Cisco Catalyst Micro Switches

Contents

The Cisco® Catalyst® Micro Switches are Cisco's purpose-built product family for FTTx deployments, allowing customers to eliminate IDF, save precious real estate, conserve energy, and cut cabling costs.

Product overview

Fiber to the desk, office, etc. (FTTx) is not a new concept. In this deployment scenario, the improved range of fiber optics over copper cables allows access switches to be deployed right next to the end devices, with uplinks connected directly to the main distribution frame, eliminating the need for an intermediate distribution frame on each floor. However, as access switches get closer to the end users, the requirements for operating noise and product footprint get stricter. Enter the Cisco Catalyst Micro Switches, a product family of small, fanless switches purpose-built for FTTx deployments. These switches offer flexible mounting options and open up a variety of network design and connectivity opportunities.

Figure 1.
Cisco Catalyst Micro Switch Series Switches

Highlights

- Four Gigabit Ethernet ports and two Gigabit Ethernet copper or fiber uplinks, with line-rate forwarding performance
- Power over Ethernet Plus (PoE+) support, with up to 60W PoE power budget in wall-jack switches, and up to 120W for desktop versions
- Fanless design for silent operation and enhanced reliability
- Enhanced Limited Lifetime Warranty (E-LLW)

Features and benefits

Table 1 lists many of the features and benefits of the Cisco Catalyst Micro Switches.

Table 1. Features and benefits

Feature	Benefits
Switch reliability and scale	
Small form factor, fanless design, silent operation	Delivers up to 30W of power per port, ideal for deployment in indoor open workspaces and other areas that require quiet operations.
Perpetual and Fast PoE	**Perpetual PoE ensures** uninterrupted powering of endpoints during switch upgrades, reboots, and configuration changes. **Fast PoE** ensures powering of PoE endpoints within **5 seconds** of power restoration, in case of power losses.
System life	These switches come with the **industry's highest level of reliability** and 10 years of system life.
Prevalidated architecture	Cisco **supports tested, validated, and integrated solutions,** which can reduce deployment risk and speed up the time to value. Proven robust technology, with existing network and end-to-end security, provide a complete digital building solution.
Installation simplicity	
Flexible mounting options	Supports flexible deployment and mounting options, including **wall mount, C-rail duct mount, desktop, and bottom mount, based on the SKU.**
Flexible powering options	The switch can be powered through an AC/DC adapter with IEC plugs for 100-240VAC inputs. The desktop version has an uplink Powered Device (PD) port that, when connected with an external power supply, will power up the unit.
Single Pane of Management - Management/Automation Options	
Configuration at scale	The switches are Cisco DNA ready and can be used as part of the Cisco Digital network Architecture (Cisco DNAC) solution for automated switch deployments.
Automation via Cisco PnP	They also support Cisco Network Plug and Play (PnP), a secure, scalable solution that accelerates network device deployments **by automating the installation and configuration** of Cisco IOS® Software, enhancing productivity and user experience and reducing costs and downtime.
Network management	Cisco Prime® Infrastructure provides comprehensive network lifecycle management with an extensive library of features that automate initial and day-to-day management. Cisco Prime integrates hardware and software platform expertise and operational experience into a powerful set of workflow-driven configuration, monitoring, troubleshooting, reporting, and administrative tools.
Cisco SDA Extended Node	SDA Extended Node provides Cisco DNA Center Automation and Assurance for Cisco Micro switches. It also extends Fabric Benefits to end points connected to the switches, allowing consistent segmentation and policy-based access. SDA Extended Node requires Cisco DNA-A license on the Micro switches, and a Fabric-Edge Capable switch at the upstream.

