

U1905A GS-8800 Design Verification Bench-top System

Data Sheet



An automated and calibrated platform for

- LTE (Bands 1 to 17)
 - 3GPP TS36.521-1. Section 6 (transmitter) and Section 7 (receiver)

The Agilent Technologies U1905A bench-top system is one of the latest additions to the GS-8800 Series family and uses Agilent's latest one box tester: the E6621A PXT wireless communication test set. Designed to increase your confidence and reduce the time-to-market of your new products, U1905A's design verification environment allows test cases to be easily configured or modified to suit your specific test requirements. It provides "just-enough" test cases¹ for RF chipset module or mobile UE testing and is ideal for applications such as:

- 'Lite' R&D test
- Targeted RF module R&D test such as transmitter module design
- Early-design phase test with requirements for high flexibility to configure test parameters
- 'Volume' manufacturing screening
- Quality assurance screening

1. For detail supported test case number, please contact your Agilent sales representative.



U1905A Platform Overview

U1905A provides a cost effective, entry-level design verification platform for LTE wireless handset RF testing. The bench-top system provides product designers with targeted pre-conformance test coverage that helps to ensure better results—before a new chipset or wireless handset goes into full design verification or conformance testing. This helps reduce the end users cost of design validation and increase your confidence that your device’s design conformance testing will pass the first time. Indirectly, it also helps to speed up end users’ product time-to-market.

The U1905A bench-top system is designed in accordance to 3GPP specification TS36.521-1 test cases which covers targeted transmitter (Section 6) and receiver (Section 7) test cases.

The U1905A bench-top system is easily upgraded, allowing end users add other emerging technology formats, accommodate previous 2G or 3G technologies, or grown into a full-scale LTE RF test system.

The uniquely designed system architecture of U1905A also makes it easy to modify or scale the system configuration to provide the test capabilities needed for the different stages of your product’s life cycle—from R&D to manufacturing, or even quality assurance screening applications.

U1905A Platform Characteristics

Flexibility

U1905A supports LTE bands 1 to 17. In addition, the flexible measurement software provides you with full control over parameters, as well as the ability to stress designs through a broad range of frequencies and power levels.

Easy-to-use user interface

U1905A is equipped with a powerful and an easy-to-use measurement user interface (UI), which makes it simple for end users to change test parameters and run design verification tests. The calibration tool also comes with a straightforward UI and graphical diagram to simplify calibration procedures.

Scalability and upgradability

The bench-top system provides a clear upgrade path, allowing you to grow into up to a full-scale LTE RF test system, and support more test case and section coverage such as Section 8 (performance) and Section 9 (UE reporting) for design verification testing or conformance testing. This upgrade capability protects and leverages your existing investments in the bench-top system.

Accuracy and repeatability

Equipment stability and signal paths used during the test case measurement are automatically compensated based on calibrated data, providing accurate measurements and repeatable results. U1905A leverages the measurement speed, accuracy, and repeatability strengths of Agilent products—creating reliable, high performance design verification test systems.

Comprehensive test coverage

U1905A covers more than 60% of the transmitter (Section 6) and receiver (Section 7) test cases as specified in 3GPP TS36.521-1. Agilent is committed to supporting more test sections and enhancing test coverage as technology standards evolve.

Software support

U1905A's Software and Technical Support Contract (STSC), which is available for purchase, provides you with software updates and feature enhancements, as well as direct access to a technical expert for support during the duration of the STSC contract. A minimum 1-year STSC is mandatory for new system purchases. For more information on STSCs, please visit www.agilent.com/find/GS-8800

Hardware and Software Component

| Component | Part number | Description |
|-----------|-------------|--|
| Hardware | U1905A-H01 | Industrial PC (IPC) |
| | E6621A | PXT wireless communication test set |
| | N9020A | MXA signal analyzer |
| Software | U1908A-1FP | Core test manager fixed and perpetual license |
| | U9511A-1FP | Bench-top LTE FDD Section 6 (Tx) DV test cases license – fixed & perpetual |
| | U9511A-2FP | Bench-top LTE FDD Section 7 (Rx) DV test cases license – fixed & perpetual |
| | U1908AS-xSY | Software and Technical Support license (1-year, 2-year, or 3-year) |
| Optional | 66319D | Power supply |

Software Architecture

U1905A's GS-8800 LTE measurement software is design using Microsoft® .NET. The software architecture is modular-based for easy software maintenance and support. The software architecture is designed with flexible sequencing capability in mind to reduce test time. In addition, U1905A has plug-and-play capability for different .dll files for measurement and assets. That feature allows you to select or customize the system with other Agilent instruments for obtaining additional measurements. The architecture provides foundation to end user to add in their own value add test component such as temperature chamber control or the UUT control component.

