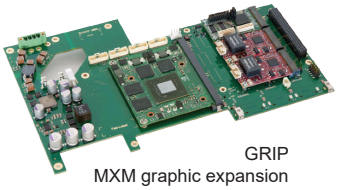
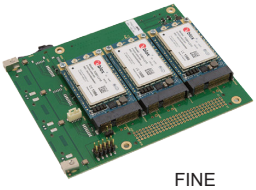
PIP4x Expansion Options

Expansion Options for the PIP4x



GRIP
MXM graphic expansion



FINE
mPCIe expansion



BOLERO
integrated UPS and RAID

General Description

Although the MPL embedded processor boards are traditionally equipped quite well, special interfaces like sound or standard PCIe slots are sometimes required in industrial applications. Therefore, we provide you with a wide selection of optional expansion modules to further extend the capabilities of the MPL processor boards.

Key features are

- Low power usage
- Rugged design
- Long-term availability *
- Environment temperature up to -40°C to +85°C

MPL expansions options have been designed to withstand harsh environments and extreme temperature conditions. The special rugged design, combined with the best industrial-grade components, offer high reliability and long-term performance.

All MPL products are fanless, shock and vibration proof, low power, rugged, and long-term* available. The perfect solution for a system to be used in rugged environments.

** Typically 10 years or more, 20+ repair*

PIP Options

Power options	
PIP4x-SB-x	Smart battery charger 0°C to 45°C charge
SM BATT	Smart battery -20°C to 60°C discharge
PIPVIN	9-36V/18-72V/43-160V input
REDPI	Redundant power input
Mass storage options	
HSRAID	Hot swap RAID expansion
SATA-REMOVE	External mass storage access
Expansion options	
PIPPCIe	PCIe x16 slot expansion
PIPPMC	PMC expansion
PIPXMC	XMC/PMC expansion
FINE	mPCIe expansion (GPS, WLAN, CAN, ...)
GRIP	MXM/GPGPU graphic expansion with mPCIe slots
ICC	Customized interconnect board
Networking options	
UNIGET	Gigabit Ethernet controller with PoE+
MAGBES	5-port managed Gbit switch
µMAGBES	10-port managed Gbit switch
MAXBES	10-port managed switch with 2x 10Gbit SFP+ ports
TX2FX	Fiber optical converter / unmanaged switch
µTX2FX	Media converter (copper to fiber)
UNIGET	10Gbit Ethernet controller board
µEPI	PoE for PIP
IEBY	LAN bypass solution
PIP4x-LAN-x	LAN expansion, up to 4 ports
Various add-on	
DP2DVI	Dual Display expansion
SERIF	RS232/422/485 module
HDSound	Sound module

All MPL products are 100% engineered & manufactured in Switzerland (since 1985).

MPL AG is an ISO9001 certified company

MPL High-Tech • Made in Switzerland

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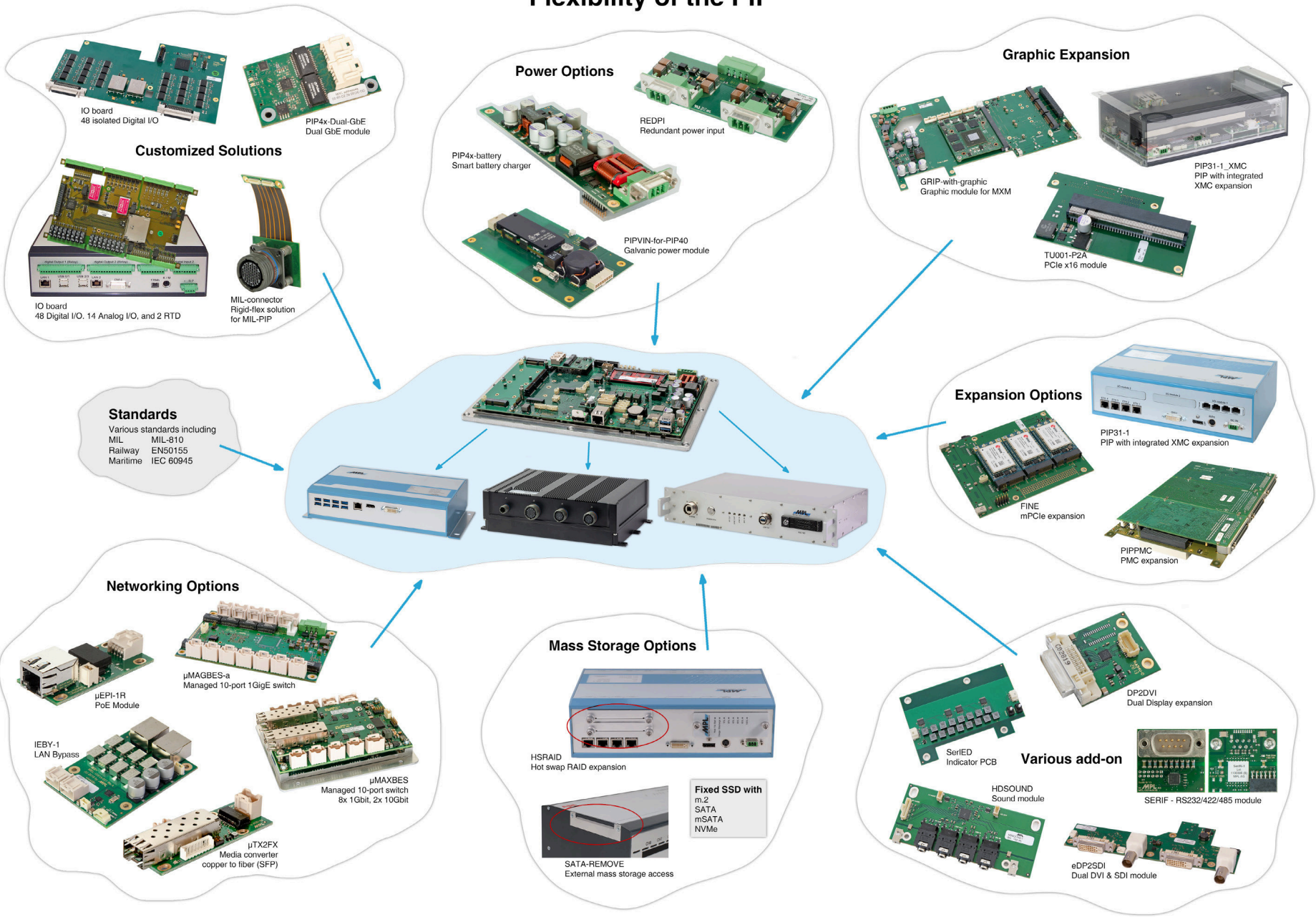
Flexibility of the PIP



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SiSAV
TECHNOLOGY TOGETHER

10 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 custocmers 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 military 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 climatic 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 applications, MPL COTS products have proven their ability to withstand extreme temperatures, thermal cycling stress, high shock, and vibration conditions. They have been used worldwide on vehicles, trains, airplanes, and land based applications, according standards like MIL-STD-810G, EN50155, IEC 60945, ...

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 Longterm - Think MPL

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