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Willtek

4192

GSM Phone Checker Software



user's guide

version 2.00

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About This Guide

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- "Conventions" on page vii

Purpose and scope

The purpose of this guide is to help you successfully use the GSM Phone Checker Software features and capabilities. This guide includes task-based instructions that describe how to install, configure, use, and troubleshoot the GSM Phone Checker Software. Additionally, this guide provides a description of Willtek's warranty, services, and repair information, including terms and conditions of the licensing agreement.

Assumptions

This guide is intended for novice, intermediate, and experienced users who want to use the GSM Phone Checker Software effectively and efficiently. We are assuming that you have basic computer and mouse/track ball experience and are familiar with basic telecommunication concepts and terminology.

Related information

Use this guide in conjunction with the following information:

Willtek 4100 user's guide (doc. no. M 290 012)

Willtek 4200 user's guide (doc. no. M 290 013)

Willtek 4916 Antenna Coupler user's guide (doc. no. M 292 015)

Willtek 4921 RF Shield user's guide (doc. no. M 292 016)

Technical assistance

If you need assistance or have questions related to the use of this product or call one of Willtek's technical assistance centers. You can also contact Willtek by e-mail at customer.support@willtek.com.

Table 1 Technical assistance centers

Region	Phone number	Fax number
UK	+44 (0) 161 486 3353	+44 (0) 161 486 3354
Europe, Middle East, Asia, Africa	+49 (0) 89 996 41 386 +49 (0) 89 996 41 363	+49 (0) 89 996 41 440
Americas	+1 317 595 2021 +1 866 WILLTEK	+1 317 595 2023

Conventions

This guide uses naming conventions and symbols, as described in the following tables.

Table 2 Typographical conventions

Description	Example
User interface actions appear in this typeface .	On the Status bar, click Start .
Buttons or switches that you press on a unit appear in this TYPEFACE .	Press the ON switch.
Code and output messages appear in this typeface.	All results okay
Text you must type exactly as shown appears in this typeface .	Type: a : \set.exe in the dialog box.
Variables appear in this <typeface>.	Type the new <hostname>.
Book references appear in this typeface .	Refer to Newton's Telecom Dictionary
A vertical bar means "or": only one option can appear in a single command.	platform [a b e]
Square brackets [] indicate an optional argument.	login [platform name]
Slanted brackets < > group required arguments.	<password>

Table 3 Keyboard and menu conventions

Description	Example
A plus sign + indicates simultaneous keystrokes.	Press Ctrl+s
A comma indicates consecutive keystrokes.	Press Alt+f,s
A slanted bracket indicates choosing a submenu from menu.	On the menu bar, click Start > Program Files .

Table 4 Symbol conventions






	This symbol represents a general hazard.
	This symbol represents a risk of electrical shock.
	NOTE This symbol represents a note indicating related information or tip.

Table 5 Safety definitions

	WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Overview

A green square containing the white number 1, indicating the chapter number.

This chapter provides a general description of the GSM Phone Checker Software. Topics discussed in this chapter include the following:

- ["About the GSM Phone Checker Software" on page 2](#)
- ["What's new in version 2.00" on page 2](#)
- ["Features and capabilities" on page 2](#)

About the GSM Phone Checker Software

The GSM Phone Checker Software is an easy-to-use and inexpensive tool providing automated tests of the mobile's transmitter, receiver and audio paths. The GSM Phone Checker supports the P-GSM 900, GSM 1800 and GSM 1900 frequency bands including 900/1800 dual-band and 900/1900 dual-band testing.

What's new in version 2.00

New feature:

New COUPLER menu for selecting the type of antenna coupler (Willtek 4910 or 4916) that will be used for testing.

Improvements:

- Improved user interface. New menu bar.
- New structure of the coupling loss database, number of supported phones increased.
- The tester search routine now supports COM1 to COM8. This allows for the usage of USB to Serial converters.

Features and capabilities

- Checks the transmitter parameters.
- Verifies that the receiver is working ok.
- Allows for a quick check of the audio paths by way of a voice loopback.
- Identifies more than 400 mobile phone models and provides phone-specific user information where necessary.
- Provides a quick Go/NoGo result, as well as on the screen.
- Offers a more detailed test protocol on hard disk.
- Tests can be performed with any SIM card, i.e. no special Test SIM is needed.
- Blocked channel already in use by a nearby base station can be determined and excluded, see ["Scanning channels used by real networks" on page 9](#).
- Allows experienced users to customise procedures, for example to change the number of channels per band to be tested, see Appendix ["Field Descriptions" on page 23](#).

Installation

2

This chapter describes how to install the GSM Phone Checker Software. The topics discussed in this chapter are as follows:

- "Hardware requirements" on page 4
- "Software requirements" on page 4
- "Setting up the hardware" on page 4
- "Installing the software" on page 5
- "First-time startup" on page 5

Hardware requirements

In order to use GSM Phone Checker, you need the following parts:

- A GSM tester from the Willtek 4100 or 4200 Series Mobile Service Testers.
- An antenna coupler, Willtek recommends the Willtek 4916 Antenna Coupler.
- For proper shielding and thus more reliable results use of the Willtek 4921 RF Shield is recommended.
- A cable from the Antenna Coupler (or RF Shield) to the tester.
- A PC running a Microsoft operating system, with a CD drive and free serial port (COM1 to COM8).
- A pointing device, such as a mouse, connected to the PC.
- A serial cable to connect the tester to the PC.

Software requirements

Your PC needs to be running one of the Microsoft operating systems Windows 95, 98, Me, 2000 or XP.

