Passive Intermodulation (PIM) is an unwanted mixing effect caused by non-linearity of passive components in the RF path of telecommunication systems. PIM diverts signal energy to other frequencies (spurious signals). This can generate interfering signals that may fall into receiving bands causing serious degradation of system performance.

Causes of PIM:
- Dissimilar metals with different electrical properties as well as corroded components and structures.
- Ferromagnetic metals like iron, nickel and steel, show hysteresis effects when RF energy is applied.
- Irregular contact areas, even on a microscopic scale, cause an inconsistent flow of electrons, generating inhomogeneous electrical fields.
- Spark discharges that may happen by accidental “hot” connections and disconnections create craters on the connectors’ surfaces and lead to chemical reactions.

PIM S1L testers are ideal for component testing in the laboratory and/or during quality control. They provide a wealth of features that deliver accurate and reliable results. They are very easy to operate; it takes just one click to start a predefined test.

Modern telecommunication technologies demand PIM testing of network infrastructures and their components. Low PIM components are particularly important when wireless frequencies are combined. Signal degradation caused by PIM causes loss of capacity, which translates directly into dissatisfied customers as well as reduced revenues for the operators. Low PIM components are key to network optimization.
**PIM S1L Models**

<table>
<thead>
<tr>
<th>Model</th>
<th>Technologies</th>
<th>Tx Frequency (MHz)</th>
<th>Rx Frequency (MHz)</th>
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</thead>
<tbody>
<tr>
<td>PS1L-700U</td>
<td>LTE700-U</td>
<td>730 ~ 759</td>
<td>776 ~ 788</td>
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<tr>
<td>PS1L-700D</td>
<td>LTE700-L</td>
<td>728 ~ 759</td>
<td>698 ~ 716</td>
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<tr>
<td>PS1L-850</td>
<td>CDMA850</td>
<td>869 ~ 896</td>
<td>824 ~ 851</td>
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<tr>
<td>PS1L-900</td>
<td>GSM900</td>
<td>935 ~ 960</td>
<td>890 ~ 915</td>
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<td>PS1L-900E</td>
<td>EGSM900</td>
<td>925 ~ 960</td>
<td>880 ~ 915</td>
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<tr>
<td>PS1L-1500</td>
<td>LTE-JP1500</td>
<td>1488 ~ 1520</td>
<td>1456 ~ 1480</td>
</tr>
<tr>
<td>PS1L-1800</td>
<td>DCS/GSM1800</td>
<td>1805 ~ 1880</td>
<td>1710 ~ 1785</td>
</tr>
<tr>
<td>PS1L-1900</td>
<td>PCS1900</td>
<td>1930 ~ 1990</td>
<td>1850 ~ 1910</td>
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<tr>
<td>PS1L-1921PA</td>
<td>PCS1900 &amp; AWS</td>
<td>1930 ~ 1935 / 2110 ~ 2155</td>
<td>1710 ~ 1755</td>
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<tr>
<td>PS1L-2100AWS</td>
<td>AWS</td>
<td>2110 ~ 2155</td>
<td>1710 ~ 1755</td>
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<tr>
<td>PS1L-2000TD</td>
<td>TD-SCDMA(2000)</td>
<td>2010 ~ 2025</td>
<td>1900 ~ 1920</td>
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<tr>
<td>PS1L-2100UMTS</td>
<td>UMTS/W-CDMA</td>
<td>2110 ~ 2170</td>
<td>1920 ~ 1980</td>
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<tr>
<td>PS1L-2160JP</td>
<td>W-CDMA-JP</td>
<td>2150 ~ 2170</td>
<td>2110 ~ 2140</td>
</tr>
<tr>
<td>PS1L-2600LTE</td>
<td>LTE2600, IMT-E(2600)</td>
<td>2620 ~ 2690</td>
<td>2500 ~ 2570</td>
</tr>
</tbody>
</table>

**Options & Accessories**

- **POPT001**: VSWR/DTF/DTP (Distance to Fault / PIM) Option. Embedded in the tester.
- **PACC2**: Accessory Kit: (2) low PIM cables 3m / 10ft, low PIM load 100W, adapters, torque wrench with hard carry case.
- **PLOAD100**: Low PIM Load 100W, < -165 dBc, 700-2700MHz.
- **PIMGEN**: PIM Generator, 90dBm (133dBc) for quick system tests.

**Specifications**

- **Receiver**
  - Reverse IM: -129 dBm / -172 dBc
  - Noise Floor: -138 dBm (300 Hz BW) / -132 dBm (1200 Hz BW)
  - Dynamic Range (typical): 96 dB (ref: -90 dBm)
  - Reverse Power Protection: +43 dBm for 5 sec
  - Operational Input Power: -45 dBm RMS
  - Max Input Power: +10 dBm
  - Measurement Accuracy: +/- 2dB @ 2 x 43 dBm

- **Transmitter**
  - Carrier Power: 15 to +44 dBm (46dBm opt)
  - Power Accuracy: +/- 0.35 dB
  - Frequency Accuracy: 200 ppm
  - Reverse Pwr. Protection: +43 dBm for 5 sec

- **Distance to PIM / Distance to VSWR (Option)**
  - DTP Accuracy: 0.5 m (typ.) 1.5m
  - DTF Accuracy: 0.5 m
  - Cable Types: Preloaded & settable

**Dimensions / Weight / Environment / Electrical**

- Dimensions: 521 x 396 x 236 (mm) / 20.5 x 15.6 x 9.3 (inch)
- Weight: 25.3 kg
- Temperature: 0 °C to +45 °C
- Humidity: 85% (non-condensing)
- Protection closed / during operation: IP20
- AC Power: 100 to 240V 50 / 60 Hz
- Power Consumption: 640 Watts (VA)

Specifications subject to change without further notification.

**PRODUCT QUALITY**

AWT is committed to providing our customers with products meeting the highest quality standards. All AWT products undergo thorough quality checks and are ISO 9001 and ISO 14001 certified.

For more information on any of our products or services, please visit our Web site: www.awt-global.com

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