

Testing mobiles on the spot

Fast

Accurate

Easy to use

Affordable

AUTOTEST

FAULT FIND

TEST RESULTS

Now With Dual-Band
Test Capability

Defective mobile? Find out fast with the Wavetek 4100 Family

The complete testing solution

The 4100 tester together with the Universal Antenna Coupler is a neat and compact solution for testing mobile phones.

Universal and versatile

The correct tester for any GSM based mobile radio system, from point of return (4100) up to service applications (4100S).

Fast and thorough

You know immediately if the mobile is working or defective.

Handy and inexpensive

All products within the 4100 family fit easily onto any shop counter or work bench.

High precision

High accuracy measurements produce results you can rely on.

Future proof

The system firmware can easily be updated via a PC. These updates are available via the Internet.

Dual-band

New 4107S provides testing on 900/1800 and 900/1900 MHz phones.

The mobile radio market has been waiting for a fast, accurate, low-priced performance tester. Wavetek's 4100 series offers speed, versatility and precision in a sensationally-priced hand-held tester.

Point-of-return testing – stemming the tide

The rapidly increasing number of mobile radios in use points to large increases in defective mobiles. But up to half of the returned mobile phones are not really defective. They are acceptable, but suffer from network coverage problems or have only simple problems that can be fixed on site. With only 50 mobiles being returned every month, the purchase of a POR mobile phone tester will pay for itself within 3 to 6 months.

Wavetek 4100 series testers put an end to unnecessary returns. Within a minute you can see if a mobile is really defective. Everyone profits – the customer, the dealer, the depot and the factory, with fast, accurate testing at the point of customer contact!

Systems and models

Models for each GSM-based system are provided plus one model which covers all three. The new 4107 also has dual-band test capability.

4100 series models

4103 (GSM 900)
4104 (GSM 1800)
4105 (GSM 1900)
4106 (GSM 900/1800/1900)
4107 (GSM900/1800/1900+
Dual-band)



**Fast and accurate testing of
mobiles at the retail counter
enhances customer confidence and
loyalty**

Testing you can trust!

When testing mobiles there is nothing more frustrating than inconsistent results.

Wavetek has achieved a breakthrough in mobile phone testing by using a combination of fast digital signal processors (DSP), high performance VLSI chips, and 30 years of experience in radio testing technology.

All models in the Wavetek 4100 series offer the precision of an expensive radio test set in a hand-held unit – all at an exceptional price.

**Stage 1:
Go/NoGo test
Stage 2:
Toubleshooting**

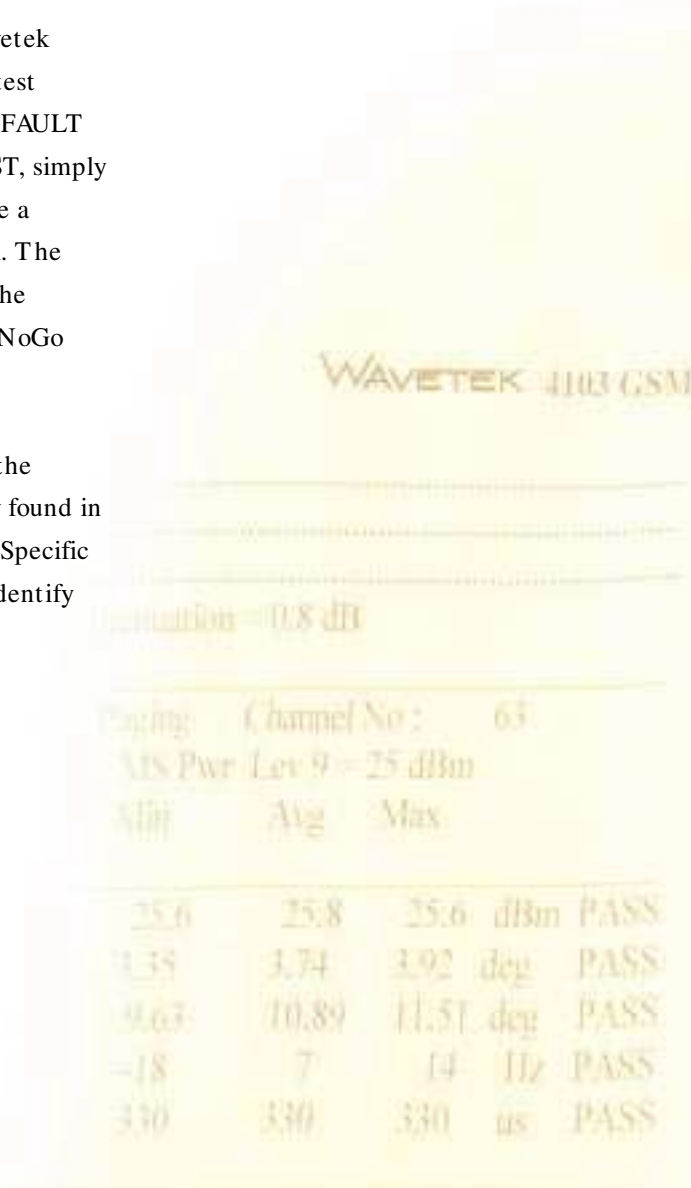
Every member of the Wavetek 4100 family features two test modes: AUTOTEST and FAULT FIND. To use AUTOTEST, simply connect the phone, choose a mobile and press ENTER. The 4100 automatically tests the mobile and displays a Go/NoGo result.

