# OPEN-M, OPEN-XL, OPEN-XLi

The **OPEN**control product family is an highly scalable CNC system based on several powerful hardware platforms. The same software, real-time and HMI, works on the whole OPENcontrol range, allowing to choose the model with the most suitable characteristics for the application, simplifying this way the development and the maintenance of machines with different complexity levels.

OPENcontrol performances increase with the models named **OPEN-M**, **OPEN-XL** and **OPEN-XLi**, the latter one being able to manage up to 24 process, 12 simultaneously interpolated axes per process and a total number of 64 axes.



*OSAI OPEN-M/XL CNC*

**OPEN-M and OPEN-XL,** respectively equipped with Intel Celeron-M 2.0 GHz CPU and Core 2 Duo 2.26 GHz, are suitable for the development of complex applications, having a computing power fitting the multi-process working centers with several axes. For both models, the SW structure with dual operating system Windows CE and Windows 7 (WES7) is available for the simultaneous execution, on the same hardware, of both CNC real time applications and market software for Windows™.

Thanks to the i5 CPU, **OPEN-XLi** is the solution that best fits working centers requiring the highest performances.

OPEN-M, OPEN/XL and OPEN-XLi can be completed with OSAI Operator Panels or with simple touch screen monitors, with high performances servo-drives and servo-motors driven by EtherCAT bus and with a complete line of modular I/OS.

Thanks to its characteristics, CNC OPENcontrol family allows obtaining high finishing in workpiece machining and optimization of working centers management:

- Control of 5 axes machines (bi-rotary head) by Tool Center Point (TCP)
- Algorithms for High Speed Cutting (HSC)
- Complete 3D roto-translations.
- Gantry and dual axes management
- Look-ahead with 1024 pre-calculated blocks
- Velocity Feed Forward (VFF) calculation
- Jerk control using advanced algorithms
- Management of tool magazine, tool life, random tool, multi-pocket tool
- Multi-axes electronic cam
- Cross compensation
- Volumetric compensation to correct both asymmetries and mechanical misalignments of the machine

Systems can be completely customized with a graphical software HMI and an embedded PLC offering:

- Multi-tasking real time execution
- Up to 250 tasks with 10 priority levels
- Task cycle time with 250 µSec. minimum scheduling
- More than 450 predefined functions
- Possibility to interpolate the axes also from machine logic
- Possibility to include customized functions and external software algorithms

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# Technical data

| | OPEN-M | OPEN-XL | OPEN-XLi |
|---|---|---|---|
| CPU | Celeron® M 2.0 GHz | Intel Core 2 Duo 2.26 GHz | Intel Core™ i5-3610ME, Dual Core, 2.7 GHz |
| Max axes n° | 32 | 64 | |
| Max n° of parallel processes | 4 | 24 | |
| n° blocks/sec | 7000 (5 axes) | 8500 (5 axes) | >9000 (5 axes) |
| n° look ahead blocks | Configurable up to 1024 | | |
| Primary fieldbus | Mechatrolink III, Mechatrolink I/II, EtherCAT (SoE and CoE profiles), OS-Wire | | |
| Secondary fieldbus | EtherCAT, CANopen, Profibus | | |
| Min. interpolation time | 0.25 ms | | |
| Storage | Compact Flash 1-4 GB/SSD – 128 GB | | |
| RAM | 4GB | | |
| Monitor port | 1 x VGA + 1 x DVI-I (independent display using dual O.S.) | | Dual VGA or VGA/DVI (independent display using dual O.S.) |
| Ethernet | 2 x 10/100/1000 MHz | | |
| USB | 6 x USB 2.0 | | 4 x USB 3.0 2 x USB 2.0 |
| PS/2 | 2x (keyboard and mouse) | | - |
| Serial Line | 3 x RS232 + 1 x RS232/422/485 | | 5 x RS232 1 x RS232/422/485 |
| Parallel port | 1 x LPT1 | | - |
| Expansion Slot | 2 x PCI 32 bit / 33 MHz | | |
| Power Supply | 24Vdc | | |
| Power Consumption | 2.5 A @ 24Vdc | | |
| Dimensions (mm) W x H x D | 195 x 268 x 101 | | 215 x 272 x 114 |
| Housing | Aluminium Chassis | | |
| Operating system | Single OS (Windows CE 6.0)/ Dual OS (Windows CE 6.0 + WES7 32 bit) | | |
| Controlled axes | Up to 32 | Up to 64 | |
| Number of processes | Up to 4 | Up to 24 | |
| Local I/O port | | | |
| Analog Axis | 1 x 16 bit Analog Out + 1 x Inc. Encoder Input | | |
| Analog input | 2 x 12 bit ±10V (channel 1 also configurable 4÷20 mA) | | |
| Fast Input | 4 (3 + Touch-Probe) | | |
| Fast Output | 3 | | |
| Power enabling | 1 x digital out 24V | | |