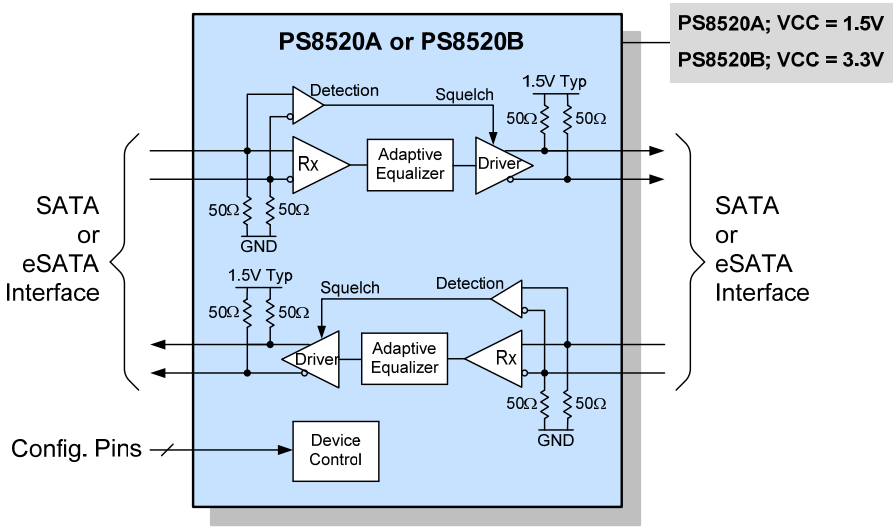
PS8520A & PS8520B SATA 6Gb/s Bidirectional Repeaters

Product Brief

PS8520A, PS8520B



APPLICATIONS

- Desktop and laptop PCs
- Docking Stations
- Servers
- Workstations
- Data Storage Systems

KEY FEATURES

- Supports serial-ATA (SATA) III/SAS operation up to 6.0Gbps
- Supports SATA Out-of-Band (OOB) Signaling with fast enter/exit time
- Adaptive equalizer in SATA receiver enhances performance
- **Very low power consumption** – PS8520A performance:
  - Active Mode – 122mW
  - Power Saving Mode – 10mW
  - Standby Mode -- < 0.5mW
- Integrated 50Ω termination resistors for input and output
- Configurable output pre-emphasis
  For device I2C configuration capability, please refer to the PS8521A/B devices
- High ESD performance:
  - HBM 8kV
  - CDM 2kV
  - MM 400V
  - IEC 6100-4-2: 8kV Direct Contact Zapping
- Single 1.5V power supply for PS8520A
- Single 3.3V power supply for PS8520B
- In-line signal pads for flow-through PCB layout
- 20-pin TQFN Halogen free RoHS Package
- 0°C to 85°C Operating Temperature

GENERAL DESCRIPTION

PS8520A and PS8520B are bidirectional SATA repeaters that support the new SATA 6Gb/s standard, twice the speed of the previous generation SATA. As repeater (or redriver) devices they integrate two equalizer-driver channels to recondition the high-speed SATA signals. In a typically application, the PS8520A or PS8520B is placed close to an eSATA receptacle to compensate for board losses and regenerate high-quality SATA electrical signals.

The PS8520A and PS8520B offer many unique device features. For example, in addition to the usual 3.3V power supply operation (PS8531B), a 1.5V version is offered (PS8520A). Within each device, input receivers have adaptive input equalization, another industry first. Both output drivers have configurable output pre-emphasis. A squelch circuit prevents driver output when the input amplitude drops below the threshold level.

The PS8520A and PS8520B also offer greatly reduced power consumption. The PS8520A, which uses a 1.5V supply voltage, consumes only 122mW when fully active, 10mW in automatic power saving mode, and < 0.5mW in standby. The automatic power saving mode in both devices require no host or firmware support. Exit from Partial and Slumber states is <50ns.

Rev.0

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