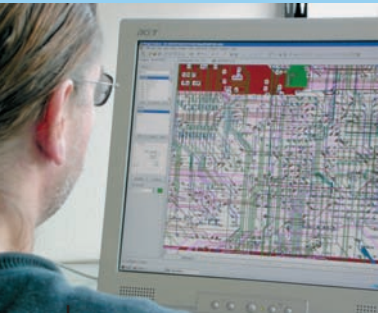


Final verification of the schematics



Multilayer rule driven Layout



BIOS and Software development

MPL AG

We strive to be a valued partner in understanding your critical business issues. MPL then translates that knowledge into innovative products and solutions that enhance productivity, quality and security.

MPL AG was founded in 1985. During our history, MPL has become the industry technology leader for low power, rugged, embedded, and extended temperature designs. MPL develops and manufactures highly integrated Industrial PCs, embedded CPU boards and systems for long term reliability and availability. Our products are mainly used in harsh industrial and military/aerospace environments.

MPL is a privately owned company which has demonstrated continuous growth and profitability since 1985. Our commitment to customer service and the relationships we have developed are the most valued asset in our inventory. This is our guarantee of trust which allows our customers to work with us today and tomorrow.

High-Tech • Made in Switzerland

MPL stands for state-of-the-art microprocessor based solutions. We provide a complete service from conception and design through manufacturing and test. This includes long life cycle support for our high quality electronic modules and devices.

The Rugged Solution Provider

Our success is based on unique solutions – designed for rugged and sensitive environments such as: medical, maritime, aerospace, food industry, defense, and industrial applications with high reliability requirements.



Quality and Reliability

The design and manufacturing of all MPL products are conducted in Switzerland – according to our philosophy “High-Tech • Made in Switzerland”. Quality and reliability are key priorities in the evaluation of components, design, production and test. MPL is an ISO 9001 certified company since 1995.

Development and Engineering

We continuously invest in new and innovative technologies for our microprocessor based products. Our close partnerships with the world leaders in chip technologies guarantee state-of-the-art hardware and software solutions with long-term availability.

Life cycle Support

To assure life cycle support, we stock all components in-house. This guarantees that we are prepared to repair all MPL products over their full operating life cycle.

MPL – The Company You Trust



Packaged Industrial PC assembling in our production



Members of the MPL engineering support team



BGA re-work station



Panel PC – Communication device in the stock market



Packaged Industrial PC – In-car test & measurement system



Embedded CPU board – Steady use of MPL products in shuttle and ISS

CAPABILITIES

The real value of a product is when: It can be installed, forgotten, readily available over the years and repaired when needed.

