



# Intel® LXT16598L and LXT16598H

622MHz/809MHz Generic Phase Locked Loop (PLL) Clock Synthesizers

## Product Description

In today's price-sensitive communications environment, network equipment designers are seeking flexible, high-performance integrated circuitries for cost-effective timing applications in a wide variety of optical-network designs.

The Intel® LXT16598L/H is a generic Phase Locked Loop (PLL) clock synthesizer in two versions to support different frequency ranges:

- The Intel LXT16598L on-board Voltage Controlled Oscillator (VCO) supports the frequency range of 622MHz to 675MHz.
- The Intel LXT16598H on-board VCO supports the frequency range of 675MHz to 809MHz.

The LXT16598L/H is used in SDH STM 16/64 and SONET OC-48/192 telecommunications systems, Optical Transport Network (OTN) systems with Forward Error Correction (FEC), Gigabit Ethernet systems, and fiber-optic test equipment. The device features a Phase Frequency Comparator (PFC), LC-VCO, and has three separate, programmable differential clock outputs in the range between 1/1 and 1/64 of the reference clock.

The system reference clock may range from 9MHz to 809MHz, and can select up to three external VCXO/VCSOs in addition to the on-board VCO. The polarity of VCXO/VCSO driver outputs can be changed to support VCXO/VCSOs, with either positive or negative gain constants.

This two-chip solution can be used to support up to 30 percent overhead for 10Gbps FEC applications. The devices are housed in a



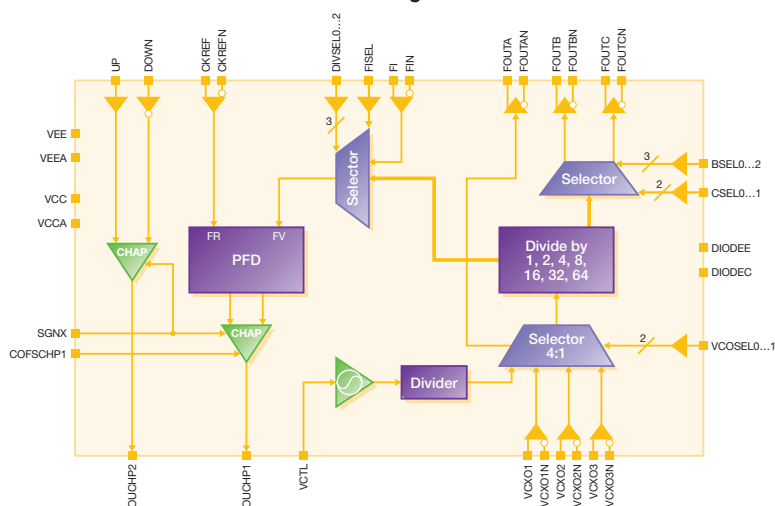
48-pin QFN 7x7mm low form factor package, and are operated from a single +3.3V power supply with a low power dissipation, less than 0.5W.

With the Intel LXT16598L/H, customers can focus resources on features that differentiate their products from the competition instead of having to design their own clock architectures or use more costly modules.

## Key Applications

- SDH STM 16/64, SONET OC-48/192 FEC or OTN applications—can be used as a gearbox for synchronous or asynchronous clocking operation with FEC devices from Intel or third parties
- SDH STM 64, SONET OC-192 Metro/Long-Haul Modules—can be used for clock synthesis in MSA modules
- SDH STM 16/64, SONET OC-48/192, or GbE applications—can be used for jitter cleanup, where the incoming system reference clock is cleaned against an external VCXO

Block Diagram



## Benefits