4-Channel LVDS Dual-Output Laser Diode Driver with Oscillator

AD9664

FEATURES

- Dual-current controlled output current sources with 4 input channels
- TTL selectable output
- Stable on-chip oscillators with independent frequency and amplitude control
- TTL or LVDS selectable write channel enables
- Independent TTL oscillator enable
- 150 mA minimum output current for Read Channel
- 325 mA minimum output current for Write Channel 1
- 250 mA minimum output current for Write Channel 2
- 150 mA minimum output current for Write Channel 3
- Rise time/fall time of ≤0.8 ns
- Low output overshoot
- Low power consumption
- Single 5 V power supply (±10%)

APPLICATIONS

- DVD-R, DVD+R, DVD-RW, DVD+RW, DVD-RAM supercombo drives
- MO drives
- Laser diode current switching

GENERAL DESCRIPTION

The AD9664 is a laser diode driver for high performance CD-RW and DVD recordable drives. It includes four channels for four different optical power levels: the Read Channel generates a continuous output power level, whereas Channel 1, Channel 2, and Channel 3 can be used as write channels that can be controlled with an LVDS or TTL interface. The OSCEN pin is controlled by a TTL signal. All channels are summed at the selected LD output pin where Write Channel 1 can contribute a minimum 325 mA maximum output current, and Write Channel 2 and Write Channel 3 can contribute a minimum of 250 mA and 150 mA, respectively. The level of the output current is set by an external resistor, which converts this voltage into a current at the xSET pin.

An on-chip oscillator is provided to allow output current modulation and to reduce laser mode hopping. Four external resistors permit the setting of two distinct values for the frequency and swing of the oscillator. The oscillator can output up to 100 mA p-p of current (push-pull oscillator) with a frequency range of 200 MHz to 500 MHz.

FUNCTIONAL BLOCK DIAGRAM

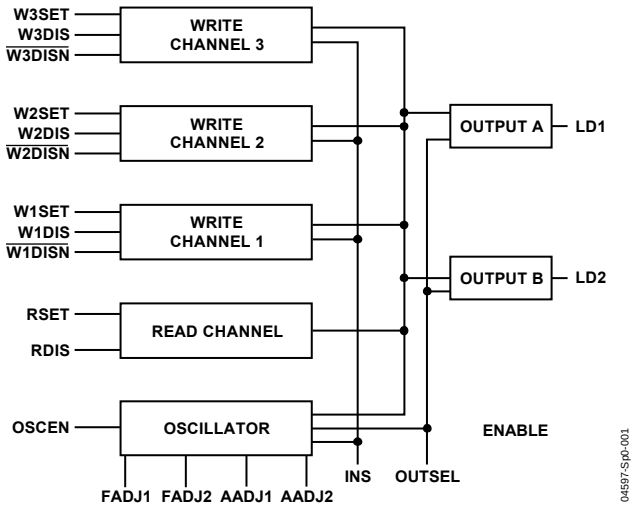

Figure 1. 4-Channel LVDS Laser Driver Block Diagram

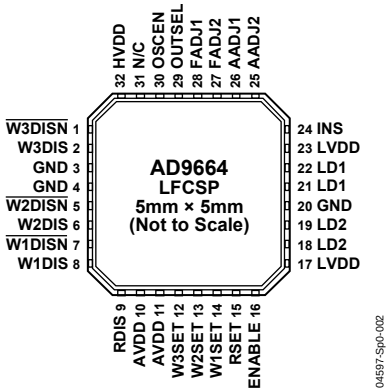

Figure 2. 4-Channel LVDS Laser Driver Pin Configuration

For more information about the AD9664, contact Analog Devices at high_current_drivers.com@analog.com.

Rev. SpA

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D04597–0–4/04(SpA)