

STABILOCK® 4032

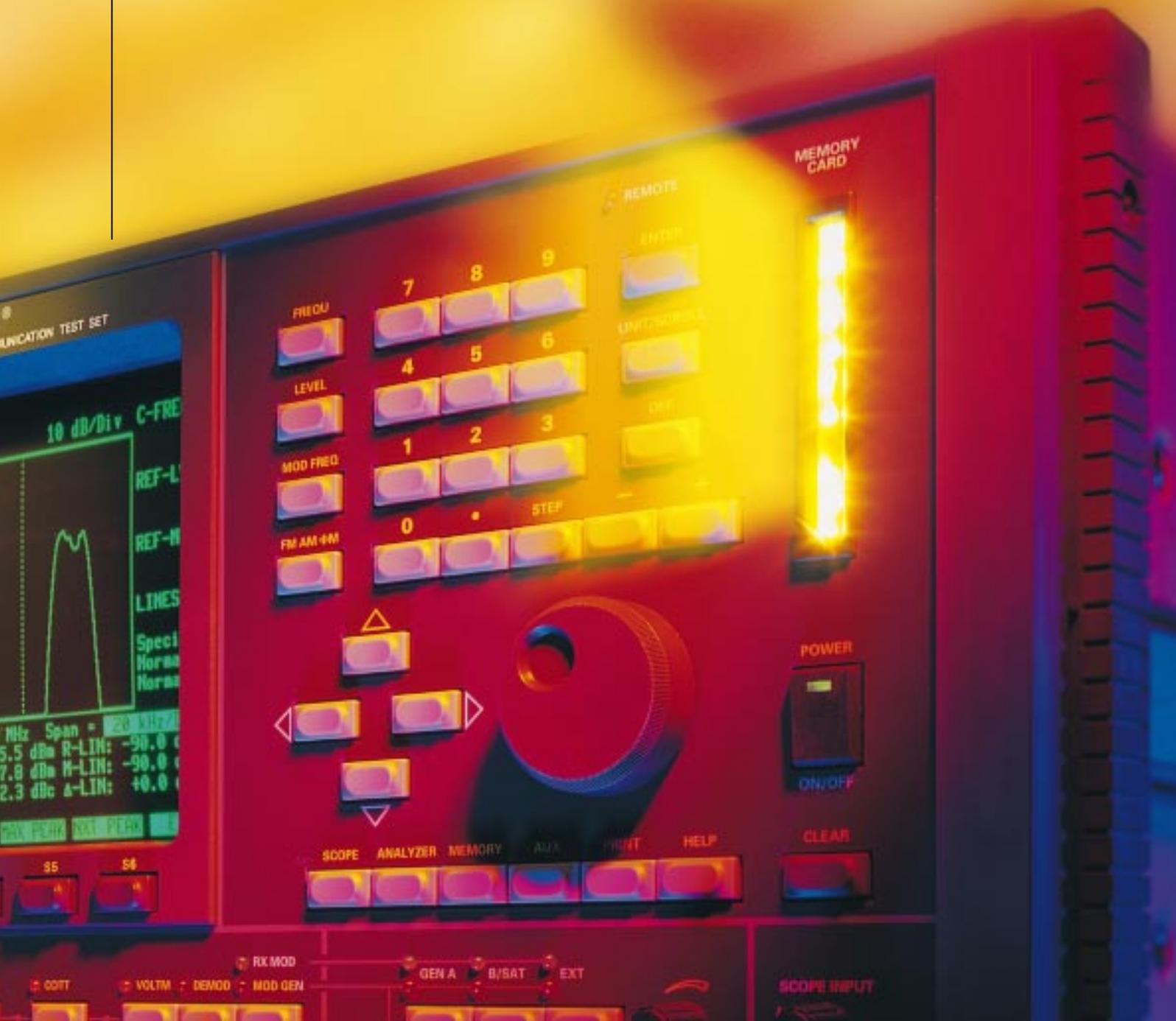
WAVETEK

# Testing without limits

Cellular & cordless phones

Base stations

Production & service



**STABILOCK® 4032**

Modular radio testing for the world of telecommunication

**Digital Systems For**

GSM/PCN/PCS

CDMA/IS-95

DECT

IS-54/IS-136

TETRA

TERAPOL

PDC

**Unique Radio Test Flexibility in a Small Package**

The STABILOCK 4032 Series meets the needs of service organizations and mobile radio manufacturers worldwide. With over 7 major digital systems and over 30 analog formats available, universal coverage of radio systems is provided.

