

# World Leading High-Accurate Dk/Df Measurement System for Film, Powder etc., 1GHz - 10GHz

Model No. DPS18

Keysight Technologies and KEYCOM Corp.

## High accuracy Capable of measuring Ultra-thin films, Powders

KEYCOM's high precision perturbation method enables you to measure dielectric constant (permittivity,  $\epsilon_r$ ) and dielectric loss tangent ( $\tan \delta$ ) of such specimens as multi-layered structure, ultra-thin film or ferroelectric materials in the microwave region. KEYCOM refined the conventional perturbation method that was JIS-standardized in 1992 (JISC2565) by closing the hole into which the specimen is inserted with metal, and the new method is also compliant with ASTM D2520.

### Features

- High accuracy :  $\epsilon_r$  accuracy  $\pm 1\%$ ,  $\tan \delta$  accuracy  $\pm 3\%$ . (depending on VNA).
- Capable of measuring Ultrathin films (less than  $0.1\mu\text{m}$  in thickness), multi-layer film
- Also ideal for solids, sheets, powders, liquids (oils, etc.)
- User-friendly operability.
- Measurement frequency range : 1GHz - 10GHz.

### Specifications

**Measurement frequency :**  
1GHz-10GHz (single point measurement)

**Standard frequencies :**  
1, 2, 2.45, 3, 5, 5.8, 10GHz  
(Please request your desired frequencies for customization.)

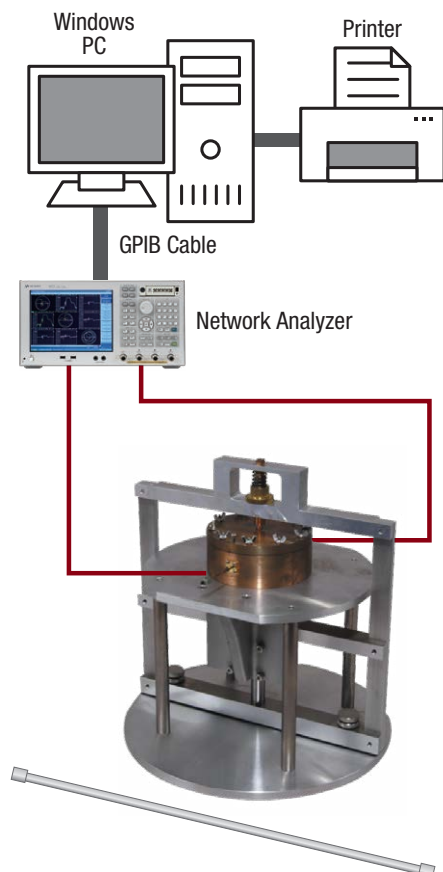
**Relative permittivity :**  
 $\epsilon_r$  : 1~150 (accuracy :  $\pm 1\%$ )

**Dielectric loss tangent :**  
 $\tan \delta$  : 0.0001~0.05 (accuracy  $\pm 3\%$ )  
(depending on VNA)

### Specimen shape

#### @1GHz

Film : 30mm( $\pm 0.1$ mm) x 50mm  
Solid : 30mm( $\pm 0.1$ mm) x 7mm  
or less x 7mm or less  
Powder : 5ml



### Standardization

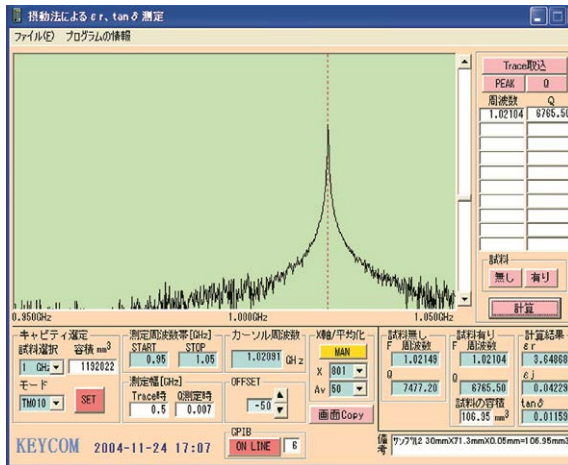
ASTM D2520, (JISC2565)

### Measurable samples

- Powders
- Ultra-thin films
- multi-layer film
- solids
- sheets
- liquids (oils etc.)

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## Data example



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## 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.

Parts Number	Name	Specification
COE-01	Mechanical Control System for Cavity	
TMR-1A		1 GHz
TMR-2A		2 GHz
TMR-2.45A		2.45 GHz
TMR-3A	Mechanical Control System for Cavity	3 GHz
TMR-5A		5 GHz
TMR-5.8A		5.8 GHz
TMR-10A		10 GHz
DMP-25	Perturbation method resonance mode measurement software	
CM06D-AA-1000	Coaxial cable assembly (1 m)	2 sets

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

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)

