# Take the guess work out of finding PIM problems.

## PIM Master's unique Distance to PIM technology drastically reduces the time to locate PIM problems.

Without Distance-to-PIM (DTP) many base station operators often have to guess the location of the PIM source and then swap cables, adapters, diplexer and antennas until they eventually manage to remove the source of PIM. This is both time consuming and can be a very expensive way of improving base station performance.

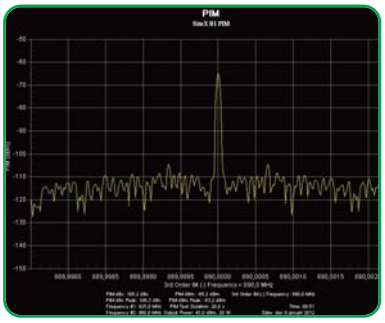
During recent trials of PIM Master, Anritsu specifically asked selected customers to allow us to test PIM Master at their "worst sites". At one site, 900 MHz LTE had to be shut down because so much PIM was being generated. This was effecting the GSM Rx by raising the noise floor to such a degree that it could not operate normally (the receiver was desensitised).

To solve this issue a PIM measurement was performed to verify which antenna branch had PIM problems (in this case the operator could not always determine which branch had problems). After verifying which branch had the PIM problem, a DTP test is performed which quickly tracked down the largest PIM source first. The sources of PIM were bad connectors, incorrectly torqued connectors, diplexers, antennas and even an external source. The DTP information made it very easy to quickly and accurately locate which components were faulty and replace or fix them. Together with the continuous PIM measurement the effect of bending/stressing the component could be observed and the problem or fix confirmed.

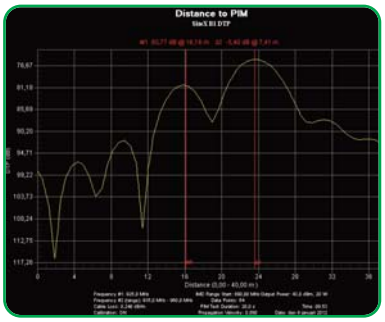
When the largest PIM source had been rectified the site is measured again. In some cases another source that had been masked by the largest source can be found. Without DTP it would be very difficult to find multiple PIM sources within a system. In one case PIM Master was indicating an external PIM source located ~7m in front of the antenna. In this example it turned out to be a corroded snow fence located near the antenna.

PIM Master has now been trialled at several sites and in most cases it took less than one hour on each site to locate the PIM source(s).

**Stop chasing PIM problems, and start fixing them with PIM Master.**




A PIM level of -65.2 dBm has been identified. With a PIM level this high on the Rx channel the receiver will become totally desensitised




With DTP the PIM source has been identified ~7 m beyond the antenna using markers

The source of PIM was in this case a corroded snow fence. Without DTP this source of PIM would have been almost impossible to locate.

Anritsu Discover What's Possible™

## PIM Master - MW8208A/09A/19A

### Features

- Covers cellular, E-GSM and PCS/AWS Bands
- Featuring Distance-to-PIM™ (DTP), the fastest way to pinpoint the source of PIM
- Featuring 2 x 40 Watts of RF Power, finds PIM that cannot be found by 2 x 20 Watt PIM testers
- Tx Band: 869 MHz to 894 MHz
  925 MHz to 960 MHz
  1930 MHz to1990 MHz
  2110 MHz to 2155 MHz
- IMD Band: 824 MHz to 849 MHz
  880 MHz to 915 MHz
  1710 MHz to 1755 MHz
  1850 MHz to 1910 MHz
- IMD Orders: 3rd, 5th, or 7th orders (user selectable)

### Measurements:

- PIM, Noise Floor and Distance-to-PIM (DTP)

### Controlled with Anritsu Handheld Spectrum Analyzers

- See PIM results with PIM Analyzer
- Listen to relative PIM level with audible tone
- Set Limit Lines for visual and/or audible Pass/Fail criteria
- Save and Recall Set-ups for standardized testing
- GPS tag PIM measurements with GPS Option 0031


### Report Generation and Training

- Utilize Anritsu's next generation Line Sweep Tool
- PIM Master Certified PIM Measurement Training Course

The PIM Master generates two high power tones in the transmit band of a base station and Anritsu's family of handheld RF instruments' PIM Analyzer measures the 3rd, 5th, or 7th order intermodulation products in the receive band coming back down the same cable. And the GPS option will record the location of the measurement.

The Distance-to-PIM test offers far more insight than traditional PIM testing. This information can speed up repairs, control repair costs, and help plan budgets accurately. Comparison of PIM values over time can show if a device is deteriorating with age. This permits fault correction before a failure causes dropped or blocked calls.



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