If you are using a Willtek 4100 Series Mobile Service Tester or Mobile Fault Finder, you will need firmware revision 3.00 on that tester. Software and firmware updates are available free of charge on the Internet at www.willtek.com.

If you are using a Willtek 4200 Series Mobile Service Tester, you will need firmware revision 2.00 on that tester. Software and firmware updates are available free of charge on the internet at www.willtek.com.

Setting up the hardware

- 1 If you want to use the RF Shield, place the Antenna Coupler in the RF Shield and connect the cable between the RF Shield (internal) and the coupler.
- 2 Connect the coupler to the tester using a double-shielded RF cable. If you want to use the RF Shield, connect the box to the tester instead.
- 3 Use the serial interface cable delivered with the tester to connect a free serial port of the PC (COM1 to COM8) with the serial interface of the tester.
- 4 Connect the power supply connector of the tester to a power outlet using the mains power cable or the power supply provided with the tester.
- 5 Switch on the PC.
- 6 Switch on the tester.

Installing the software

- 1 Ensure that there is no previous installation of the GSM Phone Checker Software on your PC. If there is, save the files that you want to keep (e.g. BADCHAN.DAT) to a different location on your hard disk and uninstall that version. Use the **Software** applet in the System Control folder to uninstall the previous software version.
- 2 Insert the CD into the PC's CD drive.
- 3 Start the File Manager or the Windows Explorer and click on the appropriate CD drive containing the GSM Phone Checker Software installation disk.
- 4 Double-click on the **setup.exe** file.
The installation program starts.
- 5 When the installation program prompts for the folder to install the software, confirm the folder proposed by the program or enter a drive and folder name of your own choice.
The installation program copies the files to the hard disk and adds a new entry in the Programs section of the Windows Start menu.
- 6 You can create a shortcut to GSM Phone Checker on the desktop by clicking on **Start > Programs** and right-clicking the GSM Phone Checker entry. A context menu appears. Select **Copy**. Right-click on the Windows desktop; a new context menu appears. Select **Paste**; a link to GSM Phone Checker is created on the Windows desktop.
- 7 If you had a previous version installed on your disk, you can now copy saved files (such as BADCHAN.DAT) to the installation directory.

First-time startup

On first-time use, a message window ("File 'BADCHAN.DAT' not found") pops up, advising you to run a channel scan before first use. See "[Scanning channels used by real networks](#)" on page 9 for using this feature.

The channels are scanned to identify those which are used by a nearby base station. It is essential for the GSM Phone Checker Software to know these channels so that it can exclude them from the tests, otherwise the test fails due to interference by a base station rather than due to a faulty mobile phone. As network operators keep optimising their networks and adapt their base stations to the changing network use, the networks' channel use may be changing frequently. A channel scan should therefore be performed on a regular basis, for example once per month.

The GSM Phone Checker Software invites you to enter company data. These data are printed on the results sheet, if you print from within the GSM Phone Checker Software. You can enter data either now or at a later stage.

The software proceeds with the normal startup sequence.

Operation

3

This chapter describes the functionality of the software. The functions are described as they are available with the default settings. The settings can be changed by experienced personnel; this is explained in more detail in the Appendix "[Field Descriptions](#)" on page 23. Topics discussed in this chapter are as follows:

- "[Using the front panel](#)" on page 8
- "[Scanning channels used by real networks](#)" on page 9
- "[Performing a test](#)" on page 12
- "[Reading test results](#)" on page 16
- "[Stopping a test or scan](#)" on page 17
- "[Exiting the GSM Phone Checker Software](#)" on page 17

Using the front panel

To start the GSM Phone Checker Software click **Start > Programs > GSM Phone Checker**.

The Setup Serial Port screen is displayed.

Select the type of antenna coupler you intend to use from the COUPLER menu.



Switch on the tester. Click **Done**.

The GSM Phone Checker Software searches for a tester connected to serial ports COM1 to COM8, and initializes the tester.

The start menu appears (see below).



Select whether you want to perform a test, or scan channels to exclude distorted channels from the tests. See following sections for more details.

Scanning channels used by real networks

Introduction

The GSM Phone Checker Software includes different automated procedures to check the interference by real networks. When testing over an antenna coupler, the signal from base stations (and nearby mobile phones and other testers) will distort the signals between the tester and the mobile phone under test, if they are all using the same channels. The scan procedures identify those channels already in use; in subsequent tests, these channels are not used by the GSM Phone Checker Software. The software stores a list of used channels on the hard disk of the PC, so it can be retrieved for each new test and the scan procedure does not have to be repeated each time you switch on the PC or the tester.

Interference is most likely to occur when testing over the air using the Willtek 4916 Antenna Coupler. The optimum choice is therefore to perform the tests over a double-shielded cable; but many mobile phones do not have a connector for a cable connection. Therefore, Willtek recommends to use the 4916 Antenna Coupler in conjunction with the Willtek 4921 RF Shield, which is a Faraday cage shielding the coupler and the mobile under test from interfering signals.

Strong signals in the vicinity of a base station can even affect measurements over a shielded RF cable or the RF Shield. Therefore, the channel scan is recommended in any case.

As mobile phone penetration increases, so changes network usage. Network operators install additional base stations and optimise their networks to allow for best network coverage. This means that networks may add channels which were not used previously. Thus an incremental check is useful to ensure that these additional channels are found and excluded from the list of channels that the GSM Phone Checker Software uses to test the mobile phone. Also, the incremental check takes up less time because there are less channels left to check.

