

## RTEM-C-PN

FPGA Based Integration Kit Supporting PROFINET Controller Functionality

The RTEM-C-PN is an integration kit ready to implement PROFINET Controller functionality. It is based on FPGA technology and supports two external Ethernet ports as well as Dual Port memory for integration. Besides Industrial Ethernet data standard IT information can also be exchanged.

### **INVESTMENT PROTECTION THROUGH FPGA TECHNOLOGY**

The RTEM-C-PN integration kit is based on the PROFINET Controller stack and the switch IP core developed by Softing Industrial Automation. The IP core is integrated into an FPGA and the stack has been ported to this environment. This approach provides maximum flexibility to adapt the solution both to changes in specification and customer requirements. It is also possible to further enhance features by migrating to a larger Dual Port RAM memory. Upon request, Softing's experienced team of engineers can customize the RTEM-C-PN module according to customer specification, including the supported operation temperature and form factor.

### **SHORT TIME TO MARKET THROUGH SIMPLE INTEGRATION**

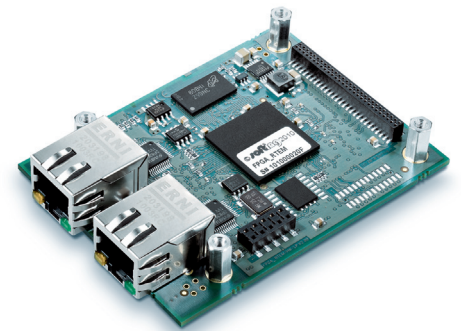
The RTEM-C-PN product comes as a standalone, ready to use integration kit. It provides two external Ethernet ports allowing to support all specified PROFINET topologies. The easy integration into an existing device is performed using a lean application programming interface (API) and a Dual-Port RAM memory. The application related part of the API can be ported to various operating systems. In addition, a configuration tool is available, which allows to define all individual PROFINET communication features.

### **INTEGRATION INTO EXISTING IT ENVIRONMENT**

The seamless integration into existing IT infrastructure is one of the advantages that can be gained using Industrial Ethernet. To support this functionality the RTEM-C-PN module provides a transparent IT channel, which allows to send and receive standard and proprietary IT traffic through the Ethernet ports. The application can access this data through a socket interface that is part of the Dual Port RAM memory. Standard IT Ethernet traffic does not influence the performance of the PROFINET protocol.

### **CUSTOMER BENEFITS**

- > Investment Protection Through FPGA Technology
- > Short Time-To-Market Through Simple Integration
- > Integration into Existing IT Environment



## TECHNICAL DATA

Hardware		
Processor	Altera Cyclone III (With NIOS II CPU)	
Memory	8MB Flash, 32MB RAM	
Connectors	2 RJ-45, GPIO, JTAG	
Status LEDs	Ethernet Traffic, Protocol States	
Dimensions (HxWxD)	80mm x 50mm x 15.23mm	
Power Supply	+3.3V ( $\pm 5\%$ ), Typically 500mA	
Operating / Storage Temperature	0°C...60°C / -20°C...70°C	
Relative Humidity	<90% (Non Condensing)	
Mounting	4 Holes for Fixing Screws	
Housing	None	
Conformity	RoHS Compliant, WEE	
Certifications	CE	
Software		
Functionality	PROFINET Controller Conformance Class B	
	Number of Field Devices	$\leq 128$
	Maximum Amount of Configuration Data Per Field Device	8KB
	Maximum Amount of Parameterization Data Per Field Device	8KB
	Maximum Amount of I/O Data Per Field Device	1440Byte
	Maximum Amount of I/O Data for All Field Devices	8KB Input Data and 8KB Output Data
	Size of Dual Port RAM for PROFINET Data Exchange	32KB
Protocols	PROFINET	
Interfaces	Softing PROFINET Access Kit	
	Size of Dual Port RAM for Socket Interface	8KB
	Number of Sockets	64
Supported Operating Systems for Application	Any	

## SCOPE OF DELIVERY

Hardware	FPGA RTEM CIII, V1.10, Switch IP Core
Software	PROFINET Controller Stack, V1.80
Documentation	Hardware User Manual

## ORDER NUMBER

EAL-AA-014102	RTEM-C-PN
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## ADDITIONAL PRODUCTS AND SERVICES

VCL-YY-097701	Communication Configurator, Standard License Version
VCM-YY-097701	Communication Configurator, Customized License Version
VFL-AA-097702	PROFINET Configuration and Integration Toolset PN-CIT, Standard License Version
VFM-AA-097702	PROFINET Configuration and Integration Toolset PN-CIT, Customized License Version
FCM-NO-3000	Integration Support

Softing Industrial Automation is a world leading provider of industrial communication products and technologies for manufacturing and process automation. Our products are tailored to the requirements of system integrators, device vendors, machine and equipment manufacturers or end users and are known for their ease of use and functional advantages.

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