Reducing total cost of ownership

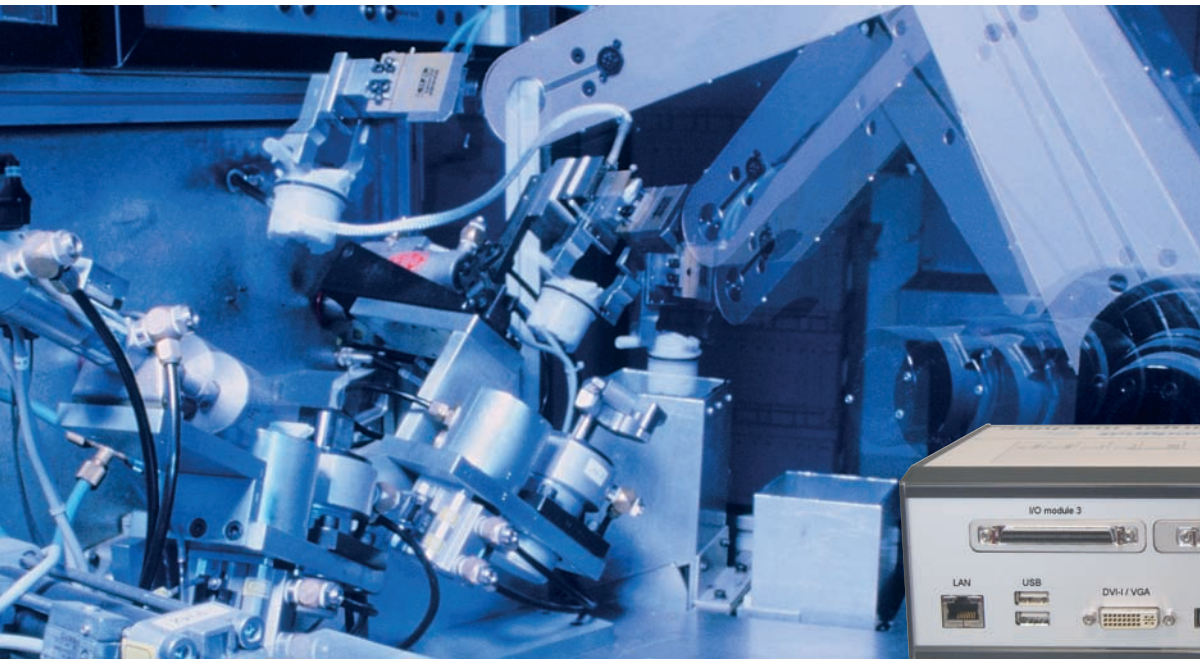
When designing products our main target is the long-term availability of a given design. Therefore, the selection of the long-term available components is critical. Whenever possible, we use products from the embedded road maps of different suppliers as this will assure the long-term availability of a given component. In addition, we keep all parts in local stock allowing us to repair the products years after delivery and in most cases beyond the End Of Life of a given design. This local stock also enables quick delivery when needed.

Increase MTBF values

One of the MPL design rules is to use components with the lowest possible power consumption. The selection of the proper parts is key, because reliable and energy-efficient products can only be developed with high quality components. A design created to only achieve a low price cannot be the driving factor for best MTBF values. This design philosophy is what differentiates MPL from its competitors.

Operational from - 40°C up to + 85°C

The basic principle to achieve extended temperature in a product is to design it with lowest power consumption. Hence, with minimum thermal loss. Prior to delivery a complete thermal test cycle of every product is performed in MPL's environmental chamber. This insures full functionality for a given temperature range and provides additional assurance to our customers.



Our mission is reliability

Our products are used in harsh environments including areas of shock and vibration. Therefore, we design and manufacture our boards and mechanics to exceed the requirements of defense, railways, traffic, avionics, space, marine and industrial applications. The right design makes the difference.

What is a real rugged design?

Designing products from scratch is the only solution. Simply taking the reference design created for commercial PCs, is not suitable. Many manufacturers of Industrial PCs take this approach and create inherently flawed designs which cannot meet the specifications for harsh environments. Therefore MPL designs and manufactures its state-of-the-art PCs and controller boards in Switzerland by implementing the latest thermal technologies and utilizing our many decades of experience in designing products for rugged market demands. This is what makes our products “Real Rugged” and tested to the highest reliability standards.

These are the principles which differentiate MPL in a fast moving market.



Packaged Industrial PC – Power stations control system



Custom design – Storage & communication system in avionics



Packaged Industrial PC – Monitoring and control system



Packaged Industrial PC – Offshore for various applications



Packaged Industrial PC – Data acquisition & communication



Packaged Industrial PC – Power distribution monitoring

PRODUCT RANGE

All MPL products are designed to withstand harsh and rugged environments. They are most reliable with a long-term availability to achieve the lowest possible cost of total ownership. All of our products are available in extended temperature and can be customized to specific requirements.

