**Micronas showcases system solution for brushless DC motor control applications**

**Embedded microcontroller for small BLDC system solution**

**Freiburg, February 28, 2011** – Micronas (SIX Swiss Exchange: MASN), a leading supplier of cutting-edge sensor and IC system solutions for automotive and industrial electronics, today announced that it will showcase an enhanced system solution for brushless DC motor (BLDC) drive applications. The system solution comprises the Micronas embedded microcontroller HVC 2480B, a flash-based 8-bit microcontroller which can directly be connected to 12V supplies, equipped with a built-in three-phase driver for small BLDC motors.

With the introduced system solution Micronas is addressing the fast growing market of brushless motor applications. Many DC and stepper motor applications will switch to brushless solutions due to their overall better performances in terms of energy consumption, space requirements, reliability, and noise reduction – especially in the harsh automotive environment.

Depending on the system requirements, BLDC applications today are using either Hall-effect sensors or the back electromotive force (BEMF) to detect the rotor position and perform the motor commutation. In addition to the standard Hall sensor interfaces, the HVC 2480B has built-in comparators and a virtual star point reference for motor position detection via BEMF monitoring without requiring any external resistor network.

Thanks to the three-phase motor output with up to 600 mA driving capability, the HVC 2480B provides a single-chip solution for the operation of small motors.

Although the HVC 2480B is mainly aimed at small electrical motors, six special I/Os with high pulse current source/sink capability can be used to directly drive the external power stage required by more powerful electrical motors.

The HVC 2480B provides a very high integration level of embedded functionality with the flexibility of a general-purpose microcontroller. Built-in features aimed to motor control applications enable a very compact design preserving the advantages of a microcontroller-based architecture.

The device can operate directly with an unregulated 12V power supply while a 5V switchable output can supply 5V peripherals. The enhanced PWM (pulse width modulation) modules allow easy implementation of sinusoidal and space vector modulation motor driving techniques while the ability to trigger the ADC by means of PWMs allows monitoring the current in a simple way. The four-stage ADC queue enables acquisition of many signals, e.g. power supply and motor phase voltages.

The built-in amplifier for current monitoring and the embedded power MOS short-circuit protection further minimize the number of external components required to build up a complete brushless motor application.

For LIN-based applications, the integrated LIN bus driver enables a further step towards smaller PCB and the enhanced LIN-UART minimizes the CPU load for LIN protocol handling.

The on-chip temperature sensor allows detecting unusual operating conditions such as very cold/hot environment and taking the appropriate countermeasure such as reducing the current within the motor. For enhanced reliability the microcontroller has an under/overvoltage detection circuit and an over-temperature protection.

This microcontroller offers a wide range of power-saving modes, with a current consumption far below 100 μA while still preserving RAM data for fast system wake-up. The true on-chip EEPROM allows non-volatile data storage over the whole temperature range.

With its embedded functionality the HVC 2480B fits well to applications such as fans, pumps, and general-purpose actuators.

Micronas will present the BLDC system solution at the “embedded world 2011” trade fair in Nuremberg, Germany, hall 12, booth 12-424, from March 1 to 3.

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**About Micronas**

Micronas (SIX Swiss Exchange: MASN), a semiconductor designer and manufacturer with worldwide operations, is a leading supplier of cutting-edge sensor and IC system solutions for automotive and industrial electronics. Micronas offers a variety of Hall sensors and microcontrollers for automotive and industrial applications, such as car dashboard, body control, as well as motor management and comfort functions.

Micronas serves all major automotive electronics customers worldwide, many of them in continuous partnerships seeking joint success. While the holding company is headquartered in Zurich (Switzerland), operational headquarters are based in Freiburg (Germany). Currently, the Micronas Group employs around 900 people. For more information about Micronas and its products, please visit www.micronas.com.