

Clock Synthesis Products

miClockSynth 24x, 25x, 26x Devices

Today's modern systems often require the generation and distribution of several clock frequencies to multiple loads. Clock synthesis devices from Microsemi help lower bill of material (BOM) costs, reduce board space, simplify design, and improve performance and reliability by replacing multiple external components traditionally used to time processors, memory chips, PHY chips, and more with a fully integrated single-chip solution.

Microsemi's miClockSynth 26x devices can create a complex clock tree, replacing a number of multipliers, synthesizers, and oscillators on the board, improving design reliability while reducing BOM costs and simplifying the design. The miClockSynth 25x devices provide up to six ultra-low jitter output clocks from <1 Hz to 1035 MHz. With a small package and best-in-class jitter performance, these devices target clock synthesis and frequency conversion applications with tough jitter budgets and tight board space restrictions.

Applications

- Clocks for NPUs, FPGAs, CDRs, high-speed ADCs and DACs, PCIe interface devices, Ethernet switches, and PHYs
- Timing generation for optical, storage, networking, and broadcast video applications
- OTN, WDM, and wireless applications

Key Benefits

Reduces BOM Cost and Board Space

- Replaces multiple high-performance crystals and crystal oscillators
- Small packages: 5x5 (miClockSynth 25x) and 8x8 (miClockSynth 26x) QFNs

Easy to Design

- Up to 8 custom configurations per device or part number selectable with external hardware pins to ensure clocks are available at power-up
- miClockDesigner™ web tool creates devices to power-up with preset clocks while reducing time-to-market/BOM costs and simplifying inventory
- Easy-to-use evaluation software with intuitive Windows-based GUI

Key Features

Best-in-Class Jitter Performance

- Ultra-low output jitter: 160 fs RMS

Up to Four Independent Frequency Families

Families

- miClockSynth 26x Frac-N APLL has a fractional and integer divider, creating four independent frequency families

Any-Rate Frequency Conversion

- Any input frequency: 10 MHz to 1.25 GHz
- Any output frequency: 1 Hz to 1 GHz

High-Precision Numerically Controlled Oscillator

Oscillator

- Steer output frequency per APLL or Frac-N divider with better than 0.01 ppb resolution

Configurable Output Format

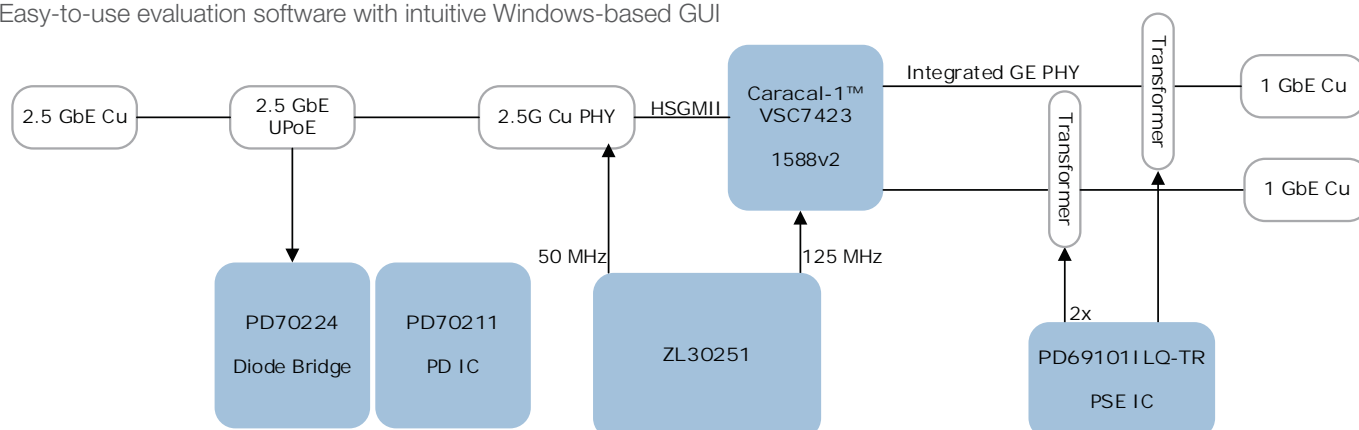
- miClockSynth 26x devices provide LVDS, LVPECL, HCSL, 2x CMOS, or HSTL per output

Spread-Spectrum Modulation Mode

- miClockSynth 25x and 26x devices meet PCIe standard requirements

Flexible Power Supply Banks

- miClockSynth 26x outputs are grouped into six power supply banks, enabling glueless interfacing with neighboring components

