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## Marine test approval (IEC60945) for powerful and fanless Packaged Industrial PC

The recently introduced PIP9 from MPL AG is Marine test approved (EN/IEC60945:forth edition, 2002). The EN/IEC60945 Marine approval includes tests like dry heat, damp heat, low temperature, vibration, endurance vibration, conducted & radiated emission and radio frequency interference, burst & surge voltage, power supply variation, power supply failure, electrostatic discharges.

The PIP9 is based on the PIP-family specific features that include but are not limited to:



- Extreme low power consumption
- extended temperature range
- designed for rugged use & fanless operation
- enduring solution
- compact expandable housing
- a real total solution with maximum flexibility

The standard PIP9 as well as the Marine approved solution incorporate the low power Pentium III processor out of Intel® Embedded Program (long-term availability) running at 933MHz with 512kB L2 cache. The solution has a complete set of PC features such as USB 2.0, IEEE1394, LAN, Parallel Port, 3D-Graphics and more.

And in addition industrial features like wide DC input power, up to 4 serial ports (RS232/422/485, galv. isolation), Watchdog, temperature sensor, Multi Purpose Socket for SRAM and EPROM to mention just a few, are standard.

The systems are prepared to be equipped optionally with CAN, Sound or an integrated UPS system.

All on-board interfaces can be accessed externally on standard connectors without any internal wiring.

The well known, compact and flexible PIP housing (designed by MPL) for robust and best EMC performance, is just one of several enclosures for the PIP9. The solution is also available in a line of housings with integrated panels. These include stainless steel or aluminum material (all around IP65) with display sizes ranging from 12,1" up to 19" and still fanless! Touch screen solutions are available optionally.

The PIP9 has been successfully tested with Linux, Windows (NT, XP, XPe, CE), QNX, VxWorks.

Due to the unique board design for rugged environments and the 20 years of supplying independently and successfully this specific market the PIP9 be used not only in Marine applications but in areas like

- vehicles (cars, trucks, railways)
- open field (meteorology, monitoring )
- machines where dust, heat and/or vibration cannot be eliminated

Basically anywhere that a reliable and /or rugged computer is needed, the PIP9 is the right choice.

The PIP9 is the ideal solution for any application where a flexible, rugged long-term available, very powerful and complete Industrial PC is needed. The "PIP Concept" products can be ordered according to the customer requirements and needs from stock. The Products are designed, produced and tested by MPL AG in Switzerland.