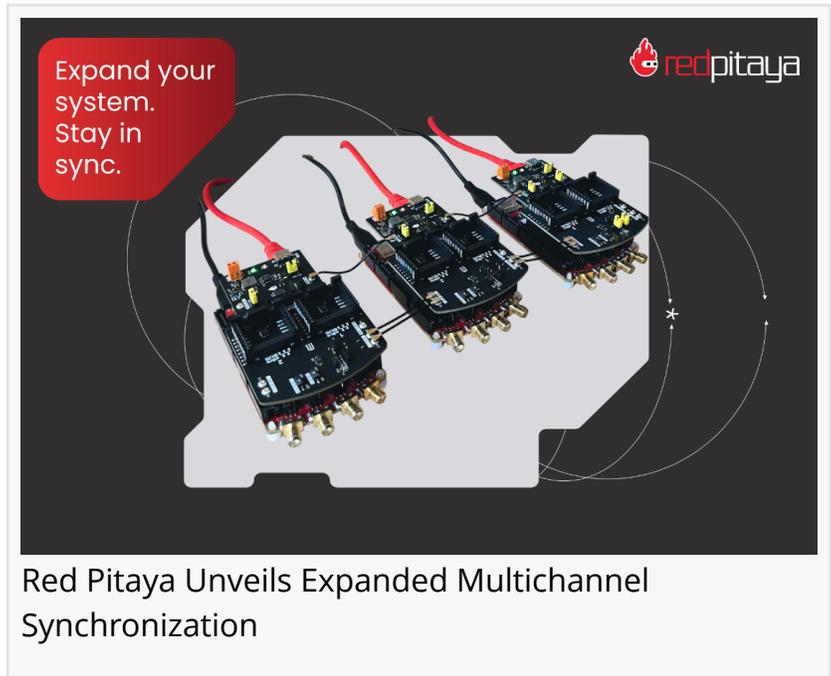


# Red Pitaya Unveils Expanded Multichannel Synchronization and High-Speed Streaming at Embedded World

*New capabilities let engineers build scalable, synchronized multiboard systems with dramatically faster data throughput*

NUREMBERG, GERMANY, March 10, 2026 /EINPresswire.com/ -- Red Pitaya, the leading developer of compact, software-defined instrumentation and FPGA-based platforms for test, measurement, and embedded systems, today announced a major expansion of its [multichannel synchronization](#) and high-speed streaming capabilities across its STEMLab 125-14 Gen 2 platform. The new capabilities will be showcased live at Embedded World 2026 in Nuremberg.



Red Pitaya Unveils Expanded Multichannel Synchronization

Following the introduction of the [STEMLab PRO Gen 2 series](#) at last year's Embedded World, this year's showcase focuses on system-level performance. Engineers can now combine multiple STEMLab boards into tightly synchronized, fully configurable setups — significantly extending input and output capacity while maintaining precise clock and trigger alignment across the entire system.

Using Red Pitaya Click Shields and shared clock distribution, users can synchronize combinations of STEMLab 125-14 PRO Gen 2, STEMLab 125-14 PRO Z7020 Gen 2, STEMLab 125-14 4-Input, and SDRlab 122-16 boards into a single, coherent measurement system. For example, pairing a STEMLab 125-14 PRO Gen 2 with a STEMLab 125-14 4-Input creates a synchronized 6-input, 2-output system — and larger configurations can be assembled to suit specific application requirements.

This expanded flexibility builds on the clock-select architecture first introduced with the STEMLab 125-14 4-Input, which allowed users to switch between the internal 125 MHz oscillator and an externally supplied reference clock. With that same functionality now available across the Gen 2 125-14 platform family, synchronization possibilities have broadened considerably. The Click



With the expanded multichannel synchronization and upgraded streaming architecture, engineers can now build customized, high-channel-count instrumentation from our standard boards."

*Mateja Lampe Rupnik, CEO of Red Pitaya*

Shield architecture handles clock and trigger distribution via the ZL40213 LVDS clock fanout buffer, delivering deterministic alignment with sharp edge control across all boards in a configuration.

Alongside the synchronization upgrades, Red Pitaya has substantially enhanced the streaming architecture of its Gen 2 boards. Through software optimization, streaming throughput between board and host computer has increased from 20 MB/s to 62.5 MB/s per board, enabling significantly higher sustained data rates in both acquisition and generation workflows.

The updated [Deep Memory Mode](#) now supports both

acquisition and generation, capturing incoming signals directly into memory or playing back data to the outputs at full core clock speed. The enhanced streaming application handles both short, high-speed bursts and longer continuous streams at up to 62.5 MB/s. All of these modes work across synchronized multiboard setups, enabling high-throughput, distributed systems built from standard modular components.

"These updates reflect what our users have been asking for — the ability to scale their systems without sacrificing precision or speed," said Mateja Lampe Rupnik, CEO of Red Pitaya. "With the expanded multichannel synchronization and upgraded streaming architecture, engineers can now build customized, high-channel-count instrumentation from our standard boards, dramatically cutting the cost and complexity of what used to require purpose-built hardware."

Red Pitaya will demonstrate these capabilities live at its booth 4-242 at Embedded World 2026, showing synchronized multiboard setups in action alongside the fully upgraded streaming architecture.

#### About Red Pitaya

Red Pitaya accelerates industrial and scientific innovation with compact, open-source, high-speed signal acquisition and processing platforms. Used by more than 5,000 industrial customers worldwide, 1,500 universities, and 700 research institutes, its technology is trusted by innovators such as NASA and Apple and by leading research institutions including MIT, Stanford, and CERN. Over 150,000 engineers, students, and researchers have used Red Pitaya boards to bridge laboratory precision with industrial scalability, helping companies reduce time-to-market and build better products faster. Learn more at [www.redpitaya.com](http://www.redpitaya.com).

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