For network optimization reasons it may also be necessary that a base channel that was used yesterday by a nearby base station may be in use by a more remote base station tomorrow. In these cases, the incremental check will unnecessarily exclude a channel which is free now, and at some point all channels may be barred for testing. It is therefore useful to reset the list of used channels and start a new scan across all frequencies.

Scanning for interfering channels

You can run a single scan or a repetitive scan. The first one identifies the base channels and strongest traffic channels (which are transmitted intermittently). The repetitive scan also identifies weaker and more intermittently transmitted signals; this scan takes more time and should be run e.g. over the weekend, including peak hours.

The scan procedure can either add new channels to the list of used channels already identified, or delete the existing list and start the channel evaluation from scratch.

A strong carrier may distract the scan procedure!

A nearby carrier may distort a channel so much that the mobile loses the carrier and the channel scan is halted. To avoid the abnormal termination of the scan procedure, it is recommended to perform the first scan using an RF cable and then repeat the scan (Search more) using an antenna coupler.

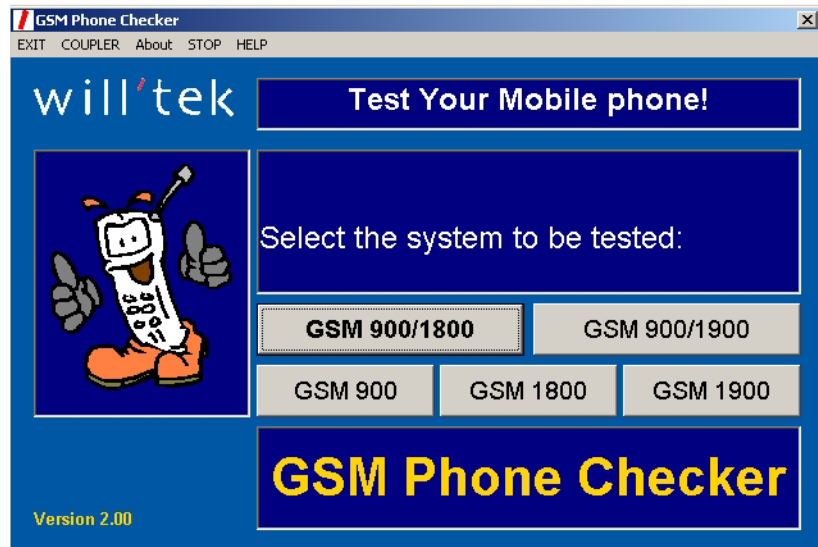
Use the Willtek Test SIM for scanning!

To avoid the mobile camping on a real base station, Willtek recommends the use of a test SIM card. In this case any real network will reject the mobile phone when it tries to register there. The mobile phone will try to find a suitable network until it finds the base station signal transmitted by the Willtek tester.

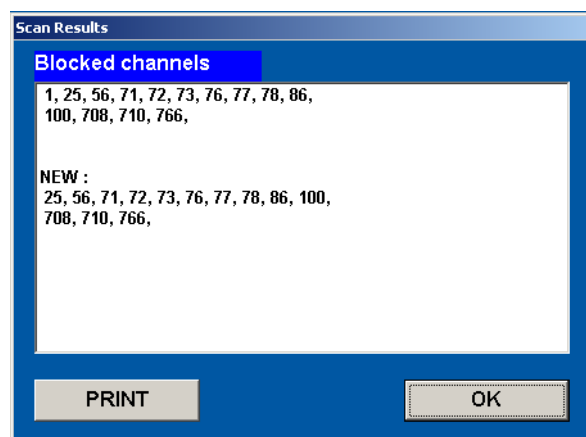
- 1 On the start menu, select **Scan**.
The Choose Scan Mode screen is displayed.



- 2 Select **One Scan** for a quick scan over the stronger carriers, or **Continuous** for a repetitive scan, also identifying intermittent signals.
- 3 The Choose Scan Mode screen asks you, if you want to add blocked channels to the existing list ("Search more") or start a completely new list ("Clear and search"). Make your selection.
A new screen is displayed prompting you to select the system to be tested.



- 4 Select the frequency band or the combination of frequency bands that you are usually testing. This is necessary even if there is no GSM network in the respective band in your area, because there may be other types of networks and carriers in this band.
Once a (combination of) frequency band(s) has been selected, the program initializes the tester. This may take a couple of seconds.
- 5 Take a mobile phone which you know is working ok and choose manual network selection in the phone's menu.
- 6 Follow the instructions on the PC screen.
The software indicates the progress of the channel scan. You can interrupt the scan by clicking on **STOP**.
- 7 If you are running a single scan, the GSM Phone Checker Software scans through all the available channels, stops after the last one and shows you a list of channels already in use. After confirming the channel list by clicking on **OK**, you can return to the start menu to begin testing.
If you are running a continuous scan, the GSM Phone Checker Software repeats scanning all the available channels until you interrupt the scan procedure by clicking on **STOP**. The software indicates the list of channels already in use. Confirm by clicking on **OK** and return to the start menu for a test.



- 8 If you are not using a mobile phone covering all frequency bands that you need to test, repeat the scan procedure with another phone supporting the remaining band(s). Do not clear the previously generated channel list in the second run but select **Search more** instead.

Performing a test

Frequency band selection

When you start a test you will be asked for the GSM systems (frequency bands) that the mobile phone supports.

