World Leading High-Accurate Permeability Measurement System for Magnetic Property, 100kHz - 20GHz

System No. PER01

Keysight Technologies and KEYCOM Corp.

Measurement of magnetic property characteristics by using vector network analyzer. Without shaping specimens into toroidal form, accurate measurement is available.

When you design or study high performance microwave magnetic devices, it is very important to know magnetic property characteristics of their materials. For this purpose, simple and easy operation way to measure magnetic properties is essential. The most important parameters of high frequency magnetic materials to be measured are as follows:

- Complex permeability
- Relaxation coefficient $\alpha$
- FMR linewidth $\Delta H$
- Ferromagnetic resonance (FMR)
- $g$-factor

This compact and easy-to-use measurement system offered by Keycom can measure all these parameters. To measure with this system, it is necessary to connect a shielded and shorted microstrip line jig to a vector network analyzer. Keysight technologies’ PNA and ENA series are available for this measurement.

Specifications
- Frequency
  - Permeability: 100kHz ~ 20GHz
  - FMR line width $\Delta H$, relaxation coefficient $\alpha$: 100MHz ~ 10GHz
- $\mu_r$ : accuracy ±5% (when measured sample with optimum thickness and also depending on VNA)
- Shape of specimens: toroidal, rectangle, thin film
- Measurement temperature: standard fixture – room temperature

Features
- Evaluation of magnetic property characteristics of magnetic substances.
- Beginning with complex permeability, FMR, measurement of important parameters of high frequency magnetic materials
- Simple and easy operation with vector network analyzer
- Measurement from low to high frequency by vector network analyzer

Standardization
IEC 60556 Ad2·2(2016)

Publications
World Leading High-Accurate Permeability Measurement System for Magnetic Property, 100kHz - 20GHz

Ordering Information

Keysight Technologies

Vector network analyzer
PNA series (N52xx)
ENA series (E50xx)

Keysight Streamline Series
USB Vector Network Analyzers
(P937xA, P500xA)

E-band network analyzer system
N5252A

KEYCOM Corp.

System No. per01

1. Common fixing stand BS-01A

2. Static magnetic field applying device
M-central value specified A
Central value ±15% changeable, central value 500-4000 Oe

3. Magnetic field device for zero compensation M-5000F
5000 Oe fixed

4. Measurement device

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Specimen size</th>
</tr>
</thead>
<tbody>
<tr>
<td>100kHz-10GHz</td>
<td>OD 7×ID 3mm ... TR0-001D</td>
</tr>
<tr>
<td>100kHz-100MHz</td>
<td>10×30mm ... ST-001A</td>
</tr>
<tr>
<td>10MHz-1GHz</td>
<td>10×30mm ... ST-002B</td>
</tr>
<tr>
<td>1GHz-10GHz</td>
<td>5×16mm ... ST-003C</td>
</tr>
<tr>
<td>10GHz-20GHz</td>
<td>2×7.5mm ... ST-004D</td>
</tr>
</tbody>
</table>

5. Cable, 18GHz coaxial cable assembly, 1m CM06A-AA-1000

6. GPIB Interface USB type GP-01

7. Software
For complex permeability µr - jµr ...
DMP-PER01-01A
For ferromagnetic resonance linewidth ΔH,
relaxation coefficient α ...
DMP-PER01-02A

8. Windows PC, Printer Available upon request

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

Learn more at: www.keysight.com

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