

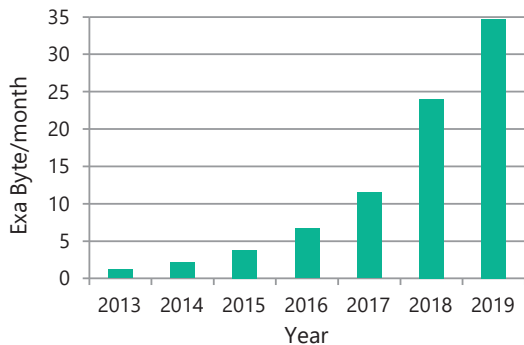
Effective Battery-Consumption/Heat-Generation Test Environment for 5G Devices

SmartStudio NR MX800070A
Radio Communication Test Station MT8000A
Signalling Tester MD8475B

Smartphone Advances and Need for Battery Consumption/Heat Generation Test

When users browse websites and watch streaming videos, etc., their smartphones are processing large amounts of IP data. To cope with these large and increasing data volumes, mobile communication systems have advanced from 3G to 4G and now to 5G standards supporting faster speeds and diversified services, leading in turn to more and longer smartphone usage. The resulting high battery consumption and heat generation are issues to be solved.

World Smartphone Data Traffic (monthly)



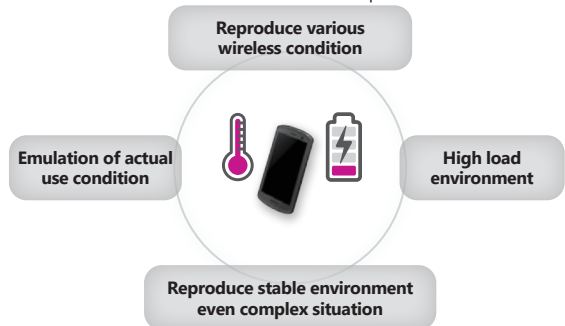
- Communications data traffic is increasing at an annual rate of 75.4%.
- In 2019, the average monthly communications data used by one smartphone was 7.2 GB.

Ericsson Mobility Visualizer Tool (Nov 2019)

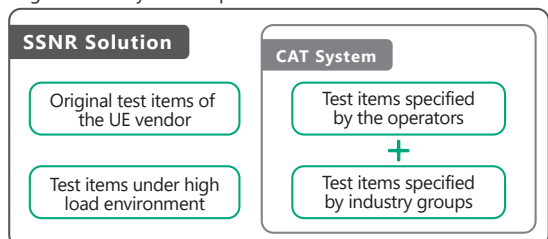
However, evaluating smartphone battery consumption and heat with stable and reproducible results on a live network is difficult due to external factors, such as interference from other phones. Consequently, a simulated flexible environment supporting good reproducibility and changing radio conditions under high loads is required. Moreover, in addition to supporting carrier acceptance tests, the first implementation evaluation phase in phone development requires support for vendor-specific issues, such as battery consumption-evaluation/heat-generation tests at high loads, countermeasures for hardware driver abnormalities, localization, etc.

SmartStudio NR provides the necessary stable, flexible, and full evaluation environment for battery-consumption and heat-generation tests at the first implementation evaluation phase in 5G smartphone development.

Evaluation Issues in Commercial UE Development

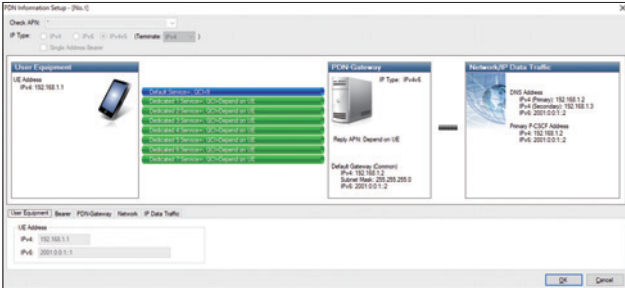


Target of Battery Consumption and Heat Generation Test

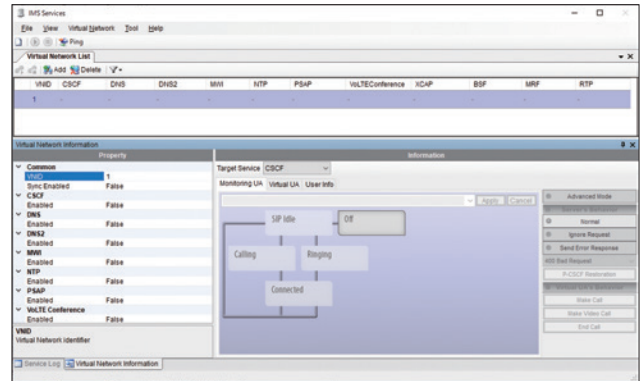


Stable Evaluation Environment Matching Live Usage

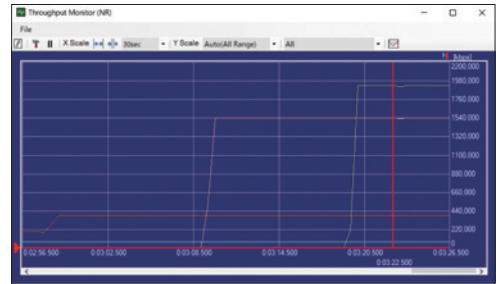
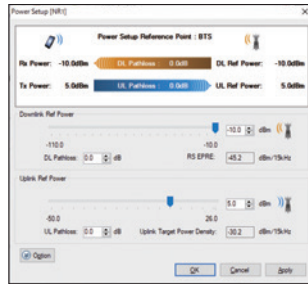
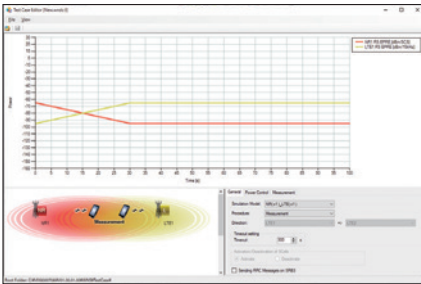
- Flexible parameter settings support stable test environment matching actual live-usage environment.
- Easy-to-use GUI-based settings with no scripting
- CDRX/RRC Status Change function to cut power consumption



Easy external server and internet connections



IMS Services for stable reproduction of VoLTE call status and other conditions matching live use



Flexible cell status changes, such as CA and MIMO, supporting difficult-to-achieve high-load environment on live network

Interface (SSM/GPIB) for External Control

- For long-term and repeat test automation
- Supports owned devices, controllers, etc., for better cost effectiveness