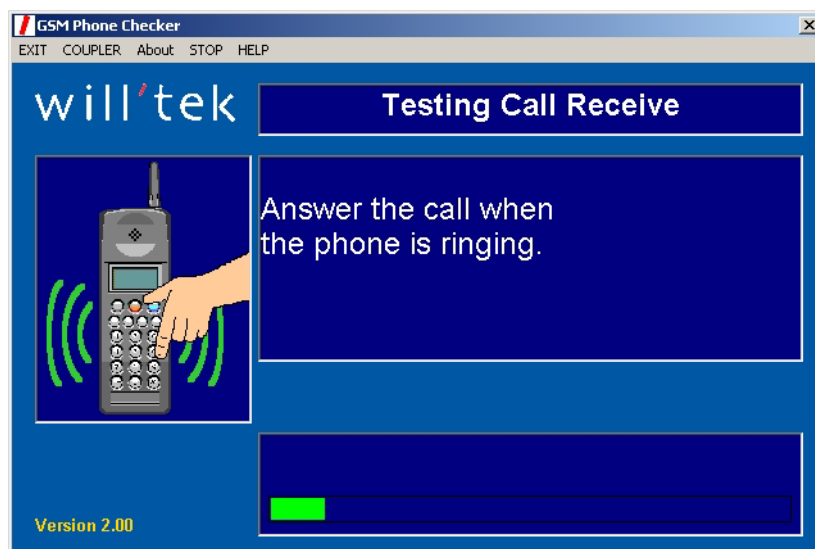
- Select GSM 900/1800 if you are unsure, since most European, Asian and African phones support these bands.
- For a tri-band phone first test GSM 900/1800 and then 1900 single.
- Select GSM 1900 for an American GSM phone.

Starting a test

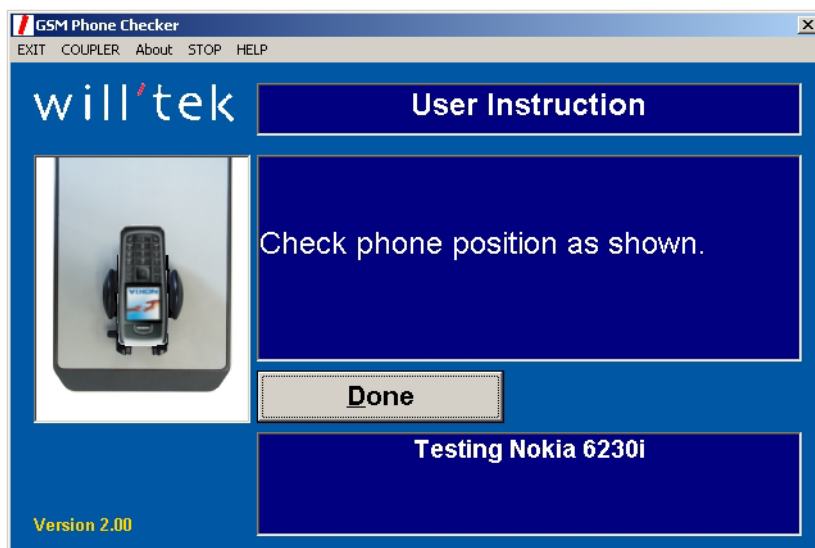
- 1 In the start menu, select **TEST**.
- 2 Select the systems (frequency bands) that the mobile supports or which you want to test (see above).



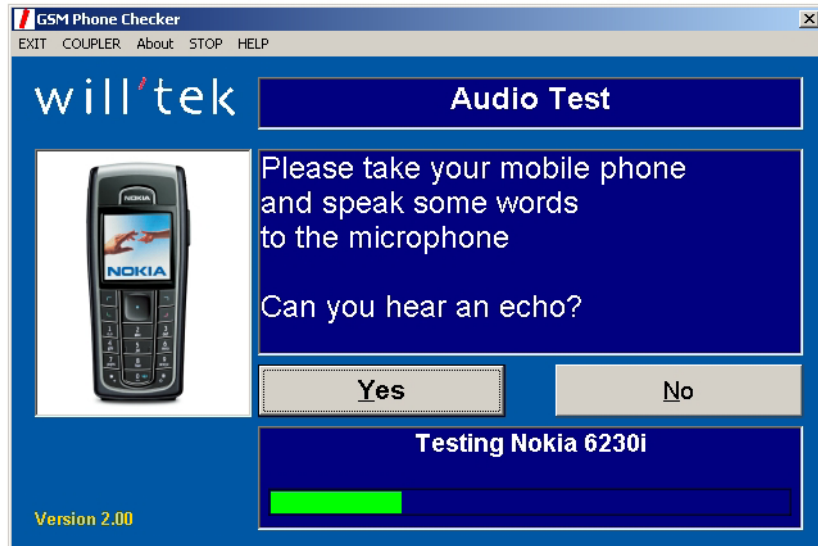
- 3 Follow the instructions on the screen and switch the phone on. The tester simulates a network and waits for the mobile to register with this network.



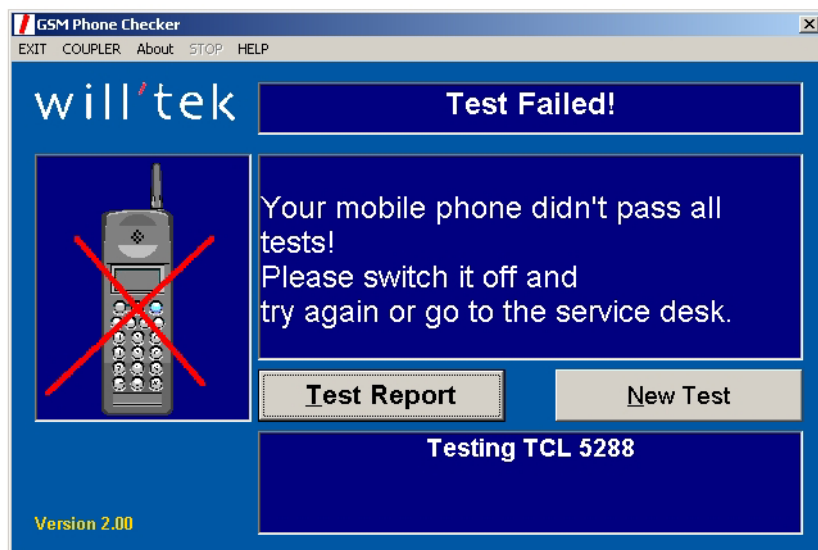
- 4 Answer the call when the phone rings.
The GSM Phone Checker Software tries to identify the phone.



