

# Agilent Technologies' TS-5500 Optimized for Lucent/Optimay Platform Designs

Mobile Phone  
Test Solution  
for Faster  
Time-to-Volume



# Lucent



# OPTIMAY



**Agilent Technologies**

Innovating the HP Way

## Facing New Challenges With New Phone Designs

The wireless communications market is more dynamic and competitive than ever before. Time-to-volume and time-to-market are critical to any product's success. That is why electronic manufacturers of GSM handsets must do everything possible to keep pace in a demanding marketplace.

The Lucent/Optimay Design Platform including integrated circuits, phone software and design services, accelerates GSM handset design. This design platform is for GSM 900 and GSM 900/1800 terminals. Of course, the best design must also be deployed as quickly as possible to meet volume commitments with network operators and service providers.

In order to meet these faster time-to-volume commitments, Agilent Technologies provides the TS-5500 Cellular Phone Test System with specific test software for the Lucent/Optimay GSM Platform Design.

Agilent's TS-5500 contains the core set of equipment and software needed to create production test stages. The tester is a pre-integrated system providing a high-level starting point rather than building systems from scratch utilizing instruments and software tools. To maximize equipment use, the TS-5500 family uses multiple-up architecture for sharing instruments,

computer, peripherals and software among devices under test. In fact, up to four handsets can be tested at the same time on one test station.

## Reusable, Transportable and Complete

Agilent Technologies and Lucent/Optimay have cooperated to provide the test plans and utilities, phone communication software and calibration algorithms for Agilent's TS-5500 Test System. Pre-defined calibration algorithms are easy to use with Agilent's RF test instruments. And the results? Start-up handset manufacturers have a more complete, reusable, transportable test system for faster time-to-volume. The phone control commands provided by Optimay's Production Test Environment Software are accessible via TS-5500 test executive software. Test developers use Lucent/Optimay design-specific test plan templates and quickly set up test scenarios without spending months of valuable time integrating software environments. The Lucent/Optimay phone calibration algorithms and phone control commands are designed for high throughput in production test.

To summarize, the high level of integration in this optimized version of Agilent's TS-5500, including the phone communication interface and test software, significantly reduces test development time and time-to-volume production.

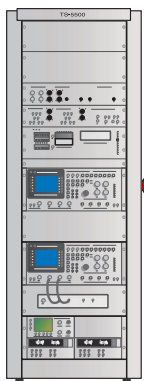
While all production lines are dependent on the phone design and manufacturer's environment, typical test stages are proposed as ready-to-run procedures and measurement routines on the Lucent/Optimay GSM Platform Design. Agilent's TS-5500 can be configured for typical board and final test stages as well as many others.

## Board and Calibration Tests

A functional test at the board level eliminates catastrophic failures within the main areas of the board. The TS-5500 features a specific test plan plus test utilities for board level test of the Lucent/Optimay GSM Platform Design including the following functions:

- Standby and Off Current
- Query Phone Software Version (Check Flash Download)
- Transmitter Go/No Go Tests
- Receiver Go/No Go Tests
- Check SIM Card
- Audio Electrical Loop Back

### Agilent TS-5500

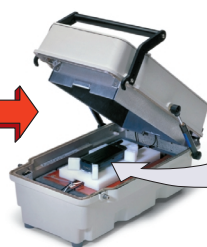


Components for Optimization

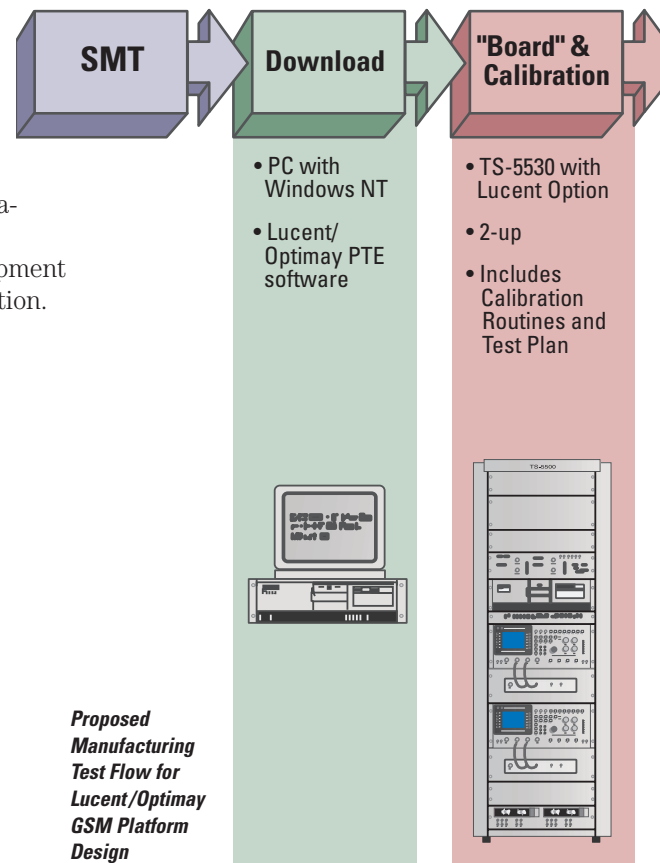
RF Test  
Audio Test  
Serial Phone Control  
DC Power/Charging

Lucent/Optimay  
Production Test  
Environment

### Agilent Test Fixture



Lucent/Optimay  
GSM Platform  
Design



A calibration stage can be integrated into either board-level or final test. The TS-5500 test plans for calibration of the GSM Platform Design include:

- Transmitter Calibration and Power Check
- Receiver Calibration and Power Check
- Battery Calibration
- ADC Calibration

### Final Tests

After the phone is completely assembled, with the exception of the antenna, a final test stage checks the quality of the RF and calibration. The TS-5500 final test software includes the following functions:

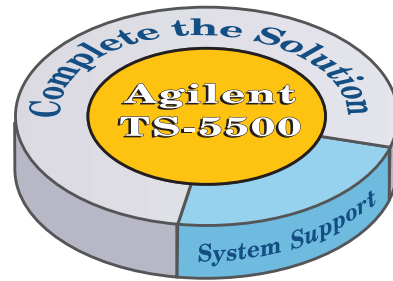
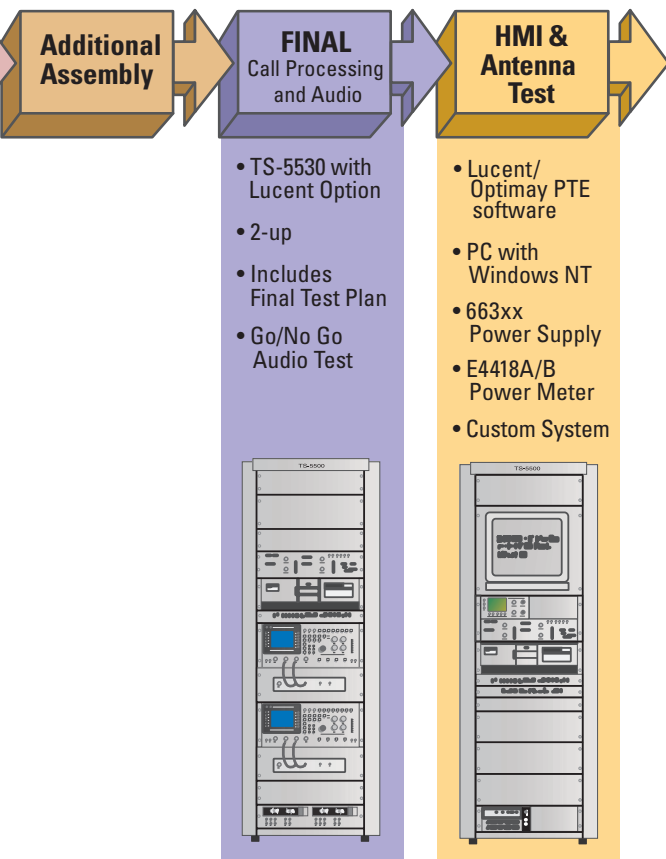
- Mobile Originated Call
- Tx Tests: Frequency Error, Phase Error, Power Level, Power Ramp (Time Mask) and Current
- Rx Tests: Rx Qual, BER, FBER
- Hand-over for Dual-band
- Audio: Ear piece and Microphone
- Charger Check

### Human-Machine Interface (HMI) and Antenna Tests

A custom system can be configured as a manual station with an operator performing the following HMI Tests:

- Display
- Backlit LED
- Key Pad
- Power Key
- Vibrator
- Ringer
- Real-Time Clock
- Antenna-Coupled Test in Test Fixture

Custom test plans must be created for the HMI tests using the test executive and phone communication software.



*Start with Agilent's TS-5500, add System Support then Complete the Solution*

Integrating the phone communications, test plans and test strategy for the Lucent/Optimay GSM Platform Design and Agilent's TS-5500 saves engineering time when developing production test systems. However, a complete solution must be planned and developed. Since this solution will be deployed into production, consideration of the whole test system life cycle using system support planning is imperative.

### System Support

The test system life cycle includes installation and set-up, learning and using the equipment, maintaining the system and disposing of or re-using the system. Agilent Technologies offers the following TS-5500 support capabilities:

- User Education
- Warranty Options
- Priority Response
- Site Planning/Installation
- Calibration of Instruments
- Consulting Services
- Maintenance Training
- Cooperative Support and Spare Parts
- Remote Diagnostics

### Complete the Solution

Deploying a complete solution to manufacturing could include the following:

- Gathering System Requirements
- Developing Test Plans
- Operator Interface
- Database/SQC Interface
- Test Fixture Customization
- RF Path Characterization
- HMI and Antenna Tests
- Tuning to Production Stability
- Acceptance Requirements and Testing

Agilent Technologies has design, development and integration capabilities to complete the TS-5500 system.

Agilent also offers consulting services for the complete production line, including line and test optimization.

## Configuration/Ordering Information

<b>E2183A</b>	TS-5500 Reference Phone Design Common Options
<b>Option 370</b>	Software for Lucent Hakuba GSM 900 Platform Design
<b>Option 371</b>	Software for Lucent Qogir GSM 900/GSM 1800 Dual-band Platform Design

## Other Agilent TS-5500 Literature

This literature provides a summary of the TS-5500 option for calibration test of the Lucent GSM Platform Design. For complete information concerning Agilent's TS-5500, contact us for copies of the following literature:

TS-5500 Family Brochure	5968-3771E
TS-5530 Product Note	5968-4041E
TS-5550 Product Note	5968-4040E

## Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk. We strive to ensure you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

### Our Promise

Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost, upon request. Many self-help tools are available.

### Your Advantage

Your Advantage means Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of our products.

### For more assistance

with your test & measurement needs go to [www.agilent.com/find/assist](http://www.agilent.com/find/assist).

Or contact the test and measurement experts at Agilent Technologies (During normal business hours)

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