Feature	Benefits
Software and security	
Layer 2 features for operational simplicity	IPv6 host support. **Simple Network Management Protocol (SNMP)** v3 for secure configuration, control, and information retrieval through appropriate MIBs. **Link Aggregation Control Protocol (LACP)** for creating Ethernet channeling with devices that conform to IEEE 802.3ad. **Dynamic Host Configuration Protocol (DHCP)** auto-configuration of multiple switches through a boot server. **Cisco VLAN Trunking Protocol (VTP)**, which supports dynamic VLANs and dynamic trunk configuration across all switches. Embedded **Remote Monitoring (RMON)** software agent for enhanced traffic management, monitoring, and analysis; four RMON groups (history, statistics, alarms, and events) are supported. **Link Layer Discovery Protocol (LLDP)** and **LLDP Media Endpoint Discovery (LLDP-MED)** enhancements for easy identification of end devices.
Constrained Application Protocol (CoAP) support	The switches **functions as a CoAP Proxy. CoAP is** a lightweight protocol enabling sensors, HVAC, and security systems to interoperate for delivering advanced space analytics.
Security and threat defense	802.1X, MACAuth, TACACS+, and RADIUS authentication capabilities for secure onboarding of end devices. **Secure Boot** to make sure that only signed and authorized images can load on the switch. **Port-based access control lists (ACLs)** to let the switch automatically allow or block packets based on policies for source and destination IP addresses. Rules can be set up differently on a port-by-port basis. **Private VLAN (PVLAN) edge** protected port feature for restricting communication between end devices. **Network-as-a-sensor:** Along with the Cisco Catalyst 9000 Series as an upstream switch, this switch has Network-as-a-Sensor (NaaS) capabilities to provide broad and deep visibility into network traffic flow patterns and rich threat intelligence information that allows rapid identification of security threats. **Network-as-an-enforcer:** Along with the Cisco Catalyst 3850 Series as an upstream switch, device profiling and Network-as-an-Enforcer (NaaE) capabilities are enabled to dynamically enforce role-based security **to reduce the overall attack surface, contain attacks, and minimize the time needed to isolate threats** when detected using Cisco TrustSec® with Cisco Identity Services Engine (ISE).
Power management	
Switch hibernate and deep sleep mode	Switch sleep management can be initiated through Cisco EnergyWise®, as was traditionally done, or through CoAP. CoAP support in the Catalyst Micro Switches enables a sleep trigger. This support is provided for initiating sleep with the Real-Time Clock (RTC) configuration. The system can wake up based on a wake-on-clock and mode button.
IEEE 802.3az or Energy Efficient Ethernet (EEE)	Ports dynamically sense idle periods between traffic bursts and quickly switch the interfaces into a low-power idle mode, reducing power consumption.
System power efficiency	The switches also improve the industry standard on system **power efficiency. During the sleep condition, the system is reducing its power use by 65%, improving its energy efficiency.**

Feature	Benefits
Cisco Energy Manager	Integrated with the Cisco Energy Management suite for full energy control and visibility.
Power supply	Certified AC/DC adapter.

Product details

Switch models

The Cisco Catalyst Micro Switches are available in three models. Two of the models take power from a recommended AC/DC adapter and guarantee two PoE+ or four PoE ports. The third model can take power from the AC/DC adapter and uplink PD port and load four PoE+ ports along with two USB-C ports.

Table 2 compares the available switch models and lists the software package that ships by default with each model and how much PoE power is available for the downlink ports.

Table 2. Switch models and default software

Model	Access ports and uplinks	PoE, USB-C	Power source	Default software
CMICR-4PS	4x 1G, 2x 1G SFP	4x PoE+	DC	LAN Lite
CMICR-4PC	4 x 1G, 1x 1G copper, 1x 1G SFP	4x PoE+	DC	LAN Lite
CMICR-4PT	4x 1G, 1x 1G copper, 1x combo	4x PoE+, 2x USB-C	DC, 803.2.bt, Cisco UPOE+®, PoE+	LAN Lite

Switch software

Cisco Catalyst Micro Switches ship with the LAN Lite version of Cisco IOS Software, which is optimized for Layer 2 deployments. For more information on the features supported in LAN Lite, refer to the Cisco feature navigator at https://tools.cisco.com/ITDIT/CFN/jsp/index.jsp.

Licensing and software policy

Customers with Cisco Catalyst LAN Lite software feature sets will receive updates and bug fixes designed to maintain the compliance of the software with published specifications, release notes, and industry standards as long as the original end user continues to own or use the product or for up to one year from the end-of-sale date for this product, whichever occurs earlier. This policy supersedes any previous warranty or software statement and is subject to change without notice.

Cisco DNA licensing

Table 3. Cisco DNA Essentials, Advantage, and Premier package features

Feature	Cisco DNA Essentials	Cisco DNA Advantage
Basic Automation Cisco Network Plug and Play, LAN Automation	✓	✓
Element management Discovery, inventory, topology, software image, licensing, and configuration management	✓	✓
Basic Assurance Health dashboards: Network, Client, and wired client health monitoring	✓	✓
Advanced Automation SD-Access*	✗	✓

Product specifications

Table 4 provides hardware specifications for the Cisco Catalyst Micro Switches.