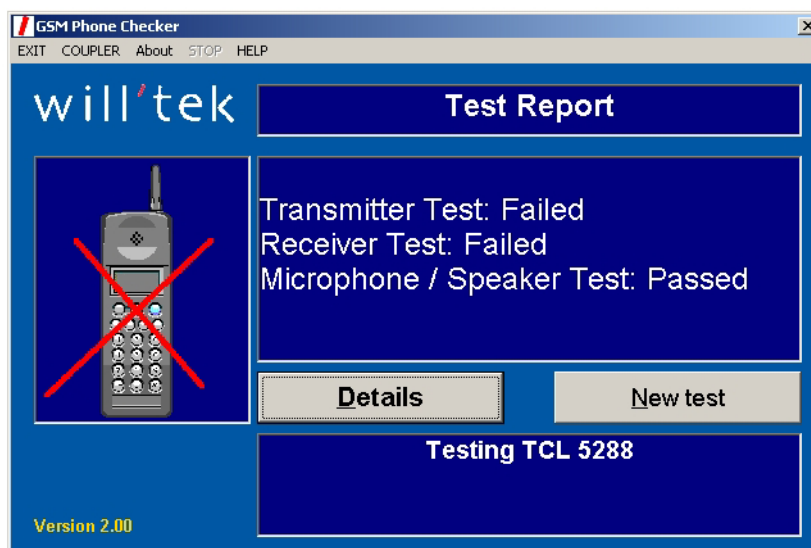
- 5 Follow the instructions on the screen, if the GSM Phone Checker Software proposes further action (e.g. adjusting the phone on the cradle or pulling out the antenna).



- 6 For the audio test, speak into the mobile's microphone and check if you can hear your voice in the speaker after one or two seconds. You can lift the phone from the antenna coupler, however, do not move it more than half a meter (1.5 feet) away from the coupler. If you can hear your voice in the speaker, select **Yes**. The GSM Phone Checker Software carries out transmitter measurements (three channels per frequency band, three power levels per channel) and receiver tests (three channels).



- 7 After completing the tests, the GSM Phone Checker Software presents a pass or fail indication and allows you to check the test report or start a new test. Select **Test Report** to view the test results, or select **New Test** to return to the start menu for another test.



- 8 The subsequent Test Report shows you which test, if any, failed and invites you to view the results in more detail. Select **Details** to view the measurement results, or select **New test** to return to the start menu for another test.



- 9 The detailed test report shows information about the test setup (such as the mobile under test and the tester being used) and the measurement results. Select **Print** to send the results to a printer. The results are printed on the default printer configured under Windows. More than one page with results may be available. The printout indicates which test was passed or failed, within provided measurement results. Select **Continue** to view the next results page or to return to the start menu. Select **Back** to return to the previous results page if available.

Reading test results

Different result views

There are two possibilities for reading test results:

- Select **Test Report**, then **Details** to view one or more pages of test results. In the window containing detailed test results measurement results are marked in green color if they passed the limits, failed results are marked in red color. These results windows are only available immediately after the test.
- By opening the results files stored on hard disk you can view the results anytime after the tests. For this purpose it is advisable to write down the serial number of the mobile phone (IMEI) during or immediately after the test.

Finding the results file

The test results are stored in a text (TXT) file. The folder and file name are based on the mobile phone's serial number IMEI. To find the results file, proceed as follows:

- 1 Look for the installation folder of the GSM Phone Checker software. The default is C:\program files\GSM Phone Checker.
- 2 The installation folder contains a subfolder named RESULTS. Open this folder.
- 3 In the RESULTS folder open the folder which contains the first six digits of the IMEI in its name.
- 4 This folder contains one or more files with the last seven digits of the IMEI in the file name. If there is more than one file with results for one and the same mobile phone, the eighth character of the file name is a letter. The GSM Phone Checker Software uses the letters of the alphabet, starting with A for the second result file created by the software.

Results format

The test result format is similar for both the on-screen detailed results display and the results file:

- On the left-hand side the measurement parameters are listed.
- The test limits are presented on the right-hand side. The ranges for valid results are shown in brackets.
- In the middle, the actual test results are shown. For easier identification of critical parameters, results which are outside the limits are shown with a leading asterisk (*).

Stopping a test or scan



A running test or scan procedure can be terminated by clicking on **STOP** in the menu bar.

Exiting the GSM Phone Checker Software



You can interrupt and terminate the program by clicking on the close button in the upper right corner.

Troubleshooting

4

This chapter describes how to identify and correct problems related to the GSM Phone Checker Software. The following topic is discussed in this chapter:

["Solving problems" on page 20](#)

Solving problems

If you experience difficulties using the GSM Phone Checker Software, refer to the related topic. Each topic describes problems and solutions that may be pertinent to your task. If you are unable to resolve your problem, please contact ["Technical assistance" on page vi](#).

Starting the software

Problem The GSM Phone Checker Software does not find a tester at the serial ports COM1 to COM8.

