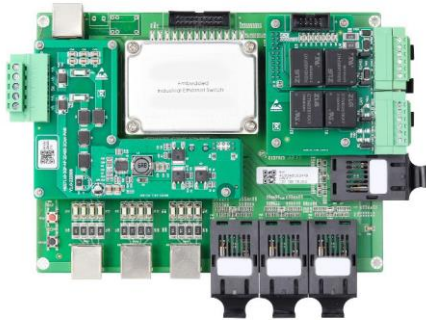


CES7110-3GF Series

10-port Layer 2 Gigabit Managed Embedded Switch



- 3x1G SFP ports, 2/4/6/7x100M fiber ports and 7/5/3/1x100M copper ports, support 2/4xRS485 and 2xCAN ports, or 4xRS485 ports
- Support ring network redundancy protocols such as MW-Ring, ERPS and STP/RSTP to improve network reliability
- Support serial port terminal equipment networking, convert UDP, TCP, Modbus, HTTPD, WebSocket and other protocols, support virtual serial port
- Support the CAN terminal equipment networking, and realize the two-way transparent transmission between CAN bus and Ethernet (UDP/TCP)
- Support DC9~24V power input, support reverse polarity protection, dual redundant power input, meet the intrinsically safe standard
- Support -40°C ~ +85°C working temperature, meet the application needs of industrial environment

Product Description

CES7110-3GF series is a layer 2 managed embedded industrial Ethernet switch supports 3x1G fiber ports, 2/4/6/7x100M fiber ports, 7/5/3/1x100M copper ports, 2/4xRS485 plus 2xCAN, or 4xRS485 ports, supports single or dual DC9~24V power input, with reverse polarity protection.

CES7110-3GF series supports WEB network management functions and multiple network protocols, such as MW-Ring, ERPS, STP/RSTP, VLAN, QoS, LACP, LLDP, IGMP snooping, 802.1X authentication, SNMPv1/v2c/v3, port mirroring, static multicast, bus configuration, storm detection, port statistics and firmware online upgrade, etc; it also supports UDP, UDP Multicast, TCP Client/Server, Modbus RTU Master/Slave, Modbus ASCII Master/Slave, RealCOM_MCP/CCP/CS, Pair Connection Master/Slave, HTTPD Client, WebSocket Client and other network working modes, to realize serial port conversion to Ethernet or Modbus TCP protocol; it supports the UDP, TCP Client/Server, UDP multicast and other network working modes to realize CAN terminal equipment networking. Its system provides user permission management, and supports online restart, online upgrade and factory reset. The hardware adopts fanless design, and industrial components, supports -40°C ~ + 85°C working temperature.

Product Features

- Support rate limiting or broadcast, multicast, and unknown unicast packets; support broadcast and multicast data packet storm detection to prevent broadcast storm
- Support serial and CAN terminal equipment networking, extend the transmission distance, and realize centralized network management
- Support the conversion between Modbus RTU/ASCII and Modbus TCP protocol, and support Modbus RTU/ASCII over TCP transmission
- Support multiple data packing mechanisms to convert the serial/CAN data into Ethernet data packets to meet the real-time needs of different networks
- Support Modbus ID mapping, to map Modbus slave real ID into virtual ID for data communication, avoid slave ID duplication
- Support QoS, give priority to voice, video and important data in network devices, and solve network congestion
- Support 802.1Q VLAN, provide Access, Trunk, Hybrid interface easy to divide multiple broadcast domain, enhance the security of the network
- Support IGMP snooping and static multicast table, establish layer 2 multicast forwarding table, reduce the broadcast of multicast data in the network, and save network resources
- Support LLDP link layer discovery protocol, obtain LLDP neighbor device information, conduct link status monitoring, facilitate topology management and fault location
- Support ERPS, provide multi-loop networking, link backup, achieve fast convergence and improve network stability
- Fast ring network redundancy (MW-Ring) of less than 20ms enhances the reliability of the system communication
- Support RSTP protocol, compatible with STP protocol, eliminate network loop, improve network reliability
- Support the link static aggregation and dynamic aggregation, which can increase the transmission bandwidth and improve the link reliability
- Support user permission management
- Support WEB control, HTTP, HTTPS protocol access control, login IP address restrictions
- Support TELNET and SSH access control, SSH can provide secure remote login to ensure data integrity and reliability
- Support 802.1X port authentication, authenticates access users, provides local authentication database and remote RADIUS login authentication
- Support the static unicast/multicast MAC address and interface binding, to ensure the use of legitimate users
- Support SNMPv1/v2c/v3 and SNMPv1/v2c/v3 TRAP, and can be centralized management through MIB network management system

