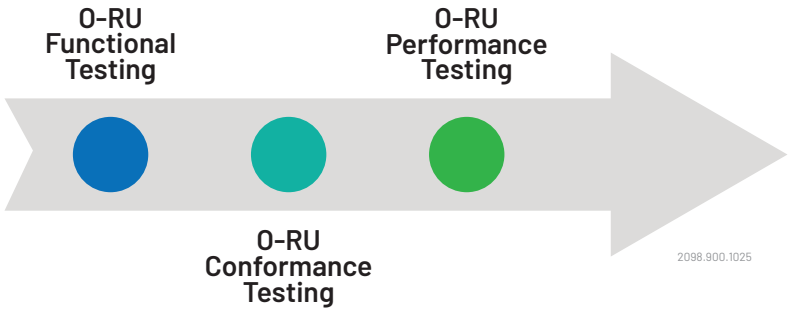
TM500 O-RU Tester

The VIAVI TM500 O-RU Tester Solution is a joint VIAVI-Rohde & Schwarz solution combining the market-leading capabilities of both companies to cover a wide range of test capabilities, allowing customers to ensure conformance, interoperability and performance of their O-RU across the product development lifecycle from functional test through to conformance (certification) and performance.

VIAVI provides a comprehensive test and validation journey, covering both standards-driven test suites (O-RAN WG4 and 3GPP) and custom test suites (functional and performance) tailored to meet specific customer needs.



- Functional Testing: Validates that the device under test (O-RU) operates according to expected specifications whilst ensuring correct execution of features. VIAVI's solutions enable early-stage validation of key functionalities in controlled lab environments.
- Conformance Testing: Ensures compliance with industry standards like 3GPP and Open RAN specifications. It verifies RF parameters, signalling, and protocol adherence for regulatory/certification/badging approvals. VIAVI supports WG4 and 3GPP compliance through automated test packages.
- Performance Testing: Evaluates components or entire system under test in loaded conditions, measuring KPIs such as throughput, latency, BLER, and EVM. It ensures that system under test can handle real-world traffic efficiently.

TM500 O-RU Tester Supported Test Modes

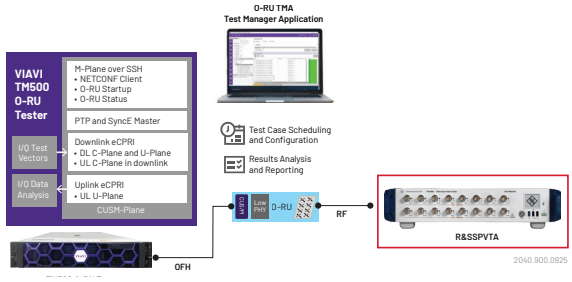
- **Conformance Test Mode:** Hundreds of test cases compliant with ORAN WG4 and 3GPP specifications.
- **Functional Test Mode:** Functional Test Mode offers enhanced testing flexibility where users can create their own bespoke test campaigns using VIAVI's built in test case templates.
- **Performance Test Mode:** Performance Test Mode enables advanced, customizable testing scenarios for real-world simulations with the help of real time signals from TM500 UE EM.

Versatile Test Setups with R&S Product Portfolio

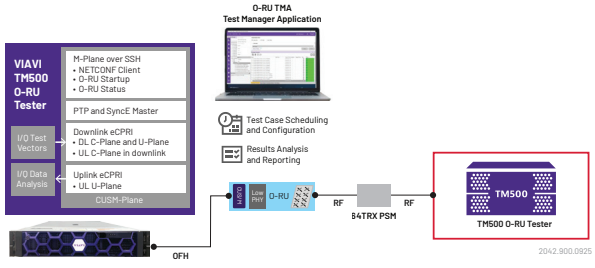
- RTO-VSA-VSG: Enhanced test coverage such as FR1, FR2, LTE, NB-IOT, SU-MIMO, MU-MIMO
- PVT360A: Compact solution with targeted test coverage of FR1, SU-MIMO
- NGP: Energy Savings, Energy Efficiency

