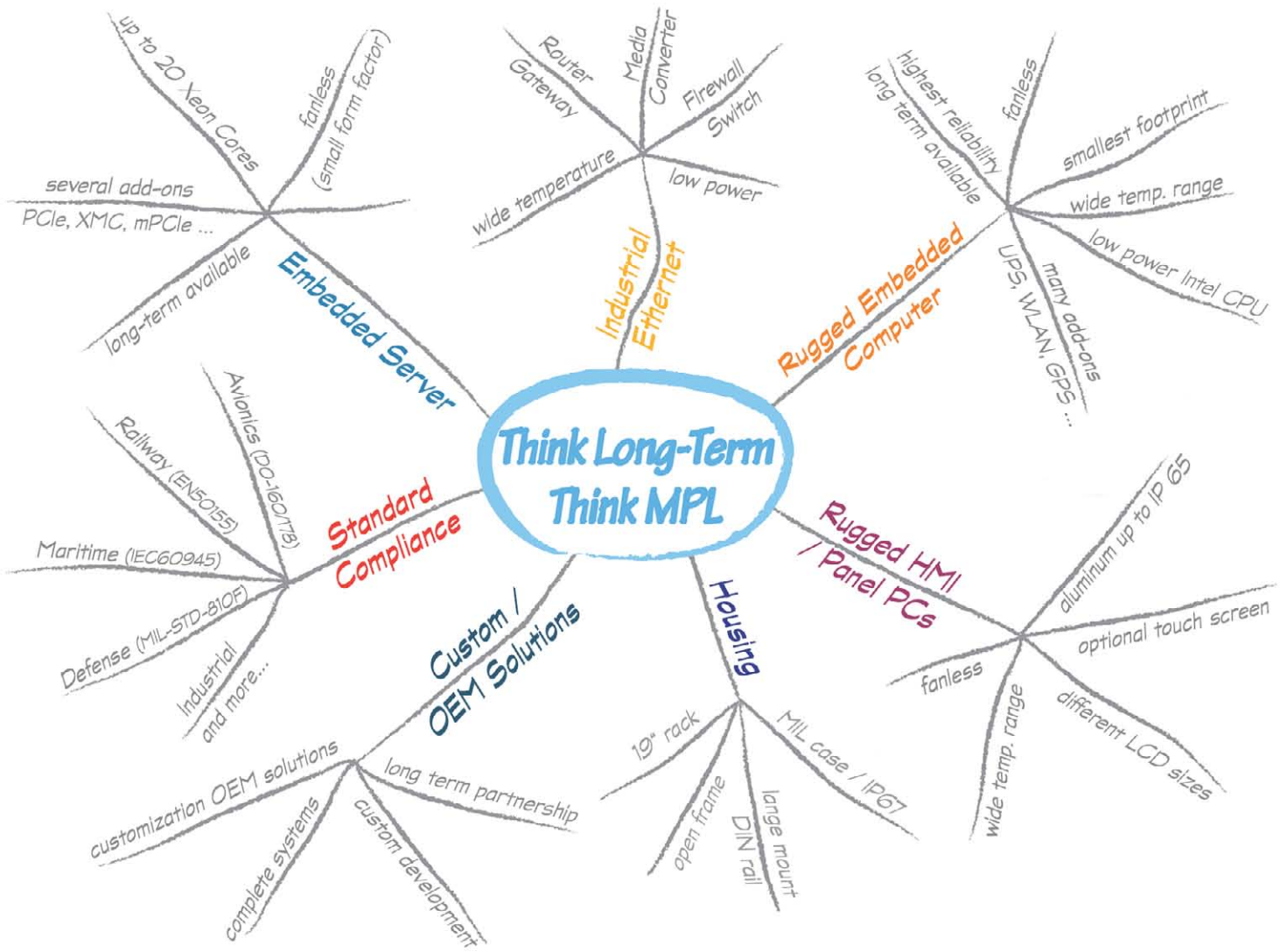
Avionics Solutions

Image credit: Julian Herzog



MPL

High-Tech • Made in Switzerland

MPL AG - Avionics Solutions

Why is MPL the right partner for Avionics 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 Avionics applications, MPL products have proven their ability to withstand extreme temperatures, thermal cycling stress, high shock, and vibration conditions. They have been used worldwide in Aerospace/Avionics applications meeting the required standards.

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

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MPL AG is an ISO9001 certified company

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Fanless open frame Swap-C solution with i7 and NVIDIA GPU

Solution is rugged enough to be installed on helicopters

Features

- i7, Quad core with NVIDIA CPU (MXM)
- All conductive cooled
- Long term available
- Proven solution with multiple expansions
- ECCDDR on CPU board
- All interfaces are available on lockable headers
- GRIP with MXM board
- SATA drive with hardware erase

Embedded Voice over IP Interface Processor

Used on UAV and other aircraft.

