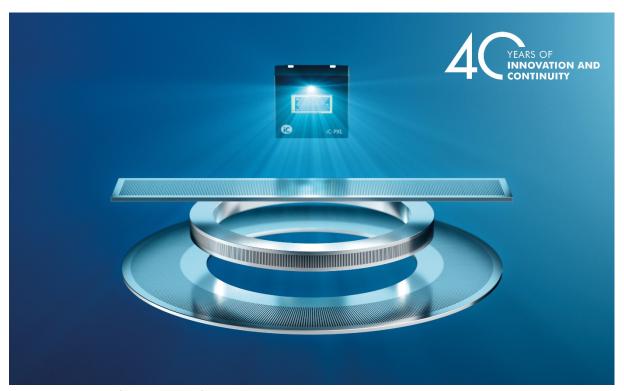# Press Release

Technological step forward for optical encoder from iC-Haus: New iC-PXL3212 with extended range of functions and features

Picture: iC-PXL3212 (iC-Haus GmbH)

Bodenheim, June 2024: Innovations in the field of high-resolution optical encoders - iC-Haus presents the latest generation of its optical reflective encoder iCs at the SENSOR + TEST (1-528).

The new **iC-PXL3212** from iC-Haus is an optical, reflective, lensless encoder IC with integrated HD phased-array photo sensors and a blue LED chip. For the latest generation of these encoder ICs, the chip designers from Bodenheim have used the advanced 180-nanometer technology in the CMOS process for the first time. The iC-PXL3212 has now a significantly extended range of functions and performance, while retaining its compact design and particularly large alignment tolerances.

What are the most important new features? A completely new feature is OTP FlexCount®, a one-time programming function that allows the resolution of the interpolator core to be

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customized. By default, the chip offers two interpolation factors based on the native resolution multiplied by 16 or interpolated by 64. For applications where these standard options do not match the desired resolution/disc diameter, OTP FlexCount® allows the chip to be reprogrammed at wafer level during production. The fact that the sensor can be used in both linear and rotary applications provides additional flexibility. Overall, the new generation of encoders offers not only significantly higher digital interpolation, but also the option to operate in analog mode, with the improved amplifier circuitry providing particularly high-quality analog signals.

More applications: Medical, LiDAR and more

The technological advancement of iC-PXL3212 improves familiar applications such as incremental encoders, miniature motors and actuators, X-Y and linear stages, or industrial robotics. However, the high performance also opens up new application areas for the encoder: These include active prosthetic systems in medical technology, for which iC-PXL3212 is predestined due to its high accuracy, processor performance and functionality. The chip is also suitable for motion control, for example in drones, or for rotating mirrors in LiDAR sensors, as used in autonomous driving. The wide temperature range of -40 to +125 degrees Celsius enables a particularly broad spectrum of applications.

To provide the best possible support for use in customer applications, iC-Haus provides comprehensive evaluation kits. The evaluation-board is pre-assembled with iC-PXL3212 sensor and comes with corresponding linear scale or code disk, which can be customized on request. Interfaces to a second circuit board enable the acquisition of all output signals and simplify testing of different operating modes. This ensures reliable test results and reduces product development time.

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You will find further information at

www.ichaus.de

https://www.ichaus.de/product/ic-pxl3212/

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Live Demonstration at SENSOR + TEST 2024

Nuremberg, June 11-13, 2024

Hall 1, Booth 1-528

Introducing iC-Haus

iC-Haus GmbH is a leading, independent German manufacturer of standard iCs (ASSP) and customized ASiC semiconductor solutions with worldwide representation. The company has been active in the design, production, and sales of application-specific iCs for industrial, automotive, and medical applications for **40 years**.

The iC-Haus cell libraries in CMOS, bipolar, and BCD technologies are specifically suited to realize the design of sensor, laser/opto, and actuator ASiCs, among others. The iCs are assembled in standard plastic packages or using the iC-Haus chip-on-board technology to manufacture complete microsystems, multichip modules, and optoBGA/QFN in conjunction with sensors.