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# Resistive Attenuator Chart.

## *PI Attenuators*

Here is a chart for a Pi-attenuator for different attenuation values based on a 50 ohm input and output system impedance.

| Attenuation (db) | Parallel R ohms, (2 reqd) | Series R (ohms) |
|---|---|---|
| 0.1 | 8686 | 0.58 |
| 0.5 | 1738 | 2.88 |
| 1.0 | 869.5 | 5.8 |
| 2.0 | 436 | 11.6 |
| 3.0 | 292.4 | 17.6 |
| 4.0 | 221 | 23.8 |
| 5.0 | 178.5 | 30.4 |
| 6.0 | 150.5 | 37.4 |
| 7.0 | 130.7 | 44.9 |
| 8.0 | 116 | 52.8 |
| 9.0 | 105 | 61.6 |
| 10.0 | 96 | 71 |
| 12.0 | 83.5 | 93.2 |
| 14.0 | 74.9 | 120.3 |
| 16.0 | 68.8 | 153.8 |
| 18.0 | 64.4 | 195.4 |
| 15.0 | 71.6 | 136 |
| 20.0 | 61 | 247.5 |
| 25 | 56 | 443 |
| 30 | 53 | 790 |
| 40 | 51 | 2500 |
| 50 | 50.3 | 7905 |

The above values are based on the following equation.

- R1 = Z0 * ((10 ^ (dB / 20) + 1) / (10 ^ (dB / 20) - 1))
- R2 = (Z0/2) * (10 ^ (dB / 10) - 1) / (10 ^ (dB / 20))

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# *TEE Attenuators*

Here is a chart for a TEE attenuator for different attenuation values based on a 50 ohm input and output system impedance.

| Attenuation (db) | Series R ohms ( 2 reqd) | Parallel (ohms) |
|---|---|---|
| 0.1 | 0.29 | 4300 |
| 0.5 | 1.44 | 868 |
| 1.0 | 2.88 | 433 |
| 2.0 | 5.73 | 215 |
| 3.0 | 8.55 | 142 |
| 4.0 | 11.3 | 104.8 |
| 5.0 | 14.0 | 82.2 |
| 6.0 | 16.6 | 67 |
| 7.0 | 19.1 | 55.8 |
| 8.0 | 21.5 | 47.3 |
| 9.0 | 23.8 | 40.6 |
| 10.0 | 26 | 35 |
| 12.0 | 29.9 | 26.8 |
| 14.0 | 33.4 | 20.8 |
| 15.0 | 34.9 | 18.4 |
| 16.0 | 36.3 | 16.3 |
| 18.0 | 38.8 | 12.8 |
| 20.0 | 41 | 10.1 |
| 25 | 44.7 | 5.6 |
| 30 | 46.9 | 3.2 |
| 40 | 49.0 | 1.0 |
| 50 | 49.7 | 0.32 |

The above values are based on the following equation.

- R1 = Z0 * ((10 ^ (dB / 20) - 1) / (10 ^ (dB / 20) + 1))
- R2 = 2 * Z0 * (10 ^ (dB / 20) / (10 ^ (dB / 10) - 1))