status of Ethernet and fiber port with Modbus or OPC protocol. And, the relay output facility can deliver warning signal while dual power or network link fails.

Managed Ethernet Switch

The ICP DAS Managed Switch provides a cost-effective managed Ethernet solution for industrial control and automation. It provides lots of powerful managed functions, such as 802.1Q Tag-based VLAN, Port-based VLAN, 802.1p QoS (Quality of Service), Port Trunking, Spanning Tree, Cable Testing and Port Mirroring. These managed functions can be configured through RS-232 port via serial console or Ethernet port using telnet or Web browser. In addition, the built-in Cyber-Ring technology offers real-time fault-tolerant ring topology to increase the reliability and performance of network. It is an ideal Managed Switch for industrial environments.



Media Converter

The utilization of fiber optic data transmission for industrial automation and process control has become increasingly popular over the past decade. A basic fiber optic system, using an optical transceiver circuit and fiber optic media, offers a wide array of benefits that are not available with traditional copper conductors.



Rugged M12 Ethernet Switch

The Rugged M12 Ethernet Switch is designed for industrial applications in harsh environments. The M12 connector ensure tight, robust connections, and guarantee reliable operation, even for applications that are subject to high vibration and shock.



PoE Ethernet Switch

The PoE (Power over Ethernet) Ethernet Switch makes centralized power supply come true and provides up to 15.4 watts of power per port.



IP67 Water Proof Switch

IP67 Ethernet Switches are designed for use in industrial waterproof/harsh environments. The rugged packaging and IP67 connectors guarantee a total protection that can withstand a variety of extreme conditions such as high temperatures, extreme shocks & vibrations, dust particles or even liquid immersion. They can be directly mounted to any machine or convenient flat surface.



Unmanaged Ethernet Switch

Industrial rate switches are intended to be installed in both harsh climatic environments and noisy electrical installations. Such switches are excellent examples of true industrial design principles

- Very high operating temperatures (down to -40 °C and up to +75 °C)
- DIN-Rail Mounting
- Wide DC operating voltages (+12 Vdc ~ +48 Vdc)



Selection Guide

Unmanaged Ethernet Switches

Model Name	Speed	Port	Power Input	Casing	Page
NS-205	10/100 M	5	+10 V _{DC} ~ +30 V _{DC}	Plastic	3-1
NS-205A	10/100 M	5	+12 V _{DC} ~ +56 V _{DC}	Plastic	3-1
NS-105A	10/100 M	5	+12 V _{DC} ~ +56 V _{DC}	Plastic	3-1
I-8135W	10/100 M	5	+5 V _{DC}	Plastic	3-3
NS-208A/NSM-208A	10/100 M	8	+12 V _{DC} ~ +48 V _{DC}	Plastic/Metal	3-5
NS-208R	10/100 M	8	+12 V _{DC} ~ +48 V _{DC}	Plastic	3-7
NS-205G	10/100/100 M	5	+10 V _{DC} ~ +30 V _{DC}	Plastic	3-9
NS-205AG	10/100/100 M	5	+12 V _{DC} ~ +48 V _{DC}	Plastic	3-9
NS-208G/NS-208AG NSM-208G/NSM-208AG	10/100/100 M	8	+12 V _{DC} ~ +48 V _{DC}	Plastic/ Metal	3-11
NSM-216	10/100 M	16	+12 V _{DC} ~ +48 V _{DC}	Metal	3-13
NS-205-IP67	10/100 M	5	+10 V _{DC} ~ +30 V _{DC}	Plastic with IP67	3-33
NS-208-IP67	10/100 M	8	+12 V _{DC} ~ +53 V _{DC}	Plastic with IP67	3-37
NSM-208-M12	10/100 M	8	+12 V _{DC} ~ +53 V _{DC}	Metal with IP40	3-41

Unmanaged Ethernet Switches with Fiber Port

Model Name	Fiber Port		Ethernet Port		Power Input	Casing	Page
	Speed	Port	Speed	Port			
NS-205AF/NSM-205AF series	100 M	1	10/100 M	4	+12 V _{DC} ~ +48 V _{DC}	Plastic/Metal	3-15
NS-206AF/NSM-206AF series	100 M	2	10/100 M	4	+12 V _{DC} ~ +48 V _{DC}	Plastic/Metal	3-15
NS-209F/NSM-209F series	100 M	1	10/100 M	8	+12 V _{DC} ~ +48 V _{DC}	Plastic/Metal	3-19