The GS-8800 LTE measurement software's GUI provides the structure to automatically execute a series of test cases, supplied as test campaigns. The software combines collections of individual test cases into a test plan, each designed to evaluate the UE's RF parametric tests, per the TS 36.521-1 specification. Any combination of test cases can be saved and recalled as a test plan, allowing the test plan to be quickly set up and executed. Detailed results and test environment variables of a particular test case can be easily identified during run time through "Detail results" and "Watch" windows, without having to wait for a complete test result at the end of the test campaign.

The flexibility of the U1905A measurement GUI allows you to fine-tune the screen layout by dragging and dropping to your personal preferences. The online documentation (.chm) is incorporated and linked with the GUI through the F1 function key, giving you quick access help information relevant to the screen being viewed.

The calibration tool is included to help you to effectively identify all signal path losses. That data can then be used to correct signal loss during test case measurement.

The software also provides integrated data collection. Results reporting, saved in a comma-separated value (CSV) format and markup language (XML), can be easily shared with other applications or with other customer specific software tools.

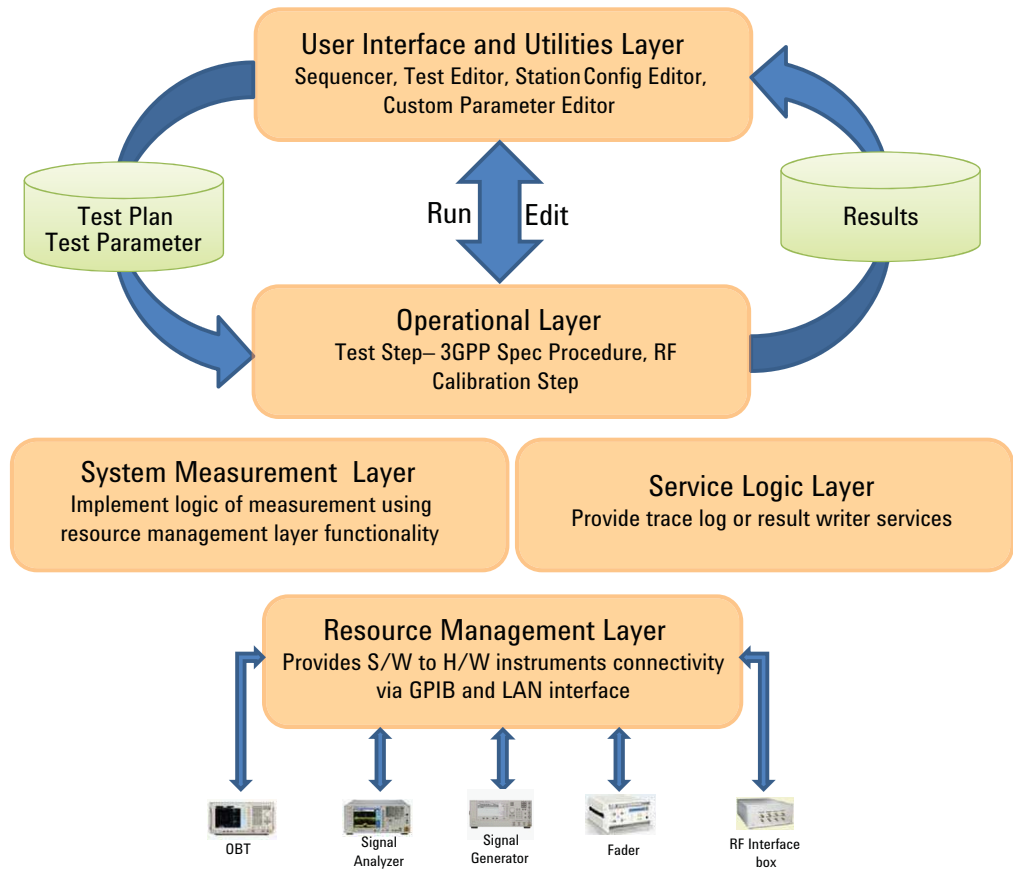


Figure 1: GS-8800 LTE system architecture.