Packaged Industrial PCs

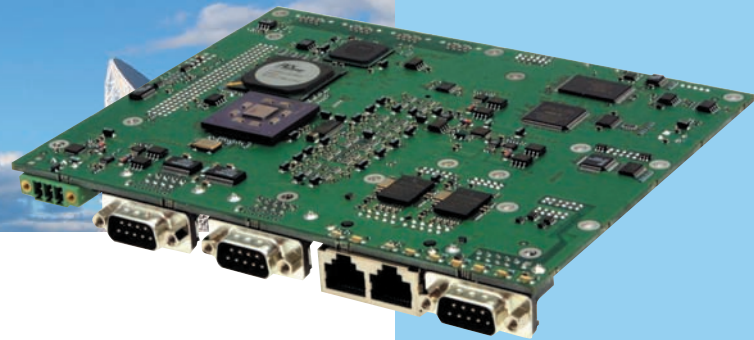
Our Industrial PCs are designed to be 100% PC compatible as well as fanless, robust and compact. A customer may select from our various chassis designs such as outdoor or MIL applications with IP67 / NEMA6 rating requirements. The comprehensive product range starts with 5x86 CPUs and continues through the latest technology. All systems come with the same Form, Fit and Function. Furthermore, MPL's embedded PC products are easily expandable with PC/104, PC/104-Plus, PCI or PMC modules to meet various I/O requirements.

Fanless Panel PCs

MPL's Panel PC solutions are slim and compact yet, they are designed to be rugged under the harshest conditions. This product line has one of the only industry chassis that offers a full (all sides) protection of up to IP65 / NEMA4 ratings. These units also maintain 100% PC compatibility. Our CPU range includes the latest technology and we offer a full range of display sizes within the product line. The displays can be customized and expanded for requirements and applications. The Panel PCs are available in aluminum or stainless steel construction. Furthermore, we offer extended temperature solutions.

Embedded CPU boards

The MPL board range is compact, robust and multi faceted. The product portfolio comes in various common form factors. MPL supports integrated CPU architectures from Intel, PowerPC and ARM. Some products can be operated with a power consumption as low as 2 Watts. All products are highly flexible and versatile and offer a perfect solution for OEM applications.



Peripheral boards

To expand our I/O solutions MPL offers a range of reliable state-of-the-art peripheral boards to choose from. The range of peripheral boards spans from unique serial board designs to industrial network switches and universal multifunctional I/O cards. MPL I/O solutions enable our customers to make the expansion easy and straight forward.

OEM and customer specific solutions

Close partnership is our belief for a successful collaboration. MPL products are supported and monitored over the full life cycle of availability. We have a broad technology base and a great deal of experience in microprocessor oriented development. MPL is a single, comprehensive source for hardware/software design, production, test, and support. In some cases the depopulation of a standard product is the best, most cost effective and quickest path to achieve a customer specific solution.

REFERENCES

Worldwide MPL has more than 600 companies which use our reliable products on a daily basis. Our applications are based in the industrial control, medicine, military/aerospace, traffic, transport, and food service industries. A partial list of trusted MPL customers are:

- **ABB**
- **ALSTOM**
- **AREVA**
- **BOEHRINGER**
- **BOEING**
- **CATERPILLAR**
- **HONEYWELL**
- **HYUNDAI HEAVY INDUSTRIES**
- **IAEA**
- **LOCKHEED MARTIN**
- **NASA**
- **RAYTHEON**
- **ROLLS ROYCE**
- **SIEMENS**
- **THALES**
- **VARIAN**



Packaged Industrial PC – Data acquisition and entry system on vehicles



Embedded CPU board – Ultrasonic inspection robot control



Packaged Industrial PC – Ship navigation and ballast control



WORLDWIDE DISTRIBUTOR AND SUPPORT NETWORK FROM MPL

Local sales support

Our distributors are near you! To serve our customers best we have a worldwide distributor network which will handle your local pre and post sales support.

Technical support from the engineer

Our customers get direct access to our design engineers to assist with initial product function and operation. We do not work with call centers or large support teams, but rather we rely upon our prompt courteous service while giving customers direct access to our design engineers to resolve any support issues.

MPL – The Company You Trust



MPL AG Elektronik-Unternehmen
Täferstrasse 20
CH-5405 Baden-Dättwil
Tel.: +41 56 483 34 34
Fax: +41 56 493 30 20
Email: info@mpl.ch
www.mpl.ch