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## MAX3986

1Gbps to 10.3Gbps Linear Equalizer

### Stand-Alone Equalizer Also Works in Conjunction with Decision Feedback Equalizers

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#### Status

Active: In Production.

#### Description

The MAX3986 is a 4-channel low-power linear equalizer optimized for use up to 10.3Gbps that compensates for losses encountered with FR-4 stripline and twin-ax cable. This linear equalizer is intended for use with decision- feedback equalizers (DFEs) integrated into ASICs as well as other applications where increased margin is needed rather than full signal regeneration. DFEs can typically handle 20dB of channel loss at a frequency half the bit rate, assuming the channel is not degraded by reflections and crosstalk. The extended linear range of the MAX3986 preserves the essential signal characteristics needed for optimum DFE performance. The analog equalization of the MAX3986 adds to the effectiveness of the DFE. This increases margin to tolerate environmental and manufacturing variations or to increase the length of the transmission line. The MAX3986 operates from a single 3.3V supply and is housed in a lead-free, 5mm x 7mm TQFN package.

[Request Full Data Sheet](#)An evaluation kit is available: [MAX3986EVKIT](#)

#### Key Features

- Increases Margin of Decision-Feedback Equalizers
- Compatible with OOB Signals
- Extends Transmission Line Length
- Coding Independent, 8b/10b or Scrambled
- 4 Channels per Device
- Analog Equalization
- Better Than 18dB Return Loss at 5.15GHz
- 33mA per Channel Supply Current
- Single 3.3V Supply
- 5mm x 7mm, Lead-Free TQFN Package

#### Applications / Uses

- 6Gbps SAS
- 8.5Gbps Fibre Channel
- Active Copper Cable Assemblies
- DDR, 6.25Gbps IEEE 802.3ae XAUI
- High-Speed Backplanes
- OIF-CEI-6G
- QDR, 10.0Gbps InfiniBand<sup>SM</sup>
- Serial 10.3Gbps Ethernet

#### Key Specifications: Equalizers (Cable and Circuit Board)

| Part Number    | Data Rate<br>(Mbps) | Data Rate<br>(Mbps) | V <sub>SUPPLY</sub><br>(V) | Channels | Package/Pins | Smallest Available Pckg.<br>(mm <sup>2</sup> )<br>max w/pins | Oper. Temp.<br>(°C) | Price       |
|----------------|---------------------|---------------------|----------------------------|----------|--------------|--------------------------------------------------------------|---------------------|-------------|
|                | min                 | max                 |                            |          |              |                                                              |                     | See Notes   |
| <b>MAX3986</b> | 1000                | 10300               | 3.3                        | 4        | TQFN/38      | 36                                                           | 0 to +85            | \$20.45 @1k |

[See All Equalizers \(Cable and Circuit Board\) \(18\)](#)

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