**Fast Speed**

*Automatic and complete GSM mobile test in under 60 seconds. Switching between most systems is easy including GSM and PCN/PCS.*

**High Accuracy**

*Accurate measurements ensure repeatable, confident test results. RF Cellular Power measurement is typically 5%.*

**Extending Capability**

*New systems capability includes DECT for fixed and portable parts, CDMA base station testing, TERAPOL, as well as TETRA, the new trunking standards.*

**Fast Spectrum Analyzer**

*Powerful Spectrum Analyzer option from 0.4 MHz to 1 GHz and up to 2.3 GHz with the Frequency Extention option. Functions include Autotuning, Zoom and GSM trigger mode.*

**Simple Automation**

*Creating IEEE-488 or AUTORUN programs is easy using a PC editor package, including syntax checks, library, memory and program handling.*



STABILOCK 4032, the universal communication platform

**Flexible Modular Structure**

Using plug-in modules and memory cards, the 4032's modular design ensures easy upgrading.

Modularity preserves the investment value and allows new systems to be tested as radio technologies mature or requirements are modified. With the 4032's consistent screen layout, GPIB commands, and simple memory card software installation, most technicians will require little training to use new modules and features.

**Service Tool Kit**

The compact design provides major benefits in productivity, saving both space and weight over competing solutions. The large easy to read screen is invaluable for manual operation and the on-screen meters give clear indication when adjusting equipment remotely. Clear layout, softkeys and cursor keys provide an intuitive user interface.

**Manufacturing Mobile Test**

Fast measurement combined with accuracy provides an ideal solution for manufacturers of digital radio terminals. GPIB programming or connection to a LAN server allow flexibility in automated testing. Programming measurements is easy using the AUTORUN feature. Editing on a PC with the ARE software package allows programs to be rapidly created or modified from the extensive Wavetek library.



Flexibility for automated testing



Modularity provides universal test capability

## Convenient and Complete Base Station Testing

The 4032 provides base station testing for IS-54, NAMPS, D-AMPS, IS-136, CDMA or ETACS. In many cases base station testing can be automated using custom AUTORUN programs.

The compact, lightweight design makes life easier for installation and maintenance crews in confined base stations.

### Network Maintenance

With a sector or channel down, lost revenue increasing and customers becoming frustrated – there is no time to loose. The fast set up of the 4032 speeds up troubleshooting.

The accurate and clear display allows fast and consistent measurements. Alignment of I and Q is simplified using the constellation display. Min./max. average statistics make tuning more convenient.

The fast Spectrum Analyzer (up to 2.3 GHz) provides in- and out-of-band measurements for identifying spurious signals or intermodulation products. Optional tracking generator provides cable fault indication.



Digital measurements with an easy to read analog feel

### CDMA Testing Simplified

Special troubleshooting tools are available for CDMA base stations at 800 MHz or 1900 MHz. The constellation display allows the symmetry of the symbols to be viewed, whilst the Channel Versus Power screen displays the pilot and any traffic channels. For many measurements including PN search funktions only an RF input is required, rather than the additional connection of Even Second Clock.

Measurements include channel power, frequency tolerance, waveform quality rho, carrier feedthrough, vector magnitude and pilot time offset. In the code domain the timing, power and phase of each code channel can all be measured.

### Fast Constellation Display

Viewing the phase error, magnitude, RMS vector error, power and dP/Symbol helps identify NADC/IS-54/IS-136 base station errors.

