

# Digital Step Attenuator

**ZX76-31-SN+**

## Typical Performance Data

| FREQUENCY<br>(MHz) | STEP ATTENUATION* AT TTL CONTROL STATE |               |               |               |               |                |                |
|--------------------|----------------------------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|                    | (dB)                                   |               |               |               |               |                |                |
|                    | 00000<br>THRU LOSS                     | 00001<br>1 dB | 00010<br>2 dB | 00100<br>4 dB | 01000<br>8 dB | 10000<br>16 dB | 11111<br>31 dB |
| 10                 | 1.36                                   | 1.00          | 2.02          | 4.03          | 7.92          | 15.89          | 30.73          |
| 50                 | 1.37                                   | 1.00          | 2.02          | 4.03          | 7.93          | 15.87          | 30.76          |
| 100                | 1.38                                   | 1.01          | 2.03          | 4.03          | 7.93          | 15.89          | 30.72          |
| 200                | 1.39                                   | 1.01          | 2.04          | 4.03          | 7.93          | 15.88          | 30.74          |
| 500                | 1.49                                   | 1.01          | 2.03          | 4.02          | 7.91          | 15.85          | 30.60          |
| 800                | 1.55                                   | 1.00          | 2.04          | 4.03          | 7.93          | 15.85          | 30.44          |
| 1000               | 1.59                                   | 1.01          | 2.08          | 4.06          | 7.95          | 15.83          | 30.36          |
| 1200               | 1.72                                   | 1.00          | 2.04          | 4.00          | 7.89          | 15.80          | 30.09          |
| 1400               | 1.84                                   | 1.00          | 2.01          | 3.96          | 7.83          | 15.72          | 29.83          |
| 1600               | 1.82                                   | 1.01          | 2.07          | 4.02          | 7.90          | 15.77          | 29.73          |
| 1800               | 1.91                                   | 1.00          | 2.06          | 4.02          | 7.88          | 15.78          | 29.50          |
| 2000               | 2.02                                   | 1.02          | 2.06          | 4.03          | 7.87          | 15.74          | 29.25          |
| 2200               | 2.25                                   | 1.00          | 2.07          | 4.03          | 7.88          | 15.66          | 28.97          |
| 2400               | 2.41                                   | 1.00          | 2.04          | 3.98          | 7.81          | 15.62          | 28.41          |
| 2600               | 2.38                                   | 1.05          | 2.12          | 4.04          | 7.88          | 15.68          | 28.31          |
| 3000               | 2.94                                   | 1.04          | 2.15          | 4.10          | 7.91          | 15.58          | 28.16          |

\* Step Attenuation above Thru Loss (TTL Logic 00000).

| FREQUENCY<br>(MHz) | INPUT RETURN LOSS AT TTL CONTROL STATE |               |               |               |               |                |                |
|--------------------|----------------------------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|                    | (dB)                                   |               |               |               |               |                |                |
|                    | 00000<br>0 dB                          | 00001<br>1 dB | 00010<br>2 dB | 00100<br>4 dB | 01000<br>8 dB | 10000<br>16 dB | 11111<br>31 dB |
| 10                 | 17.10                                  | 20.08         | 17.99         | 19.66         | 22.37         | 32.02          | 43.63          |
| 50                 | 17.14                                  | 20.14         | 18.03         | 19.72         | 22.43         | 32.16          | 43.88          |
| 100                | 17.15                                  | 20.13         | 18.05         | 19.73         | 22.39         | 31.99          | 43.09          |
| 200                | 17.23                                  | 20.20         | 18.11         | 19.77         | 22.44         | 32.02          | 43.10          |
| 500                | 17.58                                  | 20.55         | 18.44         | 20.10         | 22.77         | 32.58          | 43.97          |
| 800                | 17.94                                  | 20.93         | 18.81         | 20.47         | 23.17         | 33.46          | 43.93          |
| 1000               | 18.13                                  | 21.13         | 19.07         | 20.79         | 23.56         | 34.67          | 42.26          |
| 1200               | 18.41                                  | 21.43         | 19.51         | 21.24         | 24.06         | 36.01          | 38.55          |
| 1400               | 18.65                                  | 21.64         | 19.96         | 21.77         | 24.63         | 37.01          | 34.99          |
| 1600               | 18.84                                  | 21.77         | 20.49         | 22.43         | 25.29         | 35.91          | 31.74          |
| 1800               | 19.04                                  | 21.90         | 21.20         | 23.32         | 26.03         | 32.71          | 28.73          |
| 2000               | 19.12                                  | 21.81         | 21.93         | 24.23         | 26.42         | 29.17          | 26.07          |
| 2200               | 19.19                                  | 21.70         | 22.78         | 25.23         | 26.46         | 26.24          | 23.80          |
| 2400               | 19.80                                  | 22.30         | 24.53         | 27.00         | 26.28         | 23.66          | 21.72          |
| 2600               | 21.50                                  | 23.56         | 28.00         | 28.57         | 24.66         | 21.11          | 19.70          |
| 3000               | 22.65                                  | 22.45         | 26.32         | 23.43         | 20.26         | 17.28          | 16.48          |

| FREQUENCY<br>(MHz) | OUTPUT RETURN LOSS AT TTL CONTROL STATE |               |               |               |               |                |                |
|--------------------|-----------------------------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|                    | (dB)                                    |               |               |               |               |                |                |
|                    | 00000<br>0 dB                           | 00001<br>1 dB | 00010<br>2 dB | 00100<br>4 dB | 01000<br>8 dB | 10000<br>16 dB | 11111<br>31 dB |
| 10                 | 17.08                                   | 17.84         | 22.31         | 26.97         | 27.98         | 23.56          | 39.26          |
| 50                 | 17.11                                   | 17.88         | 22.35         | 27.02         | 28.04         | 23.60          | 39.03          |
| 100                | 17.15                                   | 17.91         | 22.36         | 26.99         | 27.99         | 23.56          | 39.10          |
| 200                | 17.22                                   | 17.96         | 22.43         | 27.04         | 27.97         | 23.58          | 38.39          |
| 500                | 17.47                                   | 18.23         | 22.70         | 27.12         | 27.91         | 23.75          | 34.61          |
| 800                | 17.72                                   | 18.48         | 22.86         | 26.86         | 27.41         | 23.90          | 31.22          |
| 1000               | 18.18                                   | 18.97         | 23.47         | 27.29         | 27.70         | 24.70          | 29.02          |
| 1200               | 18.22                                   | 19.10         | 23.31         | 26.34         | 26.63         | 24.95          | 26.80          |
| 1400               | 18.37                                   | 19.32         | 23.23         | 25.46         | 25.69         | 25.55          | 24.90          |
| 1600               | 18.41                                   | 19.56         | 22.92         | 24.32         | 24.52         | 26.23          | 23.14          |
| 1800               | 18.49                                   | 19.83         | 22.58         | 23.24         | 23.38         | 27.13          | 21.59          |
| 2000               | 18.55                                   | 20.14         | 22.01         | 21.93         | 22.04         | 27.66          | 20.00          |
| 2200               | 18.48                                   | 20.29         | 21.15         | 20.60         | 20.64         | 26.95          | 18.63          |
| 2400               | 18.22                                   | 20.19         | 20.59         | 19.60         | 19.65         | 25.84          | 17.78          |
| 2600               | 19.33                                   | 22.03         | 21.85         | 20.57         | 20.28         | 27.42          | 17.49          |
| 3000               | 20.89                                   | 22.42         | 18.95         | 16.77         | 16.25         | 18.78          | 14.23          |

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