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# Keysight RF & Microwave Programmable Step Attenuators



Keysight programmable step attenuators offer fast, precise signal-level control up to 50 GHz, with switching time of less than 20 ms.

Unmatched attenuation repeatability of less than 0.03 dB up to 5 million cycles per section ensures low measurement uncertainty and reduces calibration cycles when installed into test systems.

Automatic GPIB/USB/LAN drive control is achieved with the 11713B/C attenuator/switch driver.

## Programmable step attenuators

- High reliability and exceptional repeatability reduce downtime
- Excellent RF specifications optimize test system measurement capability
- Broad portfolio of attenuation and connector options provide configuration flexibility

Product specifications

Programmable step attenuator

| Model number | Frequency (GHz) | Attenuation range (dB) | Attenuation step (dB) | Insertion loss (dB) @ 0 dB | Maximum SWR | Maximum input average power (W) | Maximum input peak power (W) | Operating life (in million cycles/section) | Repeatability   |
|--------------|-----------------|------------------------|-----------------------|----------------------------|-------------|---------------------------------|------------------------------|--|---|
| 8494G        | DC to 4         | 0 to 11                | 1                     | 0.96                       | 1.50        | 1                               | 100                          | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 8495G        | DC to 4         | 0 to 70                | 10                    | 0.68                       | 1.35        | 1                               | 100                          | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 8496G        | DC to 4         | 0 to 110               | 10                    | 0.96                       | 1.50        | 1                               | 100                          | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 8494H        | DC to 18        | 0 to 11                | 1                     | 2.22                       | 1.90        | 1                               | 100                          | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 8495H        | DC to 18        | 0 to 70                | 10                    | 1.66                       | 1.70        | 1                               | 100                          | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 8496H        | DC to 18        | 0 to 110               | 10                    | 2.22                       | 1.90        | 1                               | 100                          | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 8495K        | DC to 26.5      | 0 to 70                | 10                    | 3.95                       | 2.20        | 1                               | 100                          | 5  | ± 0.03 dB max to 18 GHz,<br>± 0.05 dB max to 26.5 GHz<br>(5 million cycles per section) |
| 8497K        | DC to 26.5      | 0 to 90                | 10                    | 2.79                       | 1.80        | 1                               | 100                          | 5  | ± 0.03 dB max to 18 GHz,<br>± 0.05 dB max to 26.5 GHz<br>(5 million cycles per section) |
| 84904K       | DC to 26.5      | 0 to 11                | 1                     | 1.86                       | 2.00        | 1                               | 50                           | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 84906K       | DC to 26.5      | 0 to 90                | 10                    | 1.86                       | 2.00        | 1                               | 50                           | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 84907K       | DC to 26.5      | 0 to 70                | 10                    | 1.40                       | 1.90        | 1                               | 50                           | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 84904L       | DC to 40        | 0 to 11                | 1                     | 2.40                       | 2.00        | 1                               | 50                           | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 84906L       | DC to 40        | 0 to 90                | 10                    | 2.40                       | 2.00        | 1                               | 50                           | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 84907L       | DC to 40        | 0 to 70                | 10                    | 1.80                       | 1.90        | 1                               | 50                           | 5  | ± 0.03 dB max<br>(5 million cycles per section)   |
| 84904M       | DC to 50        | 0 to 11                | 1                     | 3.00                       | 3.00        | 1                               | 50                           | 5  | ± 0.03 dB max <sup>1</sup>  |
| 84905M       | DC to 50        | 0 to 60                | 10                    | 2.60                       | 2.60        | 1                               | 50                           | 5  | ± 0.03 dB max <sup>1</sup>  |
| 84908M       | DC to 50        | 0 to 65                | 5                     | 3.00                       | 3.00        | 1                               | 50                           | 5  | ± 0.03 dB max <sup>1</sup>  |

1. Typical

RF connector options:

- 849xG/H offers N (f) / SMA (f) / APC-7
- 849xK offers only 3.5 mm (f)
- 8490xK offers 3.5 mm (f) / 3.5 mm (f/m)
- 8490xL offers 2.4 mm (f), 2.92 mm (f) / 2.4 mm (f/m) / 2.92 mm (f/m)
- 8490xM offers 2.4 mm (f/m) / 2.4 mm (f/f)

For more details on Keysight attenuators and ordering information see the “Keysight RF and Microwave Attenuators”, literature number 5989-6948EN.

For more information on Keysight attenuators, please visit: [www.keysight.com/find/attenuators](http://www.keysight.com/find/attenuators)

Download or order from [www.keysight.com/find/mta](http://www.keysight.com/find/mta)

To find a distributor in your area, go to [www.keysight.com/find/distributors](http://www.keysight.com/find/distributors)

Programmable step attenuator option

Keysight 8494/95/96/97 series ordering

example

| Models   | Option type   | Option description   |
|--|---|--|
| 8494G/<br>8494H/<br>8495G/<br>8495H/<br>8496G/<br>8496H/<br>8497K                              | 001<br>002<br>004<br>024<br>011<br>060<br>016               | N (f) <sup>G,H</sup><br>SMA (f) <sup>G,H</sup><br>3.5 mm (f) <sup>2,K</sup><br>24 Vdc<br>5 Vdc<br>12-pin viking connector <sup>G,H,K</sup><br>16-inch ribbon cable with<br>14-pin DAP plug <sup>G,H,K</sup>  |
|  | UK6   | Commercial calibration test data with certifications   |
| Keysight 84904/905/906/907/908 series ordering example*  |   |  |
| 84904K/<br>84904L/<br>84904M/<br>84905M/<br>84906K/<br>84906L/<br>84907K/<br>84907L/<br>84908M | 024<br>011<br>012<br>104<br>004<br>006<br>100<br>106<br>101 | 24 Vdc<br>5 Vdc<br>6 Vdc<br>3.5 mm (f) drive cable end,<br>3.5 mm (m) opposite end <sup>K</sup><br>3.5 mm (f) both ends <sup>K</sup><br>2.92 mm (f) both ends <sup>L</sup><br>2.4 mm (f) drive cable end,<br>2.4 mm (m) opposite end <sup>L,M</sup><br>2.92 mm (f) drive cable end,<br>2.92 mm (m) opposite end<br>2.4 mm (f) both ends <sup>L,M</sup> |

1. Each order must include RF connector option  
\* Drive cable not included
2. Available with 8495/97 only
  - G. G-models
  - H. H-models
  - K. K-models
  - L. L-models
  - M. M-models

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