

- Multiformat capability
- One-button cdmaOne, GSM, NADC, PDC, W-CDMA, and cdma2000 measurements
- Spectrum and time domain waveform analysis capability



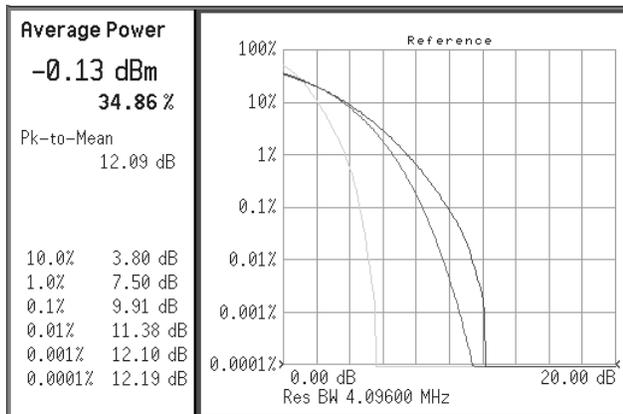
HP E4406A

### HP E4406A VSA-Series Transmitter Tester

The HP E4406A VSA-series transmitter tester is a full-featured transmitter tester designed to meet the test needs of wireless equipment manufacturers. The VSA provides a wide range of digital modulation analysis capability in an easy-to-use format. The advanced digital demodulation capability makes the VSA an excellent tool for doing R&D on third generation cellular systems. The multiformat capability of the VSA makes it ideal for a flexible production line. Measurements are accessible at the touch of a button and are easily configured with the simple, straight-forward menu structure. The VSA comes standard with the following measurement capability:

- Spectrum (frequency domain) analysis
- Waveform (time domain) analysis
- Channel power
- Adjacent channel power (ACP)
- Occupied bandwidth
- Complementary cumulative distribution function (CCDF)

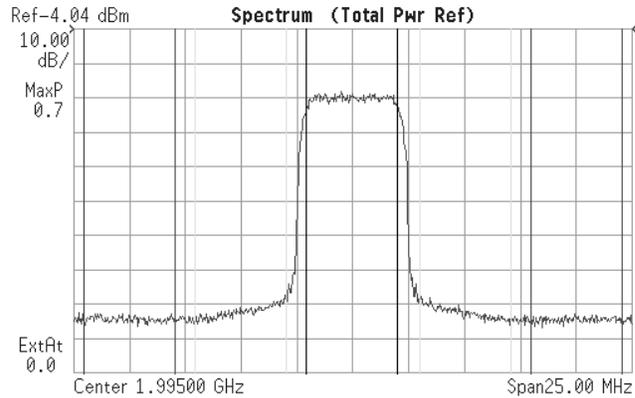
For the latest on our 3G enhancements to the HP E4406A VSA, please visit our web site: [www.hp.com/go/VSA](http://www.hp.com/go/VSA) and click on E4406A VSA.



Complementary cumulative-distribution function curves

### cdma2000 Personality

The cdma2000 personality provides key transmitter measurements for analyzing systems based on the IS-2000 Standard. The VSA provides the flexibility to analyze both Spreading Rate 1 (SR1) and Spreading Rate 3 (SR3) systems. The decoding algorithm automatically determines active channels of any code layer. The active channel identification allows engineers to examine and analyze unknown signals with ease. The ability to decode heavily loaded signals means engineers can evaluate and stress test their transmitter.



W-CDMA adjacent channel power ratio (ACPR) measurement

### cdma2000 Measurements

- Channel power
- Adjacent channel power ratio (ACPR)
- Modulation accuracy
- Code domain analysis
- Symbol EVM
- Power vs. symbol

### W-CDMA Personality

The W-CDMA personality provides key transmitter measurements for analyzing W-CDMA systems based on the 3GPP standard. The system automatically determines active channels of any code layer. It can display the code domain power information in a composite multi-rate view. The robust decoding algorithm can decode heavily loaded signals which means engineers can evaluate and stress test their transmitter.