### Clear Display

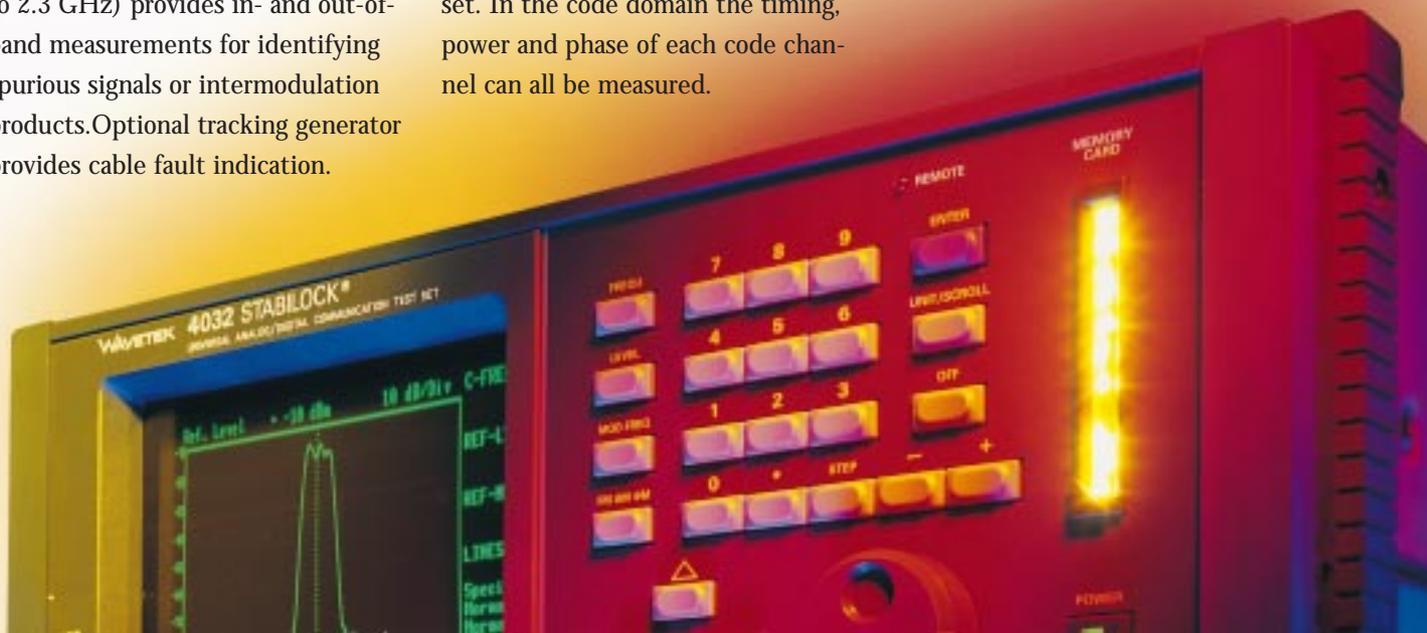
Bring an analog feel to digital measurements. Measurements are graphic and numeric for fast analysis.

### Adjacent Channel Power

Numeric display provides simple analysis of channel, adjacent and alternate adjacent channel power levels.



Convenient handling at less than 20 kg (36 lbs) weight



# Comprehensive Capability from Hardware and Software Options

## GSM Measurements (MS)

- Transmitter power
- Phase and frequency error
- Burst shape (power vs time) and burst length
- Modulation spectrum
- TX tests on mobiles in test mode
- Bit error ratio (BER)
- Paging sensitivity
- Measurement report of MS
- Min./max./average statistics
- Audio RMS

## CDMA Measurements (BS)

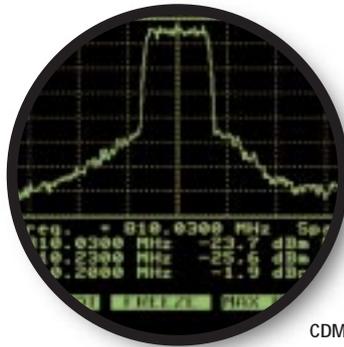
- Channel power
- Code domain power
- Code domain timing
- Code domain phase
- PN offset search
- Waveform quality (rho)
- Error vector magnitude (constellation display)
- Phase error
- Pilot time offset
- Carrier feedthrough
- reverse channel signaling

## TETRA Measurements (MS)

- Power vs time
- Constellation display
- Modulation Spectrum
- Frequency error
- Vector error
- Residual carrier power

