



Pegatron 5G Reduces Open RAN Radio Power Consumption by 40%

Wireless Communications and Open RAN

Based on press release October 18, 2024



Keysight Propels Pegatron 5G to Transform Power Efficiency for Open RAN

01**Company**

Taiwan-based 5G Open RAN
radio unit manufacturer

02**Solutions**

Keysight Open RAN Architect
Solutions (KORA) and E-Plane
ETSI Test Suites

03**Challenge**

Validate O-RU energy savings
using ETSI-specified
measurement methods

04**Results**

40% reduction in O-RU
power consumption, verified
to ETSI standards

Keysight has enabled Pegatron 5G to test and validate its Open Radio Unit (O-RU) advanced energy savings features using ETSI-specified energy measurement methods. This was achieved using Keysight's Open Radio Access Network Architect Solutions (KORA), which ensures conformance, interoperability, performance, security, and energy efficiency validation for radio access network (RAN) testing.

With the majority of energy in the radio access network (RAN) consumed by radio units, improving efficiency is a strategic priority for operators. As advancements from 2G to 5G have delivered improvements, the increasing density of 5G networks needed to meet higher data demands will continue to drive up consumption, impacting operating costs and sustainability goals.

“**David Hoelscher****Chief Product Officer, Pegatron 5G**

We are proud to be the first company in Taiwan to demonstrate O-RAN energy saving and e-plane support on our PR1450 O-RU. This achievement reflects our ongoing commitment to innovation and our ability to deliver advanced 5G solutions that benefit customers and the environment.

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The Challenge

With the majority of energy in the radio access network consumed by radio units, improving efficiency is a strategic priority for mobile operators. Testing energy consumption and its impact on network performance is critical, but as 5G networks grow denser to meet higher data demands, consumption is only set to rise, straining operating costs and sustainability goals.

Pegatron 5G needed a way to test and validate advanced energy savings features on its PR1450 Open Radio Unit (O-RU) using standardized, ETSI-specified energy measurement methods — specifically ETSI ES 202 706-1 and ETSI TS 103 786 — while confirming compliance with O-RAN energy saving requirements.

Proving these gains required E-plane testing capable of evaluating energy efficiency under realistic traffic conditions, giving Pegatron 5G a credible, standards-based way to demonstrate its O-RU's power performance to operators and industry partners.

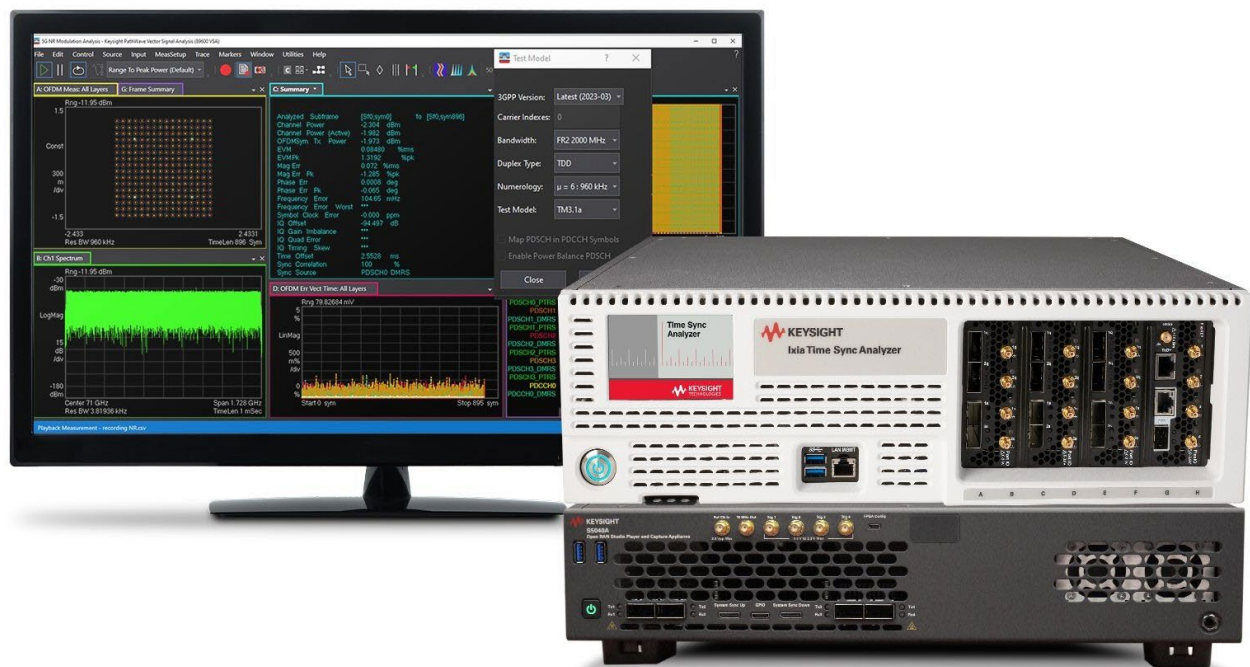


Figure 1. Validating O-RAN radio unit conformance and performance requires signal analysis software and time-synchronized test equipment capable of capturing RF, protocol, and timing behavior together

The Solution

By utilizing Keysight's E-Plane ETSI Test Suites to evaluate the energy efficiency of its PR1450 O-RU solution, Pegatron 5G was able to achieve a 40% reduction in power consumption while adhering to O-RAN energy saving requirements and the ETSI ES 202 706-1 and ETSI TS 103 786 energy measurement methods.

