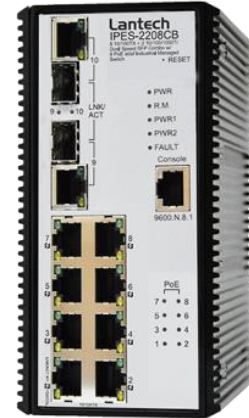# IPES-2208CB

8 10/100TX + 2 10/100/1000T/Dual Speed SFP Combo w/ 8-PoE at/af Managed Industrial Switch

- *Pro-Ring IIse/Pro-ring IIm for sing ring & couple ring self-healing in 20ms*

- *Support PoE Plus 802.3at/af ;240W PoE budget;12V~48V input (12V model)*

- *PoE management incl. Detection, Delay and Scheduling*

- *Support Advanced SNMP including QoS, IGMP query & source only / v3, DDM***, Environmental Monitoring***

OVERVIEW

The Lantech IPES-2208CB is a full wire speed 8-port 10/100BaseTX + 2-port 10/100/1000T/Dual Speed SFP Combo industrial PoE switch w/8 POE 802.3at/af Injectors and Pro-Ring IIse and couple ring (Pro-Ring IIm) self-recovery in less than 20ms. The SFP connection is suitable with 100M or 1000M Dual Speed. The advanced SNMP management features include QoS for 4 queues, 802.1q VLAN, IGMP snooping, query and source only for multicast IP surveillance, DDM*** as well as Web Ping, Environmental Monitoring**, SNTP and SMTP etc.

Compliant with 802.2at/af PoE Plus standard, the Lantech IPES-2208CB is able to feed each PoE port up to 30 Watts@54 VDC providing the connected PD devices. The built-in relay contact is able to connect with alarm system and send Email, SNMP trap and Syslog alert in case of power or connection failure. IPES-2208CB-12V is built with Booster technology that can accept input voltage from 12V ~ 48V and deliver PoE power at 48V to feed the PD.

Lantech IPES-2208CB supports advanced PoE management including PoE detection, delay and scheduling. PoE detection can detect if the connected PD is hanging up then restart the PD; PoE delay is to delay power feeding when the switch is completely booted up; PoE scheduling is to allow pre-set power feeding schedule upon routine time table. The exclusive IGMP source only function can auto choose IGMP query for surveillance application.

The innovative Pro-Ring IIse self-recovery scheme can recover single ring network in less than 20ms while Pro-ring IIm for couple ring topology with only one step configuration. Lantech IPES-2208CB builds all the important management features required in large network like DHCP Client/Server, 802.1X authentication, IGMP Query / Snooping / v3 and Source only for reverse multicast flow ,and advanced QoS. It also supports Ping commands via Web to detect whether a specific device is connected for easy trouble-shooting.
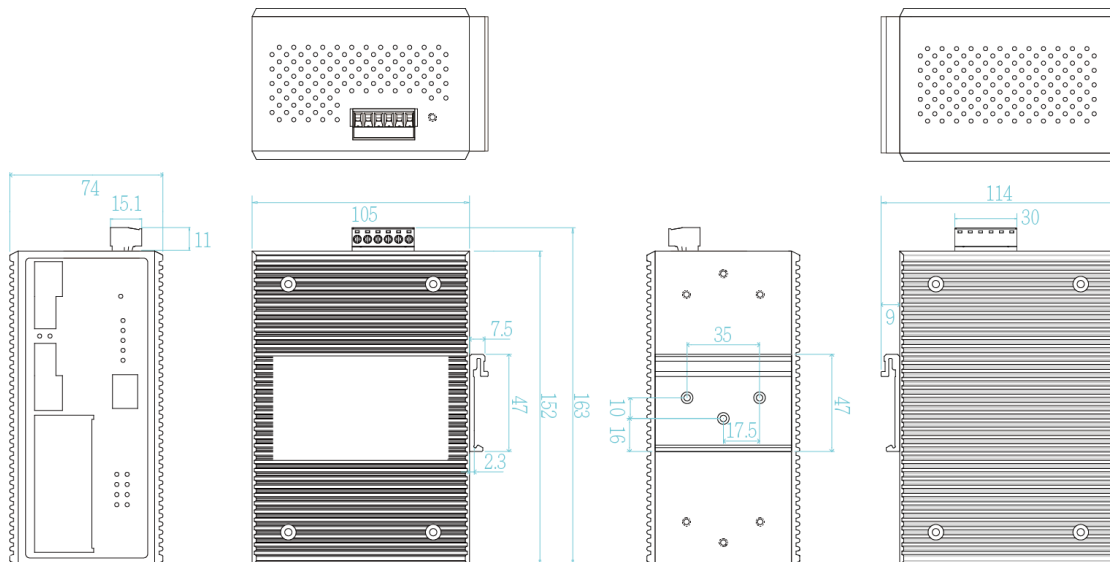
The built-in factory reset button can restore all setting back to factory default in case of User name and Password are missing. The optional environmental monitoring model can display ambient temperature inside case, Input voltage, current, power consumption, PoE load info at a glance and with capability of alert setting.

The Lantech IPES-2208CB can support up to ±6KV ESD contact per UTP port to minimize the burn down risk where the electronic static discharge is usually found. It is the best to be used in municipal, city surveillance, automation, transportation, mining, heavy Industrial factory where needs PoE functionality under harsh environment. The -E model can be used in extreme environments with an operating temperature range of -40°C to 75°C.

FEATURES & BENEFITS

- **Pro-Ring IIse for self-recovery scheme in less than 20ms in Ring for single ring and Pro-ringIIm for coupling ring protection**
- **Embedded 8-port PoE plus to feed power up to 30W@54V.**
- **PoE management including PoE detection, delay and scheduling for PD(power devices)**
- **PoE voltage boost from 12V to 48V (12V model)**
- **SFP slot supports 100/1000 Dual Mode with DDM*** for SFP diagnostic and monitoring**
- **Back-plane(switch fabric): 5.6Gbps**
- **1Mbits Packet Buffer / 8K MAC address table**
- **Support switching full wire speed**
- **IP30 metal housing with DIN rail and Wall-mount** design**
- **Dual Power Design for +DV power input**
- **Provides EFT protection ±2000 VDC for power line**
- **Supports ±6000 VDC ESD protection**
- **Support CPU load monitoring every 1,5,15 minutes and Web Ping to check if the connected device is alive**
- **IEEE 802.1d STP, IEEE 802.1w RSTP**
- **IGMP with Snooping / v1,v2,v3, Query mode for Multi Media Application**
- **IGMP source only for auto query chosen in surveillance application**
- **Manual static multicast route for non-IGMP application**
- **Port Based VLAN, 802.1Q Tag VLAN**
- **Port Trunk with LACP**

- **Supports IEEE 802.1ab LLDP**
- **Supports IEEE 802.1p CoS, 4 priority queues per port**
- **Port base, Tag Base and Type of Service Priority**
- **Supports Ingress Packet Filter and Egress Rate Limit**
- **Supports Broadcast/Multicast Packet Filter Control**
- **Port Mirror: Monitor traffic in switched networks**
  - *TX, RX, Both of TX and RX Packet*
- **System Log Server/Client**
- **SMTP e-mail Alert up to 6 emails**
- **Security**
  - *Port Security: MAC address entries/Filter*
  - *IP Source Guard: IP address security management to prevent unauthorized intruder*
  - *Login Security: IEEE802.1X/RADIUS*
- **SNMP Trap**
  - *Device cold start, Power status, Authentication failure, Port Link up/Link down*
  - *PoE event*
  - *Environmental Monitoring***
- **Relay Alarm Output System Events**
- **TFTP Firmware Update**
- **Factory reset bottom can restore all setting back to factory default**
- **Optional environmental graphical monitoring for ambient temperature inside case, system input voltage, current, power consumption and PoE load as well as event alerting**

DIMENSIONS (unit=mm)

SPECIFICATION

Hardware Specification

IEEE Standards	IEEE802.3 10Base-T Ethernet
	IEEE802.3u 100Base-TX
	IEEE802.3ab 1000Base-T
	IEEE802.3z Gigabit fiber
	IEEE802.3x Flow Control and Back Pressure
	IEEE802.3ad Port trunk with LACP
	IEEE802.3af /at Power over Ethernet
	IEEE802.1d Spanning Tree
	IEEE802.1w Rapid Spanning Tree
	IEEE802.1s Multiple Spanning Tree
	IEEE802.1p Class of Service
	IEEE802.1Q VLAN Tag
	IEEE802.1x User Authentication (Radius)
	IEEE802.1ab LLDP
Switch Architecture	Back-plane (Switching Fabric): 5.6Gbps, support full wire speed
Transfer Rate	14,880pps for Ethernet port
	148,800pps for Fast Ethernet port
	1,488,000pps for Gigabit Ethernet / Gigabit Fiber port
Packet Buffer	1Mbits
MAC Address	8K MAC address table
Flash ROM	4Mbytes
Connectors	10/100TX: 8 x ports RJ-45 with Auto MDI/MDI-X function
	10/100/1000T/SFP Combo port: 2 x RJ-45 + 2 x 100/1000 SFP socket with DDM***
	RS-232 connector: RJ-45 type
Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m)
	100Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m)
	1000Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m)
Optical Fiber	**1.25Gbps:**
	Multi mode: 0 to 550 m, 850 nm (50/125 μm); 0 to 2 km, 1310 nm (50/125 μm)
	Single mode: 0 to 10 km/ 30 km/ 40 km, 1310 nm (9/125 μm); 0 to 50 km/ 60 km/ 80km/ 120 km, 1550 nm (9/125 μm)
	125Mbps:
	Multi mode: 0 to 2 km/ 5 km, 1310 nm (62.5/125 μm)
	Single mode: 0 to 30 km, 1310 nm (62.5/125 μm)
	WDM 1.25Gbps:
	Single mode: 0 to 10 km/ 20 km/ 40 km/ 60 km, 1310 nm (9/125 μm); 0 to 80 km, 1490 nm (9/125 μm); 0 to 10 km/ 20 km/ 40 km/ 60 km/ 80 km, 1550 nm (9/125 μm)
	WDM 125Mbps:
	Single mode: 0 to 20 km/ 40 km/ 60 km/ 80 km, 1310 nm (9/125 μm); 0 to 20 km/ 40 km/ 60 km/ 80 km, 1550 nm (9/125 μm)
Protocol	CSMA/CD
PoE pin assignment	RJ-45 port # 1~ # 8 support IEEE 802.3at/af End-point. Per port provides up to 30W
	Positive (VCC+): RJ-45 pin 1,2.
	Negative (VCC-): RJ-45 pin 3,6.

PoE input voltage & Power feed voltage	Input V	Active Mode A /Output V	
		53~56V(at)	54V@30W
	9.5V~56V	48V/54V@15W/ 30W(IPES-2208 CB-12V)	
	45~56V(af)	48V@15W	

LED	**Per unit:** Power (Green), Power 1 (Green), Power 2 (Green), Fault (Yellow), Master (Green)
	8 port 10/100: Link/Activity (Green), Full duplex/Collision (Yellow)
	Combo port: SFP LNK/ACT(Green), 1000T: LNK/ACT(Green), 1000M(Yellow)
	R.M. indicator (Green)
Power Supply	PoE input 48V/54VDC; 9.5V~56V(IPES-2208CB-12V); Dual power connective removable terminal block for master and slave power
Overload current protection	Present
Operating Humidity	5% ~ 95% (Non-condensing)
Operating Temperature	Standard: -20°C~60°C / -4°F~140°F
	Wide Operating Temperature for E models: -40°C~75°C / -40°F~167°F
Storage Temperature	-40°C~85°C / -40°F~185°F
Case Dimension	IP-30, 74(W) x 114.3 (D) x 152 (H) mm
Weight	850 g
Fan Number	0
Installation	DIN Rail and Wall Mount** Design
EMI & EMS	FCC Class A, CE EN61000-4-2, CE EN61000-4-3, CE EN61000-4-4, CE EN61000-4-5, CE EN61000-4-6, CE EN61000-4-8, CE EN61000-6-2, CE EN55032 Class A, CE EN55024
Safety	UL 60950
Stability Testing	IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-64 (Vibration)
Power Consumption	9.86 W (no PoE load) for Ethernet data at full load
PoE Power Budget	240W @48VDC; 120W @24VDC; 90W @12VDC (54V input is recommended for PTZ or heater applications)
MTBF	865,786 hours
Warranty	5 years

Software Specification

Management	SNMP v1 v2c, v3/ Web/Telnet/CLI
SNMP MIB	RFC 1215 Traps MIB, RFC 1213 MIBIIS, RFC 1157 SNMP MIB, RFC 1493 Bridge MIB, RFC 2674 VLAN MIB, RFC 1643 EtherLike, RFC 1757 Rmon, RSTP MIB, Private MIB, PoE MIB, LLDP MIB
System Information	Show detail info incl.Name, Version,CPU load monitoring for every 1,5,15 minutes
	Display network parameters incl. Mac, IP, Gateway, Netmask
	Allow adding port description
Pro-Ring IIse/Pro-ring IIm	Pro-Ring IIse fos Single-Ring and Pro-ring IIm for couple ring supporting network recovery in less than 20ms up to 50 switches in a ring.
	20ms recovery is on fiber port.
VLAN	Port Based VLAN
	IEEE 802.1Q Tag VLAN (256 entries)/ VLAN ID (Up to 4K, VLAN ID can be assigned from 1 to 4096.)
Ping detection	Support Ping command through Web to detect the connected devices
Port Trunk with LACP	LACP Port Trunk: 4 Trunk groups/Maximum 4 trunk members
LLDP	Supports LLDP to allow switch to advise its