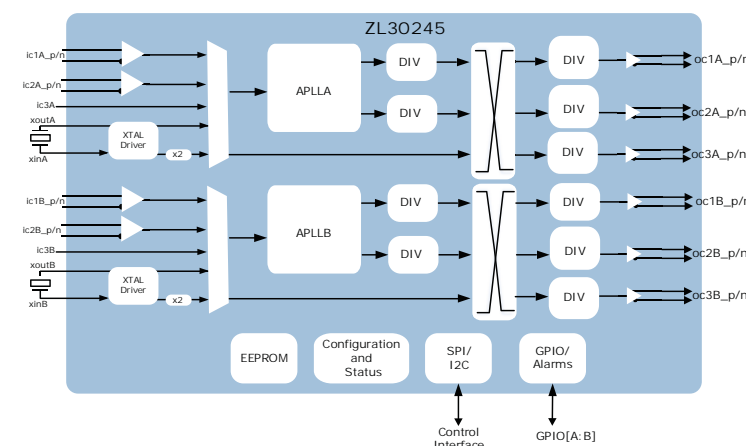
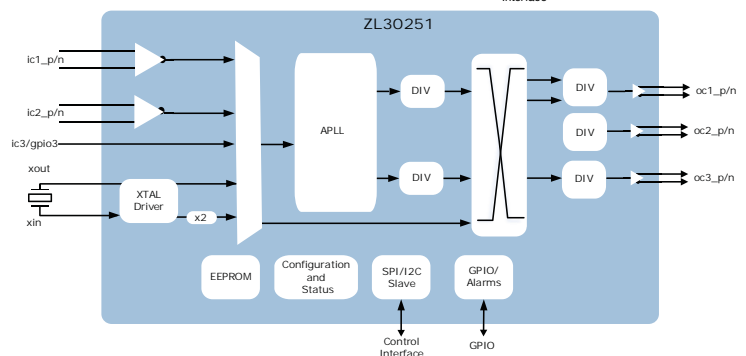
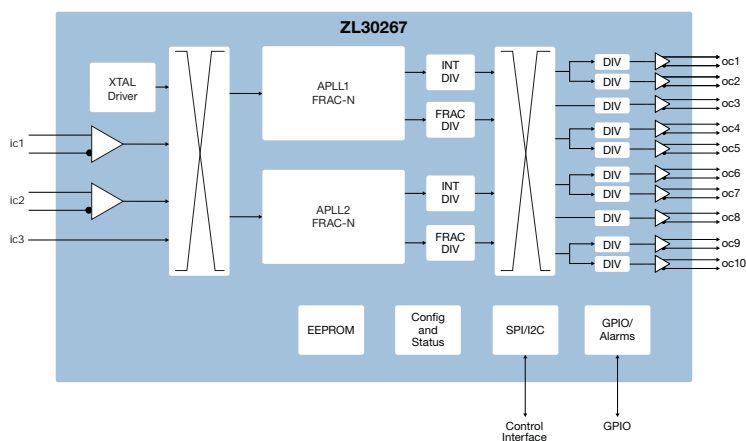


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Featured Products



miClockSynth 26x: ZL30260–ZL30267

- Replaces multiple devices: four independent frequency families with jitter as low as 170 fs RMS from integer divider
- Ideal for PCIe Gen 1–4: with spread-spectrum, HCSL, and ultra-low-jitter output
- Replaces expensive high-end analog VCXOs: accurate NCO; 0.01 ppb resolution
- Easily interfaces without level shifters: each output configurable as LVDS, LVPECL, HCSL, 2x CMOS, or HSTL
- Small 8 mm × 8 mm QFN package

miClockSynth 25x: ZL30250 and ZL30251

- Any-to-any frequency synthesis/conversion generates any clock rate from <1 Hz to 1035 MHz with jitter as low as 160 fs
- Spread-spectrum: ±0.5% meets low EMI specifications
- Accurate numerically controlled oscillator replaces expensive high-end analog VCXOs
- Pin-selectable custom configuration: easy implementation, up to four configurations
- Tiny 5 mm x 5 mm QFN package

miClockSynth 24x: ZL30244 and ZL30245

- Two independent APLL channels with four input clocks per channel
- Any-to-any frequency synthesis/conversion generates any clock rate from <1 Hz to 1035 MHz with jitter as low as 160 fs
- Spread-spectrum: ±0.5% meets low EMI specifications
- Pin-selectable custom configuration: easy implementation with up to four configurations per channel
- Space-saving 5 mm x 10 mm LGA package

Availability and Support

Microsemi Clock Management products are in volume production. To learn more about Microsemi's clock products, visit www.microsemi.com/timing-and-synchronization/clock-synthesis. Full information, including complete datasheets and design manuals, is available to registered MyMicrosemi customers. To register for a MyMicrosemi account, visit www.microsemi.com/create-an-account.



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