TM500 O-RU Tester Seamless Upgrade Path for Growing Test Needs – Maximum Reusability

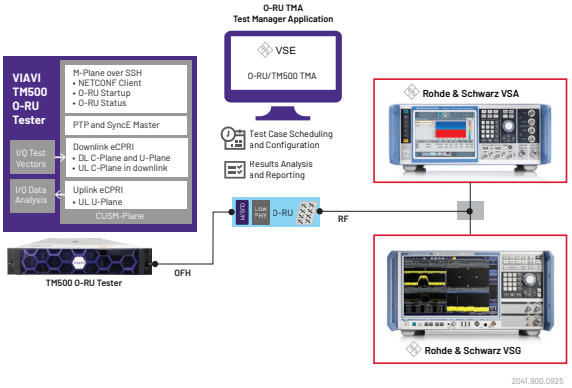
Start with PVT Deployment (SU-MIMO Conformance and Functional FR1)



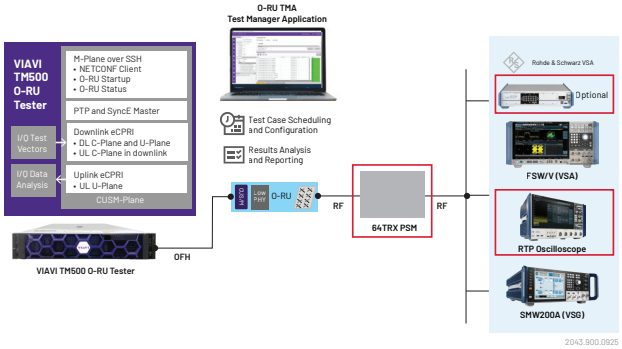
Upgrade Path for SU-MIMO/MU-MIMO Performance Mode



Upgrade Path for VSA-VSG (SU-MIMO Conformance and Functional FR1/FR2)

