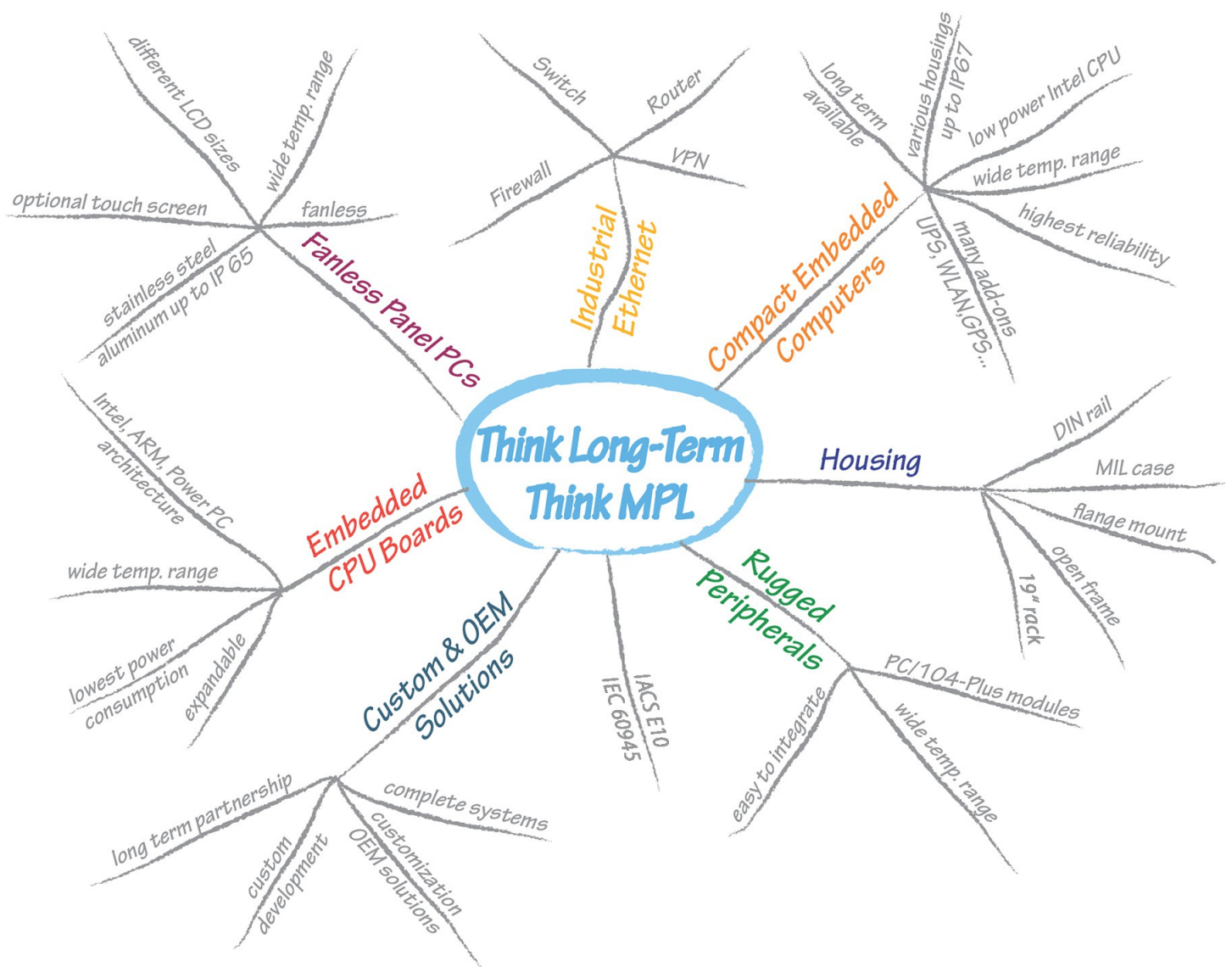


Maritime Solutions



Why is MPL the right partner for Maritime applications?

