World Leading High-Accurate Dk/Df Measurement System for Thin Film, 20 GHz – 300 GHz
Keysight Technologies and KEYCOM Corp.

Supports specimens as thin as 5µm in wide frequency range of 20 GHz~300 GHz

JIS Standard
KEYCOM’s Fabry-Perot εr and tanδ measurement system of open resonator method, which attains measurement accuracy as 0.0001 level of tanδ. Because of high accuracy, it is possible to measure ultra-thin sheet and specimens of low tanδ materials such as PTFE.

This measurement system is popular among many manufacturers not only for the purpose of reliable reports for submission as it is JIS standardized, but also for the purpose of R&D as it can check very slight difference of characteristics.

Standardization
JIS R 1660-2 (Japanese Industrial Standards)

Publications
J H.Suzuki, T.Kamijo
"Millimeter wave measurement of complex permittivity by perturbation method using open resonator"

Specifications
Frequency: 20 ~ 300 GHz
Permittivity: 1.05 ~ 30 (Accuracy: ±3%) tanδ: 0.0001-0.05 (Accuracy: ±7% or 0.0002) (depending on VNA)
Specimen size: 80mm x 80mm@76.5 GHz Specimen thickness: 5um ~ 0.2mm (depends on frequency and permittivity) or integral multiplication of half the effective wave length (with software option)

Data Samples
PTFE @40 GHz (measured by PNA E8361A) εr: 2.047 tanδ: 0.00022.
Specimen examples

- Printed circuit board
- Thin film
- Radome
- Ceramics
- PTFE film
- PE film
- Sapphire plate
- Alumina plate
- Etc.

Resonation view

Calculation table
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.**

Model No. DPS03

1. Precision automatic mobile stage (common to all frequencies) | MDM-03DX
2. Fabry-Perot resonator
   - 20-33 GHz ............ FPR-33B
   - 26.5-40 GHz .......... FPR-40
   - 33-50 GHz ............ FPR-50
   - 39-60 GHz ............ FPR-60
   - 50-75 GHz ............ FPR-75
   - 59-90 GHz ............ FPR-90
   - 75-110 GHz .......... FPR-110
   - 110-140 GHz .......... FPR-140-X
   - 140-170 GHz .......... FPR-170
   - 280-320 GHz .......... FPR-320
3. Software (common to all frequencies)
   - For sheet: P118050123-04
   - For ultra-thin sheet: P118050123-05
4. Windows PC, Printer
   - Available upon request
5. GPIB cable
   - GP-01

System No. DPS03

Learn more at: [www.keysight.com](http://www.keysight.com)

For more information on Keysight Technologies’ products, applications or services, please contact your local Keysight office. The complete list is available at: [www.keysight.com/find/contactus](http://www.keysight.com/find/contactus)