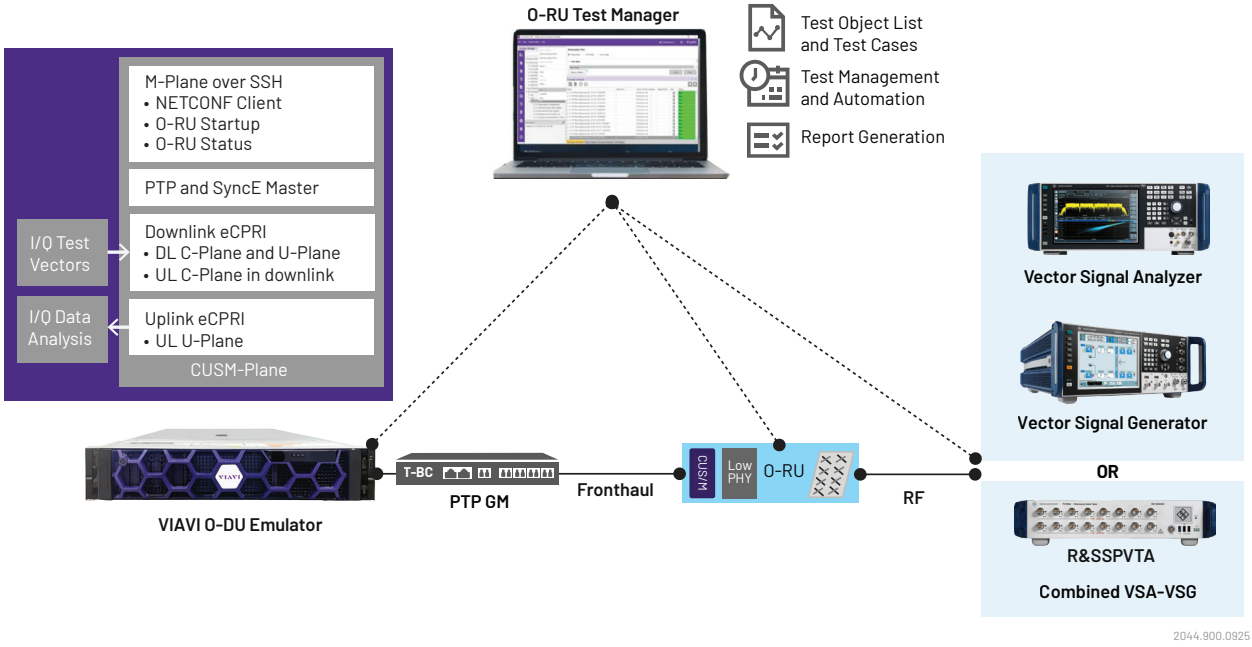


Upgrade Path for MU-MIMO Conformance Mode



Example Test Lines with Product Codes

WG4 + 3GPP SU-MIMO Conformance and Functional Test Mode



Supported Specification: O-RAN.WG4.CONF.0-R003-v12.00 and Custom Tests

System/Device(s) Under Test: O-RU

TK2055 O-RU Tester O-RAN FH Opt 7-2 SM-Plane Test Suite

TK2113 O-RU Tester O-RAN FH Opt 7-2 4G LTE Test Suite

TK2114 O-RU Tester O-RAN FH Opt 7-2 NB-IOT Test Suite

TK2136 O-RU Tester O-RAN FH Opt 7-2 WG4 Mandatory and 3GPP Test Suite

TK2171 O-RU Tester O-RAN FH Opt 7-8 Baseline Conformance Test Suite

TK2241 O-RU Tester O-RAN FH Opt 7-2 Non-BF OTA Test Suite 5G NR FR2 TDD

TK2242 O-RU Tester O-RAN FH Opt 7-2 WG4 Conditional Mandatory Test Suite 5G NR FR1

TK2243 O-RU Tester O-RAN FH Opt 7-2 Non-BF OTA Test Suite 5G NR FR1 FDD

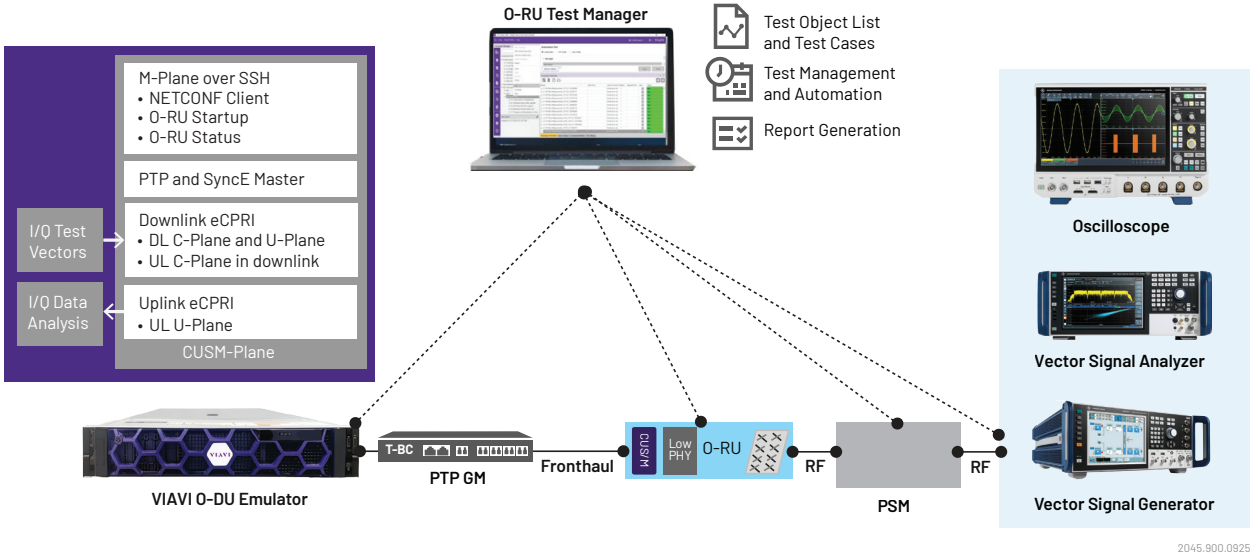
TK2268 O-RU Tester O-RAN FH Opt 7-2 Non-BF OTA Test Suite 5G NR FR1 TDD