- Support port statistics to count different types of data frames sent and received to realize the monitoring of port traffic
- Support port mirroring, collect port ingress, egress or all data for network detection and fault management
- Support loopback detection to prevent the network from ring and causing a network storm
- Support system logging to log information of WEB, LINK, CONFIG, AUTH, IGMP, STORM, RING, RSTP, SNMP, and support remote monitoring of log host and log mail

Technical Specifications

Software	
Switching	<p>Support ports configuration, such as rate, duplex mode, flow control, etc</p> <p>Support port-based VLAN and 802.1Q VLAN</p> <p>Support port ingress/egress rate limit, storm detection, port aggregation, LACP</p> <p>Support MAC address table, received/sent frame/total flow statistics</p>
Serial Port	<p>Support UDP, UDP Multicast, TCP Client, TCP Server, Modbus RTU Master, Modbus RTU Slave, Modbus ASCII Master, Modbus ASCII Slave, RealCOM_MCP, RealCOM_CCP, RealCOM_CS, Pair Connection Master, Pair Connection Slave, Httpd Client, WebSocket Client and other network working mode</p> <p>Support the length- and interval-based data packing and network connection information</p> <p>Support Modbus slave address mapping, Modbus pre-read, Modbus Over TCP</p> <p>Support heartbeat package, registration package, frame head and frame tail mode, RFC2217 function</p>
CAN (optional)	<p>Support UDP, TCP Client, TCP Server, UDP multicast and other network working mode</p> <p>Support data packing using frames, interval, CAN ID filtering, and network connection information</p>
Redundancy	<p>Support ERPS</p> <p>Support MW-Ring/MW-RingV2 private ring network technology</p> <p>Support RSTP, and compatible to STP</p>

Multicast	<p>Support IGMP snooping</p> <p>Support static multicast MAC address binding</p>
Security Management	<p>Support WEB, TELNET, and SSH control</p> <p>Support 802.1X port authentication, local authentication database and remote RADIUS server</p> <p>Support static MAC port lock</p> <p>Support Email logs</p> <p>Support loopback detection</p>
Management and Maintenance	<p>Support QoS, 802.1P/DSCP/port priority mapping, absolute and relative priority control</p> <p>Support SNMP v1/v2c/v3, SNMP v1/v2c /v3 TRAP and LLDP</p> <p>Support port mirroring, Ping</p> <p>Supports user permission management, local time management, SNTP client, and log information</p> <p>Support online restart, factory reset, system upgrade, configuration file upload/download</p> <p>Support unified upper-level computer software management</p>
Switch Capability	
Processing Type	Store-and-Forward
Backplane Bandwidth	7.6G
Buffer Size	1Mbit
MAC Table Size	8K
Interface	
1G Fiber Port	3*1000Base-X SFP ports
100M Fiber Port	2/4/6/7*100Base-FX fiber ports, support SC/FC/ST connector, single mode/multimode, wavelength, transfer distance optional
100M Copper Port	7/5/3/1*10/100Base-T(X) auto-sensing RJ45 ports, support full/half-duplex, auto MDI/MDI-X connection

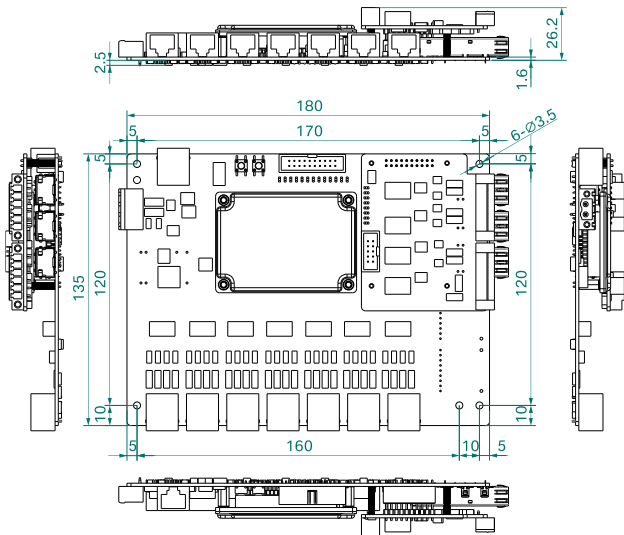
CAN Port	<p>Interface type: 2*CAN ports</p> <p>Interface signal: CANH, CANL, GND</p> <p>Baud Rate: 5kbps-1000kbps</p> <p>Connection mode: 6-position 3.81mm pitch locking terminal blocks</p> <p>Terminal resistance: built-in 120 Ω terminal resistance, can be set by the jumper cap</p> <p>Isolation voltage: 1.5kV</p>
Serial Port	<p>Interface type: 2/4*RS485 port optional</p> <p>Interface signal: A, B, GND</p> <p>Baud rate: 300bps-460800bps</p> <p>Data bit: 7bit, 8bit</p> <p>Stop bit: 1bit, 2bit</p> <p>parity bit: No, odd check, even check</p> <p>Connection mode: 1/2*6-bit 3.81mm pitch connection terminal block with lock</p> <p>Terminal resistance: built-in 120 Ω terminal resistance, can be set by the jumper cap</p> <p>Isolation voltage: 1.5kV</p>
CONSOLE	1*CONSOLE port, RS232 Signal RJ45 port, for equipment debugging
Button	Restart and factory reset button
Status LEDs	Power indicator, operation indicator, fiber port indicator, copper port indicator, serial port indicator, CAN indicator, upper computer software operation indicator, support external indicator
Power Supply	
Power Input	<p>Single DC9~24V (2F and below)</p> <p>Dual DC9~24V redundant power input</p> <p>Single DC5~32V (6F, 7F)</p>
Power Consumption	<9W@DC24V
Connection	<p>2-pin 5.08mm pitch with lock terminals (2F and below)</p> <p>5-pin 5.08mm pitch with lock terminal (4F)</p> <p>2-pin 5.08mm pitch wiring terminals (6F, 7F)</p>
Protection	Reverse polarity protection