TEN Reasons to buy MPL Products

1. Continuity

Since 1985, MPL has been the industry leader in developing and manufacturing rugged, fanless electronics, and embedded systems for customers demanding best quality. MPL's commitment to design, high reliability, low power consumption, extended temperature, and long-term available products are the cornerstones of our success.

2. Innovation

MPL products differ clearly from other products on the market. Most other products are cost optimized, but neglect the quality in design control, life cycle management, low power consumption, and MTBF optimization found in each MPL product. MPL maintains special agreements and relationships with the major chip suppliers who offer MPL early access to the latest technology developments.

3. Unmatched Quality

MPL products are designed from inception to insure high reliability when operating in rugged and tough railway environments. A further development focus is to produce consistent, stable, long-term available products, helping to reduce our customers TCO.

4. Low power Design increases MTBF

We design products and solutions that have the lowest possible power consumption in the industry. They generate less heat, less stress, and therefore a higher MTBF value with a better reliability rate as the proven result.

5. Extended Temperature Range (-40°C up to +85°C)

Each standard MPL product withstands operating temperatures of -20°C to +60°C. Products with the extended temperature option receive additional specific product tests and test cycles in our environmental chambers. Test reports are delivered with each product. Wherever possible, components with a temperature range of -40°C to +85°C will be selected.

6. Long-term available Solutions

Our main target is long-term availability, as this is a major cost reduction factor for our customer. Whenever possible, MPL uses products out of the embedded road map from various suppliers. MPL maintains end-of-life stock to ensure longevity of supply and longevity of repair. Typical long-term availability is 10 years after introduction, and repairs over 20 years.

7. Highly Ruggedized

MPL products are specifically designed to withstand harsh environmental operations. In numerous Marine applications, MPL products have proven their ability to withstand extreme temperatures, thermal cycling stress, high shock, and vibration conditions. They have been used worldwide on Ship or Naval application meeting the IEC 60945 / IACS E10 as standalone or as 19" rack solution.

8. Reliable Partnership

MPL offers to its customers and business partners a long-term, cooperative engagement. Our financial strength and independence is important to sustain MPL's growth and future.

9. Closeness

Our distributors are near you! To serve our customers the best, we maintain a global distributor network which will handle your local pre- and post sales support.

10. MPLcare

MPLcare is a system which is maintained by design engineers, management, and the MPL administration team. MPLcare is provided to each customer free of charge and includes technical support questions answered in less than 24 hours by the product design engineering team.

Think Long-Term – Think MPL

Remote Maintenance Monitoring

Description

To eliminate unexpected down times of the drives, a remote maintenance and monitoring device is installed on steel plant, ships, tunnels, to name just a few.

Features

- Used worldwide on small and large drives
- Customized CEC and specific housing
- Integration of MPL firewall (GUARD), fiber optical IO distribution of the customer and loading customer application software
- Reliability, modularity, compactness
- Wide temperature range
- Withstand the humidity and tough environment on sea
- IEC 60945 certified



Customized small Panel-PC on Sailing Yacht

Description

Used as personal information system for operating lighting, air-conditioning, and shades, as well as displaying yacht information, charts, music, and cameras.

Features

- Small compact Panel-PC with low power CPU, 6.5" LCD, LED backlight, and sensitive touch screen
- OEM housing and front frame
- Powerful device with lowest power consumption as unit is built into ship wall
- Powered over PoE
- Designed to meet IEC 60945
- Reliability, compactness, support



Network Security on Ships

Description

Providing best secure protection of the ship network during communication with the base.