Solution Ensure that either a Willtek 4100 or 4200 series tester is connected to one of the serial ports COM1 to COM8.

Switch the tester off and back on again.

Ensure that the serial interface of the tester is set to the operating parameters required by the GSM Phone Checker Software. The software requires a data rate of 38400 bit/s, normal Rx/Tx lines on the cable and the Xon/Xoff protocol. The settings on the tester can be checked and modified after selecting the appropriate menu: Press **SETUP** and select **Serial port**. Restart the PC software.

If you are not using a serial cable provided by Willtek, try **RXTX lines crossed** in the serial port settings of the tester and restart the PC software.

Ensure that no other program is using the serial port.

Try another serial cable.

Scanning for used channels

Problem The GSM Phone Checker Software terminates the scan procedure with an error message. The connection between the tester and the mobile phone has been lost.

Solution Connect a phone to the tester using a shielded RF cable, and restart the scan. This identifies strong interfering signals without the phone losing the carrier signal of the tester.

Problem The GSM Phone Checker Software reports that there are no channels available anymore in one of the selected bands. There have been many incremental scans ("Search more" option used).

Solution Restart the scan by selecting the "Clear and scan" option. This deletes the existing channel list and the tester should identify channels that are not in use by a network anymore.

Test is not executed

Problem GSM 1900 test fails after successful GSM 900 and/or GSM 1800 test.

Solution Use a the RF Shield for this test. Before starting a GSM 1900 test, switch the phone off and on. If you are using the RF Shield, close it immediately after turning the phone on.
(Some mobile phones types automatically start scanning the frequency bands at GSM 900. If they find a (real) network there, they do not scan in the GSM 1900 band and hence cannot find the network simulated by the tester).

Mobile does not find test network

Problem The mobile registers with a real network but does not find the test network (001-01).

Solution Perform a scan before starting the test to ensure that the tester does not use a channel already in use by a real network. Perform the scan procedure in all the bands that you are using for tests.

Field Descriptions



This appendix describes the fields that can be used to modify the test configuration with the GSM Phone Checker Software for your own purposes. The appendix contains the following sections:

- ["Opening the setup file" on page 24](#)
- ["General format of the setup file" on page 24](#)
- ["Field descriptions" on page 24](#)

Opening the setup file

The setup file with the GSM Phone Checker Software settings is located in the folder where the software is installed. To open the file proceed as follows:

- 1 Look for GSM Phone Checker Software installation folder. The default is C:\program files\GSM Phone Checker.
- 2 In this folder, locate the file Ph_Check.ini.
- 3 Double-click on the file to open it with the standard editor.

General format of the setup file

The setup file is a text file with different sections. The sections are indicated by a section name in square brackets.

Each section has one or several lines, each containing a parameter and its setting. A short-form explanation is added in the same line behind a semicolon.

Example:

```
[LANGUAGE SUPPORT]
LANGUAGE = 1 ; 1 = English
```



Do not change section names or parameter names

If you change the section name or the parameter name (the word in front of the equal sign), the whole user interface may be affected or the test results may be false.

Field descriptions

[LANGUAGE SUPPORT]

LANGUAGE — Takes on only one value: 1 for English. Other languages are not supported in this version.

[MISC]

SEARCHCOM — Defines whether the software shall search for the serial port to which the tester is connected. Valid entries are 0 (a menu pops up asking the user to enter the COM port at startup) and 1 (default, the GSM Phone Checker Software searches for the COM port).

COMSPEED — The bit rate at the serial interface.

- 0 means 4800 bit/s.
- 1 means 9600 bit/s.
- 2 means 19200 bit/s.
- 3 means 38400 bit/s; this is the default setting.

SHOWLIMITS — Key to enable or disable the presentation of the measurement limits in the detailed results view. 0 means that limits are not shown, 1 means that limits are shown. The default are limits being shown.

LEFTMARGIN — Indicates the number of spaces at the left-hand side to leave a margin. The default is 8.

TESTDETAIL — Defines if access to the detailed results is provided from the GSM Phone Checker Software or not. 0 means no details are offered, 1 (default) means that details are offered to the user.

TESTPRINT — Test results can be printed either automatically after the test or on request. 0 means that results are printed only on request (default), 1 means they are printed after test completion.

SWAPFILE — Test results are either kept in memory until the completion of the test, or they are written to an interim file immediately so they are not lost when the PC software hangs. 0 indicates that they are not written to an interim file (default), 1 means that they are written to a file immediately.

DIALNO — Indicates the number that the user is prompted to dial. May include any digit from 0 to 9, * and #. Default is 1234567890#*.

[SCAN]

SCANSENS — During the scan procedure, the tester takes away its TCH power level for some time. If there is no interfering base station on this channel, the phone should report an RX_LEV of 0 (< -110 dBm). If there is an interfering signal, the RX_LEV value is higher. The SCANSENS parameter forms the threshold for the GSM Phone Checker Software to decide whether the channel can be used for tests or not. The default value for SCANSENS is 20 (i.e. -90 dBm). The table of RX_LEV values and the appropriate RF receive level can be found in the appendix of the user guide to your mobile service tester.

SCANATT — This is the pre-attenuation value during the scan procedure. The default value is 0 dB.

SCANTEST — During the scan procedure, each channel is tested once except for the default channels in each band; these channels are defined in the [GSM900], [GSM1800] and [GSM1900] sections, respectively. The SCANTEST parameter defines how often these channels are tested. The default is 5.

[GSM DEFAULT SYSTEM]

GSMSYSTEM — Allows to predefine the combination of frequency bands to be tested.