Physical Characteristics	
Dimensions	180*135*26.2 mm (excluding Interface) (2F and below) 185*140*26.2 mm (excluding interface) (4F, 6F, 7F)
Installations	Embedded installation
Weight	About 0.33kg
Working Environment	
Operating Temp	-40°C~+85°C
Storage Temp	-40°C~+85°C
Relative Humidity	5%~95% (non-condensing)
Industry Standard	
EMC	IEC 61000-4-5(Surge): Level 2 IEC 61000-4-4(EFT): Level 3

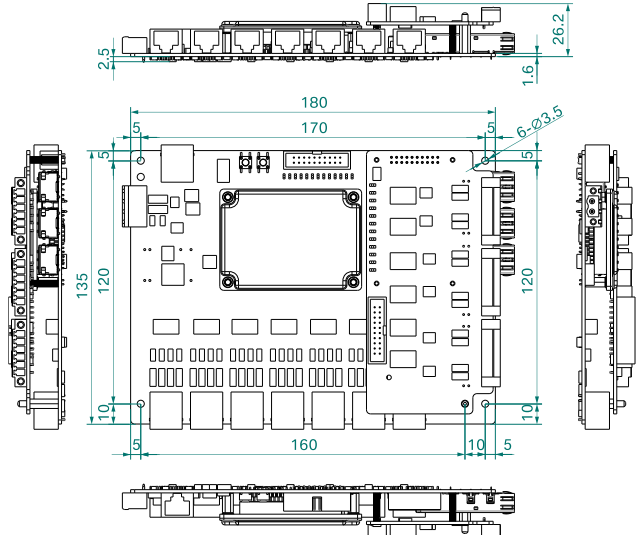
Dimensions

Unit: mm

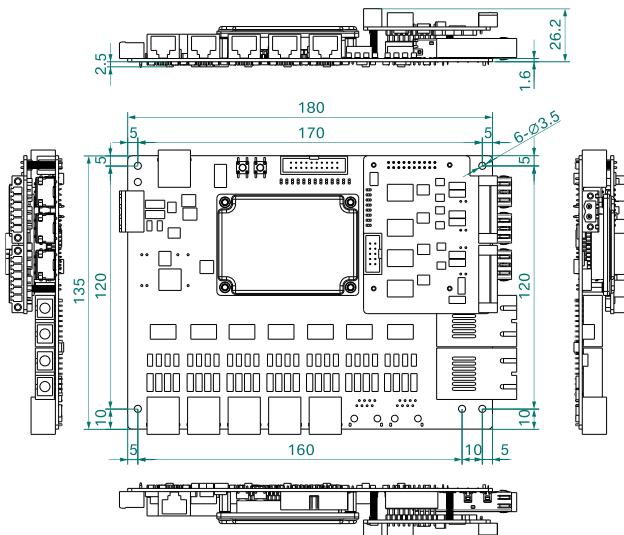
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CES7110-3GF-4D485:



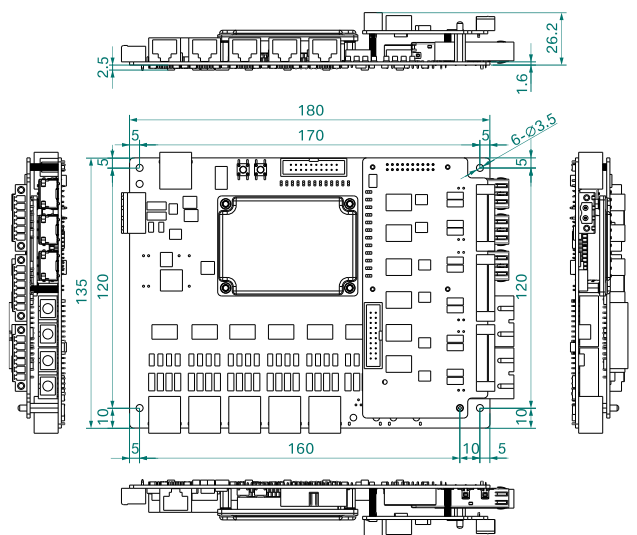
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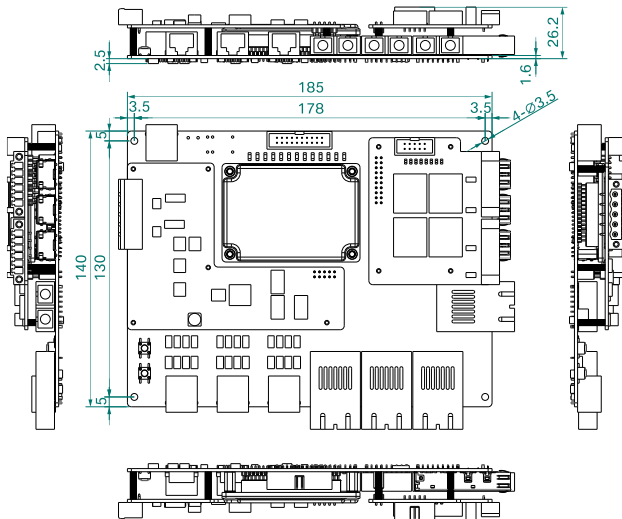
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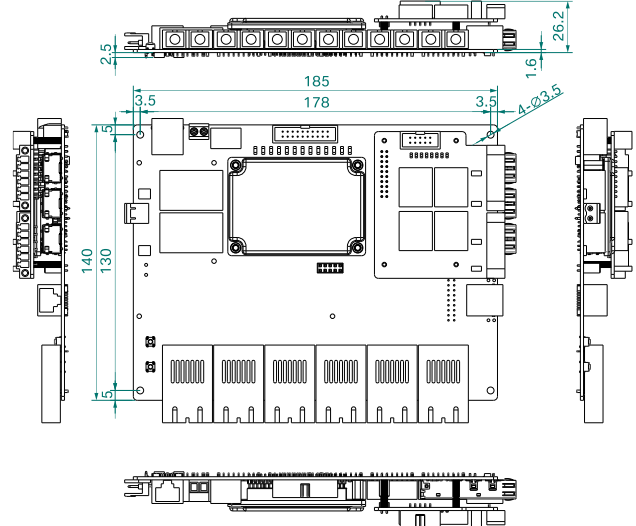
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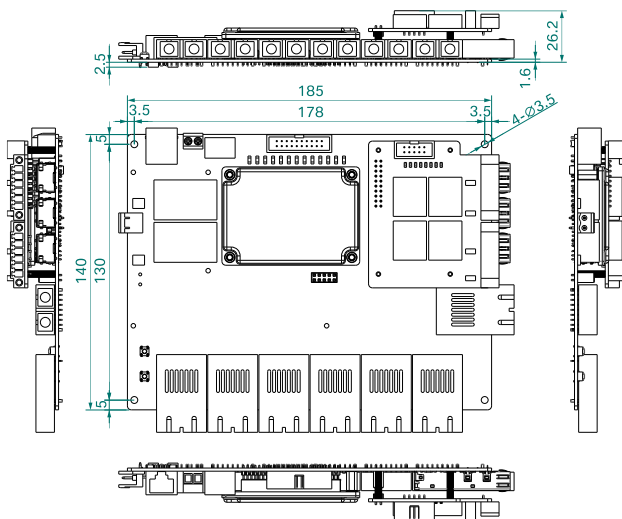
CES7110-3GF-4F-2D485-2CAN:



CES7110-3GF-6F-2D485-2CAN:



CES7110-3GF-7F-2D485-2CAN:



Ordering Information

Standard Model	1G Fiber Port	100M Fiber Port	10/100M Copper Port	RS485	CAN	Input Voltage
CES7110-3GF-2D485-2CAN	3	/	7	2	2	Single DC9~24V
CES7110-3GF-4D485	3	/	7	4	/	
CES7110-3GF-4D485-2CAN	3	/	7	4	2	
CES7110-3GF-2F(M/S)-2D485-2CAN	3	2	5	2	2	
CES7110-3GF-2F(M/S)-4D485	3	2	5	4	/	
CES7110-3GF-2F(M/S)-4D485-2CAN	3	2	5	4	2	
CES7110-3GF-4F(M/S)-2D485-2CAN	3	4	3	2	2	Dual DC9~24V
CES7110-3GF-6F(M/S)-2D485-2CAN	3	6	1	2	2	Single DC5~32V
CES7110-3GF-7F(M/S)-2D485-2CAN	3	7	/	2	2	



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