If a defect is found in AUTOTEST, proceed to the troubleshooting capability found in the FAULT FIND mode. Specific tests can then be run to identify defects.

Wavetek 4100 testers can deliver more than just a visual Go/NoGo conclusion. Precise result logs can be printed and returned with the defective mobile to the service depot to speed up repair.



All Wavetek 4100 testers feature 2-stage diagnosis – AUTOTEST and FAULT FIND modes



Mobile Call on Channel 63

Rev. Lev	0
SMS/EXT	00
A5 (123)	000
Dialed Number:	58965896

Wavetek 4100 testers that speak your language

All Wavetek 4100 series testers can communicate with a PC via a serial interface (RS-232-C) and with all printers using the standard Centronics port. Power is provided from an external AC power pack.

Anyone can use this tester with only a few minutes of training. Key features include user prompts on the high-contrast LCD display, one-button operation and an integrated HELP function.

Sharing data is easy. Download the stored test result data to your PC. Help spot trends or share comprehensive test results with

distributors or network centers and shops. It's easy to review data within your favorite spreadsheet application.

Updating to the latest firmware could not be simpler. You can obtain the latest firmware release via the Internet for free. With the Wavetek 4100 you can always count on having the latest software support at your fingertips.

Utility Software adds versatility of test

The standard AUTOTEST procedure allows the basic performance of the phone to be tested. The optional Windows™ based Utility Software allows users to create their own AUTOTEST programs for specific needs. Up to 20 user-defined AUTOTESTs can be stored in your 4100.

The testing solution

Fiddling about with different cable adapters to connect a mobile phone with test equipment can be very time consuming and frustrating. Whether in a customer support team, the service workshop or at the mobile phone depot, the Universal Antenna Coupler solution from Wavetek is the answer to connection problems.

Universal Antenna Coupler and 4100 mobile phone tester

All mobile phone models can be coupled quickly and reliably – simply place the mobile on the holder of the Universal Antenna Coupler, connect up to the 4100 tester and press AUTOTEST.



Software is available, which makes working with the 4100 even easier

Wide range of adapters

The widest range of cable adapters for mobile phones is available from Wavetek with solutions for 100 different models. The list is always being updated, so please see our

web site for latest list.

Cable connections provide high integrity of power measurements and allow receiver BER testing with confidence.



Wavetek 4100 and Universal Antenna Coupler

Typical test sequence

1

Place the mobile phone on the Universal Antenna Coupler

2

Press AUTOTEST on the Wavetek 4100

3

Choose the mobile phone model on the Wavetek 4100.*

4

Start AUTOTEST on the Wavetek 4100. The mobile phone is automatically tested.

* The Wavetek web site lists pre-attenuation values for the most popular models of mobile phones. Pre-attenuation values for each mobile phone can be stored in the 4100 with memory space for up to one hundred mobile phone types.

Wavetek 4100 Series

Calibration and repair

Economical Service testing

Finally there is a mobile phone tester for service that does not take up the whole work bench. The 4100S offers all the important features needed for Service Sites and Repair Depots, for a fraction of the cost of a comparable service tester.

Asynchronous Mode for alignment

With the Asynchronous Mode, the mobile phone operating in a test mode can be tuned or aligned to meet its specifications whilst it transmits a continuous GSMK signal burst.

- 4100S series models**
- 4103S (GSM 900)
 - 4104S (GSM 1800)
 - 4105S (GSM 1900)
 - 4106S (GSM900/1800/1900)
 - 4107S (GSM 900/1800/1900+ Dual-band)

Burst Edge Failure Indicator

Failures detected in the Power/Time Template can be displayed with the "Burst Edge Failure Indicator". With this feature the errors can be identified during the burst rising, constant power or failure time periods.

Remote Control increases data handling

With the remote control capability, the Wavetek 4100S can be controlled via a PC using SCPI command set. Service sites can carry out trend analysis, warranty claims and/or record statistics for each phone. Programs can be written for the PC, providing customized test routines, which means even more processes can be automated, saving valuable time within a service site.

New Dual-band capability

And now there is the 4107S, which can support dual-band mobile phones on 900/1800 MHz and 900/1900 MHz.



