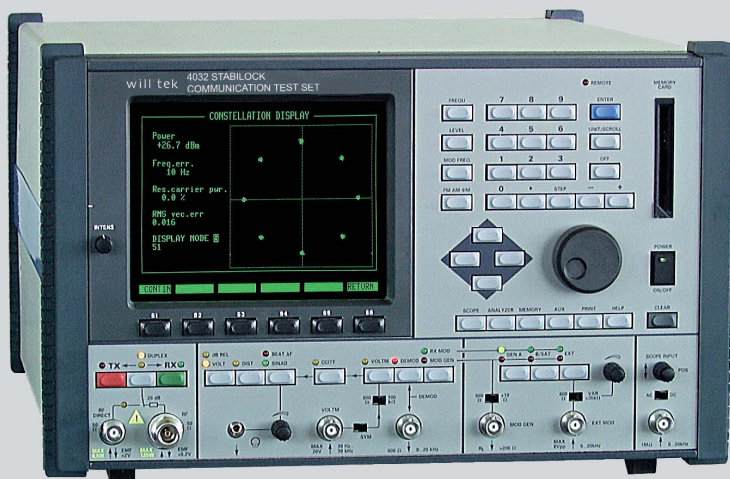


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Willtek 4032

STABILOCK® IS-136 Mobile Station Test in the 800 MHz and 1.9 GHz Bands



Tests "call from mobile" and "call from base station" with signalling in the digital control channel (DCCH).

The IS-136 package comes with everything required for testing in the 800 MHz and 1.9 GHz bands (hyperbands).

Graphical display of modulation quality on the constellation display for fast and simple adjustment of I/Q modulators.

Simple operation, clear presentation of test results, remote control via GBIP to all parameters and results.

Comprehensive analog and digital tests (MAHO, burst power, ACPM, BER etc.) including cross-band tests between 800 MHz and 1.9 GHz (e.g. handover).

The IS-136 MS test package from Willtek reflects the latest developments in the North American cellular radio market. Based on the highly successful NADC package, this product also allows the user to test call set-ups on digital control channels. All that is required for tests in the 800 MHz band is a radio test set of type STABLOCK 4032 equipped with the D-AMPS hardware option and IS-136 MS test software option.

The package also contains the 2.3 GHz frequency extension hardware option. Consequently, one and the same software package is all that is needed to satisfy all the requirements for testing in the hyper-band (1.9 GHz).

The band can be selected by simply setting a "scroll variable". Tests on NADC mobiles (900 MHz and 450 MHz) merely require a change of software option (memory card).

Signalling

Call set-ups from analog/digital CCH to analog/digital TCH, change of TCH parameters, cross-band handover and MAHO.

Transmitter tests

Constellation display (graphic/numeric), modulation spectrum, burst power with time alignment, ACPM.

Receiver test

Bit error ratio via RF loopback in test mode. Audio: Acoustical speech loopback with approximately 1 s delay.

Specifications

Receiver measurements

Frequency range	810 to 960 MHz 1850 to 1990 MHz
Output level RF DIRECT socket	-115 to 0 dBm (usable down to -122 dBm)
Output level RF socket	-115 to -20 dBm
Modulation	π/4 DQPSK
RMS vector error	< 5%
Origin offset	> 35 dB
Accuracy of symbol clock	as reference oscillator

Transmitter measurement*

Frequency range	810 to 960 MHz 1850 to 1990 MHz
Power measurement	
Range	+20 to +50 dB -15 to +20 dBm with reference measurement at +20 to +26 dBm
Resolution	0.1 dB
Accuracy RF power measurement	+5% (P > +23 dBm, RMS vector error < 12%)

RMS vector error measurement

Resolution	0.1%
Accuracy	4% (RF socket) 2% (ext. I/Q)

Phase error measurement

Resolution	0.1°
Accuracy	1.5° (RF socket, RMS vector error < 5% rms) 0.5° (ext. I/Q, RMS vector error < 5% rms)

*Specifications only valid for test signals with
Maximum frequency error < 1 kHz
Maximum RMS vector error < 15%
Maximum origin offset < 20 dB
At least 20 symbol changes available

Frequency error measurement

Resolution	1 Hz
Accuracy	typically < ±1 digit
Accuracy, relative	< ±5 Hz + error caused by demanded measuring method in IS-54
Accuracy, absolute	as for reference oscillator + relative accuracy

Origin offset

Resolution	0.1 dB
Accuracy	3% of signal magnitude (RF socket) 1% of signal magnitude (ext. I/Q)

Magnitude error measurement

Resolution	0.1%
Accuracy	4% (RF socket) 2% (ext. I/Q)
ΔP/symbol resolution	0.0001 dB

Constellation display

Update rate	approx. 350 ms
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Modulation spectrum display

Dynamic display range	120 dB
Bandwidth (display)	±30 kHz
Resolution (pixel)	0.5 dB/200 Hz
Accuracy	2 dB (RF socket) 1 dB (ext. I/Q)
Update rate	approx. 300 ms

Ordering information

IS-136 Test Package	M 248 303
including:	
NADC Module	M 248 271
RF Frequency Extension 2.3 GHz	M 248 295
Data Module	M 236 034
IS-136 MS Test Software	M 897 926

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Note: Specifications, terms and conditions are subject to change without prior notice.

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