Features

- Used worldwide on ships & oil platforms
- GUARD firewall with OEM housing
- OpenWRT OS for firewall flexibility
- Firewall setup according customers requirement
- Reliability, temperature range, compactness
- Coating



Navigation & Weight shifting on high speed Trimaran

Description

Main controller for navigation and balancing of the fastest Trimaran in the world

Features

- PIP with 24 serial lines for various sensors on the ship
- Additional PIP for the weight control and balance
- Modularity to expand the solution according the needs
- Low power consumption was key
- Humidity, shock & vibration resistant
- Coating
- Light weight
- IEC60945 certification



Interface Controller in Oil & Gas Industry

Description

PIP used as universal Interface switch for different field buses on oil and gas platforms

Features

- Customized PCIe and PCI adapter card
- Customized mechanics for 3x PCI and 1x PCIe cards matching a 19" rack
- Long-term availability (frustrated from earlier supplier with constant EOL)
- Extended temperature
- Easy to install on oil & gas platforms all over the world
- Easy maintenance



Tough Open Frame Solutions

Description

Open frame firewall/ router with 3 GigE ports (copper & fiber), using OpenWRT firewall SW incorporated in a larger environment. Solution is built into an existing cabinet on the ship.

Features

- GUARD open frame firewall
- On board soldered Flash
- On board soldered RAM
- SFP multi-mode & single-mode (-40°C to +85°C)
- Each unit tested in climate chamber at -40°C to +85°C
- Sustains toughest environment (shock & vibration)
- Designed to meet IEC 60945



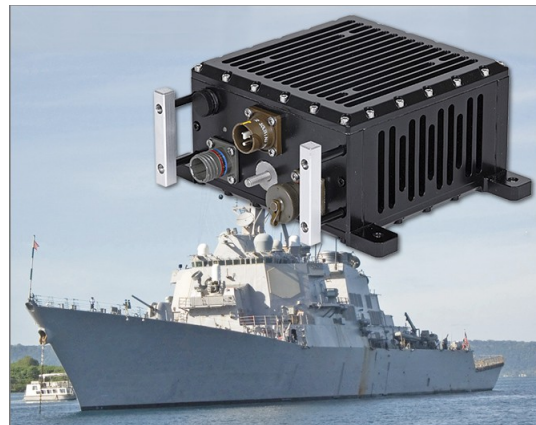
Rugged Compact Embedded Computer

Description

Ultra compact rugged controller to monitor ballistic trajectory.

Features

- Intel CPU board in PC/104 configuration
- soldered on board ECCRAM
- Integrated Flash
- Integrated UPS system
- IP67 aluminum housing (internally chromated, externally powder coated)
- Long-term availability
- Designed to meet IEC 60945



Winch Control System for Fishing Vessel

Description

Deck machinery based on high pressure hydraulic trawling systems with computerized control and monitoring.

Features

- PIP 30 base board
- Integrated customized CAN
- Started 18 years ago with PIP5 with the same fit, form, and function (long-term availability)
- Withstanding maritime environments
- Designed to meet IEC 60945
- Long term availability and serviceability
- Direct exchangeable PIP5 -> PIP30



Rugged Embedded Computer

Description

Full featured, flexible controller on ships with shock absorbers, used for various applications.

Features

- Dual Core Intel CPU soldered on-board
- Separated board and system ground
- 1 x RS485 & 1 x RS232 (galvanic isolated)
- Custom housing with custom coating
- Integrated frame grabber card
- Camera link card
- Integrated 8-port managed switch
- 2 x PoE injector
- Extended temperature range -40°C to +65°C
- MIL connectors & shock absorbers acc. customer requirements
- Designed to meet IEC 60945, MIL-STD-461, and MIL-STD-810



Rugged Controller on Sea

Description

Controlling on-board welding process of oil pipelines on Pioneering Spirit offshore vessel (largest ship in the world)

Features

- Compact Atom computer
- Humidity, shock & vibration resistant
- Extended temperature capability -40°C to +85°C
- Long term availability
- IEC 60945 certification



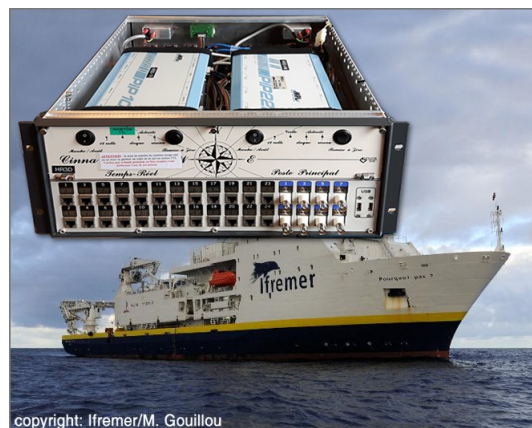
Navigation & Information System on Research Ships

Description

Electronic Chart Display and Information System ("ECDIS") used for nautical navigation that complies with International Maritime Organization (IMO).

