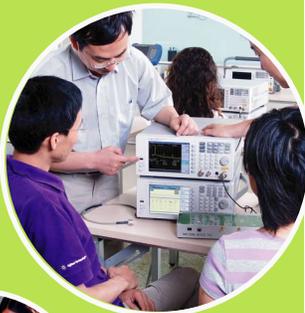


# N9320B Spectrum Analyzer

## The Most Cost-effective RF Measurement Instrument for the Manufacture of Consumer Wireless Electronics



### Introduction

Since the Industrial, Scientific and Medical (ISM) 2.4 GHz frequency band is the most universal, unlicensed RF band in most of the world, in that it can be used without any government permits, makes this a popular band for numerous consumer electronics, e.g. from wireless keyboards and mice, microwave ovens, Bluetooth® devices to wireless remotes for game controllers, miniature toy cars, boats and aircraft and wireless speaker, etc.. Because these consumer electronics transmit or radiate RF energy in the ISM band and there are RF circuit modules inside, an RF spectrum analyzer is critical on the production lines to measure relevant RF power, frequency and modulation including unintended radiation to ensure proper operation of such electronics.

Facing fierce market competition, manufacturers must minimize the cost of testing while guaranteeing product quality and meeting government regulations. Utilizing an RF spectrum analyzer with high measurement speed and reliability, guaranteed performance and low budget impact can meet these manufacturers' needs.

### Professional, low-cost RF measuring instrument for manufacturing

To meet these testing requirements for production of consumer electronics, Agilent has developed the cost-effective N9320B bench top 3 GHz RF spectrum analyzer, providing the rapid testing, guaranteed measurement specifications, reliability and ease-of-use for electronics manufacturing, thus helping manufacturers achieve their marketplace goals.

On the production lines for consumer electronics, the N9320B RF spectrum analyzer is commonly used for testing the RF channel parameters such as carrier frequency, carrier power, channel power and occupied bandwidth, providing professional performance and flexibility.

● Powerful, easy-to-use "one-button" measurement features – which can reduce not only the overall cost of test for each unit but operator training as well.

- Channel power
- Occupied bandwidth
- Adjacent channel power
- Intermodulation distortion
- Spectrum emission mask



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These one-button measurement routines will not only help ensure the measurement accuracy of the entire test system, but also make the measurements for production lines simpler and more reliable, thus reducing the demand for the professional skills of technicians and help reduce labor costs.

● Accuracy

With a new digital IF, the N9320B enables dramatic improvements in its standard power measurement accuracy to  $\pm 0.5$  dB typically. Plus the new built-in power meter functionality (standard feature) with Agilent U2000 series USB power sensors support to add exceedingly accurate RF and MW power measurements.

● Connectivity

The N9320B offers LAN and USB as standard interfaces. The flexibility of selecting from two I/O interfaces gives you the optimum convenience and choice for remotely operating the instrument.

● Compatibility

Programming code compatibility between the N9320B and Agilent ESA-L spectrum analyzers ensures a smooth migration so it is quicker and easier for manufacturing to increase throughput and maximize yields..

**Efficient and complete testing solutions from Agilent?**

In the production testing of consumer electronics, usually, one needs to measure the product's operating current and voltage in addition to the relevant RF parameters. The Agilent programmable power supplies, e.g., E3632A, and the programmable digital multimeters, e.g. 34401A, can fulfill testing needs completely. An efficient and low-cost automatic testing system can easily be assembled using Agilent power supplies and multimeters together with the N9320B RF spectrum analyzer, dedicated fixtures for testing, shielding boxes and computers.

**Configuration for testing consumer wireless products**

- N9320B 9kHz-3GHz RF spectrum analyzer
- N9320B-1HB Handle and rubber sheath
- N9320B-1CM Rack installation package
- N9320B-PA3 3 GHz preamplifier for added sensitivity

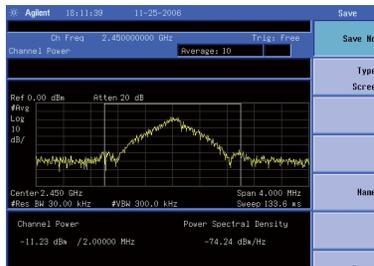


Figure 1 Channel power measurement



Figure 2 Channel bandwidth measurement

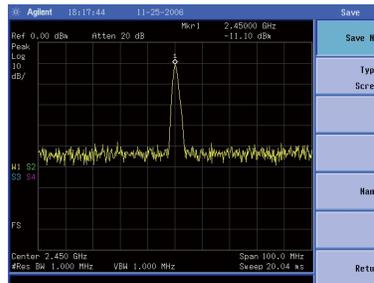


Figure 3 Carrier frequency and power measurement

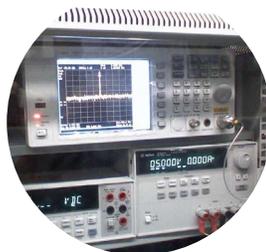


Figure 4 Testing system – N9320B RF spectrum analyzer, E3632A power supply and 34401A digital multimeter

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