

Anritsu Advancing beyond

Virtual Signalling Test Solution - Software-based simulator -

Virtual Signalling Tester NR Software MX844030PC
 Universal RF Unit MD8190A
 RTD Lite Platform MX800058PC

Importance of Software-based Virtualization Tests for Beyond 5G and 6G

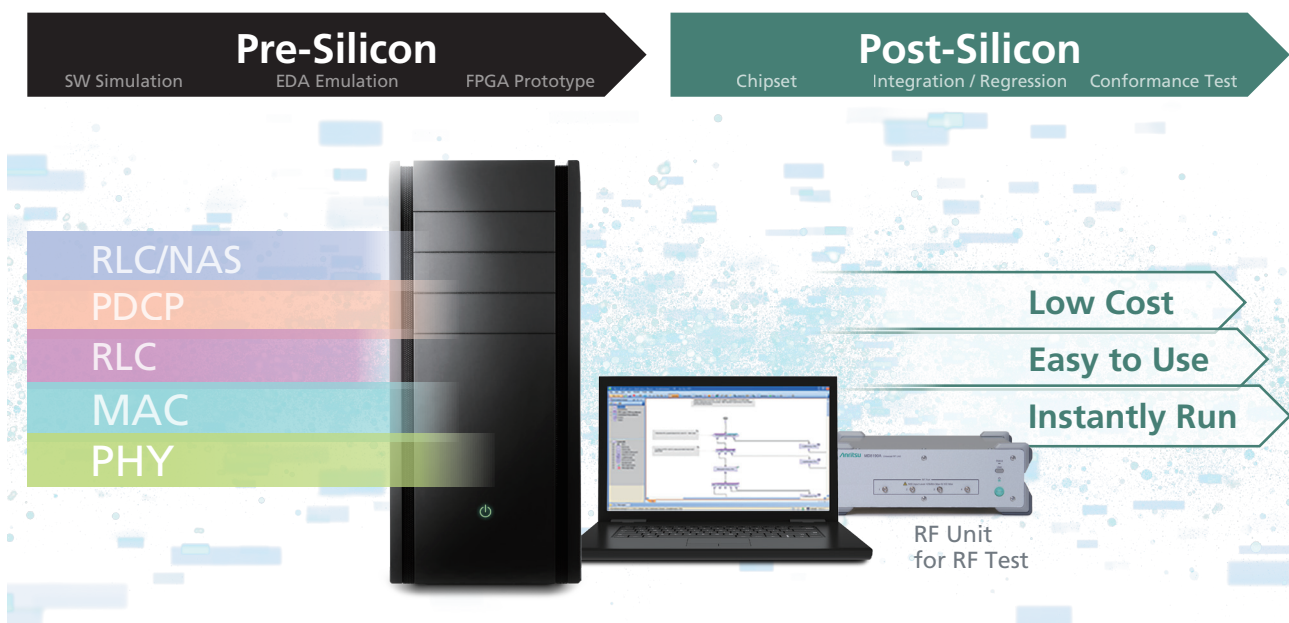
Communication standards are evolving from Beyond 5G to 6G for various products, such as chipsets, communication equipment, and IoT devices. To keep up with these communication standards, existing dedicated hardware testing facilities need updating, and new ones need establishing. Therefore, in addition to cutting costs, there is a demand for software solutions in virtual environments offering benefits, such as improved test efficiency, reduced risk, and construction of flexible scenarios.

Virtual Signalling Test Solution

Anritsu's Virtual Signalling Test (Virtual-ST) solution enables seamless transitions between real and virtual environments from pre-silicon to post-silicon phases by virtualizing the protocol layer. Dedicated hardware facilities become unnecessary, promoting a shift-left approach in development of communication-related products to cut both costs and time. Each protocol layer, from Physical and MAC layers to RF, can be replicated on a PC, allowing easy and quick setup of protocol testing environments without needing test hardware. Furthermore, the same test scripts can be used across both pre-silicon and post-silicon phases.

At the pre-silicon phase, the shift-left development process is especially effective, enabling chip testing and verification before prototyping. At the post-silicon phase, it brings particular cost benefits to development and verification of IoT devices.

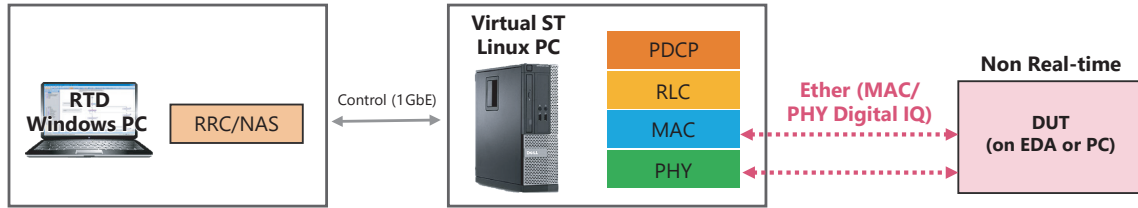
Virtual-ST also simplifies both major integration and regression tests.



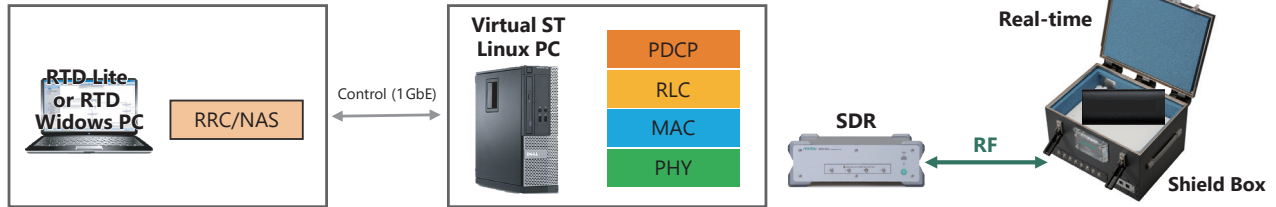
Virtual Signalling Test Setup

A test environment for verification at various development phases using different interfaces (MAC/PHY Digital-IQ/RF) is set-up easily and quickly by simply using a general-purpose PC. Test cases can be ported from the pre-silicon to post-silicon phase using the same GUI.

Pre-silicon Test Solution



Post-silicon Test Solution



Virtual Signalling Test Specifications

Pre-silicon Test Solution

Outline

Software-based simulator with MAC and PHY (Digital IQ) interfaces

- Customers: Chipset vendors
- Development phase: Pre-silicon verification phase

Quick Release

Key Features

- Work with EDA tools (planning)
- RTD test case compatibility
- Flexible debug information

MAC

- Easy to find problems for MAC features
 - Eliminate Physical Layer issue (DCI, RateMatch, etc.)

PHY

- PHY (Digital IQ)
- IQ Logging

	MAC-IF	PHY-IF
RAT	NR, RedCap	RedCap
Frequency Range	FR1, FR2	FR1
MAX Carrier BW	FR1: 100 MHz FR2: 200 MHz	FR1: 100 MHz
MAX Number of Primary Cells	2	
MAX Number of CA	14	1
Mobility	Support	

Post-silicon Test Solution

Outline

SW based simulator with RF interfaces using Anritsu SDR unit

- Customers: Chipset and device vendors
- Development phase: Post-silicon verification phase

Lower Price

Key Features

- RedCap
 - Protocol Verification
 - Mobility Verification
 - L1 Test Verification
- RTD test case compatibility
- Flexible debug
- Associated with scenario package
- IQ Logging

	RedCap
RAT	RedCap
Frequency Range	FDD: 400 MHz to 2.7 GHz TDD: 400 MHz to 6.0 GHz
MAX Channel BW	FR1: 20 MHz
MAX Primary Cells	2
MAX CA	1
MAX IP Throughput	DL 50 Mbps/UL 25 Mbps