

ControlSafe™ IOU-ETH Module

2-Port Ethernet Module for the ControlSafe™ Computer

Data Sheet

The IOU-ETH is ideal for connecting external Ethernet devices, such as GPS receivers, modems or external I/O, to the ControlSafe™ Computer.

KEY FEATURES:

- 2 x 10/100/1000 Mbps Ethernet ports (rear IO)
- IP addressable Ports
- Transparent Forwarding / Proxy ARP Function
- Freescale P1011 Processor
- 500V isolation

PRODUCT DESCRIPTION:

The Artesyn IOU-ETH Module for the ControlSafe™ Computer Platform provides 2 x 10/100/1000 Mbps Ethernet ports, perfect for extending the capability to connect with external I/O boxes or networks. With rear RTM access I/O it is perfect for wayside applications requiring non-switched, isolated Ethernet ports for connectivity to the secure rail network(s); such as Temporary Speed Reduction Server (TSRS), Train Control Center (TCC), Positive Train Control (PTC), and Computer Based Interlocking (CBI) applications.

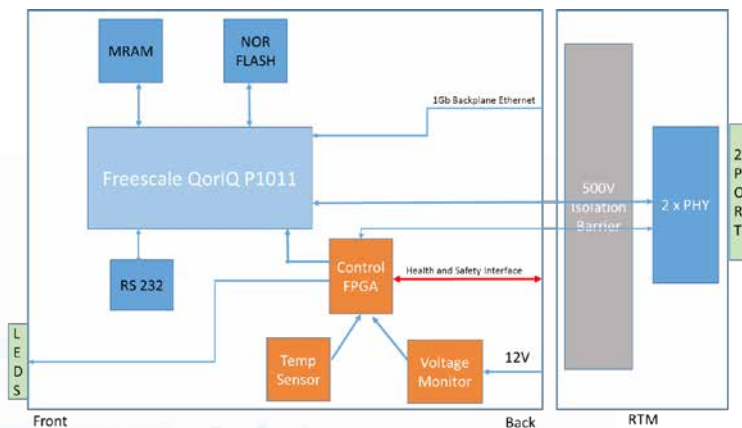
All incoming and outgoing Ethernet traffic is transparently forwarded to/from the CPU module. This allows the CPU module in the CSC to be uniquely addressable from multiple external networks using the separate Ethernet interfaces.



As an interference free (non-vital) communications module, the cIOU-ETH is designed to be fully certified for installation in a system certified to EN 50126 for reliability, availability, maintainability and safety (RAMS) processes; EN 50128 for safety-related software; and EN 50129 for safety-related electronic systems. It is fully EN 50155 compliant with long term availability.



FUNCTIONAL BLOCK DIAGRAM



Technical Specifications

Processor	NXP P1011 QorIQ @533MHz	
Operating System	VxWorks 653 2.4.0.1	
	Application development and runtime software / firmware package. Includes: <ul style="list-style-type: none"> • Bootloader / POST boot image • OS binaries implementing a proxy ARP, transparent forwarding function. • API libraries and makefiles to create custom IOU-ETH application/OS runtime images. For ETH port / forwarding configuration. • Demo/sample IOU-ETH application/OS runtime images and source. • Demo/sample CPU application source to connect through IOU-ETH to external networks. 	
Memory	512 MB DDR3	
Flash	2 x 64MB NOR	
MRAM	1 x 2MB MRAM	
EEPROM	1 x 8KB	
Maintenance Ports	RS-232 onboard RS-232 header	
Data Fabric	1 GigE link to backplane	
RTM Ports	Port 0-1	10/100/1000 Gps Ethernet
Board Management	Voltage and Temperature Sensors	
Operating Temperature	-40 °C to 50 °C	in open rack or other environment with low impedance to convection cooling
	-40 °C to 70 °C	with a required airflow measured at the intake to the bottom of chassis; or with an optional integrated fan cooling solution
Power	12V@~8W typical	
Vibration	Compliant with EN 61373, Category 1, Class B (EN 50155 12.2.11)	
Shock	Compliant with EN 61373, Category 1, Class B (IEC 60068-2-27)	
Conformal Coating	ST1 rating for EN 50155 Section 12.2.10 (Salt Mist Test)	
Standards	Designed in accordance with EN50121, EN50124, EN50155, EN50126, EN50128, EN50129, EN55024, EN60529, EN60571, IEC61508. See documentation for specific compliances.	
Safety Certificates	Interference free	

Ordering Information

Part Number	Description
CSP-CSC-ETH-01	ETHERNET I/O MODULE FOR CONTROLSAFE PLATFORM
CSP-CSC-ETH-01-M	ETHERNET I/O MODULE FOR CONTROLSAFE PLATFORM, BARE METAL FRONT PANEL
CSP-CSC-ETH-RTM-01	REAR MODULE FOR ETHERNET I/O MODULE
CSP-CSC-ETH-<Rel>-<Date>	IOU-ETH and CPU application development, runtime SW / FW upgrade package. (Download, available to HW customers)

WORLDWIDE OFFICES

United States	+1 888 412 7832	Japan	+81 3 5403 2730
Hong Kong	+852 2176 3540	Korea	+82 2 6004 3268
China	+86 400 8888 183		

Artesyn Embedded Technologies, Artesyn, the Artesyn Embedded Technologies logo and ControlSafe are trademarks and service marks of Artesyn Embedded Technologies, Inc. ControlSafe® is registered in one or more countries. NXP is a trademark of NXP B.V. All other names and logos referred to are trade names, trademarks, or registered trademarks of their respective owners. Specifications are subject to change without notice. © 2018 Artesyn Embedded Technologies, Inc. All rights reserved. For full legal terms and conditions, please visit www.artesyn.com/legal.



www.artesyn.com

CSP Ethernet Data Sheet-18Sep2018