

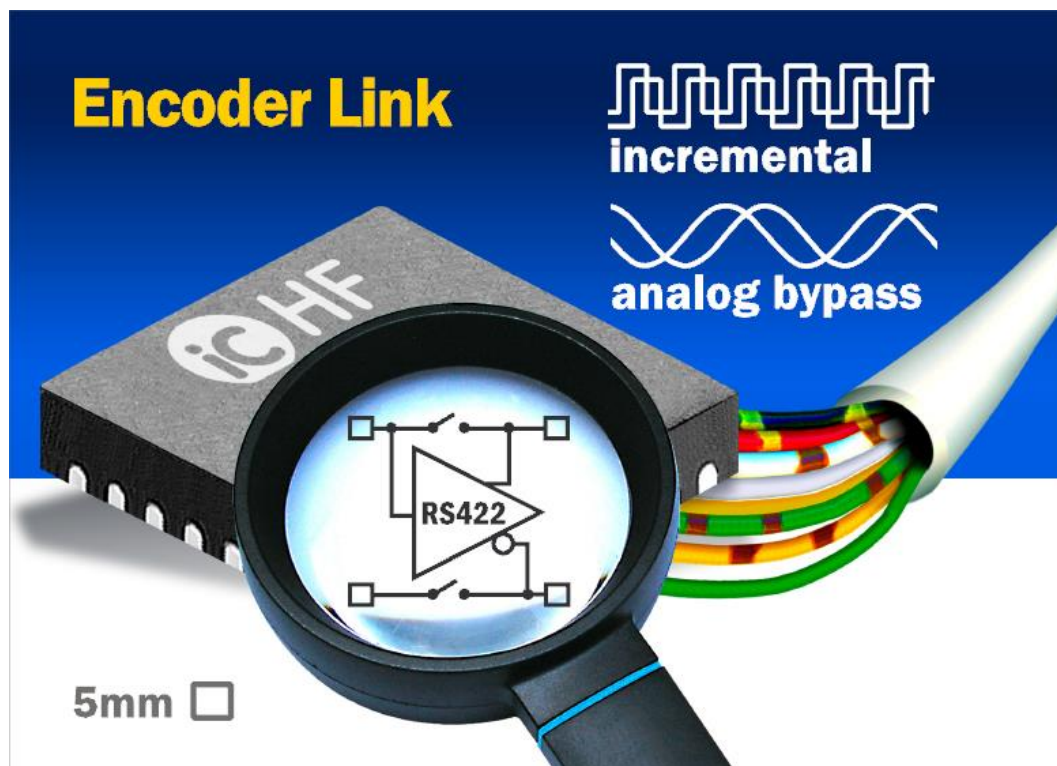
iC-HF: 6 Channel RS-422 Driver with Encoder Link

iC-HF: Encoder Link RS-422 Line Driver with Bypass

iC-HF: RS-422 Driver with analog Bypass for Encoder Applications

The new iC-HF provides 6 RS-422 line drivers for 3V – 5.5V encoder applications. With the integrated Encoder Link function, the line drivers can be deactivated and analog/digital signals directly accessed through the line driver output pins. For differential RS-422 line driver operation, six differential complementary drivers are implemented.

Product photo: iC-HF in 32 pin QFN package



Download text and photo: http://www.ichaus.de/pressroom/ichaus_hf_pre.zip

Each push-pull driver stage is capable of driving up to 65 mA maximum at 5 V and operating at an output frequency of up to 10 MHz with RS-422 termination. The driver stages are current limited, short circuit proof, and over-temperature protected. The current limitation also reduces EMC.

iC-HF contains reverse polarity protection for a safe sensor-side supply of up to 60 mA.

iC-HF is pin configurable. A safe external signal sequence at two complementary line driver outputs activates the Encoder Link state. In the Encoder Link state, 9 pins are connected from the sensor side to the field side. With this low impedance bypassing, internal analog sensor signals and digital communication signals (BiSS, SPI, I²C, etc.) can be accessed at the line driver output pins.

With the Encoder Link function, conventional sensors can be calibrated or programmed through usual RS-422 outputs. No extra contacts, pins, control lines or signals are required. Even in the field, such systems can be accessed without opening the housing. Common parts, reduced pin counts, smaller connectors, and fewer lines in the cable result in significant potential cost reduction.

The device provides under-voltage detection and on-chip temperature monitoring to switch the driver stages to high impedance on demand. A sensor error signal is combined with the iC-HF error states. On a fault, the open-drain error output NERR is activated.

All inputs are CMOS and TTL compatible and ESD protected.

Besides the 3 x RS-422 line drivers (for differential quadrature signals or commutation signals, for example), an additional 2 x RS-422 receivers and one RS-422 driver are available for the BiSS interface.

For BiSS bus applications, the iC-HF receivers and drivers can be reconfigured to comply with BiSS bus structures. Therefore 3 x RS-422 line drivers and 3 x RS-422 receivers are available for the BiSS bus communication.

In BiSS bus applications with broken or open bus structures, the communication signals can be redirected to recover communication. iC-HF redirects the BiSS communication (“loopback”) by pin control.

iC-HF works at supply voltages of 3 V to 5.5 V. Operating temperatures range from -40°C to +125°C. The device is housed in a 32-pin QFN package measuring 5 x 5 mm. The design-in process is supported by ready-to-operate demo boards including the Encoder Link signal sequence generator.

Further information is available at <http://www.ichaus.com/iC-HF> .

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 the iC-Haus chip-on-board technology to manufacture complete microsystems, multichip modules, and optoBGA, oQFN, the latter in conjunction with sensors.

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

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