**iC-LNB – iC-Haus press release**

iC-LNB: space-saving, 18-bit optoencoder with just 1 μs cycle time

iC-LNB with FlexCount®: programmable absolute and incremental encoder takes a board space of just 8 x 7 mm

The new iC-LNB device is a multichannel, optoelectronic scanner specifically designed for the capture of absolute position data for linear displacement measuring systems or rotary input type encoders. The chip's extremely small design is achieved by the synchronized scanning of an 11-bit binary code in addition to an analog signal track which is evaluated using real-time interpolation and which extends the position value to 18 bits.

Product photo of iC-LNB in a 30-pin optoBGA package of approx. 7 x 8 mm
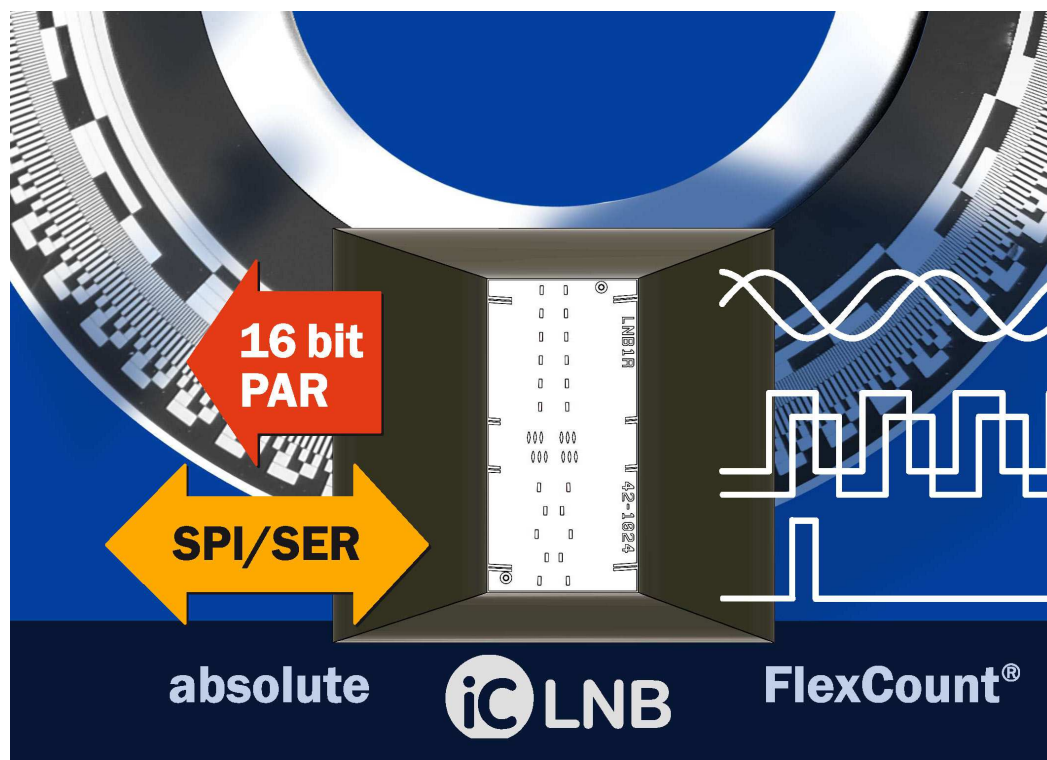
Download text and photo at

http://www.ichaus.com/pressroom/ichaus_lnb_pre.zip

iC-LNB's sensor array requires a code width of just 5.2 millimeters, enabling smaller code discs or larger hollow shaft diameters to be used. The LED lighting unit is also much more compact; iC-SN85 provides a suitable light source with a particularly energy-efficient LED. iC-LNB controls the level of illumination and acts as a monitor; a separate alarm output indicates any lighting errors.

Offset and amplitude compensation has been integrated for the correction of the analog track signals which are also output as differential sine and cosine signals with 1,024 cycles through four ports. The interpolation error can be reduced by signal correction to gain more precise position data. Thanks to the unique FlexCount® circuit iC-LNB's resolution can be chosen as required, thus enabling incremental A/B/Z signals to be output at any number of pulses. Between 1 and 65,536 cycles per revolution can be selected.

The position data can be output in parallel (up to 16 bits) or in series using a fast shift register. Clock rates of up to 16 MHz are possible for cycle times of less than one microsecond. Alternatively, the 3.3 V-compatible SPI interface can be used which was implemented for the configuration of the device.

iC-LNB operates from 4 V to 5.5 V in an operating temperature range of -40°C to +110°C. With a resolution of 16 bits all functions are available up to a maximum speed of 12,000 rpm. At 17 bits up to 6,000 rpm are followed, and at a full resolution of 18 bits to 3,000 rpm. The device comes in a 30-pin optoBGA package with a preassembled mask and requires just approximately 7 mm x 8 mm of board space. Alternatively, an even smaller optoQFN package with side lengths of just 5 mm x 7 mm is currently being qualified.

iC-LNB supplements the iC-Haus portfolio of absolute optoencoders with its medium resolution, complexity, and simple operation using the SPI interface. LEDs, code discs, a demo board, and a ready-to-operate microcontroller board which can be connected up to a PC are available for evaluation.

Further information is available at http://www.ichaus.com/iC-LNB.

Introducing iC-Haus

iC-Haus GmbH is a leading independent German manufacturer of standard iCs (ASSP) and customized ASiC semiconductor solutions. The company has been active in the design, production, and sales of application-specific iCs for industrial, automotive, and medical technology for over 25 years and is represented worldwide. The iC-Haus cell libraries in CMOS, bipolar, and BCD technologies are fully equipped to realize the design of sensor, laser/opto, and actuator ASiCs, among others.

The iCs are assembled in standard plastic packages or using iC-Haus chip-on-board technology to manufacture complete microsystems, multichip modules, and optoBGA^{TM}, the latter in conjunction with sensors.

Further information is available at http://www.ichaus.com.

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