

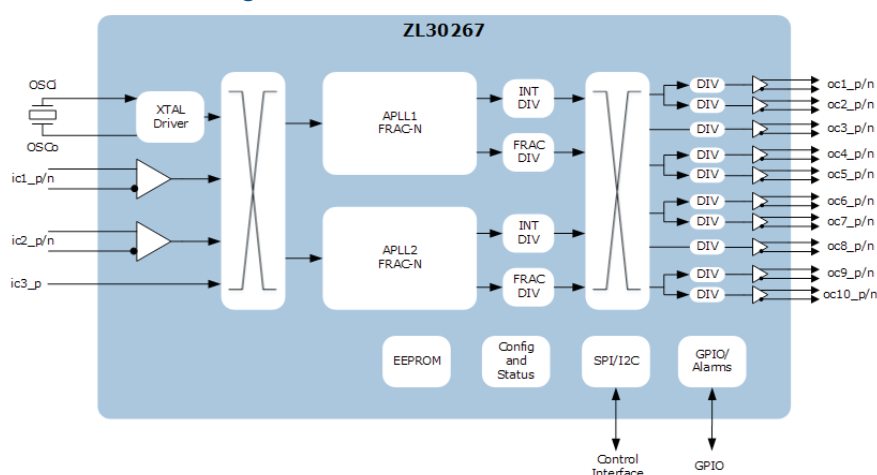
miClockSynth™ ZL30260–ZL30267 Family

High-Performance Frequency Synthesizers and Rate Converters

The miClockSynth ZL30260–ZL30267 family of high-performance, any-rate frequency converter synthesizers simplifies board design by generating ultra-low-jitter clock signals from a single crystal, crystal oscillator, or reference clock while generating additional independent frequency families.

With four independent frequency families on one chip that have best-in-class jitter performance and up to two fractional-N APLLs with both a fractional and integer divider, the ZL30260–ZL30267 family creates a complete clock-tree, improving design reliability, reducing bill of materials (BOM) cost, and simplifying the design by replacing multiple crystals and peripheral timing components.

ZL30267 Block Diagram



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

Availability and Support

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

Key Features

Best-in-Class Jitter Performance

- Ultra-low output jitter: 170 fs RMS

Four Independent Frequency Families

- Replaces multiple high-performance crystals and crystal oscillators
- Each Frac-N APLL has a fractional and integer divider

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

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

Configurable Output Format

- Native LVDS, LVPECL, HCSL, 2x CMOS, or HSTL per output

Spread-Spectrum Modulation Mode

- Meets peripheral component interconnect express (PCIe) standard requirements

Flexible Power Supply Banks

- Outputs are grouped into six power supply banks to allow for 1.5 V to 3.3 V of signal swing on a CMOS or HSTL, enabling glueless interfacing with neighboring components

Factory-Preprogrammed Devices

- miClockDesigner's™ web tool creates devices to power-up with preset clocks while reducing time-to-market, simplifying inventory, and reducing BOM costs

Key Benefits

Reduces BOM Cost and Board Space

- Complete clock-tree solution replaces multiple crystal oscillators and high-cost VCXOs

Increases Design Efficiency

- Highly configurable outputs and multiple pin-compatible variants
- Up to eight custom configurations per device or part number selectable with external hardware pins

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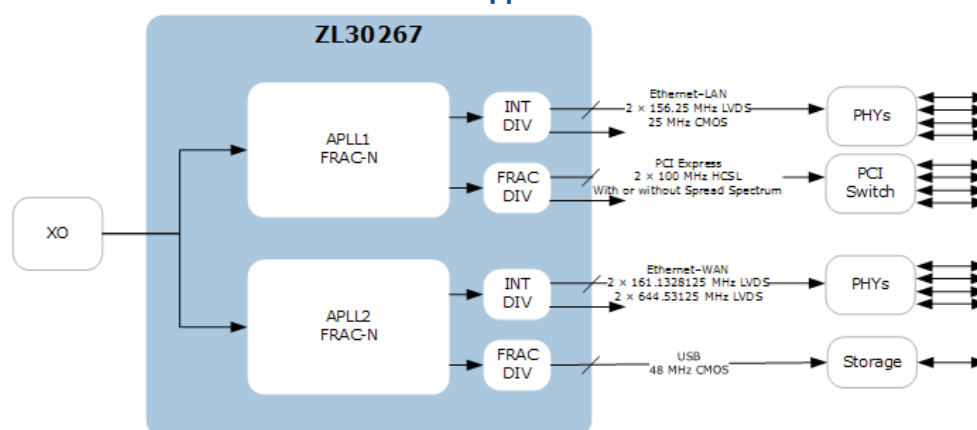
Microsemi's miClockSynth ZL30260–ZL30267 devices can create a complete clock tree, replacing a number of multipliers, synthesizers, and oscillators on the board, improving design reliability while reducing BOM costs and simplifying design.

With the devices' ultra-low output jitter of 170 fs RMS, they also offer any-rate frequency conversion—with any input frequency ranging from 10 MHz to 1.2 GHz to any output frequency from 1 Hz up to 1 GHz across four different frequency families.

The miClockSynth ZL30260–ZL30267 devices also feature an intuitive graphical user interface (GUI) and the ability to create factory pre-programmed devices with ease using Microsemi's web tool, miClockDesigner. These pre-programmed devices—which have pin-selectable configurations at power-up—ensure clock availability and proper system bring-up for all applications.

For electromagnetic interference (EMI)-sensitive applications (such as PCIe Gen 3 and Gen 4 in datacenters, servers, and storage) the miClockSynth ZL30260–ZL30267 devices can perform SSM to spread the energy of the signal and thereby reduce the application's EMI.

Datacenter Ethernet Switch/Router Application



Selector Guide

| Part Number | PLLs | Memory | Outputs | Package |
|-------------|--------|------------------------------|---------|-----------------|
| ZL30260 | 1-APLL | External EEPROM/internal ROM | 6 | 8 mm × 8 mm QFN |
| ZL30261 | 1-APLL | Internal EEPROM | 6 | 8 mm × 8 mm QFN |
| ZL30262 | 1-APLL | External EEPROM/internal ROM | 10 | 8 mm × 8 mm QFN |
| ZL30263 | 1-APLL | Internal EEPROM | 10 | 8 mm × 8 mm QFN |
| ZL30264 | 2-APLL | External EEPROM/internal ROM | 6 | 8 mm × 8 mm QFN |
| ZL30265 | 2-APLL | Internal EEPROM | 6 | 8 mm × 8 mm QFN |
| ZL30266 | 2-APLL | External EEPROM/internal ROM | 10 | 8 mm × 8 mm QFN |
| ZL30267 | 2-APLL | Internal EEPROM | 10 | 8 mm × 8 mm QFN |



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