

Programmable Attenuator PAH-8G/95-TTL

MTS-No.: 29250

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Description

The PAH-8G/95-TTL is a general purpose, single channel digital programmable attenuator which provides 0 to 95 dB attenuation in 0.5 dB steps.

The coverage from 10 MHz to 8 GHz supports a wide range of applications including digital broadcast, TETRA, GSM, Bluetooth, Wi-Fi 7 and all LTE+ as well as 5G frequency bands.

Its unique design maintains linear attenuation change per dB, even at the highest attenuation and frequency settings.



Technical data:

1 RF-specifications:

| | | | |
|----------------------------------|--------------------------------------------------------------|--------------|-------------|
| 1.1 Impedance | 50 Ω | | |
| 1.2 Input power | 31 dBm max. | | |
| - Operating: Pulsed ¹ | 28 dBm max. | | |
| - Operating: CW ² | | | |
| 1.3 Voltage rating | 50 WVDC | | |
| 1.4 Frequency range | 10 - 8000 MHz (1 MHz on request) | | |
| 1.5 Attenuation | 0 - 95 dB in 0.5 dB steps (glitch-safe state transitions) | | |
| | min. | typ. | max. |
| 1.6 VSWR in / out | | | |
| @ 0 - 5.0 dB | 1.6 | 2.1 | |
| @ 5.5 - 95.0 dB | 1.3 | 1.8 | |
| 1.7 Insertion loss (IL) | | | |
| @ 10 MHz | 3.4 dB | 3.7 dB | |
| @ 4000 MHz | 5.5 dB | 6.1 dB | |
| @ 8000 MHz | 6.7 dB | 7.6 dB | |
| 1.8 IL derating / 20 MHz | 0.01 dB | | |
| 1.9 Relative phase | 25° | | |
| @ 0 - 95 dB | | | |
| 1.10 Input IP3 | 48 dBm | 55 dBm | |
| 1.11 Switching speed | 0.5 μs | | |
| 1.12 Attenuation accuracy | (negative means more attenuation) | | |
| @ 2000 - 6000 MHz | | | |
| @ 0.5 - 30.0 dB | ±0.4 dB | +0.5/-1.0 dB | |
| @ 30.5 - 60.0 dB | -0.5/-1.0 dB | +0.5/-1.5 dB | |
| @ 60.5 - 85.0 dB | -0.5/-1.5 dB | +0.5/-2.0 dB | |
| @ 85.5 - 95.0 dB | -0.5/-1.5 dB | +0.5/-3.0 dB | |
| @ 10 - 8000 MHz | | | |
| @ 0.5 - 30.0 dB | 0.0/-1.0 dB | +0.5/-1.5 dB | |
| @ 30.5 - 60.0 dB | -0.5/-1.5 dB | +0.5/-2.5 dB | |
| @ 60.5 - 85.0 dB | -0.5/-2.0 dB | +0.5/-3.0 dB | |
| @ 85.5 - 95.0 dB | -0.5/-3.5 dB | +0.5/-6.0 dB | |

2 Connections:

| | |
|-----------------------|----------------------------|
| 2.1 RF connectors | SMA female |
| 2.2 Control connector | 12pole male, type SMC Erni |

3 General specifications:

| | |
|----------------------------------------------------|-------------------------------------|
| 3.1 Internal voltage (TTL) | 5 VDC ±5 % |
| 3.2 Power consumption | 5 mW max. |
| 3.3 Control | 8 bit parallel (TTL) |
| 3.4 Operating temperature | -40 °C - +85 °C |
| 3.5 Storage temperature | -55 °C - +150 °C |
| 3.6 Reference temperature of specifications (typ.) | +25 °C |
| 3.7 Dimensions (without connections) | 56.4 mm x 48.7 mm x 11.0 mm (LxWxH) |
| 3.8 Case style | Milled aluminium enclosure |
| 3.9 Colour | SurTec650 (Chrome alloy) |
| 3.10 Weight | 70 grams |

4 Delivered parts:

PAH-8G/95-TTL
 Datasheet
 Drawing and connector pin assignment

5 Comments:

| | |
|----------------|-----------|
| Warranty | 12 months |
| RoHS-compliant | Yes |

6 Recommended accessories:

RF-cables
 Processor card

Notes: 1. 100 % duty cycle, all bands, 50 Ω.

