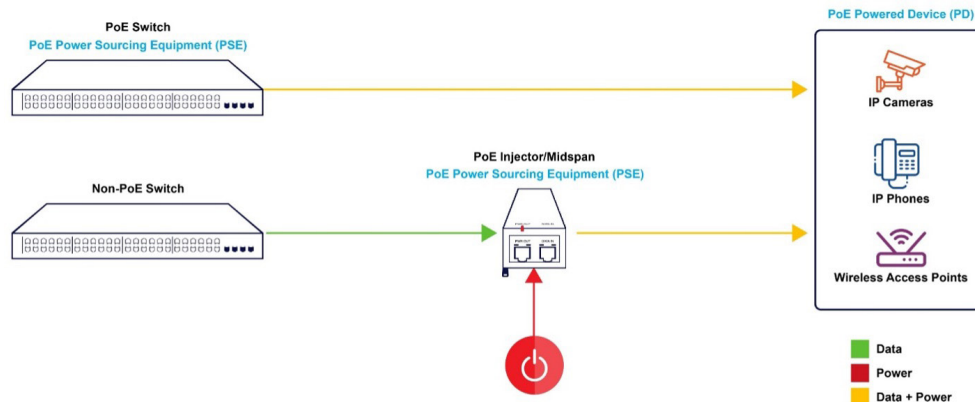# Power over Ethernet (PoE) Systems

microchip.com

PoE PSE ICs

PoE PD ICs

PoE Systems

## PoE Simplified

PoE technology is becoming the most used and most efficient power source for IT networks. PoE offers an international network power standard that eliminates the need to depend on the AC infrastructure, and its variations, to power wired network devices. It enables quick and easy installation of powered devices such as IP telephones, WLAN access points, security cameras and other IP-based terminals. PoE allows powered devices to receive both power and data on a single Ethernet cable and over an existing Ethernet infrastructure without affecting existing cabling or interfering with concurrent network operation.



PoE Switch
PoE Power Sourcing Equipment (PSE)

Non-PoE Switch

PoE Injector/Midspan
PoE Power Sourcing Equipment (PSE)

PoE Powered Device (PD)

