

RF Test Systems R&S TS8950G / TS8955G

Reliable RF testing of GSM, GPRS and EDGE mobile phones

Since the very beginning of GSM mobile radio, Rohde & Schwarz systems have been the de facto standard for conformance testing. Continuous extensions to the standard, additional frequency bands and shorter design phases pose new and higher demands to which Rohde & Schwarz responds with the RF Test Systems R&S TS8950G / TS8955G. They support all GSM 850 / 900 / 1800 / 1900 frequency bands in the circuit switched, GPRS and EGPRS connection modes and are easily upgraded to WCDMA.



FIG 1 RF Conformance Test System TS8950G

GSM – a mature standard with a future

GSM is far from being outdated, even though 3GPP WCDMA is set to be launched. Significant advantages of GSM are the stability it has achieved through years on the air and its worldwide acceptance.

Nor is GSM negligible in WCDMA networks. For fast network coverage and roaming functionality, most WCDMA mobiles will also support GSM. As a consequence, test systems for new GSM

features must be easily upgradable to WCDMA.

Scarcely is GPRS on the market, before the next development, EGPRS, appears on the horizon. EGPRS is intended to achieve data rates up to 364 kbit/s, thus also covering typical 3G applications. With a view to fast data transmission, network operators in North America in particular have shifted their focus from TDMA IS136 to GSM in recent months, and so given extra impetus to the GSM850 and EGPRS frequency modes.

There is consequently an enormous test requirement for the GSM 850 and EGPRS innovations. However, no test platform currently on the market consistently supports the new frequency band for GSM 850, i.e. with the same validated hardware. Nor can these systems use the 8PSK modulation format for EGPRS.

An exception is approaching with the new test system family from Rohde & Schwarz. It supports all GSM 850 / 900 / 1800 / 1900 frequency bands in the circuit switched, GPRS and EGPRS connection modes. And it is easily upgraded to a GSM/WCDMA test system.

From development tester to conformance test system

The new modular RF test system family provides for the first time consistent measurements over the entire development cycle of a mobile phone.

The **R&S TS 8955 G** is a modular **development and precompliance RF test solution**. The spectrum starts with test sets with two devices, e.g. a combination of the GSM Protocol Analyzer R&S CRTU-G [1] and Baseband Fading Simulator R&S ABFS [2], or the Universal Radio Communication Tester R&S CMU 200 [3] with the high-end Spectrum Analyzer R&S FSU 8 [4].

Conformance testing to GCF* is the hallmark of mobile phones. The **RF Conformance Test System R&S TS 8950 G** covers all necessary RF measurements. Validation of the R&S TS 8950 G con-

forms its compliance with the measurement accuracy required in 3GPP specifications and is proof of the quality of the test system.

The test systems of the family are based on the same hardware and software; the R&S TS 8955 G is therefore fully upgradable to an R&S TS 8950 G (FIG 2). This ensures optimum consistency of the measurement results.

This Rohde & Schwarz instrumentation is already in use in development labs all over the world. Besides the equipment mentioned above, the proven Vector Signal Generator R&S SMIQ 03 B [5] and the Microwave Signal Generator R&S SMP 22 are supported.

The high-convenience R&S PASS** software for the entire test system family sets up on these functionalities. A system thus grows with the individual devices, and new functions are fast available. The software allows speedy generation and automation of development tests without time-consuming programming effort.

Possibilities beyond GCF test cases

The systems offer extra and wide-ranging possibilities beyond the official GCF test cases. Under R&S PASS software, all test cases set up on just a few test

