AES3 and S/PDIF Recommended Transformers

Transformers are used in professional digital audio interfaces to provide common-mode noise and interference rejection, high-frequency rejection, impedance-matching, isolation from ground loops, DC blocking, and short-circuit protection. Due to the specialized needs of this application, several manufacturers have designed transformers specifically for AES3 and S/PDIF circuits.

The transformer used in the professional interface should be capable of operation from 3.6 to 24.6 MHz, which is the audio data rate of 28 kHz to 192 kHz after biphase-mark encoding. Transformers used for digital audio should also have low inter-winding capacitance. Inter-winding capacitance couples the primary and secondary windings, degrading the isolation between the windings with increasing frequency. This energy appears in the form of common mode noise on the receive side ground and has the potential to degrade analog performance.

The companies listed in Table 1 are a few manufacturers of digital audio transformers. Please contact these manufacturers directly for more detailed information.

“References” on page 2 provides a list of transformer design and analysis papers.

1. Cirrus Logic is unable to guarantee the performance of components manufactured by others.

<table>
<thead>
<tr>
<th>Manufacturer</th>
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<td>Minicircuits</td>
<td><a href="http://www.minicircuits.com">http://www.minicircuits.com</a></td>
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<td>Pulse Engineering</td>
<td><a href="http://www.pulseeng.com">http://www.pulseeng.com</a></td>
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<td>Schott Corporation</td>
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<td>Scientific Conversion Inc</td>
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<td>VITEC</td>
<td><a href="http://www.VitecCorp.com">http://www.VitecCorp.com</a></td>
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Table 1. Digital Audio Transformer Manufacturers
References


Contacting Cirrus Logic Support
For all product questions and inquiries contact a Cirrus Logic Sales Representative.
To find the one nearest to you go to www.cirrus.com

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