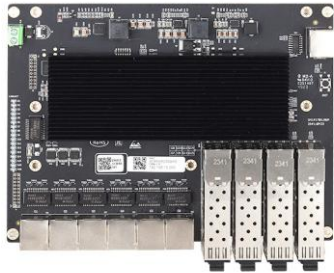


## CES7114G-8GF-6GT

### 14-Port L2 Gigabit Managed Embedded Industrial Ethernet Switch



- 8 x 1G SFP ports, 6 x 1G copper ports, with 4 x RS485 and 2 x CAN ports optional
- MW-Ring (recovery time < 20 ms @ 200 switches), ERPS, STP/RSTP, MRP for network redundancy
- Support networking with serial and CAN devices, capable of converting protocols such as UDP, TCP, Modbus, HTTPD, WebSocket, and MQTT
- Support DDM digital diagnostic monitoring, allowing monitoring of current DDM SFP module's operating temperature, voltage, current, transmit optical power, and receive optical power
- Support DC9~24V power input, complying with intrinsic safety circuit design standards
- -40°C to +75°C operating temperature range

### Product Description

The CES7114G-8GF-6GT series is a 14-port L2 fully Gigabit managed embedded industrial Ethernet switch designed for high-performance industrial communication networks and intrinsically safe system requirements. It provides 8 x 1G SFP ports and 6 x 1G copper ports, with optional configurations including 4 x RS485 serial ports and 2 x CAN ports to support integrated serial and CAN device networking. The device operates from a single DC 9–24V power input and uses a store-and-forward switching mechanism that delivers strong bandwidth processing and automatic packet-error detection, minimizing transmission failures and ensuring stable, reliable, and efficient Gigabit-speed communication. Built with industrial-grade components and an embedded installation design, the switch maintains dependable performance across a wide operating temperature range of –40°C to +75°C, making it suitable for deployment in harsh and high-interference environments.

The CES7114G-8GF-6GT series offers comprehensive web-based management and supports an extensive suite of network protocols, including MW-Ring, ERPS, STP/RSTP, MRP, VLAN, SVL, LACP, LLDP, SNMPv1/v2c/v3, RMON, QoS, 802.1X authentication, TACACS+ client, IGMP Snooping, GMRP, ACL, and secure WEB/TELNET/SSH access control. Advanced functions such as static aggregation, port mirroring, MAC binding, network diagnostics, loopback detection, line diagnostics, DDM, alarms, email logging, SNTP, and online firmware upgrades further enhance reliability, redundancy, and security in complex industrial networks. Its rich networking modes—including UDP Client/Server, UDP Multicast, TCP Client/Server, Modbus RTU/ASCII Master or Slave, RealCOM\_MCP/CCP/MW, Pair Connection, HTTPD Client, WebSocket

Client, and MQTT—enable flexible serial-to-Ethernet and Modbus TCP protocol conversion. For CAN networking, it supports UDP, TCP, relay mode, Modbus TCP Slave, and additional TCP/UDP/WebSocket/MQTT communication options. Tested extensively for functionality, extreme temperatures, safety, and EMC performance, the CES7114G-8GF-6GT is well suited for industrial automation, integrated energy systems, smart cities, intelligent transportation, smart factories, and other mission-critical environments.

## Product Features

- Support rate limiting for broadcast, unknown multicast, and unknown unicast packets, as well as detection of broadcast and multicast packet storms to prevent network storms
- Support static and dynamic link aggregation, increasing transmission bandwidth and improving link reliability
- Support port mirroring to capture data at port ingress and egress for network detection and fault management
- Support 802.1Q VLAN to provide Access, Trunk, and Hybrid interfaces for dividing multiple broadcast domains
- Support IGMP snooping and static multicast tables to reduce multicast data broadcast in the network
- Support LLDP link layer discovery protocol to obtain information about LLDP neighbor devices, facilitating link status monitoring for topology management and fault localization
- Support ERPS, providing multi-ring networking, link backup, and fast convergence
- Support RSTP rapid spanning tree protocol, compatible with STP protocol, to eliminate network loops
- Support MRP media redundancy protocol to enhance network reliability, with reconfiguration time  $\leq 500\text{ms}$
- Support SNMPv1/v2c/v3 centralized management and SNMPv1/v2c/v3 TRAP information
- Support RMON remote network monitoring for statistics and alarms on various types of data frames, usable for remote monitoring and management by network management systems
- Support QoS to prioritize transmission of voice, video, and important data, resolving network congestion
- Support ACL access control lists for filtering TCP/UDP/ICMP/IGMP packets based on source/destination IP and MAC addresses
- Support 802.1X port authentication for authenticating access users, providing local authentication databases and remote RADIUS login authentication
- Support TACACS+ clients for user authentication, authorization, and accounting to prevent unauthorized access and enhance system security
- Support loopback detection to prevent network loops and network storm triggers
- Support networking of serial port and CAN terminal devices, extending transmission distance and enabling centralized network management
- Support conversion between Modbus RTU/ASCII and Modbus TCP protocols, with transparent