Table 4. Hardware specifications

Description	Specification	
Performance	Forwarding bandwidth	6 Gbps
	Switching bandwidth (full-duplex capacity)	12 Gbps
	Flash memory	256 MB
	Memory DRAM	512 MB
	Max VLANs	64
	VLAN IDs	1-4094
	Maximum Transmission Unit (MTU)	Up to 1500 bytes
	MAC entries	15000
	Port channels	4
	Queues	4 egress queues per port
	Buffers	1000
	ACLs	180 MAC, IPv4 and IPv6

Description	Specification		
	Bootup time	30 seconds	
	Forwarding rate, 64-byte packet Cisco Catalyst Micro Switches		
	CMICR-4PS	8.928 mpps	
	CMICR-4PC	8.928 mpps	
	CMICR-4PT	8.928 mpps	
Connectors and cabling	**Interfaces:** 10BASE-T ports: RJ-45 connectors, 2-pair Category 3, 4, or 5 Unshielded Twisted-Pair (UTP) cabling 100BASE-TX ports: RJ-45 connectors, 2-pair Category 5 UTP cabling 1000BASE-T ports: RJ-45 connectors, 4-pair Category 5 UTP cabling 1000BASE-FX port: SFP connector, optical cable		
Power connector	A specific power connector for the switch itself to be used with the recommended AC/DC adapter.		
Indicators	Per-Port status: Link integrity, disabled, activity, speed, PoE status SystEM status: System, power-saving mode		
Dimensions (H x W x D)	**Model**	**Inches**	**Centimeters**
	CMICR-4PS	1.79 X 3.54 X 3.10	4.55 X 9.0 X 7.88
	CMICR-4PC	1.79 X 3.54 X 3.10	4.55 X 9.0 X 7.88
	CMICR-4PT	1.77 X 6.00 X 5.29	4.5 X 15.24 X 13.45
Weight	**Model**	**Pounds**	**Kilograms**
	CMICR-4PS	1.32277	0.60
	CMICR-4PC	1.32277	0.60
	CMICR-4PT	2.0724	0.940
Environmental ranges	Operating* temperature up to 5000 ft (1524 m)	-5° C to +35° C**	+23F to +95F
	Operating* temperature up to 10,000 ft (3048 m)	-5° C to +30° C	+23F to +86F
	Storage temperature up to 15,000 ft (4572 m)	-25° C to +70° C	-13F to +158F
	Operating altitude	Up to 3048 m	Up to 10,000 ft
	Storage altitude	Up to 4000 m	Up to 15,000 ft
	Operating relative	5% to 95% noncondensing	

Description	Specification	
	humidity	
	Storage relative humidity	5% to 95% noncondensing
	* Minimum ambient temperature for cold start is 0° C (+32° F). ** Operation above 40° C may impact service life.	

Tables 5 and 6 describe the power specifications for the Cisco Catalyst Micro Switches adapter input supply.

Table 5. Power adapter specifications

Parameter	Minimum	Nominal	Maximum
Voltage range	85VAC	100/12 /240 VAC	264VAC
Line frequency	47 Hz	50/60 Hz	63 Hz

Table 6. Adapter output rating

Parameters	Rating
Output	53V
Voltage (VDC) at 0.7A load	53.5V
Set tolerance (% and VDC)	±1% (52.965 ~ 54.035)
Min. current (A)	0
Max. current (A)	1.5
Total error and	±2%

Table 7 and 8 shows power adapter types and available passthrough power

Table 7. Power Adapter Types and Available Passthrough power for CMICR-4PS & -4PC Models

Model	Available POE Power	Description
PSU-80W (AC)	65W	80W Power Adapter (Original PWR-ADPT SKU)
65W AC to DC Adapter	50W	65W Adapter with a specification of 53V/1.22A

Table 8 shows Available Passthrough power for CMICR-4PT Model

Table 8. shows switch management and standards support.

Input Power (W) with PSU-80W-AC Adapter and Uplink PD			Input Power (W) with 65W AC to DC Adapter and Uplink PD		
Uplink PD @ PSE	**Adapter Power**	**Passthrough Power (W)**	**Uplink PD @ PSE**	**Adapter Power**	**Passthrough Power (W)**
30		7	30		7
60		29	60		29
90		46	90		46
15	80	78	15	65	63
30	80	88	30	65	73
60	80	110	60	65	95
90	80	120	90	65	105