TK2138 O-RU Tester O-RAN FH Opt 7-2 Functional Test

TK2227 O-RU Tester 5G NR O-RAN FH Opt 7-2 PVT360A Functional Test

Example Test Lines with Product Codes continued

WG4 + 3GPP MU-MIMO Conformance Test Mode

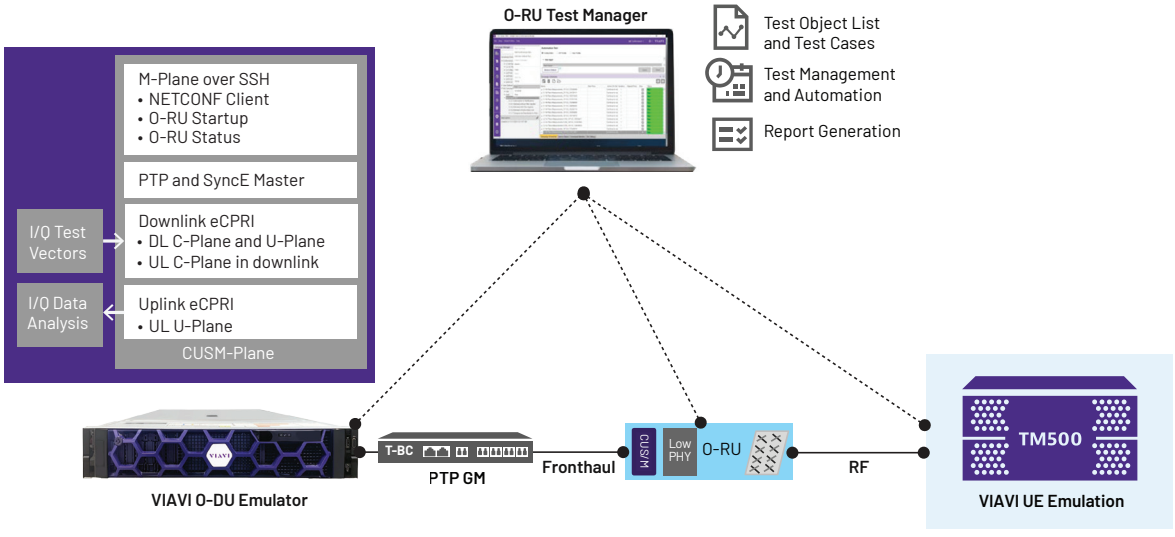


Supported Specification: O-RAN.WG4.CONF.O-R003-v12.00

System/Device(s) Under Test: O-RU

TK2224 O-RU Tester Opt 7-2 MU-MIMO Conf Test Suite - Conducted BF 5G NR FR1

