

# Portable PIM Analyzers Run Swept-Frequency Tests

This line of battery-powered portable testers performs cable and antenna performance certification for popular wireless bands from 700 through 2600 MHz.

**PASSIVE-INTERMODULATION (PIM) PERFORMANCE** is essential to the successful operation of many wireless communications systems, although it typically must be tested with a number of fairly high-level test tones. Fortunately, the MW82119B PIM Master line of portable testers from Anritsu Co. is on the case.

These offerings combine the capabilities of the company's Site Master cable and antenna analyzers for 2 MHz to 3 GHz measurements with a PIM analyzer, including high-level (40-W) test tones for generating PIM test conditions in the field when operating on battery power. By combining the capabilities into one compact housing, contractors no longer need to carry multiple test instruments to a test site.

Each MW82119B (see figure) is available for PIM testing in specific wireless communications bands, including LTE700, LTE800, the 850-MHz cellular band, the 900 MHz E-GSM band, the 1800-MHz DCS band, the 1900/2100-MHz AWS band, the 2100-MHz UMTS band, and the 2600 MHz LTE band. They are well suited for difficult-to-access locations, including Remote Radio Head (RRH) installations or indoor Distributed Antenna Systems (DAS).

In spite of running on rechargeable battery power, these analyzers can generate the high-power (40-W) continuous-wave (CW) test tones needed to produce PIM test conditions in these wireless communications systems. The portable instruments can perform a number of different tests, including PIM versus time, swept PIM, Distance-to-PIM (DTP), and noise-floor measurements.

In spite of being small and battery operated, each MW82119A is a high-performance PIM test solution that generates two test

tones at different frequencies and analyzes return signals in one or more receive bands. The test power levels can be adjusted from 0.3 W (+25 dBm) to 40 W (+46 dBm) in 0.1-dB steps across the transmit bands; by adjusting transmit levels to the power levels actually used at a site, realistic operating conditions

can be recreated for accurate testing. These include swept PIM and distance-to-PIM measurements.

The analyzers measure the third-, fifth-, and seventh-order intermodulation products produced in each respective receive band, spanning a measurement range of -70 to -130 dBm. For example, the PIM Master for LTE 700 (700 MHz) operates in transmit 1 band of 734.0 to 734.5 MHz and transmit 2 band of 746 to 768 MHz, with a lower receive band of 698 to 717 MHz and an upper receive band of 777 to 806 MHz.

The LTE 800 (800 MHz) instrument transmits in bands of 791 to 795 MHz and 811.5 to 821.0 MHz and receives from 832 to 862 MHz. The UMTS 2100 (2100 MHz) SiteMaster transmits in bands of 2110.0 to 2112.5 MHz and 2130 to 2170 MHz. It receives in a lower band from 1920 to 1980 MHz and an upper band from 2050 to 2090 MHz.

Each PIM Analyzer measures just 13.8 × 12.4 × 6.0 in. and weighs between 20 and 27 lbs. Each portable instrument runs on a lithium-ion rechargeable battery. The Site Masters are designed for use in operating temperatures from -10 to +55°C and include 8.4-in (213-mm) color touchscreen displays. P&A: \$12,950 and up; stock to 4 wks. [mw](http://www.mw)



The compact PIM Master analyzers are available for on-site PIM testing in standard wireless communications bands from 700 to 2600 MHz.

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