transmission of Modbus RTU/ASCII over TCP

- Support Modbus slave address mapping, translating actual slave IDs to virtual IDs for data communication to prevent ID conflicts
- Support Modbus slave pre-reading, fetching data in advance for rapid response
- Support MQTT protocol, connecting to Alibaba Cloud, OneNet, Tencent Cloud, Huawei Cloud, Maiwei Cloud, or other cloud platforms to enable IoT connectivity between devices and the cloud
- Support multiple packet segmentation mechanisms, converting serial/CAN data into Ethernet packets
- CAN support Normal Mode, Loopback Mode, and Monitor Mode for standard communication, bus testing, and troubleshooting respectively
- Support CAN ID filtering, permitting or prohibiting transmission of standard or extended frames within specified ID ranges.

## Technical Specifications

Software	
Switching	<p>Support port configuration, port rate limiting, storm suppression, storm detection, port aggregation, LACP, and port statistics</p> <p>Support 802.1Q VLAN, port isolation, SVL config</p> <p>Support MAC address aging and learning limits, static MAC address binding, and source MAC address filtering</p>
Serial Port (optional)	<p>Support UDP Client/ Server/ Multicast, TCP Client/ Server, Modbus RTU Master/ Slave, Modbus ASCII Master/ Slave, RealCOM_MCP, RealCOM_CCP, RealCOM_MW, Pair Connection Master, Pair Connection Slave, HTTPD Client, WebSocket Client, MQTT, and other serial-to-network modes</p> <p>Support packet length, packet interval, and network connection information</p> <p>Support Modbus slave address mapping, Modbus pre-read, and Modbus over TCP</p> <p>Support heartbeat packets, registration packets, frame header/trailer mode, and RFC2217 functionality</p>

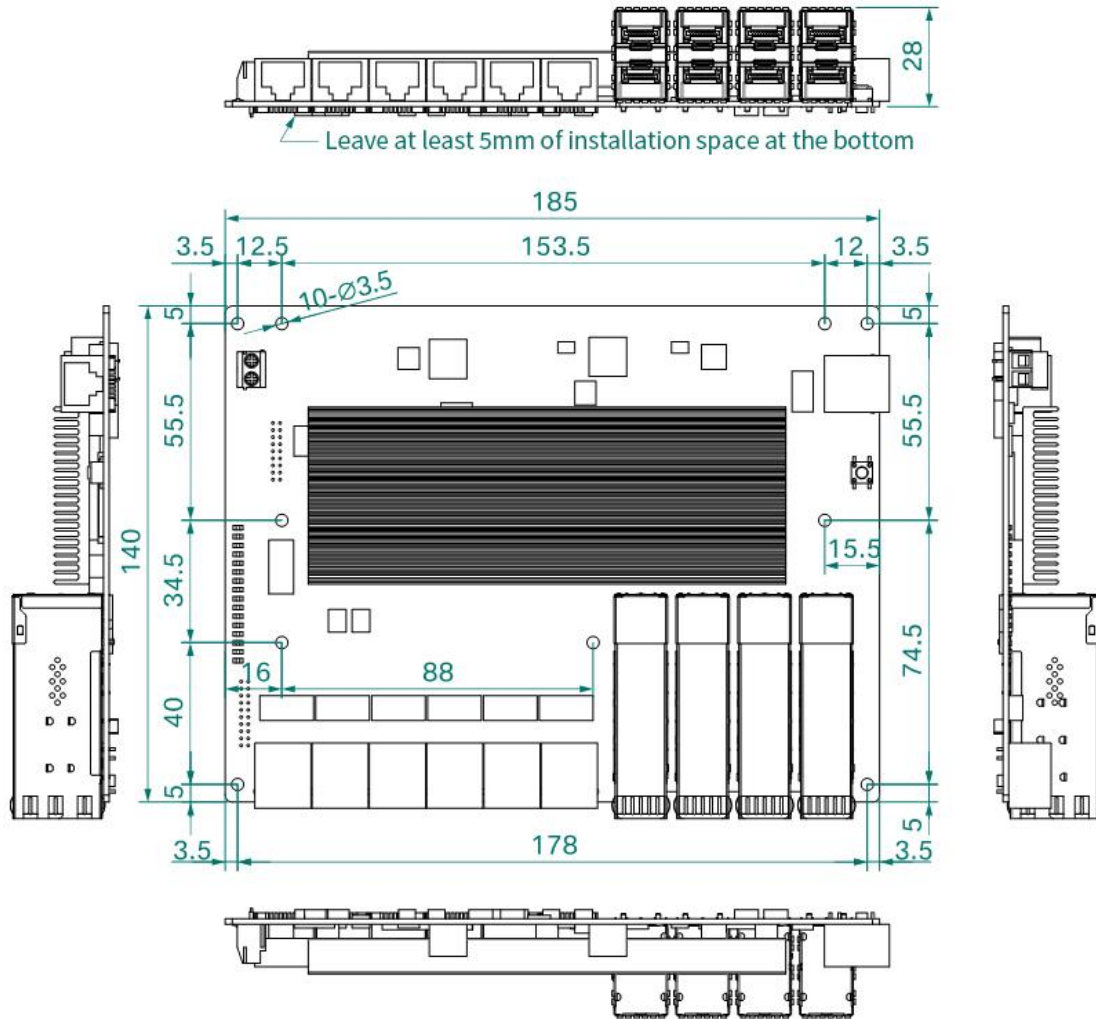
CAN Port (optional)	<p>Support CAN-to-network modes including UDP Client/ Server/ Multicast, TCP Client/ Server, Pair Connection Master, Pair Connection Slave, Relay Mode, Modbus TCP Slave, HTTPD Client, WebSocket Client, MQTT, etc.</p> <p>Support CAN operating modes such as Normal Mode, Loopback Mode, Listen Mode, etc.</p> <p>Support packet segmentation length, segmentation interval, heartbeat packets, registration packets, CAN ID filtering, and network connection information</p>
Redundancy	<p>Support proprietary MW-Ring ring network technology.</p> <p>Support ERPS, RSTP/STP and MRP</p>
Multicast	<p>Support IGMP Snooping</p> <p>Support static multicast MAC address binding</p> <p>Support Unknown Multicast Filtering</p> <p>Support GMRP</p>
Security Management	<p>Support access control for WEB, TELNET, and SSH</p> <p>Support ACL for controlling access</p> <p>Support 802.1X port authentication</p> <p>Support Email logging, loopback detection, and network storm/port link-down alarms</p>
Management and Maintenance	<p>Support QoS, SNMP v1/v2c/v3, SNMP v1/v2c/v3 TRAP, RMON, and LLDP</p> <p>Support port mirroring, Ping, and DDM for optical modules</p> <p>Support user permissions management, system logging, SNTP client, daylight saving time</p> <p>Support online reboot, factory reset, system upgrade, and configuration file upload/download</p>
<b>Switch Capability</b>	
Processing Type	Store-and-Forward
Backplane Bandwidth	56Gbps
Buffer Size	4.1Mbit
MAC Table Size	8K