	identification and capability on the LAN	& Storm Control	The egress rate control supports all of packet type and the limit rates are 100K~102400Kbps(10/100), 100K~256000Kbps(1000)
Spanning Tree	Supports IEEE802.1d Spanning Tree, IEEE802.1w Rapid Spanning Tree		
PoE Management	■ PoE Detection to check if PD is hang up then restart the PD ■ PoE Delay to send power when switch is completely boot up ■ PoE Scheduling to On/OFF PD upon routine time table		Ingress filter packet type combination rules are Broadcast/Multicast/Unknown Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all of packet. The packet filter rate can be set from 100K~102400Kbps(10/100), 100K~256000Kbps(1000)
		Relay Alarm	Provides one relay output for port breakdown, power fail alarm. Alarm Relay current carry ability: 1A @ DC24V
Environmental Monitoring **	Graphical display of Ambient temperature inside case, Input voltage, Input current, Power consumption, PoE load with capability of alert setting		
		SNMP Trap	1. Cold start 2. Link down 3. Link up 4. Authorization fail 5. PoE port event 6. Environmental abnormal event**
Quality of Service	The quality of service determined by port, Tag and IPv4 Type of service		
Class of Service	Supports IEEE802.1p class of service, per port provides 4 priority queues		
Port Security	Supports 100 entries of MAC address for static MAC and another 100 for MAC filter		
		DHCP	Provides DHCP Client/ DHCP Server/ Port and IP Binding
Port Mirror	Supports 3 mirroring types: "RX, TX and Both packet"		
IGMP	Supports IGMP snooping v1,v2,v3 IGMP Source only for query auto chosen Static Multicast Route for non-IGMP multicast 256 multicast groups and IGMP query	DNS	Provide DNS client feature and support Primary and Secondary DNS server.
		Firmware Update	Supports TFTP and Web firmware update, TFTP backup and restore.
IP Source Guard	Supports 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder.	Factory reset	Factory reset bottom can restore all setting back to factory default
		ifAlias	Each port allows importing 128bits of alphabetic string of word on SNMP and CLI interface
Login Security	Supports IEEE802.1X Authentication/RADIUS/Telnet		
Flow Control	Supports Flow Control for Full-duplex and Back Pressure for Half-duplex		
System Log	Supports System log record and remote system log server		
SMTP	Supports SMTP Server and 6 e-mail accounts for receiving event alert		
SNTP	Supports SNTP to synchronize system clock to Internet		
Bandwidth Control	Support ingress packet filter and egress packet limit		

*Future Release

**Optional

***Optional DDM SFP required

ORDERING INFOMATION

- **IPES-2208CB-48V………….……...P/N: 8350-784**
  8 10/100TX + 2 10/100/1000T/Dual Speed SFP Combo w/8 PoE Injectors 802.3at/af Industrial Managed Switch; -20°C to 60°C
- **IPES-2208CB-48V-E…....……........P/N: 8350-785**
  8 10/100TX + 2 10/100/1000T/Dual Speed SFP Combo w/8 PoE Injectors 802.3at/af Industrial Managed Switch; -40°C to 75°C
- **IPES-2208CB-12V………….……....P/N: 8350-786**
  8 10/100TX + 2 10/100/1000T/Dual Speed SFP Combo w/8 PoE Injectors 802.3at/af Industrial Switch w/9.5V~56V PoE input; -20°C to 60°C
- **IPES-2208CB-12V-E…….……......P/N: 8350-787**
  8 10/100TX + 2 10/100/1000T/Dual Speed SFP Combo w/8 PoE Injectors 802.3at/af w/9.5V~56V PoE input Industrial Switch; -40°C to 75°C
- **IPES-2208CB-48V-M………….…....P/N: 8350-7841**
  8 10/100TX + 2 10/100/1000T/Dual Speed SFP Combo w/8 PoE Injectors 802.3at/af & Environmental monitoring Industrial Switch; -20°C to 60°C
- **IPES-2208CB-48V-M-E....…….........P/N: 8350-7851**
  8 10/100TX + 2 10/100/1000T/Dual Speed SFP Combo w/8 PoE Injectors 802.3at/af & Environmental monitoring Industrial Managed Switch; -40°C to 75°C
- **IPES-2208CB-12V-M……...…….......P/N: 8350-7861**
  8 10/100TX + 2 10/100/1000T/Dual Speed SFP Combo w/8 PoE Injectors 802.3at/af & Environmental monitoring Industrial Managed Switch w/9.5V~56V PoE input ; -20°C to 60°C
- **IPES-2208CB-12V-M-E………....…...P/N: 8350-7871**
  8 10/100TX + 2 10/100/1000T/Dual Speed SFP Combo w/8 PoE Injectors 802.3at/af & Environmental monitoring industrial Managed Switch w/9.5V~56V PoE input; -40°C to 75°C

