

# BANTAM INSTRUMENTS

## WIRELESS LAN SPECTRUM ANALYZER

MODEL 424A 1.8 – 2.9 GHz

MODEL 425A 1.8 – 2.9 and 5.0 – 6.0 GHz

### TRUE SPECTRUM ANALYSIS FOR THE WIRELESS WORLD



Preset Frequency Ranges  
for all WLAN Bands

2.40 – 2.50 GHz

802.11b, 802.11g

(14 Channels)

Bluetooth

5.15 – 5.25 GHz

802.11a (8 Channels)

5.25 – 5.35 GHz

802.11a (4 Channels)

5.49 – 5.71 GHz

802.11a (10 Channels)

5.725 – 5.825 GHz

802.11a (4 Channels)

With the increasing use of wireless networking, careful evaluation of a Wireless LAN environment is necessary to assure reliable operation and high data transfer rates. Evaluation of interfering signals, antenna placement to optimize signal strength, and on-going monitoring and optimization of the site is necessary to assure a robust site implementation. The Model 425A Wireless LAN Spectrum Analyzer is designed to accomplish this for both the 2.4 GHz and 5 GHz bands with low price and amazing ease of use.

The lower frequency range of the Model 425A spans 1.8 to 2.9 GHz. This facilitates coverage of the entire 2.4 – 2.5 GHz 802.11b/g and Bluetooth band plus other frequencies of interest such as the 1.85 – 1.99 PCS Band. The high frequency range of 5.0 to 6.0 GHz allows coverage of all 802.11a bands in use worldwide. When a preset WLAN band is selected, a network channel can be selected and the channel's frequency range is highlighted. With the single press of a button, the measurement can be zoomed in to cover only the selected channel and then back out to cover the entire WLAN band. Omni-directional antennas provided with the Model 425A cover the entire frequency range of the spectrum analyzer. The antenna factors of the antennas are compensated for within the Model 425A, so field strength measurements can be made directly in dB $\mu$ V/m. Measurements can also be made in dBm and dB $\mu$ V referenced to the input of the spectrum analyzer.

The Model 425A is battery operated, and very light weight, making it easy to carry throughout the site of interest. An internal memory allows the storage of 20 measurements plus 20 measurement setups. Measurements can be downloaded to a PC using the supplied PC Enhancement software and serial cable. A peak-hold detection mode enables the capture of the entire spread spectrum signal.

Three frequency markers can be used to identify frequencies of interest. A marker seek feature commands the marker to search either left or right for the highest amplitude signal. The marker readout identifies the signal's frequency and amplitude. The Model 425A is CE Mark compliant, plus the 100–240 VAC, 50/60 Hz battery charger allows operation throughout the world.

If measurements in only the 2.4 – 2.5 GHz band are required, the single band Model 424A is available. The Model 424A covers 1.8 – 2.9 GHz and contains all the features of the Model 425A. If the 5.0 – 6.0 GHz band is required at a later date, the unit can be returned to the factory for upgrade.

# MODEL 424A/425A PERFORMANCE SPECIFICATIONS

## FREQUENCY

Model 424A Frequency Range:	1.8 – 2.9 GHz
Model 425A Frequency Ranges:	1.8 – 2.9, 5.0 – 6.0 GHz
Span:	0 MHz to Entire Range
Frequency Markers:	3
Marker Resolution (Frequency):	1% of span or 100 kHz
Marker Resolution (Amplitude):	0.1 dB
Marker Readout Accuracy:	1% of span $\pm 2$ ppm
Marker Functions:	Peak Search, left or right
Frequency Stability:	$\pm 2$ ppm
Resolution Bandwidth, 3 dB:	120 kHz, 1 MHz
Video Bandwidth:	30 kHz, 300 kHz
Channel Zoom:	Measurement of any individual channel
Preset WLAN Bands:	Channels Identified:
2.40 – 2.50 GHz:	1 through 14
5.15 – 5.25 GHz:	34, 36, 38, 40, 42, 44, 46, 48
5.25 – 5.35 GHz:	52, 56, 60, 64
5.49 – 5.71 GHz:	100, 104, 108, 112, 116, 120, 124, 128, 132, 136
5.725 – 5.825 GHz:	149, 153, 157, 161