Features

- Rugged embedded i7 CPU
- Extended temperature -40°C to +55°C
- 100ms hold-up time
- 4x E1 interface on XMC
- Removable SSD
- IP67 housing with 5 x D-38999 connectors
- SWaP-C (238 x 188 x 73.2mm)
- MIL-STD-810 and DO-160 testing

Airworthy Computer

The unit is used for Unified Communications Application which will be installed under Airborne Inhabited Cargo (AIC) environment in aircrafts to have facility control & IP based intra-voice communication between cabin crews, passengers, and ground as well.

Features

- Dual Core i7 CPU 2.1/3.1GHz (MIL-PIP38-1V1)
- Completely fanless
- Sound (HDSOUND-2)
- DDR3 ECC RAM
- 2.5” SLC SSD
- Ethernet switch (MAGBES)
- 10.4“ Night Vision Display
- IP67 aluminum housing (HE30)
- Tested in accordance:
  MIL-STD-810G, MIL-STD-461E, MIL-STD-704E

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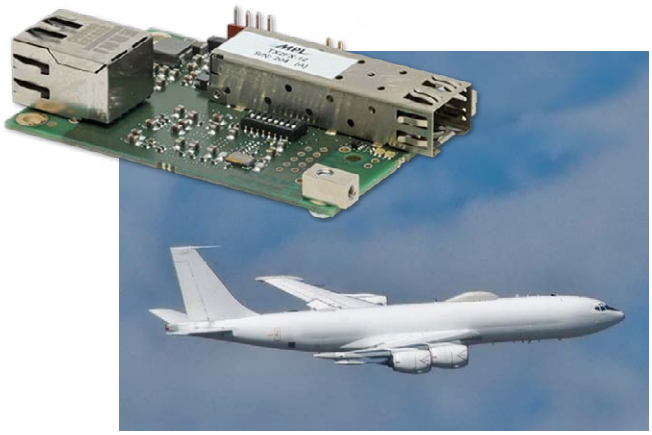
Network Upgrades

Weight reduction and modernization program.



Features

- Upgrade program on airplanes
- TX2FX for fiber network
- Weight reduction of copper wire
- Extended temperature operations (-40 to +85°C)
- Installed all over the aircraft
- Includes the MPL supplied SPF-1X

Combat System Operator system for AC-130J

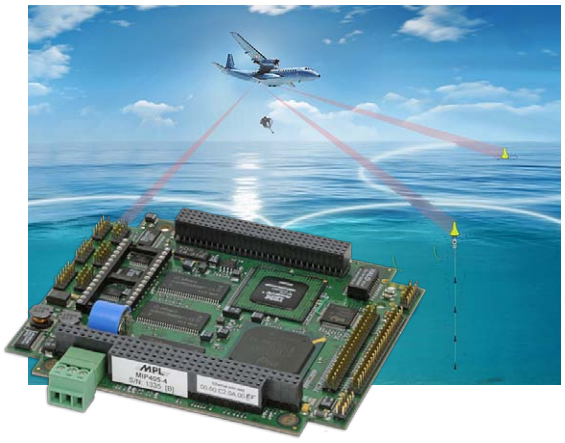
Used on various aircraft.

Features

- Rugged embedded i7 CPU
- Extended temperature -40°C to +55°C
- 2 second hold-up time (programmable)
- 16x DIOs, 4x serial lines, 2x GigE, CAN Bus
- 2x 1553 redundant, 2x 1553 transmit inhibited
- IP67 housing with 8 x D-38999 connectors
- SWaP-C (265 x 292 x 71mm)
- Removable SSD

CPU Control of Sonobouy Launcher System

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

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Mission Management Computer (MMC)

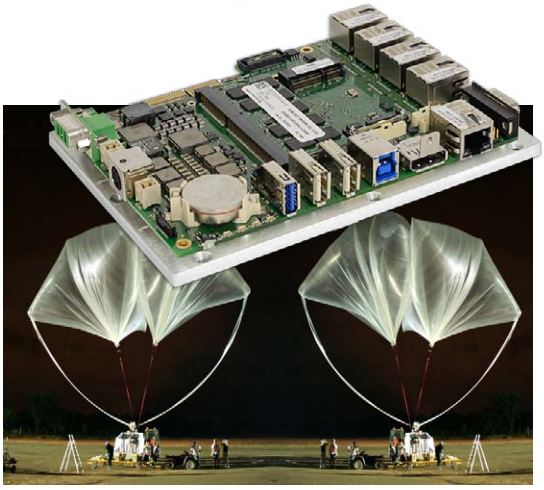
Used on various aircraft.