IP Cameras

IP Phones

Wireless Access Points

Data
Power
Data + Power

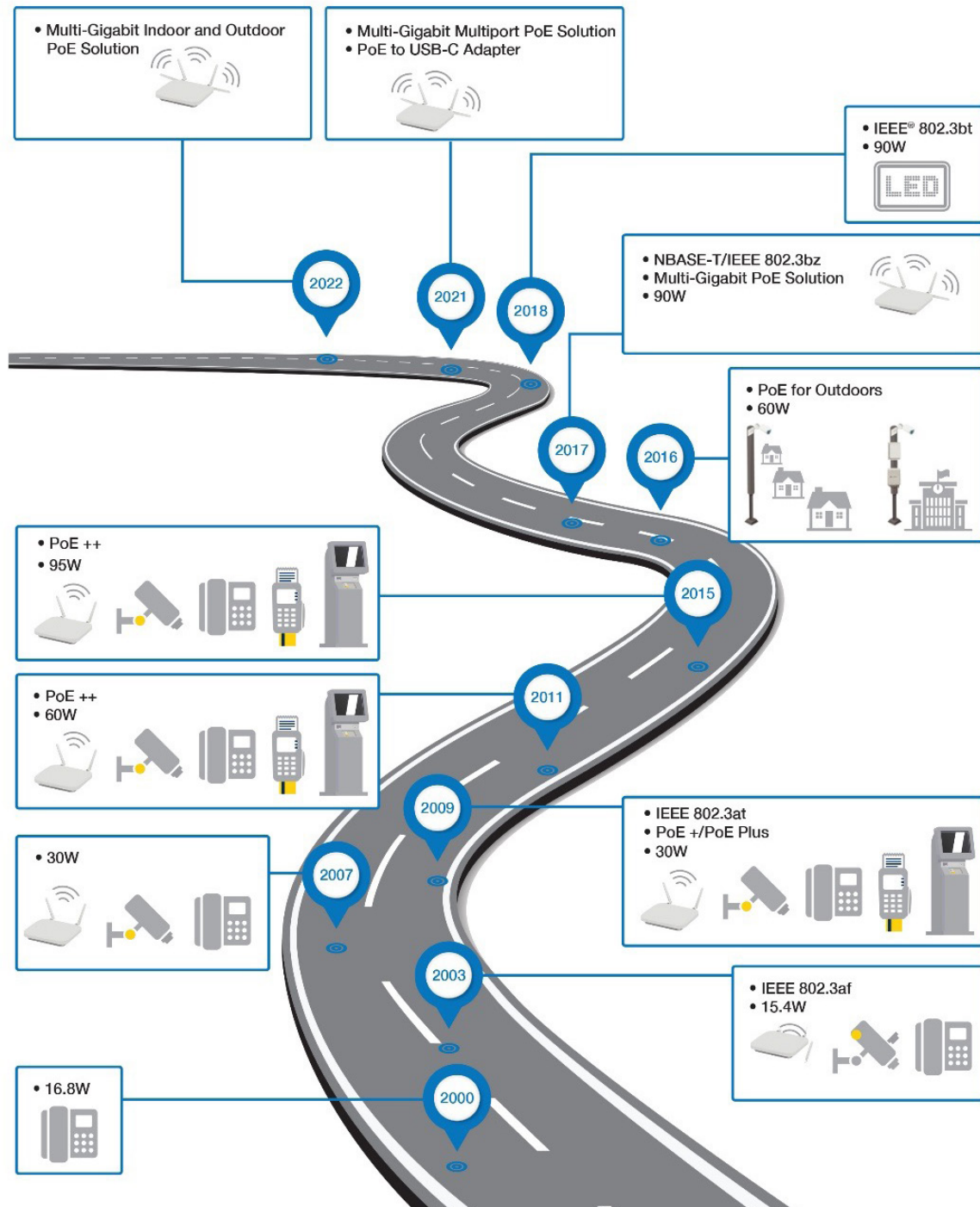## Why Choose Microchip for Your PoE Requirements?

We are a market leader in PoE. We have contributed to the IEEE 802.3af/at/bt standards for over 25 years. As pioneers in PoE technology, we developed the first PoE ICs and midspans, initiated IC integration for simple PoE designs and were the first to introduce outdoor and multi-Gigabit PoE midspans. As an innovator and thought leader in this market, we are the only supplier of PoE Powered Device (PD) ICs, PoE Power Sourcing Equipment (PSE) ICs, PoE systems (injectors/ midspans and switches) and test equipment.

Our comprehensive end-to-end product portfolio enables seamless deployment of PoE technology to Ethernet-based devices in indoor, outdoor and industrial environments. Our stand-alone, fully tested, qualified and certified PoE systems are available off the shelf and ready to install, speeding your time to market in the most demanding environments.

For a complete list of our products, please take a look at our Microchip PoE Quick Reference Guide.

## Pioneers of PoE Technology

We are innovators and thought leaders in PoE technology, as well as a major contributor to the IEEE® 802.3af, 802.3at and 802.3bt standards. We continue to innovate in PoE solutions with the aim of supporting newer applications that demand higher power, greater speed and challenging indoor and outdoor specifications, while reducing operating expenses and offering faster deployment.