Unmanaged PoE (IEEE 802.3af) Ethernet Switches

Model Name	Speed	PoE Port	Ethernet Port	Power Input	Casing	Page
NS-105PSE	10/100 M	4	1	+46 V _{DC} ~ +56 V _{DC}	Plastic	3-23
NS-205PSE	10/100 M	4	1	+46 V _{DC} ~ +56 V _{DC}	Plastic	3-23
NS-208PSE	10/100 M	8	–	+46 V _{DC} ~ +56 V _{DC}	Plastic	3-27
NSM-208PSE	10/100 M	8	–	+46 V _{DC} ~ +56 V _{DC}	Metal	3-27
NS-208PSE-4	10/100 M	4	4	+46 V _{DC} ~ +56 V _{DC}	Plastic	3-27
NSM-208PSE-4	10/100 M	4	4	+46 V _{DC} ~ +56 V _{DC}	Metal	3-27
NS-105PSE-24V	10/100 M	4	1	+18 V _{DC} ~ +32 V _{DC}	Plastic	3-25
NS-205PSE-24V	10/100 M	4	1	+18 V _{DC} ~ +32 V _{DC}	Plastic	3-25
NSM-205PSE-24V	10/100 M	4	1	+18 V _{DC} ~ +32 V _{DC}	Metal	3-25
NSM-210PSE-24V	10/100 M	8	2	+18 V _{DC} ~ +32 V _{DC}	Metal	3-25
NS-205PSE-IP67	10/100 M	4	1	+46 V _{DC} ~ +53 V _{DC}	Plastic with IP67	3-33
NS-208PSE-IP67	10/100 M	8	–	+46 V _{DC} ~ +53 V _{DC}	Plastic with IP67	3-37
NSM-208PSE-M12	10/100 M	8	–	+46 V _{DC} ~ +53 V _{DC}	Metal with IP40	3-41

PoE Injector (PSE)

Model Name	Speed	Port	Type	Power Input	Casing	Page
tNS-200IN	10/100 M	1	PSE (IEEE 802.3af)	+46 Vdc ~ +53 Vdc	Plastic	3-45
tNS-200IN-24V	10/100 M	1	PSE (IEEE 802.3af)	+18 Vdc ~ +32 Vdc	Plastic	3-45

PoE Splitter (PD)

Model Name	Speed	Port	Type	Power Output	Casing	Page
NS-200SP	10/100 M	1	PD (IEEE 802.3af, Class 1)	+24 Vdc	Plastic	call

Unmanaged PoE Ethernet Switches with Fiber Port

Model Name	Fiber Port		Ethernet Port		Power Input	Casing	Page
	Speed	Port	Speed	Port			
NS-205PF series	100 M	1	10/100 M	4	+46 Vdc ~ +55 Vdc	Plastic	3-29
NSM-205PF series	100 M	1	10/100 M	4	+46 Vdc ~ +55 Vdc	Metal	3-29
NS-205PF-24V series	100 M	1	10/100 M	4	+18 Vdc ~ +32 Vdc	Plastic	3-29
NSM-205PF-24V series	100 M	1	10/100 M	4	+18 Vdc ~ +32 Vdc	Metal	3-29

Industrial Media Converters & WDM Media Converter

Model Name	Fiber Port		Ethernet Port		Power Input	Casing	Page
	Speed	Port	Speed	Port			
NS-200AF series	100 M	1	10/100 M	1	+12 Vdc ~ +48 Vdc	Plastic	4-1
NS-200SX	1000 M	1	100/1000 M	1	+12 Vdc ~ +48 Vdc	Plastic	4-5
NS-200LX	1000 M	1	100/1000 M	1	+12 Vdc ~ +48 Vdc	Plastic	4-5
NS-200WDM series	100 M	1	10/100 M	1	+12 Vdc ~ +48 Vdc	Plastic	4-3
NS-201F	100 M (SFP)	1	10/100 M	1	+12 Vdc ~ +48 Vdc	Plastic	call
NS-201GF	1000 M (SFP)	1	100/1000 M	1	+12 Vdc ~ +48 Vdc	Plastic	call