

will'tek

Willtek 8501 GSM Air Interface Test Module



Utilises a tried and tested design used in more than 25 different GSM mobile types

Delivers precise measurements through individual calibrations

Uses industry-standard control commands

Integrates easily into system solutions

Allows users to define which channels are scanned



Features

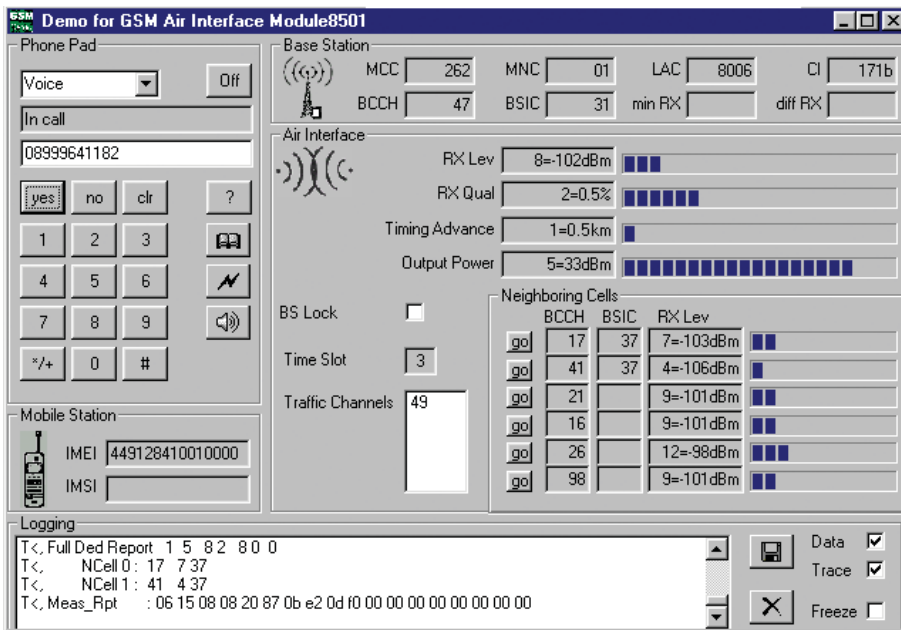
- Robust housing, easy routing
- Accurate output and measurement
- RX Qual in idle and cull mode
- SMA antenna connector
- DC supply from 5.5V to 16V
- Separate RS-232-C port for data and trace
- Full RS-232-C control including power on/off

Willtek has created an accurate, flexible mobile-to-base station test instrument that evaluates mobile network operations by simulating the traffic patterns of normal network subscribers.

The hardware design and the protocol stack of the Willtek 8501 GSM Air Interface Test Module is based upon the design used in more than 25 different GSM mobile phone types and can evaluate a network from the perspective of a "normal" subscriber.

Willtek understands that accurate testing is a key component of any successful network. The 8501 GSM Air Interface Test Module helps engineering staff by simulating a mobile phone at the antenna connection point and on the data port. Through the separate serial trace port, all layer 1 and 3 information is visible, and by manipulating the reporting, engineers can force the network to hand over registration or calls to the target base station.

The 8501's dedicated trace port provides an online view of the communication between the mobile station and the base station. This view includes data and voice calls as well as SMS transmissions. With the trace port, users can manipulate the phone's capabilities such as band selection, speech selection (FR, FR/EFR), base station selection and forced handover.



The Front Panel Software (FPS) supplied within the accessory kit for the 8501 gives the user an immediate insight of the network by showing details of TX power, serving cell and the six non-serving cells.

Precise measurements, flexible scanning

The 8501's measures neighbouring cells and reports to the strongest six base stations. Not only the RX Level also the BSIC of neighbouring cells are reported. The RX Qual can even be measured in idle mode.

In addition, the flexible scanning features enable testers to scan the whole frequency spectrum or choose a list of specific channels or ranges. This way they can monitor only the channels they need.

A robust, portable testing system

Engineers can use the 8501 in the field as an individual device together with a laptop for Go/NoGo checks of base stations and their correct configuration within the network. The robust housing resists shocks, heat, frost and even humidity up to 90 percent, and thanks to its multiple fixing options, the 8501 can be mounted in many positions.

The direct power supply has a wide input voltage range and ensures there are no problems with batteries or battery simulators.

The industry-standard SMA antenna connector ensures optimal intercabling within systems. The 8501 is fully remote controlled by the data port via standard AT commands (see ETSI GSM 7.05, 7.07).

Flexible scanning features enable testers to scan the whole frequency spectrum or choose a list of specific channels.

Specifications

Basic RF data

Frequency range	890 MHz to 960 MHz 1710 MHz to 1880 MHz
Channel range	1 to 124, 512 to 885
Impedance	50 Ω
RF connector	SMA female
Communication systems	GSM 900/1800
TX level	5 to 33 dBm (GSM 900) 0 to 30 dBm (GSM 1800)
TX level accuracy	± 1 dB ± 2 dB at TX level 5 and 33 dBm (GSM 900) ± 2 dB at TX level 0 and 30 dBm (GSM 1800)
RX sensitivity	< -110 dBm
RX level accuracy	± 1 dB (-104 to -47 dBm)

Basic AF data

Loudspeaker output	60 Ω balanced
Microphone input	20 k Ω balanced

System functions

Band select	GSM 900, GSM 1800, dual band
Voice select	full rate (FR) or FR/EFR
Forcing	location update on given channel, handover by RX report manipulation
Serving cell report	RX Qual/RX Lev (idle and call mode)
Neighbouring cells reported	≤ 6

Control interface

Control connector	36-pole, Mini D Ribbon female, contains data port, trace port, audio, power supply
Data port	RS-232-C, 19200 bps
Trace port	RS-232-C, 9600 bps
Power supply	5.5 VDC to 16 VDC

Environmental conditions

Specification temperature range	+5°C to +45°C
Operation temperature range	-10°C to +55°C
Relative humidity	$< 90\%$
Shock	25 g
Dimensions	158 (162) x 60 x 20 mm
Weight	290 g

Ordering information

8501 GSM Air Interface Test Module	M 860 280
Accessory Kit for 8501 MAX-502	M 248 600
Accessory Kit with GPS for 8501 MAX-503 with built-in GPS receiver	M 248 601
8050 HindsitePlus data collection and analysis (Software for cellular wireless networks)	M 248 602

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