KORA gives Pegatron 5G a complete framework for validating its O-RU under standardized traffic and load conditions, rather than relying on isolated bench measurements, and the capability was demonstrated live at India Mobile Congress 2024.

Keysight's **Open RAN Architect Solutions (KORA)** ensure conformance, interoperability, performance, security, and energy efficiency validation across the RAN test lifecycle, from radio unit bring-up through field deployment.

For power efficiency validation specifically, Keysight's **E-Plane ETSI Test Suites** measure O-RU energy consumption under different load conditions following ETSI standards, giving Pegatron 5G a repeatable way to demonstrate compliance and quantify the 40% power reduction.

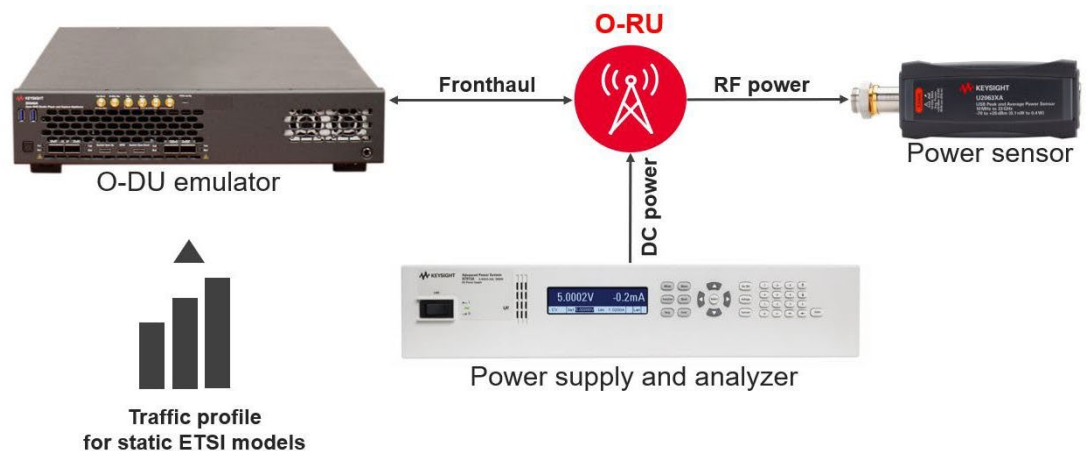


Figure 2. The E-Plane ETSI test setup pairs an O-DU emulator and power supply/analyzer with the O-RU under test, using a static traffic profile to measure RF power and DC power draw under ETSI-specified conditions

Results

Pegatron 5G achieved a 40% reduction in power consumption on its PR1450 O-RU solution while adhering to O-RAN energy saving requirements and the ETSI ES 202 706-1 and ETSI TS 103 786 energy measurement methods. This will significantly reduce network operating costs and help ensure compliance with environmental targets.

Pegatron 5G is the first company in Taiwan to demonstrate O-RAN energy saving and E-plane support on a commercial O-RU, a milestone it showcased live at India Mobile Congress 2024. The achievement reflects a broader industry shift toward standardized, verifiable energy efficiency testing as 5G networks scale.

"Keysight's KORA solutions expedite the sustainable development and deployment of the O-RAN ecosystem, with a full range of industry-proven Open RAN energy lab and field test solutions," said Peng Cao, Vice President and General Manager of Keysight's Wireless Test Group. "By collaborating with partners like Pegatron 5G, Keysight is accelerating deployments, helping network operators reduce costs, and contributing to environmental sustainability."

Conclusion

Pegatron 5G's collaboration with Keysight shows how standardized, ETSI-specified energy testing can turn power efficiency from an aspiration into a measurable, verifiable outcome for Open RAN equipment.

As 5G networks grow denser and operators face mounting pressure to control operating costs and meet sustainability targets, E-plane testing offers a practical path to optimize network efficiency without compromising performance.

Pegatron 5G's 40% power reduction sets a new bar for what O-RAN radio units can achieve, and a template other manufacturers can follow as the industry moves toward more sustainable 5G deployments.

Related Information

- [Use case: Measure the energy efficiency of an O-RU](#)
- [White paper: Energy Efficiency of Radio Units in Next-Generation Open RAN](#)
- [Pegatron 5G company website](#)
- [Keysight Propels Pegatron 5G to Transform Power Efficiency for Open RAN](#), October 18, 2024 press release