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Rugged Embedded Computer, taken to the extreme

Packaged Pentium-M concept operational at full CPU Speed between -40°C up to +75°C

The Pentium M Packaged Industrial PC from MPL AG Switzerland (PIP10) is a fanless, robust, high quality industrial embedded PC with long-term availability program. The design of the PIP10 is made from scratch to withstand extended temperature conditions that many customers have. The key for a successful and reliable design that works under such rigid temperatures is to lower the overall necessary power consumption without any compromises. Just to use the reference design of Intel and create a new form factor is not sufficient and will not lead to success.

21 years of broad experience and knowhow in developing and designing embedded, rugged, low power and extended temperature solutions have been implemented in the PIP concept.



The **lowest possible power consumption of the total design** as well as a specific **placement of the components** on the board in respect of thermal issues **are the key** for extended temperature designs. Neither unimportant in an extended temperature concept is the **design of the housing**. A simple sheet-metal housing or an external heat sink is definitely not the solution. It may look good and gives a rugged impression but the power consumption losses and tests show definitely a different story.

Only an **uncompromising design** as MPL implemented in the PIP10, allows to offer such a powerful solution for industrial, marine or transportation applications and environment conditions from -40°C up to +75°C. The PIP10 design has been done such that the operation in extended temperature is possible **without throttling the CPU**, fans and openings in the housing. The PIP concept requires under no conditions a complicated heat pipe systems or a large external heat sink that gets filled with dust in an industrial environment. In comparison of most products in the market, the PIP10 differentiates and is the solution for applications that need to be robust, rugged and reliable.

The PIP concept is also Shock & Vibration resistant, the standard solution is available for 0°C up to +60°C for applications and environments where temperature is not so important but still a long term and quality product is key.

The PIP10 is also available in the PANEL-PIP, as "All-in-One" PANEL-PC concept, offered with 12,1" up to 19" LCD's and optionally with touch. As possible housing material one can choose from either Aluminum or Stainless Steel with a total case depth of less than 90 mm. The MPL "All-in-One" Panel PC's are fanless and completely sealed (front, side and back are IP65).

Further Information about the PIP10, its feature and expandability you will find under www.mpl.ch or send an email to info@mpl.ch