Spread Injection PLL Buffer

The new IDT spread injection clock products add the ability to "inject" spread spectrum onto the incoming clock to minimize electromagnetic interference, while maintaining good phase noise.

Description

IDT® spread injection phase-locked loop (PLL) clocks are ideal for applications where spread spectrum needs to be added to the incoming clock. The IDT 9DS800 is pin compatible to the 9DB803 and adds the ability to inject spread spectrum onto the incoming differential clock, while maintaining good phase noise.

Key Specifications

- Output cycle-cycle jitter < 50 picoseconds (ps)
- Output to output skew < 50 ps
- Phase jitter: PCIe® Gen1 and Gen2 compliant

Output Features

- 8–0.7V current-mode differential output pairs
- Supports spread injection (PLL) mode and fanout mode
- Two pin selectable down spread amounts: 0.5 percent and 0.25 percent
- 50–110 MHz operation in PLL mode
- 50–400 MHz operation in bypass mode

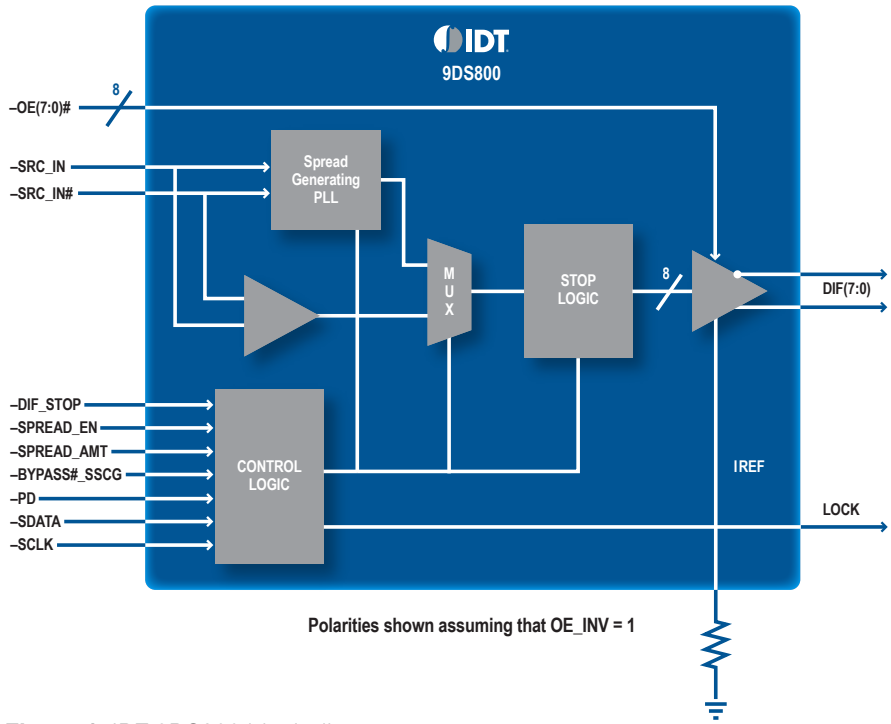

Figure 1. IDT 9DS800 block diagram

Figure 1 illustrates how the 9DS800 can take a 100 MHz non-spreading input clock and add spread to it. Spread can be turned off or set to 0.5 percent or 0.25 percent down spread via pin control. Additional 0.125 percent down spread and 0.375 percent down spread settings are easily selected via system management bus (SMBus) control. The 9DS800 PLL can also be bypassed completely if necessary.

IDT Spread Injection PLL benefits and features

Benefits	Features
• Easily adds spread to incoming clock "after the fact" to reduce electromagnetic interference (EMI)	Spread injection
• Only add as much spread as needed to meet EMI requirements.	Selectable spread amount
• Used in PCIe® Gen2 or PCIe Gen1 applications	PCI Express® Gen2 compliant
• Does not conflict with 9DB803 for easy SMBus design	D8 SMBus address

IDT Spread Injection PLL part information

IDT Part Number	Description	Voltage	Package	Availability
9DS400A	4 output PCIe PLL with spread injection	3.3V	28 pin TSSOP / SSOP	September 2009
9DS800A	8 output PCIe PLL with spread Injection	3.3V	48 pin TSSOP / SSOP	September 2009

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