- 0: no predefined combination, the user is prompted to enter the combination to test (default).
- 1: GSM 900
- 2: GSM 1800 (PCN, DCS 1800)
- 3: GSM 1900 (PCS)
- 4: GSM 900/1800 (GSM/PCN)
- 5: GSM900/1900 (GSM/PCS)

- [GENERAL]**
- MSPOWLEV1** — First MS power control step (level) to test. Default is 5 (which means 33 dBm in GSM 900 and 20 dBm in GSM 1800 and GSM 1900).
- MSPOWLEV2** — Second MS power control step (level) to test. Default is 8 (which means 27 dBm in GSM 900 and 14 dBm in GSM 1800 and GSM 1900).
- MSPOWLEV3** — Third MS power control step (level) to test. Default is 10 (which means 23 dBm in GSM 900 and 10 dBm in GSM 1800 and GSM 1900).
- LOCBSPLEV** — Power level of the tester used initially, i.e. during the location update procedure, in dBm. The default value is -70.
- [TIMEOUTS]**
- TOSEARCH** — Time (in seconds) allowed for the mobile to find the network and register. Default is 120.
- TOBSCALL** — Time (in seconds) until the mobile should have answered a call from the network. If the time is exceeded, the test is stopped. Default is 120.
- TOMSCALL** — Time (in seconds) until the mobile should have originated a call to the network as prompted to the user. (The MS call only occurs during the scan procedure.) If the time is exceeded, the test is stopped. Default is 120.
- [All Bands]**
- CH_BAND** — Number of channels on which the GSM Phone Checker Software measures in each frequency band. The valid range is from 1 to 3. Default is 3.
- [GSM900]**
- GSMBCCCH** — BCCH carrier (base channel) of the network simulated by the tester. Valid range is from 1 to 124. The default is 1.
- GSMTCH1** — The channel number for the first traffic channel to test. Valid entries are in the range from 1 to 124. The default is 1. The actual value is taken from the list of available channels (according to the scan list), close to this value.
- GSMTCH2** — The channel number for the second traffic channel to test. Valid entries are in the range from 1 to 124. The default is 45. The actual value is taken from the list of available channels (according to the scan list), close to this value.
- GSMTCH3** — The channel number for the third traffic channel to test. Valid entries are in the range from 1 to 124. The default is 110. The actual value is taken from the list of available channels (according to the scan list), close to this value.
- GSMBSPLEV** — Power level that the mobile phone is to receive from the simulated base station, dBm. The valid range depends on the capabilities of the tester. Default value is -75. If you change this value, take the RXLEV and RXQUAL parameters in the [TEST LIMITS] section also into account.

GSMATT — Default attenuation assumed between the mobile phone and the tester, in dB. Default is 2. A phone-specific attenuation is used if the GSM Phone Checker Software recognizes the mobile phone type (from its type approval code).

[GSM1800] **PCNBCCH** — BCCH carrier (base channel) of the network simulated by the tester in the GSM 1800 band. Valid range is from 512 to 885. The default is 598. The actual value is taken from the list of available channels (according to the scan list), close to this value.

PCNTCH1 — The channel number for the first GSM 1800 traffic channel to test. Valid entries are in the range from 512 to 885. The default is 514. The actual value is taken from the list of available channels (according to the scan list), close to this value.

PCNTCH2 — The channel number for the second GSM 1800 traffic channel to test. Valid entries are in the range from 512 to 885. The default is 704. The actual value is taken from the list of available channels (according to the scan list), close to this value.

PCNTCH3 — The channel number for the third GSM 1800 traffic channel to test. Valid entries are in the range from 512 to 885. The default is 882. The actual value is taken from the list of available channels (according to the scan list), close to this value.

PCNBSPLEV — The power level that the mobile phone is to receive from the simulated base station, in dBm. The valid range depends on the capabilities of the tester. Default value is -75. If you change this value, take the RXLEV and RXQUAL parameters in the [TEST LIMITS] section also into account.

PCNATT — The default attenuation assumed in the GSM 1800 band between the mobile phone and the tester, in dB. Default is 15. A phone-specific attenuation is used if the GSM Phone Checker Software recognizes the mobile phone type (from its type approval code).

[GSM1900] **PCSBCCCH** — The BCCH carrier (base channel) of the network simulated by the tester in the GSM 1900 band. Valid range is from 512 to 810. The default is 597. The actual value is taken from the list of available channels (according to the scan list), close to this value.

PCSTCH1 — The channel number for the first GSM 1900 traffic channel to test. Valid entries are in the range from 512 to 810. The default is 515. The actual value is taken from the list of available channels (according to the scan list), close to this value.

PCSTCH2 — The channel number for the second GSM 1900 traffic channel to test. Valid entries are in the range from 512 to 810. The default is 655. The actual value is taken from the list of available channels (according to the scan list), close to this value.

PCSTCH3 — The channel number for the third GSM 1900 traffic channel to test. Valid entries are in the range from 512 to 810. The default is 805. The actual value is taken from the list of available channels (according to the scan list), close to this value.

PCSBSPLEV — The power level that the mobile phone is to receive from the simulated base station, in dBm. The valid range depends on the capabilities of the tester. The default value is -75. If you change this value, take the RXLEV and RXQUAL parameters in the [TEST LIMITS] section also into account.

PCSATT — Default attenuation assumed in the GSM 1900 band between the mobile phone and the tester, in dB. The default is 15. A phone-specific attenuation is used if the GSM Phone Checker Software recognizes the mobile phone type (from its type approval code).

