DPS50 is a resonance method, strip line type dielectric constant and dielectric loss tangent measurement system optimized for sheet materials with dielectric constant of approximately 1 to 40 and relatively small dielectric loss in the frequency range of 800MHz to 14GHz. This system is compliant with the IPC-TM-650 2.5.5.5.1 Stripline Test for Complex Relative Permittivity of Circuit Board Materials to 14GHz, and ASTM D3380 Standard Method of Test for Permittivity (Dielectric Constant) and Dissipation Factor of Plastic-Based Microwave Circuit Substrates. This measurement technique was announced at 2008 IEEE I2MTC.

Compliance standards
IPC-TM-650, ASTM 3380

Publications
IEEE 2008 I,MTC, Victoria, Canada paper#1569085274, Tue_20 12-15 May 2008

Specifications
Frequency: 800MHz – 14GHz
Permittivity: 1.05–40
(Accuracy: ± 5%)
\( \tan \delta \): 0.001–0.05
(Accuracy: ± 10%)
Sample size:
- R-09.B 900MHz 30mm x 150mm
- R-1B 1GHz 30mm x 150mm
- R-2B 2GHz 30mm x 80mm
- R-5B 5GHz 30mm x 80mm
- R-10B 10GHz 30mm x 30mm
- R-20B 15GHz 30mm x 30mm
Sample thickness:
5μm ~ 2mm

Measurement Process
1. Calibrate your vector network analyzer.
3. Press calculation button to compensate the result so that it matches the true known value of PTFE.
4. Measure your sample using resonator for measurement.
5. Press calculation button to obtain result.

Features
- Eliminates fringing effect
- No conductor pattern is required
- Capable of measuring in a perpendicular electric field to the sample sheet

Applications
- PCB
- Planar antenna

Specimen examples
- Film
- Prepreg
- PCB

Highly accurate in dielectric loss tangent (\( \tan \delta \)) measurement and requires no conductor pattern; Optimum solution for thin film measurement
## Configurations

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure type fixture</td>
<td>FS-03</td>
</tr>
<tr>
<td>Resonator (measurement + calibration + fixture)</td>
<td>R-0.9B, R-1B, R-2B, R-5B, R-10B, R-15B</td>
</tr>
<tr>
<td>Software</td>
<td>DMP-61M</td>
</tr>
<tr>
<td>Coaxial cable</td>
<td>CM06D-APC2.9(m)APC2.9(m)-500 2pc.</td>
</tr>
<tr>
<td>Windows PC, Printer</td>
<td>Available upon request</td>
</tr>
<tr>
<td>GPIB interface</td>
<td>GP-01</td>
</tr>
</tbody>
</table>

Product specifications and descriptions in this document subject to change without notice.

## Ordering Information

**Agilent Technologies**
- Vector network analyzer
  - PNA series (N52xx)
  - ENA series (E50xx)

**KEYCOM Corp.**
- System No. DPS50
  1. Pressure type fixture ........................................ FS-03
  2. Resonator (measurement + calibration + fixture)
     - 900MHz .................................................. R-0.9B
     - 1GHz .................................................. R-1B
     - 2GHz .................................................. R-2B
     - 5GHz .................................................. R-5B
     - 10GHz ................................................ R-10B
     - 15GHz ................................................ R-15B
  3. Software ..................................................... DMP-61M
  4. Coaxial cable ..................CM06D-APC2.9(m)APC2.9(m)-500 2pc.
  5. Windows PC, Printer ............ Available upon request
  6. GPIB interface .............................................. GP-01

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