WG4 + 3GPP SU-MIMO Performance Test Mode



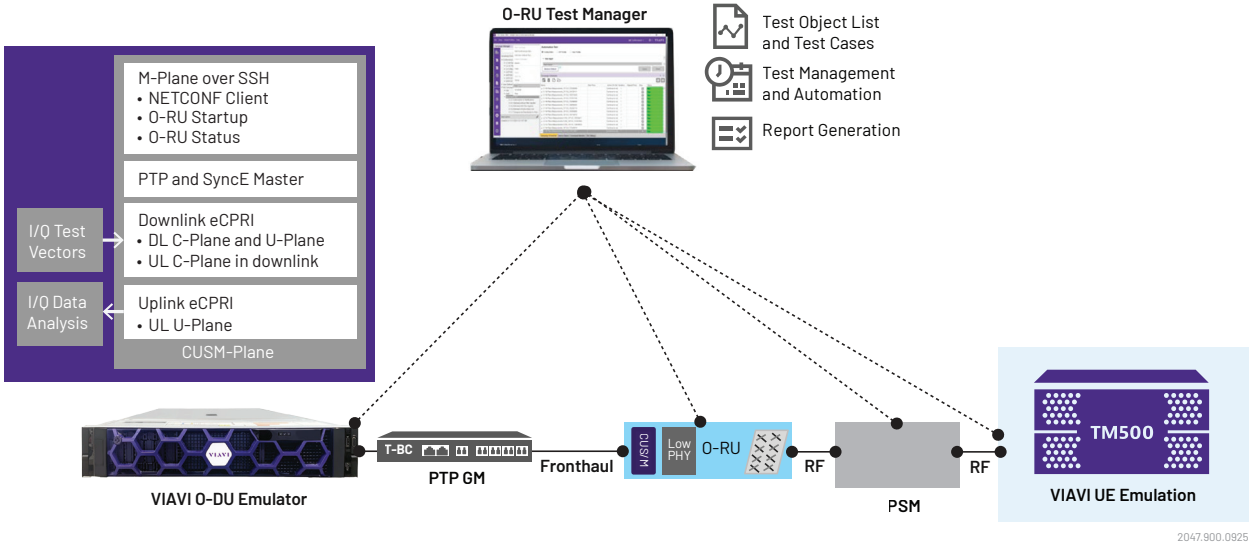
Supported Specification: Custom tests

System/Device(s) Under Test: O-RU

TK2111 O-RU Tester O-RAN FH Opt 7-2 DL Phy Performance Test NR FR1

Example Test Lines with Product Codes continued

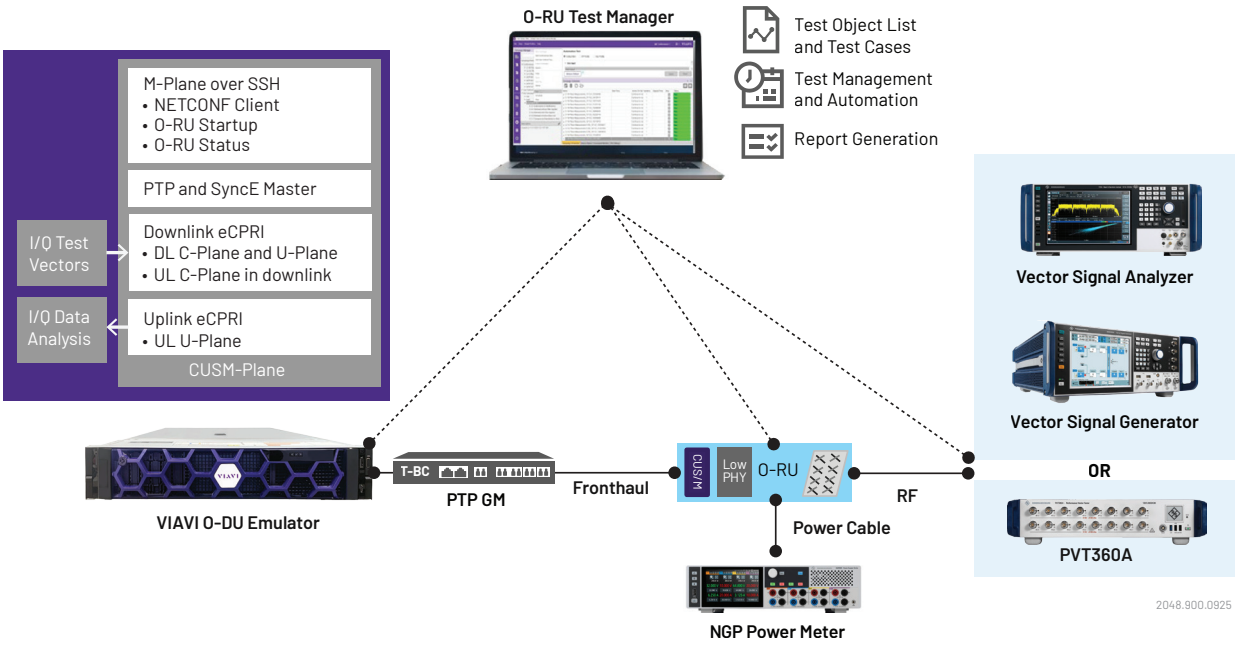
WG4 + 3GPP MU-MIMO Performance Test Mode