[TEST LIMITS]

RFLEVEL — In the transmitter measurements, gives the maximum allowable variation of the RF power level in dB. The default is 5. The value must be a positive number.

Example: If the commanded power level is 27 dBm, the lower limit is 22 dBm and the upper limit is 32 dBm.

PHASERMS — Defines the maximum allowable RMS phase error of the mobile phone under test. The value is given in degrees and must be a positive number. The default value is 15.

PHASEPEAK — Maximum allowable peak phase error of the mobile, in degrees. The default is 40. The value must be a positive number.

FREQUENCY — Gives the maximum allowable amount of frequency error for the tested mobile phone, in Hertz. The value must be a positive number. The default is 300.

BURSTLEN — Maximum allowable variation of the burst length of the mobile phone's signal, in microseconds. The default is 15.

RXLEV — Minimum receive level (RX level) that the mobile must report. Valid entries are in the range from 0 to 63. The default is 15, corresponding to a received signal level of -96 to -95 dBm. The table of RX levels can be found in the appendix of the operating manual for your tester.

RXQUAL — Minimum received quality that the mobile should report. Valid entries are in the range 0 to 7, the default is 3.

[WINDOWS]

MAXIMIZE — The window in which the GSM Phone Checker Software is displayed can be maximized to fill the whole screen, or can be shown in a normal window (without the minimize/maximize buttons). The value 0 indicates that the software should appear in a normal window, the value 1 commands the GSM Phone Checker Software to fill the whole screen.

Customer Services

A green square containing a white capital letter 'B'.

This chapter describes the customer services available through Willtek. Topics discussed in this chapter include the following:

- ["Warranty information" on page 30](#)
- ["Equipment return instructions" on page 31](#)

Warranty information

Willtek warrants that all of its products conform to Willtek's published specifications and are free from defects in materials and workmanship for a period of one year from the date of delivery to the original buyer, when used under normal operating conditions and within the service conditions for which they were designed. This warranty is not transferable and does not apply to used or demonstration products.

In case of a warranty claim, Willtek's obligation shall be limited to repairing, or at its option, replacing without charge, any assembly or component (except batteries) which in Willtek's sole opinion proves to be defective within the scope of the warranty. In the event Willtek is not able to modify, repair or replace nonconforming defective parts or components to a condition as warranted within a reasonable time after receipt thereof, the buyer shall receive credit in the amount of the original invoiced price of the product.

It is the buyer's responsibility to notify Willtek in writing of the defect or nonconformity within the warranty period and to return the affected product to Willtek's factory, designated service provider, or authorized service center within thirty (30) days after discovery of such defect or nonconformity. The buyer shall prepay shipping charges and insurance for products returned to Willtek or its designated service provider for warranty service. Willtek or its designated service provider shall pay costs for return of products to the buyer.

Willtek's obligation and the customer's sole remedy under this hardware warranty is limited to the repair or replacement, at Willtek's option, of the defective product. Willtek shall have no obligation to remedy any such defect if it can be shown: (a) that the product was altered, repaired, or reworked by any party other than Willtek without Willtek's written consent; (b) that such defects were the result of customer's improper storage, mishandling, abuse, or misuse of the product; (c) that such defects were the result of customer's use of the product in conjunction with equipment electronically or mechanically incompatible or of an inferior quality; or (d) that the defect was the result of damage by fire, explosion, power failure, or any act of nature.

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Equipment return instructions

Please contact your local service center for Willtek products via telephone or web site for return or reference authorization to accompany your equipment. For each piece of equipment returned for repair, attach a tag that includes the following information:

- Owner's name, address, and telephone number.
- Serial number, product type, and model.
- Warranty status. (If you are unsure of the warranty status of your instrument, include a copy of the invoice or delivery note.)
- Detailed description of the problem or service requested.
- Name and telephone number of the person to contact regarding questions about the repair.
- Return authorization (RA) number or reference number.

If possible, return the equipment using the original shipping container and material. Additional Willtek shipping containers are available from Willtek on request. If the original container is not available, the unit should be carefully packed so that it will not be damaged in transit. Willtek is not liable for any damage that may occur during shipping. The customer should clearly mark the Willtek-issued RA or reference number on the outside of the package and ship it prepaid and insured to Willtek.

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Publication History

Revision	Comment
0211-120-A	First issue.
0312-121-A	End-user license agreement added.
0505-200-A	New software version 2.00. Descriptions and screen shots updated accordingly. Text reviewed. "What's new in version 2.00" section added. "Willtek Worldwide Offices" section updated.

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Willtek Worldwide Offices

West Europe/Middle East/Africa

Willtek Communications GmbH
Gutenbergstr. 2 – 4
85737 Ismaning
Germany

info@willtek.com

Willtek Communications SARL
Aéroport – Bâtiment Aéronaf
Rue de Copenhague – BP 9001
95728 Roissy CDG Cédex
France

willtek.fr@willtek.com

Willtek Communications Ltd.
Landmark House, Station Road
Cheadle Hulme
Cheshire SK8 7BS
United Kingdom

willtek.uk@willtek.com

North America/Latin America

Willtek Communications Inc.
7369 Shadeland Station Way, Suite 200
Indianapolis, IN 46256
USA

willtek.us@willtek.com
willtek.cala@willtek.com

Asia Pacific

Willtek Communications
22, Malacca Street
#09-00, Royal Brothers Building
Raffles Place
Singapore 048980

willtek.ap@willtek.com

Willtek Communications (China) Ltd.
Room 1403, 14/F Cimic Tower,
1090 Century Avenue, Pudon,
Shanghai, 200120
China

willtek.cn@willtek.com