

## Product Preview

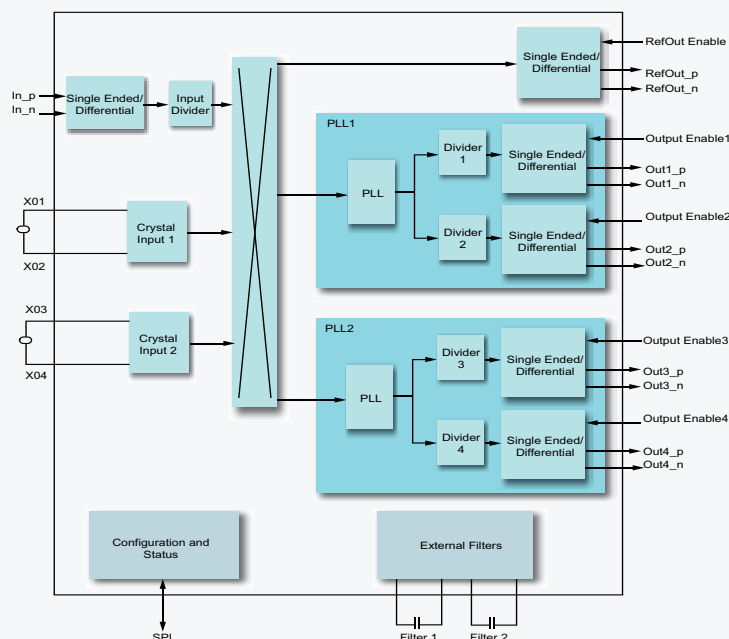
## PRECISION UNIVERSAL CLOCK GENERATORS



The ZL30240 family of Universal Clock Generators simplifies traditional board design by synthesizing frequencies from a reference input clock or a common low cost crystal providing up to 5 low jitter output clocks from 12 MHz to 940 MHz.

The family consists of a dual-channel (ZL30240) and a single channel (ZL30241) clock generator. With a small package and low power consumption, the ZL30240 family targets clock synthesis applications with tough power budgets and tight board real estate restrictions.

The ZL30240 family reduces BOM cost by replacing multiple crystals and peripheral timing components. When used together with Microsemi Clock Distribution Fanout Buffers, the complete timing solution improves board performance.



## Applications

- Clocks for NPUs, FPGAs, 10G CDRs, high-speed ADC, PCIe interface devices, Ethernet switches and PHYs.
- Timing generation for optical, storage, networking, and broadcast video applications.
- OTN, SONET, WDM, Wireless applications.

## Key Features

## Each PLL Synthesizes an Independent Frequency Set

- Crystal input: 22 MHz to 54 MHz
- Crystal Oscillator: 22 MHz to 180 MHz
- Reference input
  - LVCMOS (22 MHz to 180 MHz)
  - LVDS, LVPECL, or HCSL (22 MHz to 864 MHz)

## Any Output Frequency

- Independently configured for LVDS, LVPECL, HCSL, LVCMOS
- Frequency range from 12 MHz – 940 MHz
- Dynamic Frequency programming

## Easy Configuration

- Factory/user programmable through SPI

## Modes of Operation

- Integer, Fractions, or Ratio (FEC support)
- NCO

## Key Benefits

## Reduces BOM Cost and Board Space

- Replaces multiple crystal oscillators and external timing components
- Small package 7x7 mm
- Low Power, <0.8 W

## Increases Design Efficiency

- Easy programming: factory or SPI
- User friendly GUI enables custom configurations

# ZL30240 and ZL30241

## Precision Universal Clock Generators

The ZL30240 family of universal clock generators help lower bill of material costs, reduce board space requirements, simplify design complexity and improve performance reliability by replacing multiple external components traditionally used to time processors, memory chips, PHY chips and more with a fully integrated single chip solution.

