

MINT RF Tester



- Modular test platform covering 2G, 2.5G and 3G standards
- RF calibration routines and automated signal switching ensure high accuracy and repeatability
- Automated execution of test cases
- Development mode allows execution of customized tests
- GCF and PTCRB test cases validated by independent test laboratory

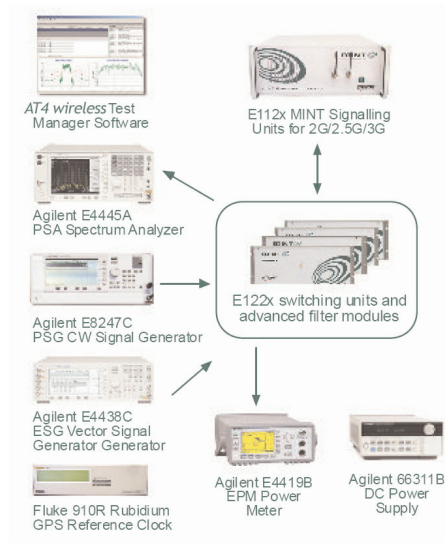
testing automation, built-in test report generation or comprehensive test results presentation and analysis tools.

Overview

The MINT RF Tester is the most complete, scalable and flexible test platform for 2G/2.5G/3G mobile stations, covering not only officially validated Conformance test cases (GCF and PTCRB) but also RF R&D Testing beyond conformance requirements. The MINT RF Tester allows the user to customize test conditions in order to create multiple test scenarios and to adapt to the user's testing needs.

The MINT RF Tester has been designed as an open testing platform that can be upgraded to support existing and future radio access technologies, test cases and frequency bands, making it an ideal and future-proof solution that can be developed with customer's testing needs in mind.

AT4 wireless's long experience as a wireless and mobile technologies testing laboratory can be found in all aspects of the MINT RF Tester: repeatability and accuracy of the measurements,



Applications

- Conformance testing
- Development support
- Performance evaluation
- UE benchmarking

System Architecture

The MINT RF Tester architecture has been designed with a high degree of scalability and flexibility, allowing users with AT4 wireless Test Manager Software E112x MINT Signalling to start with a minimum investment, covering just some of the test Units for 2G/2.5G/3G cases or frequency bands, and to add hardware and software as needed to support new testing requirements.

The MINT RF Tester is built around E112x MINT Signalling Units for 2G/2.5G/3G. These advanced base station and PSA Spectrum Analyzer network emulators support all the requirements for mobile stations RF testing and can be easily upgraded to different standards and frequency bands, supporting GSM, E122x switching units and GPRS, EDGE and W-CDMA FDD, as well as channel emulation for 3GPP testing.

E122x switching units and advanced filter modules provide the way to automate test case execution and ensure repeatability and accuracy by automated signal switching. These units have been designed taking into account the reliability in order to overcome problems often seen in automated RF test systems. Different E122x switching units and advanced filter modules can be fitted into the system to cover different standards and frequency bands.

The MINT RF Tester also includes best-in-class general purpose instruments from Agilent Technologies and Fluke:

- Agilent E4445A PSA Spectrum Analyzer
- Agilent E8247C PSG CW Signal Generator
- Agilent E4438C Vector Signal Generator
- Agilent E4419B EPM Power Meter
- Agilent 66311B DC Power Supply
- Fluke 910R Rubidium GPS Reference Clock

Standards

- GSM/GPRS/EDGE/AMR RF Tests: 3GPP TS 51.010-1 (sections 12, 13, 14 and 21 in the frequency bands 850/900/1800/1900 MHz)
- WCDMA FDD RF Tests: 3GPP TS 34.121 (sections 5, 6, 7)
- WCDMA FDD RRM Tests: 3GPP TS 34.121 (section 8)

AT4 wireless Test Manager

The MINT RF Tester platform uses the intuitive and user friendly AT4 wireless Test Manager software that automates all tasks in the testing process chain, covering test execution, data collection for test preparation, results analysis, report generation, and system calibration.

By means of the automation capabilities of AT4 wireless Test Manager, unattended execution of test sessions is possible, maximizing the actual testing time of your MINT RF Tester.

