cosylab
CONTROL SYSTEM LABORATORY

microIOC

Plug & play remote control solution. If your time matters.

Product Descriptions

what is it?

microIOC is a **plug & play solution** for remote control of a wide range of devices. Its hardware platform offers rich set of functionality that is complemented by a software platform, which provides flexible integration into your control system.

Perfect for engineers to save time and for labs to save resources.

microIOC family of products ranges from the very simple ones - as for example serial device support - to fairly advanced ones – as for example multi-axis programmable motion control system. See separate product descriptions for details on specific microIOC systems.

benefits

- plug & play integration of devices into control system; software is part of the package
- solution that is particularly suited to accelerators' equipment – we understand how accelerators work
- high reliability; no moving parts, reliable building blocks, each unit tested
- flexible installation close to controlled equipment and both remote as well as local access

plug & play

Package includes complete SW support for all delivered HW; including operating system, device drivers and CS integration. No extra configuration effort is required.

plug & **play**


power supply

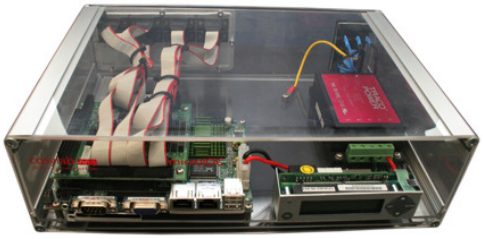

LAN


connect device


access remotely

key features

- preinstalled Linux OS
- web based configuration, monitoring and control
- application customized back-panel connections
- modular platform allowing customizations
- a support with expertise in accelerator field and long list of accelerator-related reference projects



Cosylab, June 2007
Product specifications version: 1.01

Teslova ulica 30
SI-1000 Ljubljana
Slovenia

phone: +386 1 477 66 76
fax: +386 1 477 66 10
e-mail: info@microioc.com
visit us at : http://www.microioc.com

reliable HW

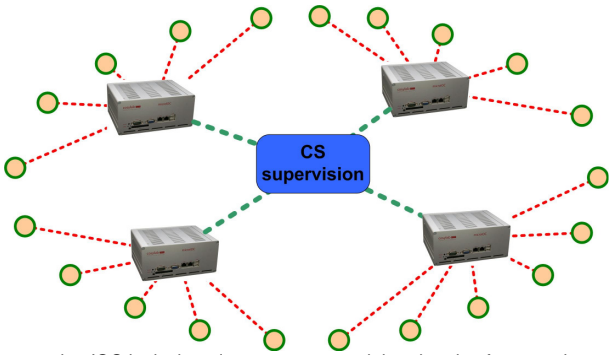
Long-life, industrial grade components minimize maintenance cost. microIOC has no moving parts; even the fan and hard-disk (compact flash is used instead) are left out. The system is resistant to vibrations and makes no noise.

Components are enclosed in a compact and robust aluminum casing. Tree different form factors are available to accommodate various mounting requirements.

Standard off-the-shelf industrial-grade components with high mean time between failures (MTBF) are used. Each microIOC must pass a special system integrity test. Correct operation of the entire system is guaranteed.

flexible installation and access

- installation right next to controlled devices enables flexible distributed control
- communication protocol of a device interface no longer enforces distance limitations; devices can be placed farther away
- devices can be directly connected; additional transition boards or adapter circuitries are not needed
- access to microIOC can be remote (Ethernet) or local if on-place device-debugging is required (RS232 or keyboard & VGA LCD)



microIOC is designed to serve as a peripheral node of a control system, providing access to the controlled devices.

SW support

microIOC software platform is built on an **open source Linux** OS that provides grounds for flexible control system integration. Reliable and stable Linux **Debian distribution** simplifies handling of the correct versions of SW libraries. RTEMS is also supported. To develop and deploy your own applications for microIOC, a **development environment** is provided to speed-up the development cycle. All the HW is fully supported in software, including **Linux device drivers**.

EPICS, **ACS** and **TANGO** control systems are supported with pre-built records/objects. When integrating into control system, a SW layer ensures that only system-level relevant information is passed to the supervisory part of the CS. Device relevant information and control processing is done locally.

For even greater flexibility, a **web-based monitoring and control** (Webmin) is provided; microIOC device offers the functionality of a web-server. For easy access to network available files **network file system** (NFS) is supported. microIOC can act as an **Ethernet gateway** to provide console communication with any of the controlled devices; a serial/GPIB to socket server is provided.

EPICS TANGO RTEMS Xe ALMA ACS

Cosylab, June 2007
Product specifications version: 1.01

Teslova ulica 30
SI-1000 Ljubljana
Slovenia

phone: +386 1 477 66 76
fax: +386 1 477 66 10
e-mail: info@microioc.com
visit us at : http://www.microioc.com

technical specification

microIOC	
single board computer	
processor	x86 compatible processors, ranging from/to: Geode GX1, 300 MHz, 111MHz FSB, 16 KB L1 cache Intel Celeron M 320, 1.3 GHz, 400 MHz FSB, 512 KB L2 cache
interfaces	10/100 Ethernet , 2 x USB, 2 x RS232, VGA, IrDA, Parallel
system memory	144-pin SO-DIMM SDRAM, up to 1GB
permanent memory	industrial grade CF card, up to 1GB
expansion bus	PC/104, up to three extension cards
storage an boot device	CF or via network (hard-disk only on request)
software	
operating system	Linux Debian, RTEMS
device drivers	fully supported HW configuration
control system	EPICS, Tango, ACS
power supply	
mains input	auto range: 90~132V / 180~264V, 47~63Hz
power	70 W, overload protection
cooling	convectional
aluminum casing	
dimensions: desktop 8" 2U case desktop 12" 2U case rack-mount 19" 2U case	 200 x 88 x 160 mm 300 x 88 x 200 mm 440 x 88 x 200 mm
dual SBC option	to save space, rack-mount 19" 2U case can be equipped with 2 single board computers
weight: desktop 8" 2U case desktop 12" 2U case rack-mount 19" 2U case	 ~2 kg ~2.5 kg ~3 kg
3½ " front-panel cutout	desktop 12" 2U case – standard rack-mount 19" 2U case – optional

microIOC family

microIOC family products (see separate product descriptions for detailed information)	
microIOC-CosyIcon	Cosy **instrumentation control**; connect up to 24 serial devices: RS232, RS422, RS485 and/or up to 3 units of advanced laboratory devices with GPIB ports
microIOC-M-Box-PMAC	**motion control** solution for up to 8 axis, featuring advanced programmable multi-axis controller and support for various feedback devices
microIOC-Analog/Digital	**analog/digital input/output system**; acquire up to 48 analog input signals (16-bit, 500 kS/s), control 6 analog output channels and 16 programmable digital inputs/outputs…
microIOC-MX-BPM & microIOC-LR-BPM	up to 8 multiplexed and/or log-ratio **beam position monitors** for cycling and/or single-pass bunches, based on a Bergoz MX-BPM and LR-BPM sensor and analogue capturing electronics, leveraged by control system integration
microIOC-LOCO	high-voltage **power-supply distribution system for vacuum ion pumps**; supply up to 16 ion pumps using only 1 or 2 power supplies; measure the pressure for each pump
microIOC-BLM	a complete solution for **beam loss measurement** and loss localization, based on a Bergoz BLM sensor and analogue capturing electronics; up to 96 sensors per microIOC
microIOC-DG	**low-jitter delay generator** with 15 fully-programmable output channels; constant transfer function of output jitter at ~50ps; synchronization with multiple signals
microIOC-CosyEye	**integrate image data into the control system**; perfect solution for a beam profile and position measurement; Ethernet , Firewire and USB cameras supported
microIOC-CosyScope	conventional oscilloscope features, providing **signal analysis over the Ethernet**; signals can be measured, compared, saved, and analyzed on the user-specific basis

Cosylab, June 2007
Product specifications version: 1.01

Teslova ulica 30
SI-1000 Ljubljana
Slovenia

phone: +386 1 477 66 76
fax: +386 1 477 66 10
e-mail: info@microioc.com
visit us at : http://www.microioc.com