- Multi-Gigabit Indoor and Outdoor PoE Solution

- Multi-Gigabit Multiport PoE Solution
- PoE to USB-C Adapter

- IEEE® 802.3bt
- 90W

- NBASE-T/IEEE 802.3bz
- Multi-Gigabit PoE Solution
- 90W

2022

2021

2018

- PoE for Outdoors
- 60W

2017

2016

- PoE ++
- 95W

2015

- PoE ++
- 60W

2011

2009

- IEEE 802.3at
- PoE +/PoE Plus
- 30W

- 30W

2007

2003

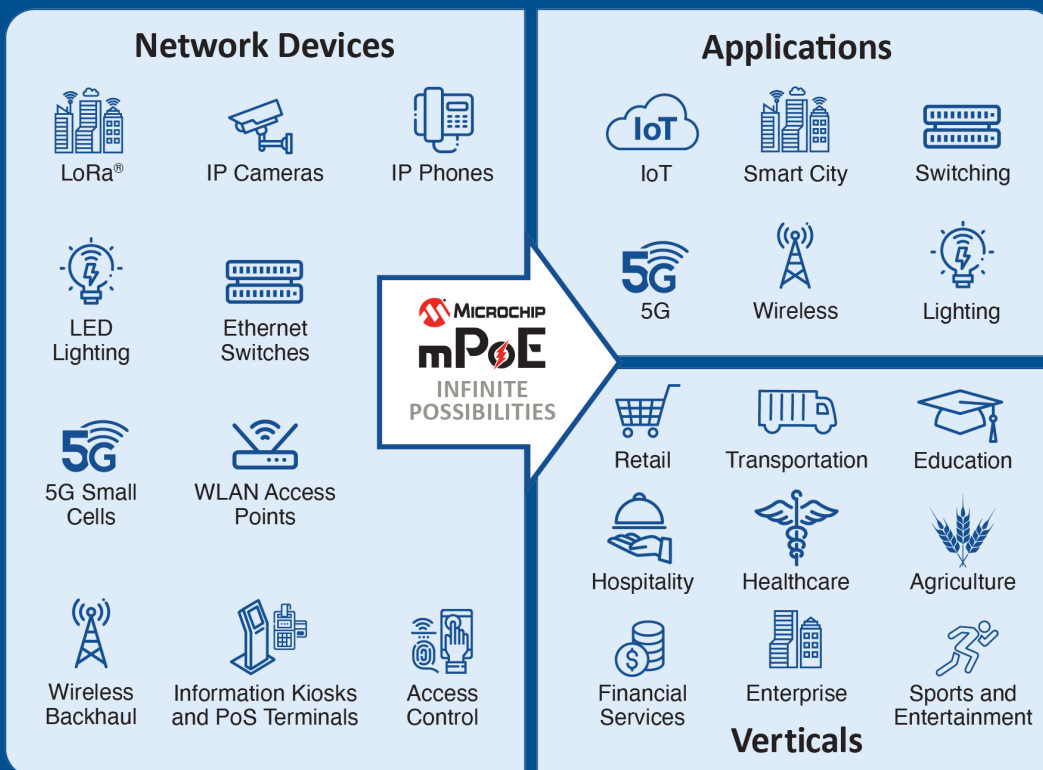- IEEE 802.3af
- 15.4W

- 16.8W

2000

## Microchip multi-Power over Ethernet (mPoE)

Microchip multi-Power over Ethernet (mPoE) technology allows you to power any wired network device seamlessly and efficiently, making it an excellent solution for Ethernet-based applications. This technology leverages an algorithm to enable backward compatibility with pre-standard devices while supporting all IEEE PoE standards. Our PoE injectors/midspans and PoE switches implement this technology to allow quick and simple deployment of Microchip mPoE in any network without changing existing switches or cabling.



### Network Devices

| | | |
|---|---|---|
| LoRa® | IP Cameras | IP Phones |
| LED Lighting | Ethernet Switches | |
| 5G Small Cells | WLAN Access Points | |
| Wireless Backhaul | Information Kiosks and PoS Terminals | Access Control |

**MICROCHIP mPøE**
INFINITE POSSIBILITIES

### Applications

| | | |
|---|---|---|
| IoT | Smart City | Switching |
| 5G | Wireless | Lighting |

| | | |
|---|---|---|
| Retail | Transportation | Education |
| Hospitality | Healthcare | Agriculture |
| Financial Services | Enterprise | Sports and Entertainment |

### Verticals

## PoE Systems Product Portfolio

We offer a complete product portfolio, from single ports to 24 ports, 15.4W to 90W, 1 Gbps to 10 Gbps, indoor, outdoor and industrial-rated PoE systems. Microchip mPoE solutions have significant differentiators and features and are ideal to power traditional network devices such as IP phones, Wireless Access Points (WAPs), IP surveillance cameras, 5G small cells, LoRa® gateways, LED luminaires, access control terminals and other Internet of Things (IoT) devices.