Test Project Edition

Allows the operator to edit the ICS/IXIT features and UE characteristics. It is possible to import the data from MS Excel templates and highlight the ICS/IXIT associated to a specific test case.

Report Generation

Automatically generates the test report in MS-Word format according to the manufacturer's information, ICS/IXIT and Test Case results.

Technology Version Manager

Provides the operator with an easy and convenient tool to test against different versions of the standards and to install different versions of the test suite executables.

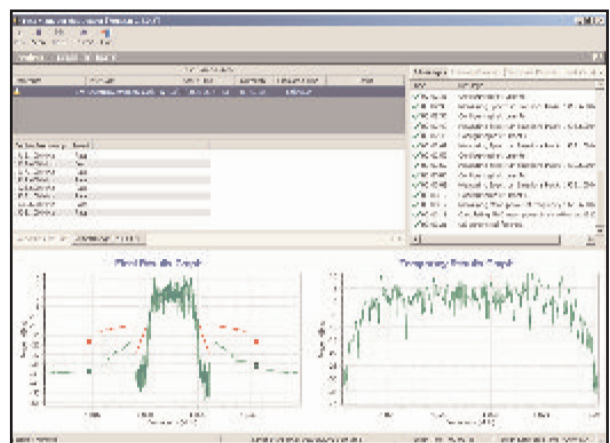
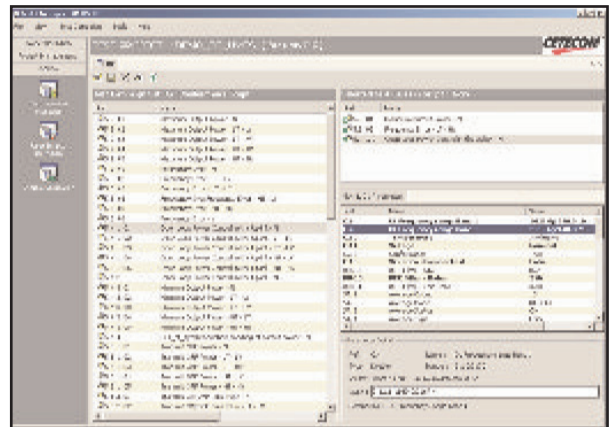
User Scripts

Provides an easy way to create test scripts by modifying the user parameters associated to each test case and saving them into the User Scripts Data Base. The system automatically detects if the test parameters are in or outside the range of the test specification and marks them accordingly.

Results Analysis

The Test Manager provides tools to filter the results and to analyze the graphs and message traces. The verdicts will be automatically evaluated according to the Test Specifications.

Results are stored in an industry-standard database, together with the parameters used for the execution of the test campaign and the information about the test case version and calibration data. This allows the user to export the results to their own processing tools if customized data analysis is required.



Measurement Accuracy

AT4 wireless's long experience as a testing laboratory has been used extensively during the development of the MINT RF Tester platform in order to achieve the greatest levels of accuracy in the measurements undertaken by the system. A combination of best-in-class instrumentation and rigorous RF path calibration routines that determine the losses in each signal path, ensures that uncertainty levels described in the 3GPP standards are met.

The flexibility of the AT4 Wireless Test Manager user interface allows the user to run the RF path calibration routines very efficiently with minimal manual intervention. It provides tools to define calibration scripts that can be used to calibrate several paths in one test session without the need to manually change connections.

A Check Calibration procedure is also available to quickly ensure that the calibration data used is up to date. In case that calibration data is outdated, the user is required to perform the calibration process for that path.

Technical Support Services

Support of conformance system hardware is an essential element in maximizing the efficiency and return on investment of the equipment. Aeroflex provides worldwide customer support through its 24 hour helpdesk services ensuring an immediate response to a customer issue.

Technical backup including new software releases, repair and calibration services is provided by the AT4 wireless factory in Spain to certify that the system operates to the manufacturer's specification.

Customized support packages are available which include options for the following support services.

- Downloading of new software and documentation version through the MINT Technical Support Website.
- FAQ through the MINT technical support website
- Remote troubleshooting and diagnostics via the Internet. The customer can provide access to the MINT conformance test system to technical support staff, allowing fast diagnostics and maximizing the operation time of the system.

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