Features

- Rugged embedded i7 CPU
- Extended temperature -40°C to +55°C
- 2 second hold-up time (programmable)
- 48 DIOs, 16 serial lines, 2x GigE, CAN Bus
- 2x 1553 redundant, 2x 1553 transmit inhibited
- IP67 housing with 10x D-38999 connectors
- SWaP-C (265 x 292 x 71mm)
- Removable SSD

Onboard Computer for a stratospheric balloon

The CEC14 is responsible for all data collected by the balloon in the stratosphere at an elevation up to 45km.



Features

- Compact Atom Computer / Quad Cores
- ECC RAM
- Linux OS
- Each unit tested in climate camber at -40°C up +85°C
- Supplied as Open Frame solution (for easy integration in existing cabinet)
- Long term availability and serviceability

Largest Airborne Observatory in the World equipped with MPL Switches (MAGBES)

Description

Rugged embedded switch used in extended temperature environment.

Features

- Universal 10-port switch
- Built in 19” 1U rack
- All ports on M12 connectors
- Extended temperature operation (-40°°C to +85°C)
- Low power consumption, <6W with use of 10-ports
- Convection cooled, dust protection
- Long-term available (+10 years)

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Airborne Mission Networking Avionics Interface

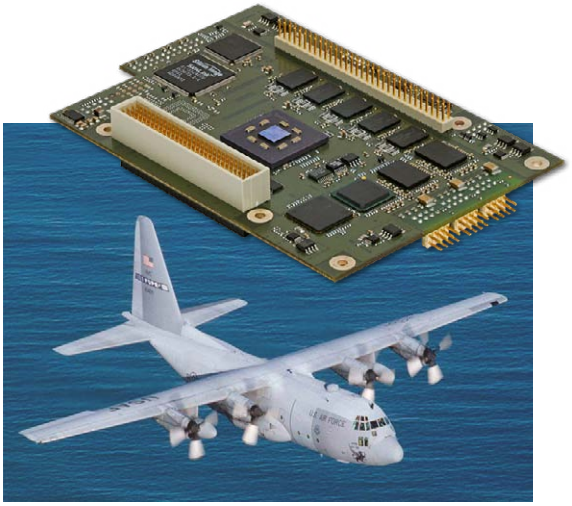
Used on various aircraft.

Features

- Rugged embedded i7 CPU
- Extended temperature -40°C to +55°C
- 2 second hold-up time (programmable)
- 48x DIOs, 12x serial lines, 2x GigE, 2x ARINC 429
- 1x 1553 redundant, 1x 1553 transmit inhibited
- 4x EIA 530 synchronous serial Interface
- IP67 housing with 10x D-38999 connectors, all on one side
- SWaP-C (220 x 296 x 120mm)
- Removable SSD

Tough Open Frame Solutions

Commercial & Military aircraft use for distributing mission data for PCCARD or SATA drive, to all on-board mission systems.



Features

- IBM PPC440GX PowerPC (custom design)
- 4 x SATA, 3 x GigE port, PCI-104, 2 x USB
- Low power consumption of only 10.5 watts
- 40°C to +85°C, tested in climate chamber
- Long-term availability
- Customer built his own housing according his needs
- Soldered ECC RAM
- Soldered Flash

Real-Time Data Acquisition Test Set

Used on various aircraft.

Features

- Rugged embedded i7 CPU
- Integrated UPS system
- ARINC 429 and 1553 interfaces on XMC
- Digital I/Os galvanic isolated
- Analog 12bit I/Os
- IP67 housing with 8x D-38999 connectors
- SWaP-C (296 x 220 x 103mm)

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Tough Open Frame Solutions

Redundant Network Controller used in UAV (Unmanned Aerial Vehicle). MIP10 controls two Ethernet switches and provides a Compact Flash IF for SW changes / updates, all built as portable ground station.

Features

- Pentium M 1.4GHz as PC/104 (MIL-MIP10-1)
- -40°C to +75°C tested in climate chamber
- All boards are coated and bonded
- ECC RAM
- Supplied as open frame solution
- Local integrator installed it in custom housing

Design

MPL's Avionics Embedded Computers have specifically been designed to operate in harsh environments and under extreme temperature conditions. 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 railway 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 railways certifications (EN 50155), maritime certification (IEC 60945), defense certifications (MIL-STD-810G), 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 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 Avionics/Aerospace Application customers are:

ASTRONICS	BEL	BOEING	GENERAL DYNAMIC
BOMBARDIER	DLR	FRAUENHOFER	LEONARDO FINMECCANICA
L3 HARRIS	HONEYWELL	KAMAN	LOCKHEED MARTIN
MBDA	NASA	PILATUS	NORTHROP GRUMMAN
RAYTHEON	RUAG	SAAB	SNC
THALES	BOGER	AIRBUS	KUDELSKI/ NAGRA

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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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