Microchip PoE midspans/injectors and switches are:
- IEEE standard compliant and backward compatible
- Supporting 1G data rate, with multi-gigabit midspans supporting up to 10G
- Compliant with necessary regulatory and safety standards
- Available with power cord options for different geographies
- Built with compact design
- Plug and play
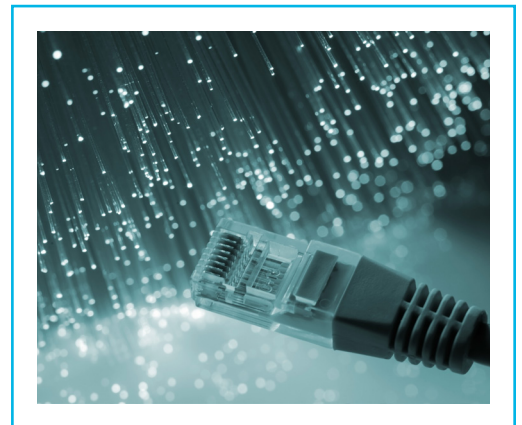
# Single Port PoE Midspans/Injectors

## Indoor

- 15.4W IEEE 802.3af
- 30W IEEE 802.3at with optional surge protection
- 60W IEEE 802.3bt Media Converter with optional SFP uplink
- 90W IEEE 802.3bt

## Outdoor

- 30W/60W/90W IEEE 802.3at/bt
- IP66/67 outdoor rated
- Metal casing with integrated surge protection
- Extended temperature range
- Corrosion resistant

## Industrial

- 30W/60W IEEE 802.3at/bt
- IP30 industrial rated
- Shock, freefall and vibration resistant
- Extended temperature range

## Multi-gigabit

- Indoor and outdoor 30W/60W IEEE 802.3at/bt
- Data rates up to 10 Gbps

## Multiport PoE Midspans/Injectors



- 15.4W/30W IEEE 802.3af/at 4 ports
- 30W/60W/90W at/bt 6/12/24 ports
- 6/12/24 ports multi-gigabit options
- PowerView Pro SNMPv3 and web-based management

## Infrastructure Management at Your Fingertips

Our PoE systems offer PowerView Pro SNMP v3 cloud-based power management

### Key Features

- Available on multi-port units (65XX, 90XX, 95XX)
- Supports SNMP v3 IPv4 and IPv6
- Supports security features: HTTPS, SSH, SNMP v3
- Offers integration with RADIUS server
- Offers integration with SNMP UPS to prioritize ports in case of power failure
- Offers port scheduling (turns on/off, saves energy and protects from intrusion)

### Key Benefits

- Delivers up to 68% savings per device through scheduled power shutdown
- Offers 24/7 business uptime
- Improves reliability by actively monitoring the UPS for centralized power back up
- Manages power flow to critical and non-critical devices
- Enables convenient remote management
- Accesses and manages network devices in real time

## PoE Switches

### 4 Ports Outdoor PoE Switch



- 1 SFP uplink, 4 PoE outputs
- 60W per port, 150W total power budget
- Extended temperature range
- Integrated surge protection
- VLAN tagging: access/trunk
- Authentication, authorization, and accounting: RADIUS and TACACS
- PowerView Pro SNMPv3 and web-based management
- Perfect for security and smart city applications

### 8 Ports Digital Ceiling PoE Switch



- 8 PoE ports with 2 Copper and 1 SFP uplink
- 90W per port, 480W total power budget
- Fan-less design for enhanced reliability and silent operation
- High power efficiency with <10W power consumption in standby
- PowerView Pro SNMPv3 and web-based management
- Perfect for LED lighting and smart building applications

## PoE Accessories

### PoE to USB-C® Adapters



- PoE to USB-C Power and Data Adapter up to 30W/60W
- PoE to USB-C Power Adapter up to 30W
- Extends the USB-C range to 328 ft/100m
- Enables powering of small PCs/Next Unit of Computing (NUC), information kiosks, smart monitors, tablets, laptops, cameras, and other USB-C devices

### PoE Surge Protectors
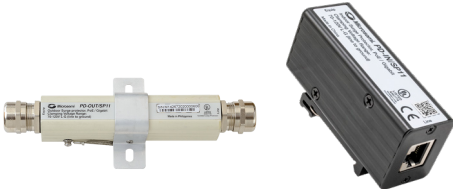


- Indoor surge protector supports up to 95W
- Outdoor surge protector protects up to 10 KV Surge, IP66 rated

### PoE Extender



- Extend Ethernet network range up to 200m
- Can be cascaded to reach up to 500m
- 30W PoE output
- IEEE 802.3at compliant

### PoE Splitters



- For contemporary devices unable to accept power via Ethernet 1 Port
- 54W/10W PoE output

### PoE Tester



- Test RJ-45 outlet for PoE existence
- Indicates type of power source
- Detects IEEE 802.3af/at/bt and legacy PoE

## PoE Systems

| Product | Product Type | Operating Environment | Power Per Port | Number of Ports | Data Rate | Managed | Input Power | Rack Mountable | Warranty |
|---|---|---|---|---|---|---|---|---|---|
| PD-3501G/AC-XX | Midspan | Indoor | 15.4W | 1 | 1 Gbps | No | AC | No | 1 |
| PD-3504G/AC-XX | Midspan | Indoor | 15.4W | 4 | 1 Gbps | No | AC | No | 1 |
| PD-6512G/AC/M-XX | Midspan | Indoor | 15.4W | 12 | 1 Gbps | Yes | AC | Yes | 3 |
| PD-6524G/AC/M/F-XX | Midspan | Indoor | 15.4W | 24 | 1 Gbps | Yes | AC | Yes | 3 |
| PD-9001-10GC/AC-XX | Midspan | Indoor | 30W | 1 | 10 Gbps | No | AC | No | 1 |
| PD-9001GR/AT/AC-XX | Midspan | Indoor | 30W | 1 | 1 Gbps | No | AC | No | 1 |
| PD-9001GR/SP/AC-XX | Midspan | Indoor | 30W | 1 | 1 Gbps | No | AC | No | 1 |
| PD-9001GI/DC | Midspan | Industrial | 30W | 1 | 1 Gbps | No | DC | No | 3 |
| PD-9001GO-ET/AC | Midspan | Outdoor | 30W | 1 | 1 Gbps | No | AC | No | 3 |
| PD-9004G/AC-XX | Midspan | Indoor | 30W | 4 | 1 Gbps | No | AC | No | 1 |
| PD-9006G/ACDC/M-XX | Midspan | Indoor | 30W | 6 | 1 Gbps | Yes | AC and DC | Yes | 3 |
| PD-9012G/ACDC/M-XX | Midspan | Indoor | 30W | 12 | 1 Gbps | Yes | AC and DC | Yes | 3 |
| PD-9024G/ACDC/M-XX | Midspan | Indoor | 30W | 24 | 1 Gbps | Yes | AC and DC | Yes | 3 |
| PD-9501-10GC/AC-XX | Midspan | Indoor | 60W | 1 | 10 Gbps | No | AC | No | 1 |
| PD-9501G-SFP/AC-XX | Midspan | Indoor | 60W | 1 | 1 Gbps | No | AC | No | 1 |
| PD-9501GC/AC-XX | Midspan | Indoor | 60W | 1 | 1 Gbps | No | AC | No | 1 |
| PD-9501GR/SP | Midspan | Indoor | 60W | 1 | 1 Gbps | No | AC | No | 1 |
| PD-9501GCI/DC | Midspan | Industrial | 60W | 1 | 1 Gbps | No | DC | No | 1 |
| PD-9501GI/DCF | Midspan | Industrial | 60W | 1 | 1 Gbps | No | DC | No | 3 |
| PD-9501GCO/AC | Midspan | Outdoor | 60W | 1 | 1 Gbps | No | AC | No | 3 |
| PD-9501GO/12-24VDC | Midspan | Outdoor | 60W | 1 | 1 Gbps | No | DC | No | 3 |
| PD-9501GO/48VDC | Midspan | Outdoor | 60W | 1 | 1 Gbps | No | DC | No | 3 |
| PD-9506GC/AC-XX | Midspan | Indoor | 60W | 6 | 1 Gbps | Yes | AC | Yes | 3 |
| PD-9506-10GC/AC-YY | Midspan | Indoor | 60W | 6 | 10 Gbps | Yes | AC | Yes | 3 |
| PD-9512GC/AC-XX | Midspan | Indoor | 60W | 12 | 1 Gbps | Yes | AC and DC | Yes | 3 |
| PD-9512-10GC/AC-YY | Midspan | Indoor | 60W | 6 | 10 Gbps | Yes | AC | Yes | 3 |
| PD-9524GC/AC-XX | Midspan | Indoor | 60W | 24 | 1 Gbps | Yes | AC and DC | Yes | 3 |
| PD-9524-10GC/AC-YY | Midspan | Indoor | 60W | 24 | 10 Gbps | Yes | AC | Yes | 3 |
| PD-9601GC/AC-XX | Midspan | Indoor | 90W | 1 | 1 Gbps | No | AC | No | 1 |
| PD-9601GO/AC | Midspan | Outdoor | 90W | 1 | 1 Gbps | No | AC | No | 3 |
| PD-9606GC/AC-XX | Midspan | Indoor | 90W | 6 | 1 Gbps | Yes | AC | Yes | 3 |
| PD-9612GC/AC-XX | Midspan | Indoor | 90W | 12 | 1 Gbps | Yes | AC and DC | Yes | 3 |
| PD-9624GC/AC-XX | Midspan | Indoor | 90W | 24 | 1 Gbps | Yes | AC and DC | Yes | 3 |
| PDS-104GO/AC/M-CC | Switch | Outdoor | 60W | 4 | 1 Gbps | Yes | AC | No | 3 |
| PDS-408G/AC-XX | Switch | Indoor | 90W | 8+3 | 1 Gbps | Yes | AC | Yes | 3 |
| PD-USB-DP60 | PoE to USB-C Power and Data Adapter | Indoor | 60W | 1 | 1 Gbps | No | PoE | No | 1 |
| PD-POE-EXTENDER | PoE Extender | Indoor | 30W | 1 | 1 Gbps | No | DC | No | 1 |
| PD-AS-951/12-24 | Splitter | Indoor | 54W | 1 | 1 Gbps | No | PoE | No | 1 |
| PD-IN/SP11 | Surge Protector | Indoor | NA | 1 | 1 Gbps | No | DC | No | 1 |
| PD-OUT/SP11 | Surge Protector | Outdoor | NA | 1 | 1 Gbps | No | DC | No | 3 |
| PD-AFATBT-TESTER | PoE AF/AT/BT Tester | Indoor | NA | NA | NA | NA | PoE | NA | 1 |
| PD-OUT/MBK/ET | Outdoor Mounting Bracket | Indoor/Outdoor | NA | NA | NA | NA | NA | NA | 1 |
| PD-OUT/MBK/S | Outdoor Mounting Bracket | Indoor/Outdoor | NA | NA | NA | NA | NA | NA | 1 |

XX indicates power cord code: US (North America), EU (Europe), UK (United Kingdom), JP (Japan), AU (Australia), BR (Brazil)
YY indicates power cord code: US (North America), EK (Europe and UK), JP (Japan), AU (Australia), BR (Brazil)

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