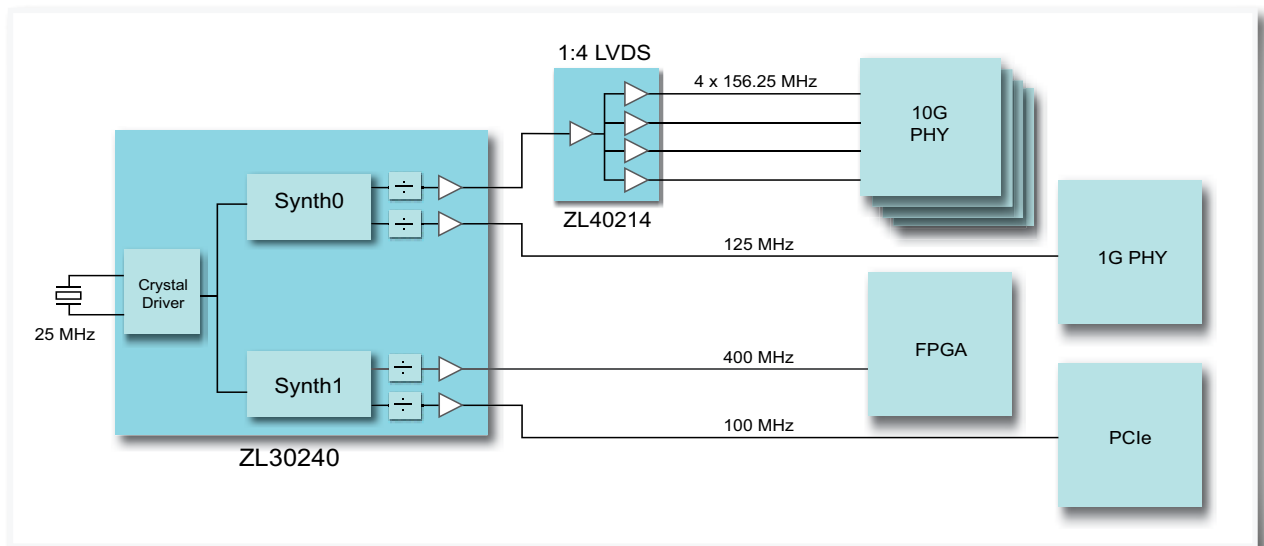
The ZL30240 family integrates 1 or 2 independent ultra low jitter synthesizers generating up to 4 differential or CMOS clocks. Two PLLs, each with a crystal, crystal oscillator or external reference input frequency, produce up to four unique output frequencies. Input references can be shared among the PLLs.

Three PLL modes of operation can be selected. Integer mode provides the lowest noise with a maximum jitter of 275 fs RMS. The fractional mode has a frequency resolution of 1 ppb or better with a maximum jitter of 400 fs RMS. Ratio mode offers frequency translation of an N+X/Y

nature, ideal for translation related frequencies like SONET and OTN. Precise phase alignment is offered, the output phases of each PLL can be independently controlled.

Up to five output buffers are available. Each PLL has two outputs configurable as differential or single ended with individual hardware and software output enables. One for input frequency PLL bypass.

The application diagram below illustrates how a Microsemi Universal Clock Generator can be implemented as a solution to supply all of the clocks necessary for different components on a PCB and replace multiple discrete oscillators. This application example also uses a Microsemi clock distribution fanout buffer supplying additional copies of a clock. Microsemi has designed its clock distribution fanout buffers to work synergistically with the Universal Clock Generators minimizing the impact to the jitter budget allowing for higher performance designs.



## Availability and Support

Precision Universal Clock Generators are in volume production. To learn more about Microsemi new clock generators, visit [www.microsemi.com/hs/Timing.htm](http://www.microsemi.com/hs/Timing.htm). Full information, including complete data sheets and design manuals, is available to registered MyZarlink customers. To register for an account, visit [www.microsemi.com/hs/register.htm](http://www.microsemi.com/hs/register.htm).



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