ni.com/5g-test-ue

NI Solution Brief

5G New Radio Test User Equipment

A complex standard, 5G presents more challenges than any previous generation of wireless technology. Before the 5G ecosystem can evolve, semiconductor, commercial infrastructure equipment, and even service operators must test and validate products and services to evaluate performance, conformance to the standard, and interoperability. This validation first needs to occur inside a controlled lab environment and outdoors in field trials. Aside from new technology for the mobile broadband, 5G aims to deliver a whole new wave of applications to market. To develop new applications on top of 5G, you need a standard-compliant system as a foundation.

Application Requirements

- Access to full user equipment (UE) or user device that is capable of making an attach to a gNodeB
- Ability to update system software as new requirements are added
- 3GPP UE-compliant RF front ends

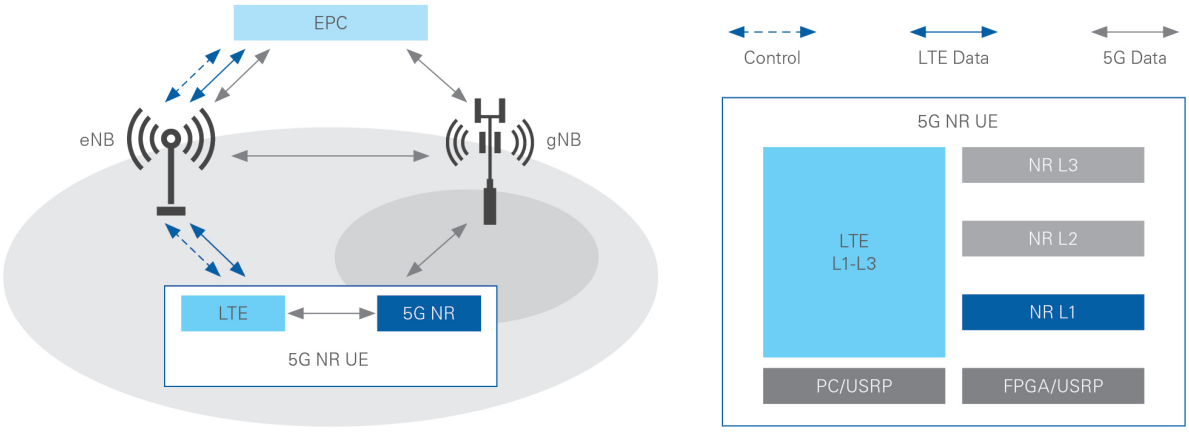
The NI Advantage

- The complete protocol stack, L1–L3, is built in software, not hardened ICs, to allow for easy updates as use cases change.
- Software defined radios give you the flexibility to select the carrier frequency of your choice.
- You can observe link performance with a variety of measurements and statistics when you are connected to a gNodeB.

NI Solution

- Gain access to a Release 15 non-standalone (NSA) compliant UE for sub-6 GHz with the NI Test UE offering for 5G New Radio (NR) before commercial hardware is available.
- Monitor link performance in real time using the visualized measurements on the GUI. Analyze and debug link performance offline with additional data logs.
- Reduce development time and maximize hardware investments with a system designed for both lab benchmark test and field test.

SYSTEM DIAGRAM



5G NR UE Overview (left) and NI Test UE for 5G NR (right)

Why Spirent Partnered With NI

"As 5G was picking up steam, we looked to find a world-class 5G NR platform that would outperform the market today and continue to do so as the 5G market matures. As a leader in SDR-based radios since 2011, NI was the natural choice to ensure we have the best radio with the best testing capabilities to stay ahead of the curve for our customers."

Clarke Ryan
Senior Director, Product Development

Key Features

Standard Features

- Fully 3GPP Release 15 NSA-compliant software capable of completing a full attach
- 4x2 MIMO configuration for 5G NR
- 2x2 MIMO LTE anchor for options 3x and 3a
- User-selectable center frequency between 500 MHz and 6 GHz
- Cabled or over-the-air functionality

Optional Features

- UE-compliant RF transmit power level
- Hard case for easy transport

NI Test UE for 5G NR in a Ruggedized Case

System Integration on Your Terms

NI offers a variety of solution integration options that can be customized to your application-specific requirements. You can use your own internal integration teams for full system control or leverage the expertise of our worldwide network of Alliance Partners to receive a turnkey system.

Contact your account manager or call or email us to learn more about how NI can help you increase product quality and accelerate test timelines.

(888) 280-7645
info@ni.com