BUSINESS PROPOSAL

PC BASED CNC CONTROLS

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YARA
The company operates in the field of implementation of the modern technologies in the industry since 1998. We have accumulated great experience, have performed a variety of complex and interesting projects. It was a hard way, but now we can say that every step was made from the beginning to the end. Everyone says what they can do, I say that we never do:

- We do not leave unfinished projects, each of them is made on 100%.
- We do not try to sell our products to you, we try to do that you want to buy it yourself
- We do not do low-quality goods, each product is tested before sale
- We do not renounce our errors, if there are problems we quickly and efficiently eliminate all of them

The growth of the industry and the high demands to the quality of products don’t allow to work on old equipment. The solution is purchasing of new. But where to get the resources?

There is a solution - it is modernization of the existing equipment.

According to statistics, 72% of failures occur due to failure of obsolete electronic equipment.

Our mission

“Make affordable, non-proprietary and reliable PC based CNC control for retrofitting of CNC machines and for new equipment”

Today modernization of equipment is the optimal solution, which allows effective use of existing manufacturing resources and get advanced capabilities with minimal cost.
WE OFFER

PC BASED **CNC CONTROL** uCNC-1300xx

![Image of CNC control system]

**CHARACTERISTICS**
- any type of CNC software
  - MACH3/MACH4
  - LinuxCNC
  - UCCNC
  - WinCNC
  - CNC-D, TurboCNC etc.
- industrial PC based
- works with +/-10V and STEP / DIR servos and stepper drivers
- can be connected to encoders, resolvers, inductosyns, selsyns (with special modules)
- up to 896 IO signals (with special modules)
- hand held MPG pendant, operator panel

**APPLICATION**
- CNC machines retrofit
- lathes
- mills
- EDM
- machines with ATC
- plasma cutting
- multi axis machines
- New CNC machines

**ADVANTAGES**
- open architecture
- modular design
- standard components
- expandable
- multifunctional

Since 1998, we use uCNC in equipment retrofitting. 147 CNC machines were retrofitted by our company using this system.

**SOFTWARE**

**MACH 3,4**
Well known around the world as low-cost software for CNC machines. With module **uIPC-1300MC** can control machines with servo. Runs on OS WINDOWS

**CNC-D**
Licensed software offered by our company. Flexible, adaptable to any equipment.

**TurboCNC**
Freeware for hobby machines. Simple.

Sensors and actuators are connected to the expansion modules. The software integrates all components of the system and controls them. Remote monitor and keyboard can be moved away from the main unit up to 30m.

Other types of software

You can write your own software or use any software that meets your requirements. Also we can develop it for you.
STRUCTURE OF uCNC-1300xx

POSSIBLE CONFIGURATION #1

**Manufactured by our company**

- 10.1" Rugged TFT Monitor uIPC-1300M
- Power 12V
- On / Off button
- USB

**Any other manufacturer**

- Any type of PC
- CNC Software
  - WINDOWS based
    - MACH 3 / MACH 4
    - UCNC
    - WinCNC
    - KMotion etc.
  - Linux based
    - LinuxCNC etc.

- PC computer
- STEP / DIR
- +10V Analog
- SERVO
- DISCRETE IO
- LIMIT SWITCHES
- ELECTRO VALVES
- VFD
- Automatic Tool Changer
- LATHE TURRETS

Waterproof keyboard uIPC-1300KB
RS-232

Waterproof operator control panel uIPC-1300CP
RS-232

Handheld MPG pendant uIPC-1300KH

This configuration is useful if you want to apply usual PC computer or any other IBM PC compatible computer. It helps to save resources on purchasing of quite expensive Industrial workstation but require of extra skills for configuring and connection. Also monitor, keyboard, handheld pendant and operator control panel can be purchased separately.
STRUCTURE OF uCNC-1300xx

POSSIBLE CONFIGURATION #2

Manufactured by our company

- 10.1" Rugged TFT Monitor uIPC-1300M
- Distance up to 30 m
- Power 12V
- On / Off button
- USB
- VGA
- PS/2
- Limit switches
- Electro valves
- Discrete IO

Any other manufacturer

- Any type of PC
- CNC Software
- WINDOWS based
  - MACH 3 / MACH 4
  - uCNC
  - WinCNC
  - KMotion etc.
- Linux based
  - LinuxCNC etc.
- Industrial computer uIPC-1300xx
- OR
- DIR + 10V Analog
- SERVO
- STEP / DIR
- +10V Analog
- DISCRETE IO
- Limit switches
- Electro valves
- VFD
- Automatic Tool Changer
- Lathe Turrets

Handheld MPG pendant uIPC-1300KH

Waterproof keyboard uIPC-1300KB

Waterproof operator control panel uIPC-1300CP

This configuration is useful if you want to receive fully assembled and configured CNC control according to specified requirements. There are huge number of extra modules which can be installed in our Industrial PC for connection to old analog servo drives, encoders, resolvers, inductosyns etc. Configured by this way CNC control often used for retrofitting of old CNC machines, where replacing of servo drives and motors is out of budget. We have partner relations with many manufacturers of CNC controllers and software and we have modules which include their controllers. All parts can be purchased separately.
More than 147 CNC machines were retrofitted by our company since 1998. All customers were satisfied with quality of our products and especially with technical support. Even more machines were retrofitted by our partners, who installed CNC controls by themselves.
COMPONENTS of uCNC-1300xx

Industrial monitor uIPC-1300M

CHARACTERISTICS

- 10.1" TFT
- VGA, DVI (option), HDMI (option)
- 12V Power
- 1280x800 dpi
- rugged enclosure
- Emergency button
- On/Off power button
- Power LED
- USB connector (option)
- extra industrial connector for different purposes

APPLICATION

- CNC controls
- HMI panels
- special equipment

ADVANTAGES

- standard VGA connector
- rugged design
- protected screen
- extra buttons (power, alarm)

We can make any Industrial monitor according to your drawings. TFT panels from 5" to 22" are available for ordering.
WATERPROOF KEYBOARD uIPC-1300KB

CHARACTERISTICS
- protection level - IP54 (front panel)
- 2 multifunctional encoders
- custom key labels and layout
- custom front panel design
- interfaces
  - PS/2
  - RS232
  - I2C
  - USB (with converter)
- connection to the handheld pendant with MPG and to operator control panel
- expansion of the keys amount

APPLICATION
- using as additional control panel
- retrofitting of the CNC machines
- manufacturing equipment
- using in an existing projects

ADVANTAGES
- interfaces
  - PS/2
  - RS232
  - I2C
- custom appearance
- expandability

Combining more than one keyboard to a single control panel can significantly extend the functionality of the existing control system. Ability to connect to other CNC makes a device indispensable for the modernization of equipment.
OPERATOR CONTROL PANEL uIPC-1300CP

CHARACTERISTICS
- protection level - Ip54 (front panel)
- 2 multifunctional encoders
- custom key labels and layout
- custom front panel design
- interfaces
  - PS/2, USB (option)
  - RS232
  - I2C
- connection to uIPC-1300KB keyboard
- MPG 100 impulses
- expansion of the keys amount

APPLICATION
- using as additional control panel
- retrofitting of the CNC machines
- manufacturing equipment
- using in an existing projects

ADVANTAGES
- interfaces
- PS / 2
- RS232
- I2C
- custom appearance
- expandability

Every professional CNC control has operator panel. It is used for controlling of complex equipment with many different mechanisms and aggregates.

Dimensions:
- Width: 403mm
- Height: 165mm
- Depth: 22mm
INDUSTRIAL PC **uIPC-1300xx**

**CHARACTERISTICS**
- modular design
- powerful PC workstation
- Windows or Linux based
- extra modules for connection to:
  - encoders, resolvers, inductosyns, syncros
  - +-10V analog drives
  - discrete IO signals
  - modules with stepper motor drives inside
  - modules with famous controllers inside
  - Smooth stepper, Kflop etc.

**APPLICATION**
- retrofitting of the CNC machines
- manufacturing equipment

**ADVANTAGES**
- modular design
- embedded mini-ITX motherboard
- SSD shockproof HDD
- LPT, COM, USB, LAN

**WE OFFER**

- **“uCNC” Workstation**
  - 1.8GHz Processor
  - 2Gb RAM
  - 4.8 Gb HDD SSD
  - USB, LAN, LPT, COM

- Motion controller
  - sensor and drives connection
  - expansion up to 16 axis in main block

- IO controller
  - IO signals connection
  - expansion up to 896 signals
  - relay outputs

- Place for extra modules

**All components of Industrial PC can be freely replaced and serviced.** Modular enclosure helps to conveniently remove blocks and add new. Also we can design special modules for mounting your controllers inside PC enclosure.
MOTION CONTROLLER uIPC-1300MC

CHARACTERISTICS

- control analog +−10V servo drives
- expandable up to 64 axis
- works with all types of sensors (encoders, resolvers, inductosyns, syncros)
- servocycle 0.0001s
- allows connection up to 8 IO signals per 1 axis

APPLICATION

- CNC machines retrofit
- lathes
- mills
- wire erosion
- machines with ATC
- plasma cutting
- multi axis machines

ADVANTAGES

- digitize actual tool position
- different processor at each axis
- expandable
- universal

Motion Controller - a mandatory component of the control system. It receives signals from the feedback sensors and controls the drives with analog voltage +− 10V. Also, each board monitors the current misalignment, and turns off drive at exceeding the allowable limit.
IO controller receives input signals and controls the output relays with commands from a workstation. The whole algorithm of the software incorporated in the numerical control system, but the controller has several special functions to unload the main program (pulse grease control, control of spindle encoder).
Didn’t find needed module?
We can design special module and integrate existing controller inside of our Industrial PC.
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