

## M-530 HF Resistance Calibration Set



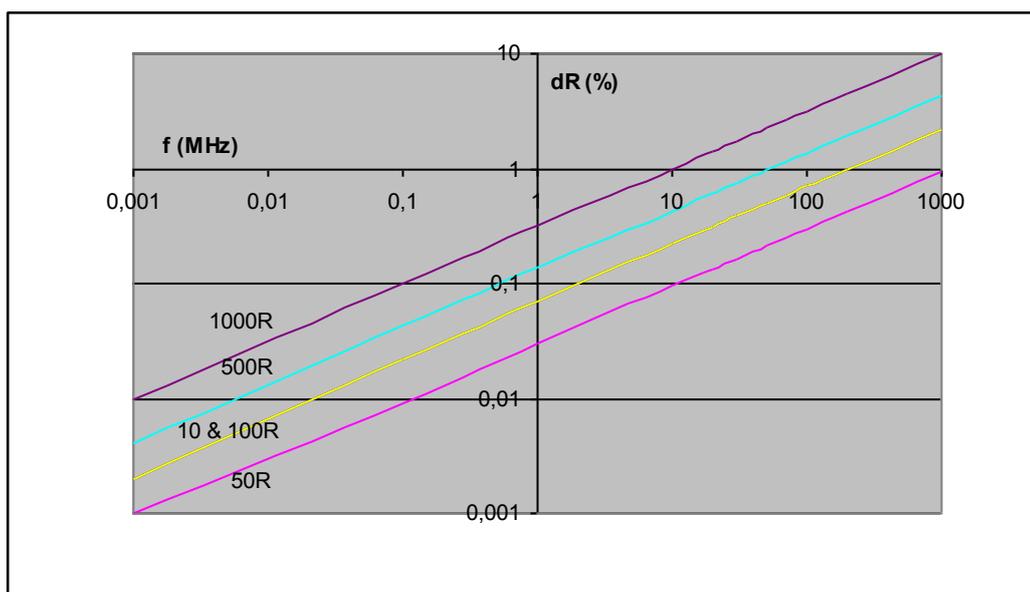
- Resistance range 10  $\Omega$  to 1000  $\Omega$
- Very low frequency dependency
- Applicable frequency range to 100 MHz
- Calibration of wide frequency range LCR meters

The resistance standard set is designed especially for calibration of LCR meters in frequency range from DC to 100 MHz. The standards are equipped with four coaxial BNC connectors. Wide frequency range is achieved by applied HF design using strip line technology. Four-pair terminal connection with 22 mm distance between them enables direct connection to the UUTs without need to apply test leads.

The standards are available with nominal value 10, 50, 100, 500, 1000  $\Omega$  in 1% tolerance. Reference positions OPEN and SHORT for easy "zero" compensation are available as well.

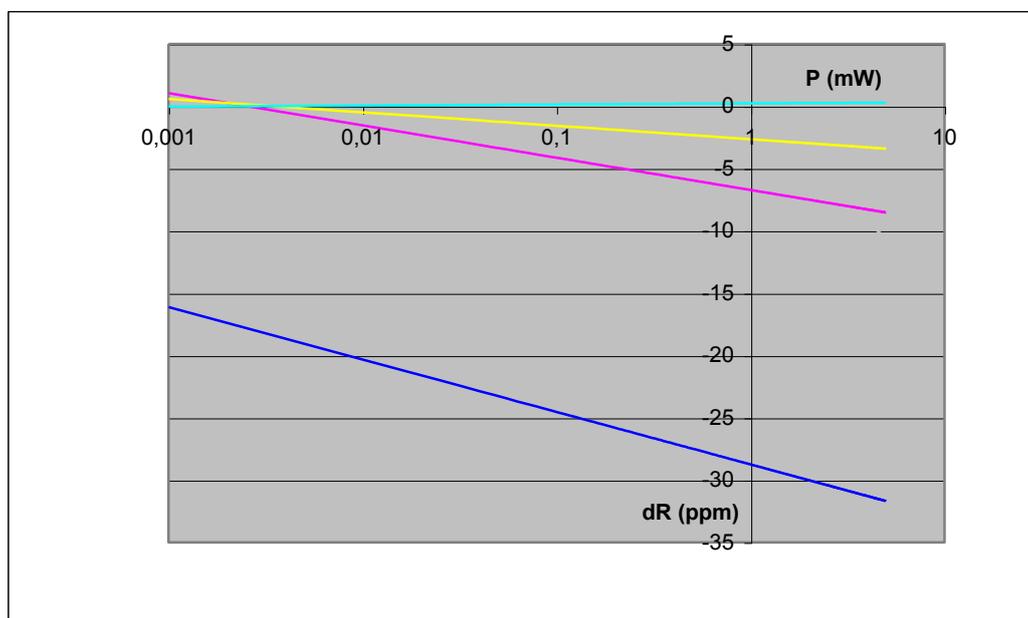
### Frequency dependency

Applicable frequency range of the resistance standards depends on nominal resistance value and requested maximal deviation. Typical frequency characteristics are shown in the diagram.



### Load parameters

Maximal electric power dissipated in the standards is limited due to small size of applied resistive segments. Typical relative change of the resistance value when loaded with 5 mW electric power is shown in the graph below.



### Time constant

Extremely low time constant of the resistance standards is given by high frequency design and RF resistance segments. The time constant value is in order of  $10^{-10}$  to  $10^{-11}$  s.

### Temperature coefficient

Typical temperature coefficient is 0.2 ppm/°C for nominal values 10, 50, 100 Ω and 15 ppm/°C for values 500 and 1000 Ω.

### Technical specification

Model	Nominal value	Max. deviation to nominal value	Maximal frequency for 0.1% deviation	Maximal frequency for 1% deviation	Time constant	Temperature coefficient	Maximal test current
	Ω	%	MHz	MHz	s	ppm/°C	mA
M530-10R	10	1	2	200	$< 2 \cdot 10^{-10}$	$< 1$	40
M530-50R	50	1	10	$> 500$	$< 2 \cdot 10^{-10}$	$< 1$	20
M530-100R	100	1	2	200	$< 5 \cdot 10^{-11}$	$< 1$	12
M530-500R	500	1	0.5	50	$< 2 \cdot 10^{-10}$	$< 25$	6
M530-1000R	1000	1	0.1	10	$< 2 \cdot 10^{-10}$	$< 25$	4
OPEN	-	-	2	200	-	-	-
SHORT	0	-	2	200	-	-	100

Self-inductance:  $< 0.08 \mu\text{H}$   
 Connection: 4 x BNC male connector  
 Distance between connectors: 22 mm  
 Dimensions: 105 x 34 x 50 mm (including connectors)  
 Housing: aluminum  
 Range of working temperatures: 15 – 30 °C