Supported Specification: Custom tests
System/Device(s) Under Test: O-RU

TK2250 O-RU Tester O-RAN FH Opt 7-2 MU-MIMO Phy Performance Test - 5G NR FR1

WG4 + ETSI Energy Savings / Energy Efficiency Test Mode



Supported Specification: O-RAN.WG4.CONF.0-R003-v12.00 & ETSI
System/Device(s) Under Test: O-RU

TK2181 O-RU Tester Energy efficiency power saving measurements test suite for M-Plane
TK2236 O-RU Tester O-RAN FH Opt 7-2 Energy Efficiency meas test suite for CU-Plane

O-DU Emulator Functional Overview



VIAVI O-DU Emulator

- **Compact High-Density Footprint:**
  - Designed to maximize performance minimizing the footprint (1U)
- **Modular and Scalable Design:**
  - Start with 8 x Layers or eCPRI streams Per Server
  - Scale up to 32 x Layers or eCPRI streams
- **Multi-RAT Solution:**
  - NR FR1 and FR2, LTE, NB-IoT, CAT-A and CAT-B
- **Latest CUSM Plane Compliance:**
  - Compliant to most recent ORAN standards and specifications
  - (O-RAN.WG4.CUS.0-R003-v16.00 and O-RAN.WG4.MP.0-R003-v16.00)
- **Latest WG4 Test Spec Compliance:**
  - Comprehensive WG4 Conformance test coverage
  - Latest ORAN test specification (O-RAN.WG4.CONF.0-R003-v12.00)
- **Single click test execution and latest ORAN compliant test reports:**
  - Summary Test Report (O-RAN.TIFG.Cert-Badge.2-R004-v10.00)
  - Detailed Test Report (O-RAN.TIFG.Cert-Badge.2-R004-v10.00) via VAMOS
- **Versatile:**
  - Supports various Multi-CC per server: 1CC 4x4 to 4CC 2x2
  - Mixed-RAT Operation: NR+LTE
- **Mass Deployment Representative:**
  - Only credible solution in market supporting LLS-C3 and LLS-C4 configurations which are representative of mass field deployments.
- **Advanced S-Plane Functionality:**
  - Supports G.8275.1/G.8275.2/1588v2-2008 protocols with dynamic PTP clock class updates and SyncE message generation
- **Comprehensive Section Support:**
  - Section Types 0/1/3/5/6
  - Section Extension Types 1/4/5/11
- **Enhanced Uplink Analysis:**
  - Configurable uplink capture for multiple frames with in/out of sync packet detection and display
- **High Throughput:**
  - 50Gbps to meet intensive data processing needs
- **User-Friendly Interface:**
  - UI and fully REST automation capabilities
- **Advanced M-Plane Operations:**
  - Supports DHCPv4/v6, Netconf, SFTP with NETCONF security via SSHv2/TLS

R&S Product Portfolio Supported with TM500 O-RU Tester

R&S Product Category	Supported Model within TM500 O-RU Tester
Combined Signal Generation and Analysis	PVT360A
Signal Generation	SMW200A
Signal Analysis	FSW26
	FSV3030
	VSE
Oscilloscope	RTO64
Power Meter	NGP824

Contact Us: +1 844 GO VIAVI | (+1 844 468 4284). To reach the VIAVI office nearest you, visit viavisolutions.com/contact

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