SEGGER and Analog Devices Collaboration Delivers Communication Solution for Industrial Ethernet-APL

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SEGGER Microcontroller GmbH, a leading provider of development tools and software for embedded systems, today announced a collaboration with Analog Devices, Inc., a leading global high-performance semiconductor company that provides embedded engineers with a new solution for the development of industrial Ethernet applications including the new Ethernet-APL standard.

The collaboration between the two companies revolves around emNet, SEGGER's IP stack, and the ADIN1110, Analog Devices' robust, low-power industrial 10BASE-T1L Ethernet MAC-PHY device. The combination of emNet and ADIN1110 enables applications with minimum energy consumption, fast transmission rates, and high reliability.

For an Ethernet application with a low-power host processor at maximum transmission rate, the emNet IP stack is the ideal choice. It combines maximum performance with minimal memory requirements and simple integration without configuration effort. The ADIN1110 MAC-PHY simplifies connectivity to any low-power processor through an SPI interface, providing increased flexibility on processor selection.

With emNet and the ADIN1110, ultra-low-power microcontrollers with minimal flash memory and without their own MAC can be selected as processors. By design, emNet supports external MACs such as the ADIN1110, enabling any standard microcontroller to attach to Ethernet. emNet is also highly efficient in terms of flash, RAM, and packet processing speed so that even small, low-frequency microcontrollers deliver excellent network performance. Thanks to their low power consumption, these processors combined with the ADIN1110 can also be safely operated in explosive environments in the process industry, among others.

SEGGER's emNet in combination with the ADIN1110 also supports the new Ethernet-APL standard and is compliant to IEEE802.3cg for 10BASE-T1L Technology. This enables both data and power over 1 km of single twisted pair cables at 10 MBit/s full-duplex. This provides access to new data and insights from devices located in remote and hazardous areas, supporting real time configuration in the field of a process plant.

Ethernet-APL-based sensors and actuators for the process industry are currently being developed by numerous suppliers.

"The joint effort by SEGGER and Analog Devices enables customers to quickly integrate a TCP/IP-based solution in their devices," said Stefan Lueder, Project Manager Ethernet-APL integration at SIEMENS.

"ADI's new ADIN1110 10BASE-T1L MAC-PHY and SEGGER's emNet combine to provide an extremely fast path to market for low power, single pair ethernet communications solution. This is ideal for sensor or actuator nodes for many use cases including those in hazardous areas," said Mick McCarthy, Director of Industrial Ethernet Technology at Analog Devices.

"What customers want from an IP stack is a combination of maximum performance and the simplest implementation without major configuration effort," said SEGGER's CEO Ivo Geilenbruegge. "Through our collaboration with Analog Devices, industrial customers get the best possible solution because of its high performance, lowest power and ease of implementation."

emNet offers a BSD-style socket API for user applications. emNet's standard socket interface with zero-copy extensions makes it easy to run existing applications on top of emNet with minimal or no porting effort. emNet works best with an RTOS. SEGGER highly recommends using embOS, part of SEGGER's all-in-one embedded OS emPower OS. However, emNet can also be used with other RTOSes.

For more on emPower OS, emNet and Analog Devices' Chronous Real Time Ethernet Solutions, please visit:

https://www.segger.com/products/empoweros/
https://www.segger.com/products/connectivity/emnet/
www.analog.com/ADIN1110
www.analog.com/Chronous

About emNet

emNet, also available as part of SEGGER's all-in-one embedded operating system emPower OS, is an industry-leading dual IPv4/IPv6 TCP/IP stack for embedded systems. It is a complete software package designed to meet all networking demands including, and especially, the Internet of Things.

emNet is renowned for its high-performance implementation with small memory footprint and outstanding documentation as well as multiple optional add-ons. emNet has proven its value for almost two decades in numerous customer products, and in SEGGER's own products such as J-Trace PRO, J-Link PRO, J-Link WiFi, and Flasher PRO.

About the ADIN1110

The ADIN1110 is a low-power single-port 10BASE-T1L MAC-PHY designed for industrial Ethernet applications. It integrates an Ethernet PHY core with a MAC and all the associated analog circuitry, input and output clock buffering. Programmable transmit levels, external termination resistors and independent Rx/Tx pins make the ADIN1110

suited to intrinsic safety applications and other use cases where low power and ease of use are key selection factors. The ADIN1110 has an integrated voltage supply monitoring and power-on-reset circuitry to improve system-level robustness. The device has a 4-wire SPI interface for communication between the MAC and host processor.

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About SEGGER

SEGGER Microcontroller has over twenty-eight years of experience in Embedded Computing Systems, producing state-of-the-art software libraries, and offering a full set of hardware tools (for development and production) and software tools.

SEGGER's all-in-one solution emPower OS provides an RTOS plus a complete spectrum of software libraries including communication, security, data compression and storage, user interface software and more. Using emPower OS gives developers a head start, benefiting from decades of experience in the industry.

SEGGER's professional software and tools for Embedded System development are designed for simple usage and are optimized for the requirements imposed by resource-constrained embedded systems. The company also supports the entire development process with affordable, high-quality, flexible, easy-to-use tools.

The company was founded by Rolf Segger in 1992, is privately held, and is growing steadily. SEGGER also has a U.S. office in the Boston area and branch operations in Silicon Valley, Shanghai and the UK, plus distributors on most continents, making SEGGER's full product range available worldwide.

Why SEGGER?

In short, SEGGER has a full set of tools for embedded systems, offers support through the entire development process, and has decades of experience as the Embedded Experts.

In addition, SEGGER software is not covered by an open-source or required-attribution license and can be integrated in any commercial or proprietary product, without the obligation to disclose the combined source.

Finally, SEGGER offers stability in an often volatile industry making SEGGER a very reliable partner for long-term relationships.

For additional information please visit: www.segger.com

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