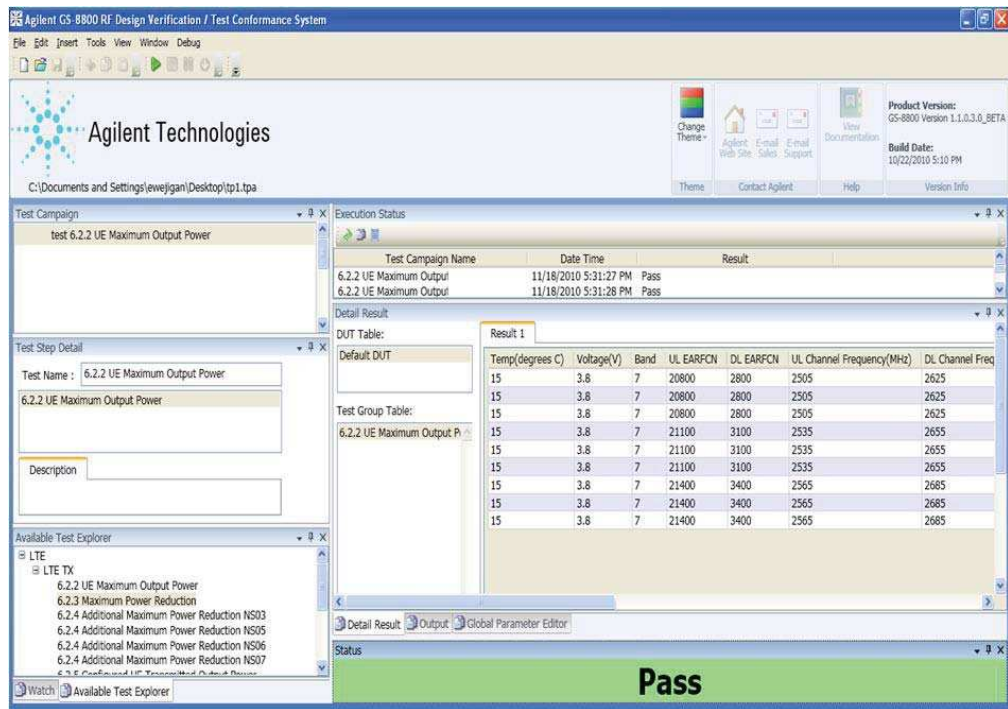


Figure 2: GS-8800 LTE measurement software GUI overview.

Specifications

Generic instrument specification

E6621A general specification

| | |
|------------------------------|---|
| RF input/output impedance | 50 Ω (nominal) |
| RF input/output VSWR | < 2.0:1 |
| Maximum safe input level | +27 dBm |
| Interfaces | USB, LAN, GPIB (future), trigger in/out, IQ/IF inputs/outputs, reference input/output |
| RF reference input/output | 10 MHz |
| Frequency reference accuracy | $\pm 1E-6$ |
| Aging per year | $5 \times 10E-8$ (–20 to 70 °C) |
| Temperature stability | $2 \times 10E-8$ |
| Power requirement | 100 to 240 Vac, 50/60 Hz |
| Size (w x d x h) | 444 mm x 600 mm x 222 mm |
| Weight | 27.6 kg maximum with all possible options |

N9020A general specification

| | |
|---------------------------------|--|
| Voltage and frequency (nominal) | 100 to 120 V, 50/60/400 Hz 220 to 240 V, 50/60 Hz |
| Weight (without options) | 16 kg (35 lbs) nominal |
| Size (w x d x h) | 426 mm x 368 mm x 177 mm |
| Interfaces | USB, LAN, GPIB, trigger in/out, reference input/output |

PC/peripheral input/output

| | |
|-----------------|---|
| USB | Six auxiliary ports are available: two on the front panel and four on the rear panel of the industrial PC |
| Serial (RS-232) | Two on the on the rear panel of the industrial PC, DB9 male connector |
| LAN | Three 100 Base-T Ethernet, RJ-45 connector |
| GPIB | One on the rear panel of the industrial PC |

General specifications

Operating conditions

| | |
|--------------------------------|--|
| General | Indoor |
| Storage temperature | –20 to +70 °C |
| Operating temperature | +10 to +30 °C |
| Accuracy specified temperature | +20 to +30 °C (Refer to measurement accuracy specification of individual radio technology for further information) |
| Humidity (relative) | 5 to 80% relative humidity (non-condensing) |
| Altitude | 0 to 2 km |
| Power requirement | 90 to 254 VAC, 50 to 60 Hz, 4118 VA maximum |



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