

IQFR1-RU

5G FR1 O-RAN Radio Unit Test System

LitePoint's IQFR1-RU is a pioneering test system designed to validate RF parametric measurements and functional performance of the 5G FR1 O-RAN Radio Unit (O-RU) over the split 7.2x interface. The instrument supports 3GPP 5G NR RF downlink and uplink measurements, as well as the O-RAN C/U/M/S-plane functionality, necessary for configuring the interface between the test equipment and the O-RU under test.



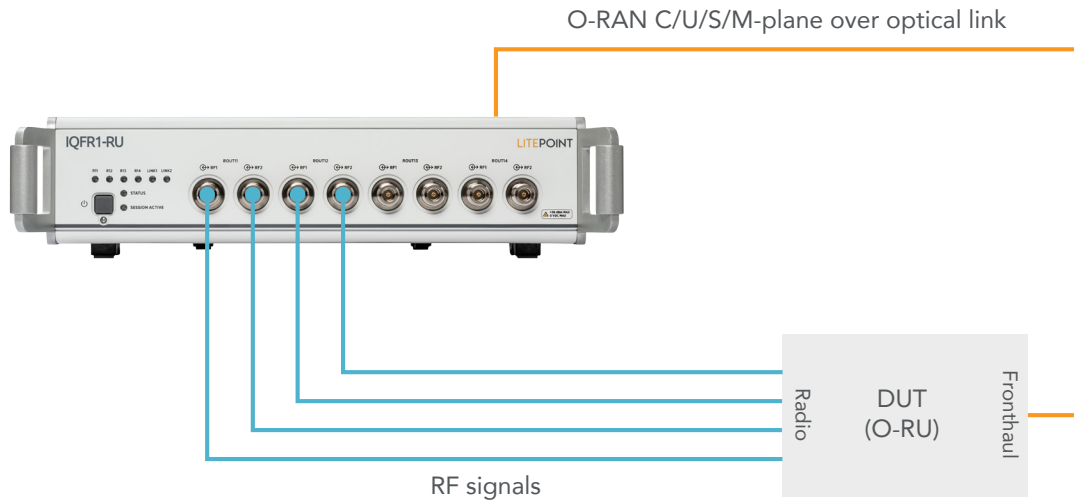
Overview

The IQFR1-RU has a compact 2U architecture, encompassing multiple independent Vector Signal Generators (VSGs) and Vector Signal Analyzers (VSAs) for 5G sub-6GHz waveform generation and analysis. Its highly integrated design, with RF signal generation, analysis, RF front-end routing hardware and optical link contained within a single chassis, makes the IQFR1-RU a simple and efficient test solution. Furthermore, the tester supports up to eight bi-directional RF ports, which are fully calibrated to provide maximum flexibility and significant time-savings during setup. With its one box simplicity and eliminated dependence on an external DU emulator, the IQFR1-RU can be easily scaled from lab to production and is ideal for ensuring reliable characterization of the radio unit.

The IQFR1-RU implements the required portions of the O-RAN Distributed Unit (O-DU) functions, as defined by split option 7-2x, for both downlink and uplink testing. For the downlink test, the engine generates eCPRI packets from the downlink signal generated by the VSG, which are then transported to the O-RU under test over the Ethernet fronthaul interface. The VSA captures and analyzes the downlink signal from the O-RU's Tx port.

For the uplink test, the O-RU under test receives the uplink signal from the VSG via the O-RU's Rx port, and the eCPRI packets are transported back to the IQFR1-RU over the Ethernet fronthaul interface. The uplink signal is then analyzed by the VSA. This testing process provides a comprehensive evaluation of the O-RAN Radio Unit's performance and functionality in both the downlink and uplink directions. The IQFR1-RU's implementation of the O-RAN Distributed Unit (O-DU) functions, as well as its support for eCPRI and Ethernet fronthaul interfaces, make it a highly versatile and valuable testing tool for 5G FR1 O-RAN Radio Units.

Connection Diagram



Order Codes

Code	Product
0100-5GSG-100	IQFR1-RU (8 Port) Radio Unit Test System
0100-5GSG-101	IQFR1-RU (4 Port) Radio Unit Test System
0300-5GSG-102	5G MIMO Measurement Suite Software License
0300-5GSG-104	5G O-RAN Fronthaul Conformance Test Software License for U/C-Plane FDD & TDD Signal
0300-5GSG-106	5G O-RAN Fronthaul Conformance Test Software License for S-Plane & M-Plane

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