Features

- Use of PIP10, PIP20 & PIP30
- Multiple IOS (VxWorks - Linux)
- 4x RS232 port additional
- 2 x LAN ports
- 2 x display ports
- Designed to meet IEC 60945
- Fanless and vibration resistant
- Long-term availability
- At least 10 years supply and repair



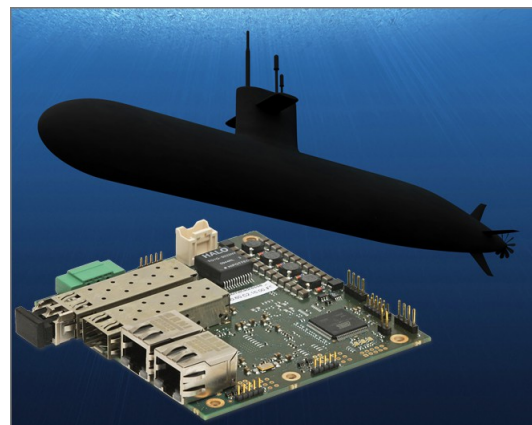
Total Ship Monitoring System (TSMS)

Description

TSMS measures water level at various points on submarines. Sensors run data through MAGBES-12S to central computer system.

Features

- Ruggedness & size of the managed switch
- Long-term availability
- Low power consumption
- Availability of extended temperature
- Reliability and robustness are key features for a monitoring system installed on a submarine
- Designed to meet IEC 60945



CPU Control of Sonobouy Launcher System

Description

The system drops Sonobouys into the ocean to passively and actively detect targets that are below the surface.

Features

- Semi-customized PowerPC board
- VxWorks as OS
- -40°C to +85° C
- Coating and bonding
- Long-time availability (15 years since first design-in)
- Rugged & reliable design



Design

All MPL Embedded Computers meet or even exceed the IEC 60945 / IACS E10 maritime standard and are the ideal choice for long-term offshore applications. The unique rugged design, combined with the best industrial-grade components, offer high reliability and long-term performance.

MPL products are 100% designed and manufactured in Switzerland by MPL AG. All our products are fanless, shock and vibration proof, low power, rugged, and long-term* available. The perfect solution for a system to be used in maritime applications and rugged environments.

** Typically 10 years or more after first introduction, 20+ years repair-ability*

Standards

All MPL products are designed to meet or exceed the most common standards. This includes maritime certification IEC 60945, but also railways certifications EN 50155, defense certifications MIL-STD-810, EMI certification, as well as other certification that might be required.

ISO Certification

MPL AG is an ISO 9001 certified company since 1995. The ISO 9001 quality standard ensures that the products and services are of consistently high quality.

References

Worldwide, MPL has more than 1000 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 Maritime application customers are:

ABB
BOEING
GENERAL DYNAMIC
LARSEN & TOUBRO
RAYTHEON
THALES

ALLSEAS GROUP
DCNS
HARRIS
LOCKHEED MARTIN
RHEINMETALL
WOODWARD

BAE SYSTEMS
GENAVIR/IFREMER
L3
NORTHUP GRUMMAN
ROLLS ROYCE
YOKOGAWA

If you need additional information do not hesitate to contact us.



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 we rather rely upon our prompt and courteous service, while giving customers direct access to our design engineers to resolve any support issues.

MPLcare

is provided to each customer free of charge and includes technical support questions answered in less than 24 hours by the design engineering team.

MPL – The Company You Can Trust



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