Table 9. Management and standards support

Description	Specification	
SNMP MIBs supported	• BRIDGE-MIB • CISCO-BRIDGE-EXT-MIB • CISCO-CDP-MIB • CISCO-CONFIG-COPY-MIB • CISCO-ENVMON-MIB • CISCO-ERR-DISABLE-MIB • CISCO-FLASH-MIB • CISCO-IF-EXTENSION-MIB • CISCO-IGMP-FILTER-MIB • CISCO-LAG-MIB • CISCO-MEMORY-POOL-MIB • CISCO-PAGP-MIB • CISCO-PING-MIB • CISCO-PORT-STORM-CONTROL-MIB • CISCO-PROCESS-MIB • CiscopowerEthernetMIB • CISCO-ENTITY-SENSOR-MIB	• ciscoPowerEthernetExtMIB • ciscoPoePdMIB • CISCO-STP-EXTENSIONS-MIB • CISCO-SYSLOG-MIB • CISCO-TCP-MIB • CISCO-UDLDP-MIB • CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB • CISCO-VLAN-MEMBERSHIP-MIB • CISCO-VTP-MIB • ENTITY-MIB • ETHERLIKE-MIB • IEEE8021-PAE-MIB • IEEE8023-LAG-MIB • IF-MIB • SNMPv2-MIB • TCP-MIB • UDP-MIB

Description	Specification	
Standards	• IEEE 802.1D Spanning Tree Protocol • IEEE 802.1p CoS Prioritization • IEEE 802.1Q VLAN • IEEE 802.1s • IEEE 802.1w • IEEE 802.1X • IEEE 802.1ab (LLDP) • IEEE 802.3ad • IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports	• IEEE 802.3af, 802.3at, and 802.3bt • IEEE 802.3 10BASE-T • IEEE 802.3u 100BASE-TX • IEEE 802.3ab 1000BASE-T • IEEE 802.3z 1000BASE-X • RMON I and II standards • SNMP v1, v2c, and v3 • IEEE 802.3az • IEEE 802.1ax
RFC compliance	• RFC 768 – UDP • RFC 783 – TFTP • RFC 791 – IP • RFC 792 – ICMP • RFC 793 – TCP • RFC 826 – ARP • RFC 854 – Telnet • RFC 951 – Bootstrap Protocol (BOOTP) • RFC 959 – FTP • RFC 1112 – IP Multicast and IGMP • RFC 1157 – SNMP v1 • RFC 1166 – IP Addresses • RFC 1256 – Internet Control Message Protocol (ICMP) Router Discovery • RFC 1305 – NTP • RFC 1492 – TACACS+ • RFC 1493 – Bridge MIB • RFC 1542 – BOOTP extensions • RFC 1901 – SNMP v2C • RFC 1902–1907 – SNMP v2 • RFC 7252 – CoAP	• RFC 1981 – MTU Path Discovery IPv6 • FRC 2068 – HTTP • RFC 2131 – DHCP • RFC 2138 – RADIUS • RFC 2233 – IF MIB v3 • RFC 2373 – IPv6 Aggregatable Addrs • RFC 2460 – IPv6 • RFC 2461 – IPv6 Neighbor Discovery • RFC 2462 – IPv6 Autoconfiguration • RFC 2463 – ICMP IPv6 • RFC 2474 – Differentiated Services (DiffServ) Precedence • RFC 2597 – Assured Forwarding • RFC 2598 – Expedited Forwarding • RFC 2571 – SNMP Management • RFC 3046 – DHCP Relay Agent Information Option • RFC 3376 – IGMP v3 • RFC 3580 – 802.1X RADIUS
Note: RFC, MIB, and standards compliance is dependent on Cisco IOS Software level.		

Table 10 shows safety and compliance information.

Table 10. Safety and compliance support

Description	Specification
Safety standards	• UL 60950-1 • CAN/CSA 22.2 No. 60950-1 • EN 60950-1 • IEC 60950-1 • CE Marking • AS/NZS 60950.1 • IEC/UL 62368-1(supersede IEC/UL 60950-1 in 2019)

Description	Specification
Electromagnetic emissions certifications	• FCC Part 15, CFR 47, Class A, North America • EN 55022 (CISPR22) and EN 55024 (CISPR24), CE marking, European Union • AS/NZS, Class A, CISPR22:2004 or EN55022, Australia and New Zealand • ICES-003 Issue 6: 2016 • KN 32: 2015 • TCVN 7189: 2009 • V-3/2015.04 • KN35: 2015 • TCVN 7317: 2003
Environmental	Reduction of Hazardous Substances (ROHS) 6
NEBS	NEBS not required

Mounting OptionsWe offer the following different mounting options for the Cisco Catalyst Micro Switches.

Model	Mounting Options
CMICR-4PS	• Cable Duct
CMICR-4PC	• Din Rail
CMICR-4PT	• Desk Mount, Surface Mount

Ordering information

To place an order, consult Table 9 for ordering information and visit Cisco Commerce Workspace.