## TETRAPOL (MS)

- Go/NoGo test



CDMA Spectrum Analyzer

## IS-136 Measurements (MS)

- Constellation display (graphic/numeric)
- Modulation spectrum
- Burst power with time alignment
- ACPM
- Bit error ratio (BER) 800 and 1900 MHz systems
- Analog/Digital Control CH to Analog/Digital TCH
- Cross-band handover checked
- MAHO functionality
- ACELP or VSELP Audio loopback



IS-136 measurement

## IS-54/NAMPS (BS)

- Power measurement
- Digital and analog operation (IS-54)
- Spectrum analyzer
- Constellation display (IS-54)
- Adjacent and alternate adjacent channel power

## DECT Measurements (FP, PP)

- Power level (NTP)
- Frequency error
- Frequency deviation
- Frequency drift
- Power/time template with zoom mode
- Adjacent Channel Power Measurements (ACPM)
- Packet timing jitter
- Reference stability
- BER - Bit Error Ratio
- Audio measurements



DECT: Portable part test screen

STABILOCK® 4032



Logical Ease of Use

High contrast, high intensity display shows measurements in all light conditions.

High sensitivity in range -130 dBm to +13 dBm depending on use of RF or RF DIRECT Socket.

Synthesizer provides low noise (4 Hz rms at 500 MHz) for accurate mobile testing, and allows use of optional Adjacent Channel Power Meter.

Memory cards provide easy AUTORUN loading and storage of results.



Precise power measurement accuracy typically 4% 20 to 500 MHz, 5% up to 1 GHz.

RF output level accuracy typically 0.3 dB below -7 dBm.

Standard Oscilloscope up to 20 kHz with trigger modes plus auto, norm, one shot, freeze and time measurements.

Integrated Spectrum Analyzer provides 0.4 MHz to 1 GHz or 2.3 GHz, with optimized sweep widths 200 kHz, 2 MHz or 10 MHz.

## Major Options

### Available Data Sheets

STABILOCK 4032 Technical Data

GSM+PCN+PCS

The universal software option

CDMA Base Station Test  
in one convenience package

STABILOCK 4032 DECT

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

TETRA Mobile Station Testing

NADC BS and MS Testing

High Speed Spectrum Analyzer  
2 MHz to 2.3 GHz

ARE AUTORUN Editor

PDC MS-Test

Accessory Catalogue

### Ordering Information for major options

See Data Sheets for full range of modules  
for analog and digital systems.

Stabilock 4032 .....108 802

RF Frequency Extension 2.3 GHz ...248 295

GSM 900/1800/1900

MS Test Package.....248 296  
incl. STABILOCK 4032

RF Frequency Extension 2.3 GHz

GSM hardware option

Spectrum Analyzer

GSM 900/1800/1900 test software

DECT Package.....248 255

incl. STABILOCK 4032

RF Frequency Extension 2.3 GHz

DECT module

DECT FP/PP test software

CDMA BS Test Package .....248 302

incl. STABILOCK 4032

High Speed Spectrum Analyzer

CDMA module

CDMA 800/1900MHz test software

IS-136 MS Test Package.....248 304

incl. STABILOCK 4032

RF Frequency Extension 2.3 GHz

D-AMPS module + Data module

IS-136 MS test software

BATE AMPS BS Test Package .....248 198

BATE ETACS BS Test Package.....248 144

### New Packages for STABILOCK 4032:

TETRA-380 MS Package .....248 307

incl. TETRA module

Duplex + IQ-380

TETRA MS test software

TETRA/FEX MS Package .....248 307

incl. TETRA module

RF Frequency Extension 2.3GHz

TETRA MS test software

TETRAPOL MS Package.....190 115

incl STABILOCK 4032

TETRAPOL module

RF Frequency Extension 2.3GHz

TETRAPOL PC Software

TETRAPOL test software

GPIB cable, Interface box, Cable set

### General Data

Weight: 18.5 kg

Power Supply

94 to 132 V or 187 to 264 V AC

Operating temperature: 0° C to 45° C

Storage temperature: -40 to +70° C

Relative humidity: 90%

Size: 230 375 486 mm

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