### W-CDMA Measurements

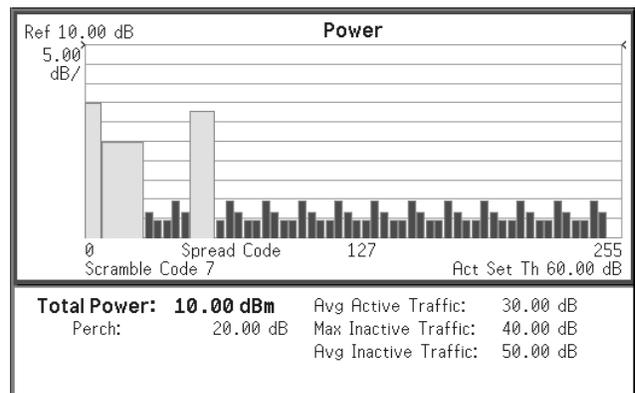
- Channel power
- ACPR
- Modulation accuracy
- Code domain analysis
- Symbol EVM
- Power vs. symbol

### cdmaOne Personality

Built on Hewlett-Packard's pioneering efforts in CDMA measurement techniques, the VSA lets you quickly and efficiently make cdmaOne measurements. The transmitter tester performs tests to the requirements of industry standards, such as IS-95, IS-97, IS-98, and ANSI J-STD-008 specifications.

### cdmaOne Measurements

- Channel power
- Modulation accuracy (Rho)
- Code domain power
- ACPR
- Close-in spurious



Code domain power measurement

# Cellular/PCS Transmitter & Receiver Test Equipment

354

## VSA Series Transmitter Tester, 7 DC to 4 GHz

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### GSM Personality

The HP E4406A VSA's GSM measurement personality lets you quickly and efficiently perform GSM measurements. The VSA provides capability to completely characterize GSM900, DCS1800 and PCS1900 transmitters for GSM requirements.

#### GSM Measurements

- Mean TX carrier power
- Power vs. time
- Output RF spectrum  
(due to modulation and transients)
- Phase and frequency error
- Transmit spurious
- Receive spurious

### NADC/PDC Personality

The NADC/PDC personality provides transmitter measurements for both the North American Digital Cellular (NADC) time-division multiple access radio system and the Personal Digital Cellular (PDC) time-division multiple access radio system at both cellular and PCS frequencies.

#### NADC measurements

- ACP
- Modulation quality

#### PDC Measurements

- ACP
- Modulation quality
- Occupied bandwidth

### E4406A VSA Key Features

- Multiformat capability
- User upgradeable firmware
- GPIB, LAN, and parallel interfaces standard
- High stability timebase standard
- SCPI instrument command language
- Large high-resolution color LCD display
- One-button measurements
- Softkey/hardkey user interface
- Flexible card cage instrument architecture
- Built-in 3.5-inch disk drive
- Plug & play drivers

### VSA—A whole product solution

To provide you with a whole product solution and protect your investment in the HP E4406A VSA Series transmitter tester, HP provides:

- Standard three-year global warranty with optional extension to 5 years
- Customer education available on the product and popular wireless communications technologies
- Worldwide Call Center and Service Center support network
- PC-based performance verification and adjustment software available with optional response center support and update service
- GPIB, parallel and LAN interfaces for connectivity with computers and printers
- VXI plug&play instrument drivers

Tools available at [www.hp.com/go/vsa](http://www.hp.com/go/vsa)

### Physical Specifications

**Weight:** 19 kg (42 lb) net

**Dimensions:** 177 mm H x 426 mm W x 432 mm D  
(7.0 in H x 16.8 in W x 17 in D)

### Key Literature

HP E4406A VSA Series Transmitter Tester Brochure, p/n 5966-4762E  
HP E4406A VSA Series Transmitter Tester Technical Specifications, p/n 5968-3030E

### Ordering Information

**HP E4406A** VSA Series Transmitter Tester

**Opt BAC** cdmaOne measurement personality

**Opt BAH** GSM measurement personality

**Opt BAF** W-CDMA measurement personality

**Opt B78** cdma2000 measurement personality

**Opt BAE** NADC, PDC measurement personality