The Wavetek web site (www.wavetek.com) provides comprehensive customer support



Service testing with the 4100S provides accurate and fast results at a fraction of the cost of a comparable service tester



RF adapter cables for connecting mobiles



Centronix Interface for printing test logs



RS-232-C interface for exchanging data with PCs

- **Transmitter test**
All power levels
Burst (profile, limits)
Phase / frequency error
- **Receiver test**
RX quality and level
Sensitivity (BER)
- **Signaling test**
Call from/to mobile
Connection clear-down
- **Audio Test**
Talk through microphone and L/S

Wavetek 4100 Figures Data Facts

Technical specifications

Generator output level	900 MHz: -44 to -110 dBm (± 1.5 dBm) 4100 900 MHz: -44 to -110 dBm (± 1 dBm) 4100S 1800/1900 MHz: -50 to -110 dBm (± 1.5 dBm) 4100 1800/1900 MHz: -50 to -110 dBm (± 1 dBm) 4100S
Generator frequency error	1 ppm
RF power measurements (burst)	+ 39 to -20 dBm (± 1.5 dBm) usable up to + 45 dBm
Frequency error measurement	within 5 kHz offset from carrier 900 MHz: ± 25 Hz, 1800/1900 MHz: ± 50 Hz
Phase error measurement	within measurement range 1.5 to 20°rms 900MHz: $\pm 1.5^\circ$ rms, 1800/1900 MHz: $\pm 2.5^\circ$ rms

Interfaces

- RS-232-C interface (serial) for exchanging data with PCs
- Centronics interface (parallel) for commercially available printers
- TNC jack for RF connection
- Power pack connection

Standard delivery

Wavetek 4100 / 4100S Series is supplied with:

Operating Manual	290 012
Test SIM (plug-in)	860 179
Plug-in adapter (full size)	860 175
Power supply	860 090
RF connecting cable	860 409

Please order the corresponding RF adapter for mobiles!*

Ordering information

Wavetek 4103	101 203
Wavetek 4104	101 204
Wavetek 4105	101 205
Wavetek 4106	101 206
Wavetek 4107 Dual-band	101 207
Wavetek 4103S	101 213
Wavetek 4104S	101 214
Wavetek 4105S	101 215
Wavetek 4106S	101 216
Wavetek 4107S Dual-band	101 217

Accessories (extract)

Universal Antenna Coupler	248 330
Antenna 900 MHz	860 261
Antenna 1800 / 1900 MHz	860 262
4100 Utility Software	897 110
Universal adapter cable for Centronics/RS-232-C	384 877
RS-232-C cable (2.5 m)	384 875
Centronics cable (2.5 m)	384 876
Test SIM (full size)	860 178
Carrying case	860 252
Soft shoulder bag	860 251

* RF adapter for mobiles (model-specific), please ask for detailed list or see web site.

Your nearest representative:

Wavetek is a registered trademark of Wavetek Corporation. Subject to alterations.
WIIS176B081998E © Wavetek GmbH 1998

Worldwide Sales Offices

Austria
Wavetek Ges.m.b.H.
Pharos Haus
Nordbahnstrasse 36/TOP 1.4
1020 Vienna, Austria
Tel: (43) 1-214-5110
Fax: (43) 1-214-5109

China
Wavetek Corporation
Room 2701, CITIC Building
No. 19 Jianguomenwai Dajie
Beijing 100004, P.R. China
Tel: (86) 10-6592-8044
Fax: (86) 10-6500-8199

France
Wavetek S.A.
12 Boulevard des Iles
Immeuble Seine St-Germain, Bât. B
92441 Issy-les-Moulineaux Cédex, France
Tel: (33) 1-4190-6666
Fax: (33) 1-4190-6650

Germany
Wavetek GmbH
Gutenbergstrasse 2-4
85737 Ismaning, Germany
Tel: (49) 89-99641-0
Fax: (49) 89-99641-160

Hong Kong
Wavetek Hong Kong Ltd.
3A, HKPC Building
78 Tat Chee Avenue
Kowloon, Hong Kong
Tel: (852) 2788-6221
Fax: (852) 2788-6220

Japan
Yokogawa Wavetek Corporation
4F, Promity Fuchinobe Building
9-15, Kanumadai 1-chome
Sagamihara-shi,
Kanagawa-ken 229-0033, Japan
Tel: (81) 427-57-3444
Fax: (81) 427-57-5722

Singapore
Wavetek Asia-Pacific Pte. Ltd.
51 Goldhill Plaza #14-04/05
Singapore 308900
Tel: (65) 356-2522
Fax: (65) 356-2553

The Americas
Wavetek Corporation
5808 Churchman Bypass
Indianapolis, IN 46203, USA
Tel: (1) 317-788-9351
Fax: (1) 317-782-4607

United Kingdom
Wavetek Ltd.
Hurricane Way
Norwich, Norfolk NR6 6JB, U.K.
Tel: (44) 1603-256-700
Fax: (44) 1603-256-688

Internet: www.wavetek.com