## AMPLITUDE

Measurement Range at Input, typical:	-30 dBm to -90 dBm
Sensitivity, 1.8 – 2.9 GHz:	65 dB $\mu$ V/m, typical <sup>1</sup>
Sensitivity, 5.0 – 6.0 GHz:	60 dB $\mu$ V/m, typical <sup>1</sup>
Maximum Safe Input Level:	+23 dBm, 50 VDC
Measurement Units:	dBm, dB $\mu$ V, dB $\mu$ V/m
Amplitude Accuracy:	$\pm 2.5$ dB, -30 to -70 dBm
Input-related 2nd Order Response:	
1.8 – 2.9 GHz Band:	>70 dBc, typical
5.0 – 6.0 GHz Band:	>20 dBc, typical <sup>2</sup>
Detection Modes:	Normal, Quasi-Peak, and Peak Hold
Input Connector:	SMA Female

## GENERAL

Internal Save/Recall Memory:	20 Setups and 20 Traces
RS-232 Data Download Modes:	Screen Display as bitmap or Excel compatible data
Dimensions, mm:	193H x 102W x 33D
Dimensions, inches:	7.6H x 4.0W x 1.3D
Weight:	1.2 lbs (0.55 kg)
Safety and Electromagnetic Compatibility:	CE Mark Compliance

<sup>1</sup>When used with supplied antennas. 55 dB $\mu$ V/m in 2.4 – 2.5 GHz band.

<sup>2</sup>Built-in signal identification feature easily identifies valid response.

## ORDERING INFORMATION

### Model 424A Wireless LAN Spectrum Analyzer, 1.8 to 2.9 GHz..... \$2600

Includes: 1.8 – 2.9 GHz Antenna  
 Battery Charger, 100-240 VAC, 50/60 Hz  
 Serial Interface Cable  
 PC Enhancement Software  
 Soft Carrying Case  
 Operating Manual  
 One Year Warranty

Option 001, Warranty Extension to 3 years..... \$200  
 Option 002, Backlight, for use in low illumination ..... \$150  
 Option 005, Add 5.0–6.0 GHz Range to existing 424A ... \$2300  
 (Unit must be returned to factory for option 005 upgrade)

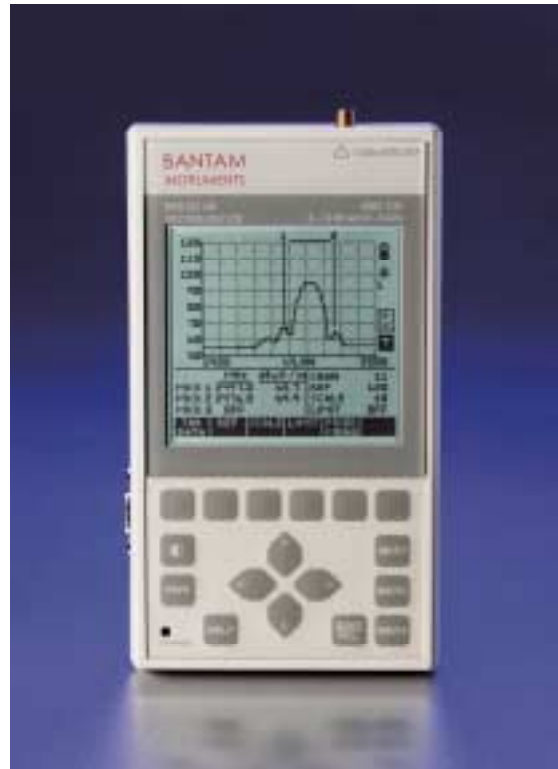
### Model 425A Wireless LAN Spectrum Analyzer, 1.8 to 2.9 GHz and 5.0 to 6.0 GHz ..... \$4400

Includes: 1.8 – 2.9 GHz Antenna  
 5.0 – 6.0 GHz Antenna  
 Battery Charger, 100 – 240 VAC, 50/60 Hz  
 Serial Interface Cable  
 PC Enhancement Software  
 Soft Carrying Case  
 Operating Manual  
 One Year Warranty

Option 001, Warranty Extension to 3 years..... \$200  
 Option 002, Backlight, for use in low illumination ..... \$150

### OPTIONAL ACCESSORIES FOR MODELS 424A/425A

9010-0002, Cigarette Lighter 12 VDC Adapter ..... \$25  
 9010-0005, SMA Male to Reverse SMA Male Adapter... \$25  
 9050-0001, Transit Case..... \$80



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