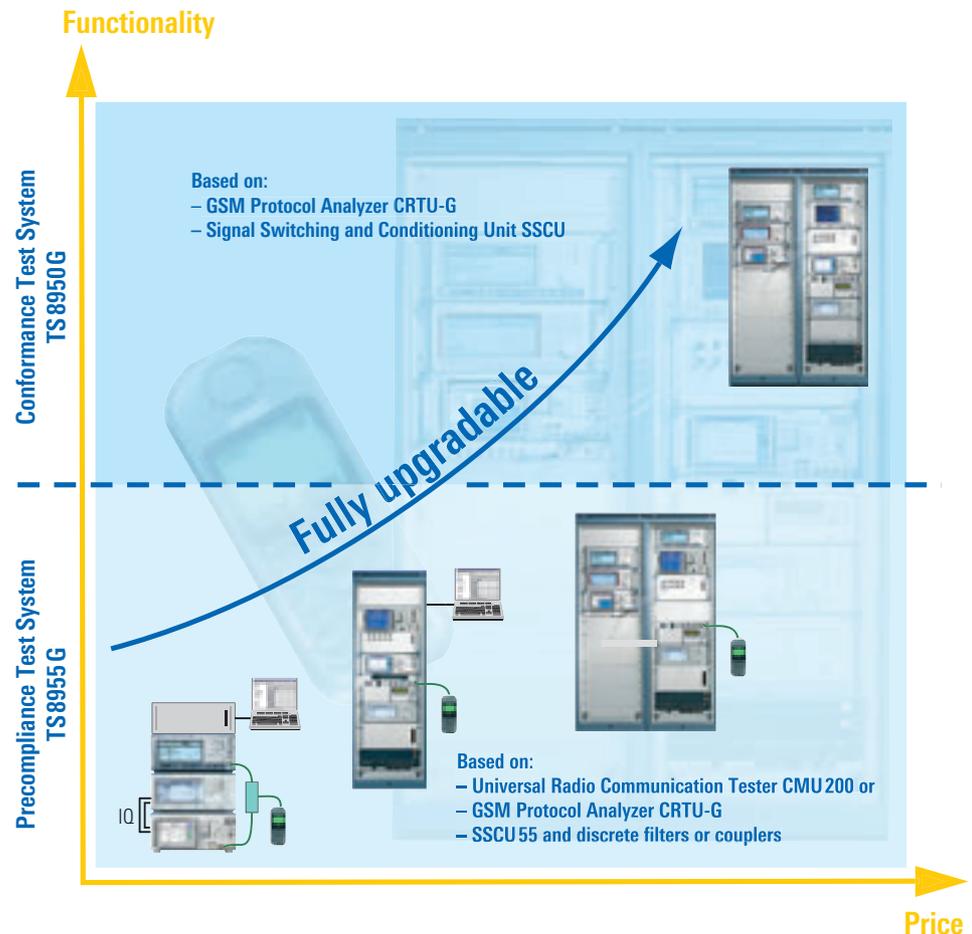


FIG 2 The test system family is based on the same hardware and software; the R&S TS 8955 G is fully upgradable to an R&S TS 8950 G.

* GCF: Global Certification Forum, an initiative of the GSM Association, manufacturers of terminals, test houses and T&M manufacturers for the standardization of mobile telephone test requirements.

** R&S PASS: parametric application software for test systems.

R&S TS8955 G – a system with many facets

The R&S TS8955 G system for development and precompliance testing can be configured to customer specifications. Depending on the application, configurations for receiver tests, transmitter tests or both can be created. Together with the customer, Rohde & Schwarz defines the hardware and software for the required test application and thus finds the matching solution. This entry-level configuration is not a one-way street, however, as subsequent upgrading is quite straightforward.

All devices can be logged on and off through the user interface, so configurations can also be modified for the short term. The use of LabWindows CVI™ as a programming environment enables simple integration of customer-specific apparatus, e.g. climatic chambers.

R&S TS8950 G – oriented on future WCDMA

The fact that the R&S TS8950 W – an RF test system for WCDMA FDD – is based on the R&S TS8950 G platform demonstrates the emphasis that Rohde & Schwarz places on modularity and secure solutions for the future. The TS8950 G and all system variants of the TS8955 G can be upgraded to WCDMA without exchanging hardware.

Summary

The new test system family from Rohde & Schwarz is a well-rounded solution for the entire development cycle of mobile terminals. The R&S PASS software and the test method concept provide an unprecedented degree of flexibility. They do away with time-consuming programming so that the user can fully focus on the actual measurement application.

The platform concept reduces time to familiarize and offers consistent test results, considerably shortening the development phase for mobile phones.

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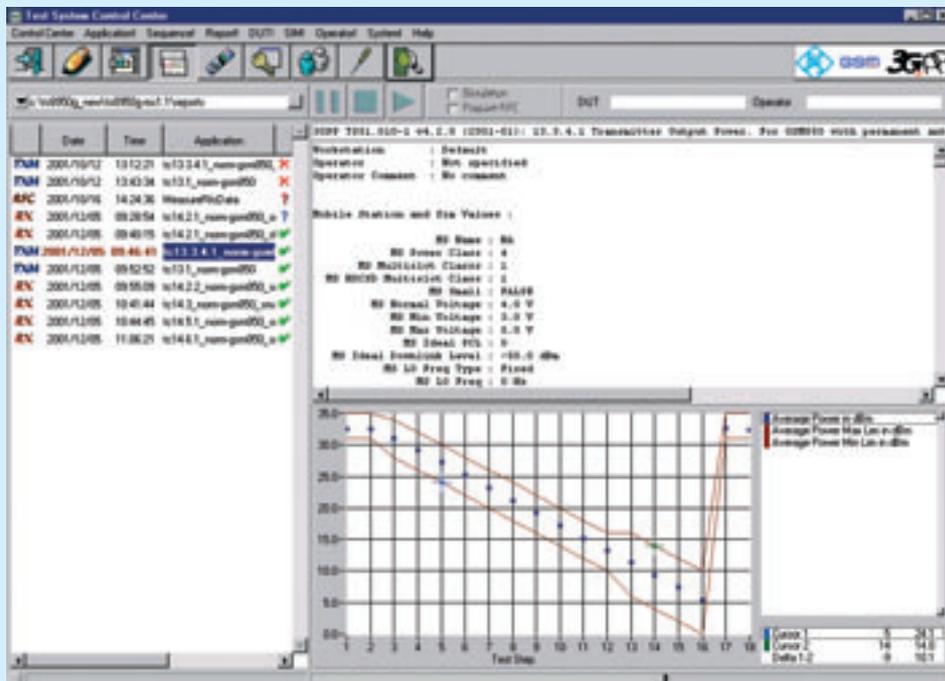


FIG 5 User-friendly evaluation of test results in text and graphics

More information and data sheets at www.rohde-schwarz.com
(search term: equipment name)



Data sheet TS8950G

REFERENCES

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