Interface		
Fiber port	8*1G SFP ports, compatible with 100Base-FX	
Copper port	6*10/100/1000Base-T(X) auto-sensing RJ45 copper ports, full/half duplex, auto MDI/MDI-X	
Serial Port (optional)	Interface Type: 4*RS485 serial ports Interface Signals: A, B, GND Baud Rate: 600bps to 460800bps Data Bits: 7-bit, 8-bit Stop Bits: 1-bit, 2-bit Parity Bit: No Parity, Odd Parity, Even Parity Connection Method: 2 x 6-pin 3.81mm pitch locking terminal blocks Termination Resistor: Built-in 120Ω termination resistor, configurable via jumper cap	
CAN Port (optional)	Interface Type: 2*CAN bus interface Interface Signals: H, L, GND Baud Rate: 5kbps to 1000kbps Connection Method: 6-pin 3.81mm pitch locking terminal block Terminating Resistor: Built-in 120Ω terminating resistor, configurable via jumper cap	
CONSOLE	1*CONSOLE port, RS232 signal RJ45 port, used for debug	
Button	Restart and factory reset	
Status LED	Power LED, operation LED, alarm LED, port LED, NET LED , CAN LED, with the ability to externally connect indicator	
<b>Power Supply</b>	CES7114G-8GF-6GT	CES7114G-8GF-6GT-4D485-2CAN
Input Voltage	DC9~24V	
Start-up Current	< 1.20A@DC12V < < 0.80A@DC18V < 0.66A@DC24V	< 1.50A@DC12V < 0.98A@DC18V < 0.82A@DC24V

Power Consumption	< 13W@DC12V(full load)	< 15W@DC12V(full load)
Connection	5.08mm pitch 2-pin terminal block	
Protection	overcurrent protection	
<b>Physical Characteristics</b>	CES7114G-8GF-6GT	CES7114G-8GF-6GT-4D485-2CAN
Dimensions	185×140×28 mm (excluding connectors)	185×140×30 mm (excluding connectors)
Installations	Embedded Mount	
Weight	About 0.37kg	About 0.46kg
<b>Working Environment</b>		
Operating Temp	-40°C to +75°C	
Storage Temp	-40°C to +85°C	
Relative Humidity	5%~95% (non-condensing)	

## Dimensions

Unit: mm



## Ordering Information

Standard Model	1G SFP Port	1G Copper Port	RS485	CAN	Input Voltage
CES7114G-8GF-6GT	8	6	/	/	DC9~24V
CES7114G-8GF-6GT -4D485-2CAN	8	6	4	2	



## Contact Us

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