14.2 Gbps Asynchronous 4-Channel Signal Conditioner

Data Sheet **HMC7545**

FEATURES

- Continuous time linear equalizer (CTLE) with up to 18 dB equalization
- Loss of signal (LOS) detection with programmable threshold and hysteresis
- Driver performance
  - Programmable differential swing: 400 mV p-p differential to 900 mV p-p differential
  - Programmable driver output with up to 12 dB de-emphasis
- Automatic electrical idle and receiver detection
- Output polarity inversion and automatic output squelch
- Single supply (2.5 V or 3.3 V)
- Low power operation: 80 mW per channel
  - Per lane power-down options
- Flexible configuration interface: pin strap, 2-wire interface, or EEPROM

APPLICATIONS

- QSFP+ direct attach active copper modules
- 10 Gb, 40 Gb Ethernet and OTN line cards
- 10 Gb, 40 Gb backplane drivers
- 8 Gb, 16 Gb Fibre Channel and InfiniBand® EDR line cards and backplane drivers
- 8 Gb, 10 Gb, 16 Gb active optical modules
- 8 Gb, 10 Gb, 16 Gb active copper cable assemblies
- 1.5 Gb, 3 Gb, 6 Gb, 12 Gb SAS/SATA
- PCIe 1.x, 2.0, 3.0
- Broadband and automatic test and measurement

GENERAL DESCRIPTION

The HMC7545 is a unidirectional, quad-channel, protocol and data rate agnostic, asynchronous signal conditioner, designed for short and intermediate range optical modules, line cards, and backplane applications operating at up to 14.2 Gbps.

Each channel provides programmable input equalization, LOS and receiver detection, automatic output squelch, programmable output swing and output de-emphasis.

All high speed differential inputs and outputs of the HMC7545 are current mode logic (CML), terminated on-chip with 50 Ω to the positive supply, and can be dc-coupled or ac-coupled.

The device uses a single supply, 2.5 V or 3.5 V, and its typical power dissipation is less than 80 mW per channel.

The HMC7545 is packaged in a 36-lead, 4 mm × 7 mm LFCSP package and operates from −40°C to +85°C.

FUNCTIONAL BLOCK DIAGRAM

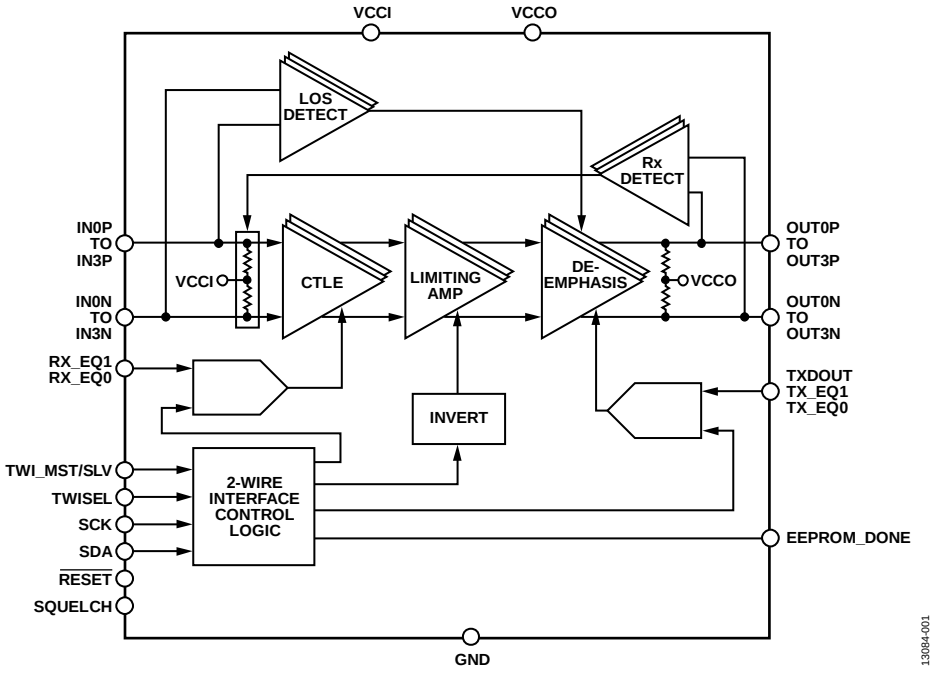


Figure 1.

For more information about the HMC7545, contact Analog Devices, Inc., at RFMG-HSL@analog.com.

Rev. Sp0 **Document Feedback**

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