Table 11. Ordering information

Cisco Catalyst Micro Switches	
Part number	**Description**
CMICR-4PS	Catalyst Micro Switch for wall-jack deployments, 2x SFP uplinks
CMICR-4PC	Catalyst Micro Switch for wall-jack Deployments, 1x copper + 1x SFP uplink
CMICR-4PT	Catalyst Micro Switch for desktop deployments

Accessories	
Part number	**Description**
CMICR-PWR-CNT	Molex power connector
CMICR-MSD-1G	Micro SD Card

Mouting Accessories for Wall jack / Din Rail versions

PID	Description
CMICR-BZL-L-OC	Long Off Centered Bezel
CMICR-BZL-S-OC	Short Off Centered Bezel
CMICR-BZL-S-C	Short Centered Bezel
CMICR-CLIP-DIN	DIN Rail Clip
CMICR-BRKT-S-OC	Short Off Centered Bracket

Mounting Accessory for desktop version

PID	Description
CMICR-BRKT-DSK	Desk Top Mounting Bracket

Warranty information

Cisco Catalyst Micro Switches come with an enhanced limited lifetime hardware warranty that includes 90 days of Cisco Technical Assistance Center (TAC) support and next-business-day hardware replacement free of change (see Table 10 for details).

Table 12. Enhanced limited lifetime hardware warranty

	Cisco Enhanced Limited Lifetime Hardware Warranty
Device covered	Applies to Cisco Catalyst Micro Switch models CMICR-4PS, CMICR-4PC, and CMICR-4PT.
Warranty duration	As long as the original customer owns the product.
End-of-life policy	In the event of discontinuance of product manufacture, Cisco warranty support is limited to 5 years from the announcement of discontinuance.
Hardware replacement	Cisco or its service center will use commercially reasonable efforts to ship a replacement for next-business-day delivery, where available. Otherwise, a replacement will be shipped within 10 working days after receipt of the return materials authorization (RMA) request. Actual delivery times might vary depending on customer location.
Effective date	Hardware warranty commences from the date of shipment to customer (and, in the case of resale by a Cisco reseller, not more than 90 days after original shipment by Cisco).
TAC support	Cisco will provide, during business hours, 8 hours per day, 5 days per week, basic configuration, diagnosis, and troubleshooting of device-level problems for up to a 90-day period from the date of shipment of the originally purchased Cisco Catalyst Micro Switch product. This support does not include solution-level or network-level support beyond the specific device under consideration.
Cisco.com access	Warranty allows guest access only to Cisco.com.

Your formal warranty statement, including the warranty applicable to Cisco software, appears in the Cisco information packet that accompanies your Cisco product. We encourage you to review carefully the warranty

statement shipped with your specific product before use. Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

Adding a Cisco technical services contract to your device coverage provides access to the Cisco Technical Assistance Center (TAC) beyond the 90-day period allowed by the warranty. It also can provide a variety of hardware replacement options to meet critical business needs, as well as updates for licensed premium Cisco IOS Software and registered access to the extensive Cisco.com knowledge base and support tools.

For additional information about warranty terms, visit https://www.cisco.com/go/warranty.

Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environment Sustainability" section of Cisco's Corporate Social Responsibility (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the "Environment Sustainability" section of the CSR Report) are provided in the following table:

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

Cisco and Partner Services

Enable the innovative, secure, intelligent edge using personalized services from Cisco and our partners. Through a discovery process that begins with understanding your business objectives, we help you integrate the next-generation Cisco Catalyst fixed switches into your architecture and incorporate network services onto those platforms. Sharing knowledge and leading practices, we support your success every step of the way as you deploy, absorb, manage, and scale new technology. Choose from a flexible suite of support services (Table 13) designed to meet your business needs and help you maintain high-quality network performance while controlling operational costs.

Table 13. Technical services available for Cisco Catalyst Micro Switches

Cisco Technical Services
Cisco Smart Net Total Care® Service • Around-the-clock, global access to the Cisco TAC • Unrestricted access to the extensive Cisco.com knowledge base and tools • NBD, 8x5x4, 24x7x4, and 24x7x2 advance hardware replacement and onsite parts replacement and installation available • Ongoing operating system software updates within the licensed feature set[1] • Proactive diagnostics and real-time alerts on Smart Call Home-enabled devices
Cisco Solution Support Service • Provides a team of experts who act as primary point of contact to deliver centralized support, including in multivendor network environments • Speed is paramount when problems arise, so we deliver on a 30-minute service level objective and prioritize Solution Support cases • Expert guidance helps to enhance IT operations with fewer outages and faster problem resolution while maximizing performance and reliability of Catalyst 1000 Series switches • We even look beyond identified problems and provide the necessary guidance needed to help you avoid any pitfalls before they can disrupt IT or your business

[1] Cisco operating system updates include the following: maintenance releases, minor updates, and major updates within the licensed feature set

Learn more about available services.

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