Datasheet Version 2.62

OPTIONAL ACCESSORIES

DIN Rail Power

- **NDR-480 Series**   480W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)

- **NDR-240 Series**   240W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)

- **NDR-120 Series**   120W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C; For 115VAC, please refer to derating curve on NDR-120 Series datasheet)

- **NDR-75 Series**   75W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ; Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C; For 115VAC, please refer to derating curve on NDR-120 Series datasheet)

Mini GBIC (SFP)

- **8330-162X**   MINI GBIC 1000SX (LC/MM/0.5KM) Transceiver
- **8330-163X**   MINI GBIC 1000SX2 (LC/MM/2KM) Transceiver
- **8330-165X**   MINI GBIC 1000LX (LC/SM/10KM) Transceiver
- **8340-0591**   MINI GBIC 1000LHX (LC/SM/40KM) Transceiver
- **8330-166**   MINI GBIC 1000XD (LC/SM/50KM) Transceiver
- **8330-169**   MINI GBIC 1000XD (LC/SM/60KM) Transceiver
- **8330-167**   MINI GBIC 1000ZX (LC/SM/80KM) Transceiver
- **8330-170**   MINI GBIC 1000EZX (LC/SM/120KM) Transceiver
- **8330-168**   MINI GBIC 10/100/1000T (100m) Transceiver
- **8330-060**   MINI GBIC 100Base (LC/MM/2KM) Transceiver
- **8330-065**   MINI GBIC 100Base (LC/MM/5KM) Transceiver
- **8330-061**   MINI GBIC 100Base (LC/SM/30KM) Transceiver
- **8330-197**   1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1310)
- **8330-198**   1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1550)
- **8330-195**   1.25Gbps BiDi SFP 2KM Transceiver (WDM 1310)
- **8330-196**   1.25Gbps BiDi SFP 2KM Transceiver (WDM 1550)
- **8330-188**   1.25Gbps BiDi SFP 10KM Transceiver (WDM 1310)
- **8330-189**   1.25Gbps BiDi SFP 10KM Transceiver (WDM 1550)
- **8330-186**   1.25Gbps BiDi SFP 20KM Transceiver (WDM 1310)

- **8330-187**   1.25Gbps BiDi SFP 20KM Transceiver (WDM 1550)
- **8330-180**   1.25Gbps BiDi SFP 40KM Transceiver (WDM 1310)
- **8330-182**   1.25Gbps BiDi SFP 40KM Transceiver (WDM 1550)
- **8330-181**   1.25Gbps BiDi SFP 60KM Transceiver (WDM 1310)
- **8330-183**   1.25Gbps BiDi SFP 60KM Transceiver (WDM 1550)
- **8330-184**   1.25Gbps BiDi SFP 80KM Transceiver (WDM 1490)
- **8330-185**   1.25Gbps BiDi SFP 80KM Transceiver (WDM 1550)
- **8330-071**   125Mbps BiDi SFP 2KM (WDM 1310) Transceiver
- **8330-072**   125Mbps BiDi SFP 2KM (WDM 1550) Transceiver
- **8330-069**   125Mbps BiDi SFP 20KM (WDM 1310) Transceiver
- **8330-068**   125Mbps BiDi SFP 20KM (WDM 1550) Transceiver
- **8330-080**   125Mbps BiDi SFP 40KM (WDM 1310) Transceiver
- **8330-082**   125Mbps BiDi SFP 40KM (WDM 1550) Transceiver
- **8330-081**   125Mbps BiDi SFP 60KM (WDM 1310) Transceiver
- **8330-083**   125Mbps BiDi SFP 60KM (WDM 1550) Transceiver
- **8330-084**   125Mbps BiDi SFP 80KM (WDM 1310) Transceiver
- **8330-085**   125Mbps BiDi SFP 80KM (WDM 1550) Transceiver
- **8330-191**   Dual Speed SFP 100M/1000M-LX 10KM Transceiver

All SFP# ended with D are with DDM function