2. The maximum average power of any complex waveform should not exceed the operating maximum RF input power, CW.

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Typical measurements:

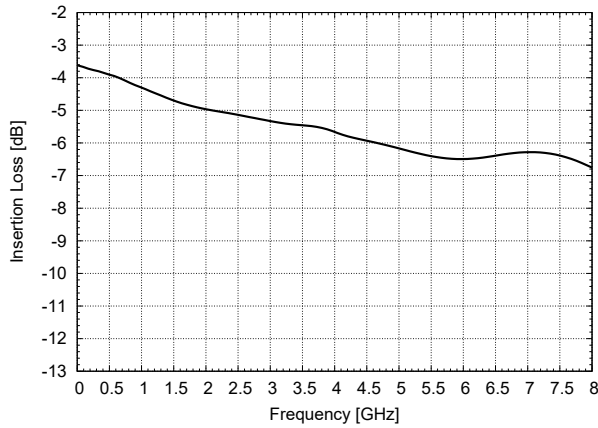


Fig. 1: Input port to output port insertion loss

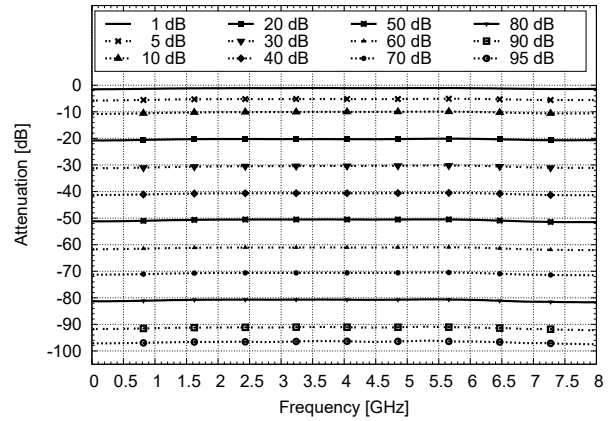


Fig. 2: Attenuation relative to insertion loss

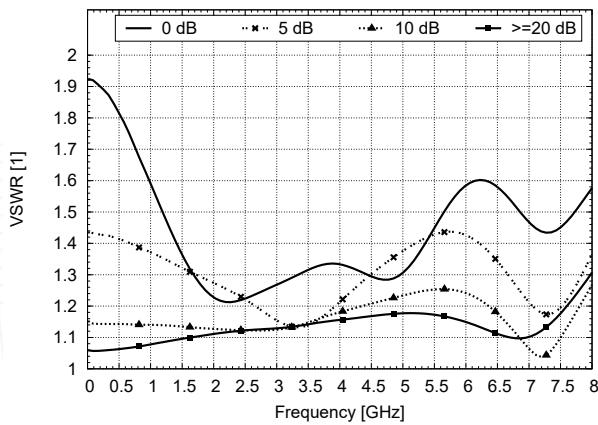


Fig. 3: VSWR for input and output ports

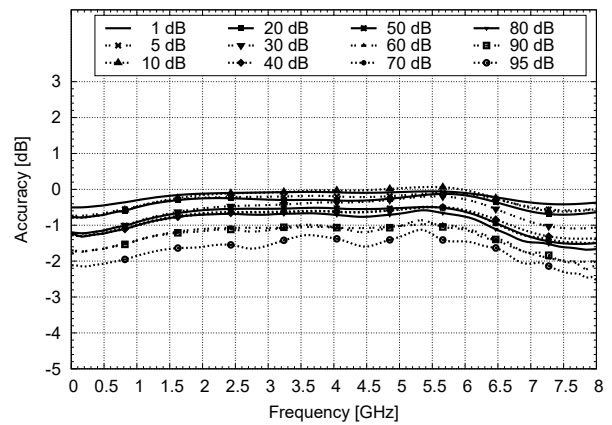


Fig. 4: Attenuation accuracy

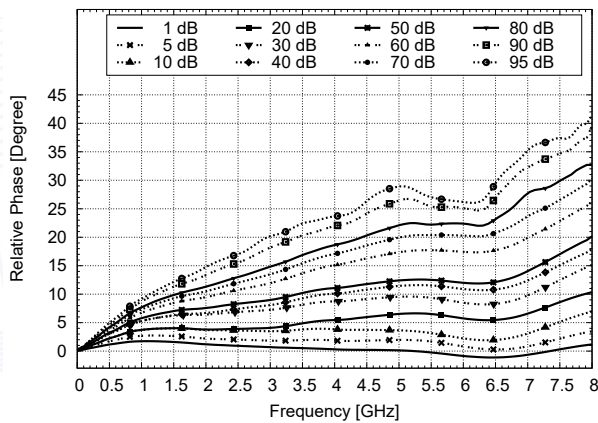


Fig. 5: Phase relative to insertion loss

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Views:

