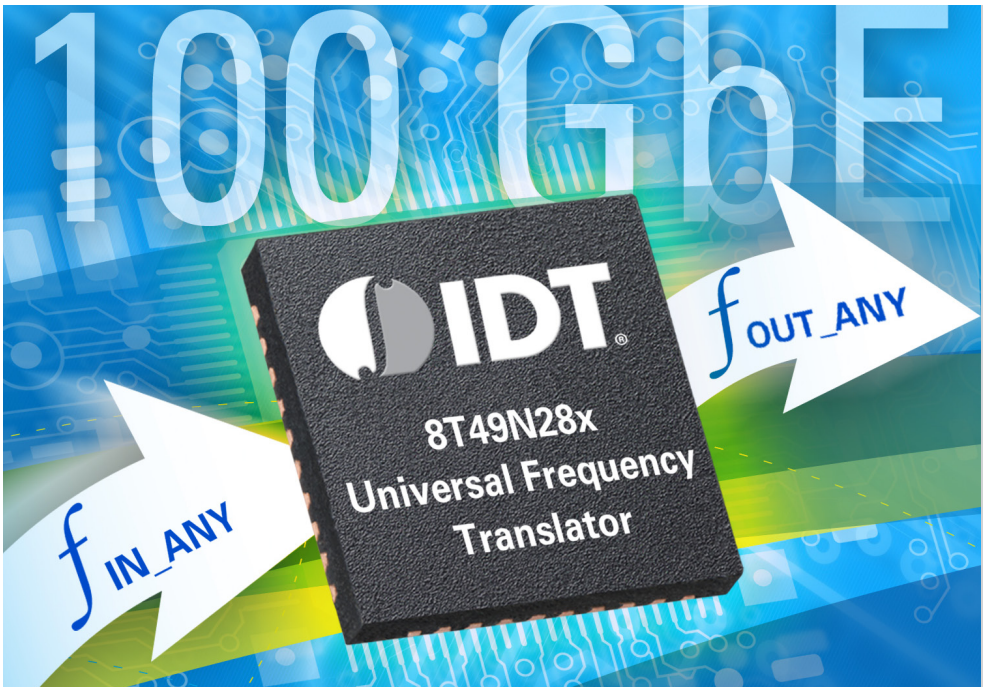
Integrated Device Technology

Third Generation Universal Frequency Translator

ANALOG AND RF | INTERFACE AND CONNECTIVITY | MEMORY AND LOGIC | POWER MANAGEMENT | **TIMING AND SYNCHRONIZATION**

FEATURES AND BENEFITS

- Eight independently-programmable clocking outputs
- Supports SDH/SONET and Synchronous Ethernet clocks including all FEC rate conversions
- Two differential outputs meet jitter limits for 100G Ethernet and STM-256/OC-768
  - <0.35ps RMS (including spurs): 12kHz to 20MHz
- All outputs <0.7ps RMS (including spurs) 12kHz to 20MHz
- Operating modes: locked to input signal, holdover and free-run
- Initial holdover accuracy of ±50ppb
- Accepts two LVPECL, LVDS, LVHSTL, HCSL or LVCMOS input clocks
- Accepts frequencies ranging from 8kHz up to 875MHz
- Auto and manual input clock selection with hitless switching
- Clock input monitoring, including support for gapped clocks
- Phase-Slope Limiting and Fully Hitless Switching options to control output phase transients
- Operates from a 10MHz to 40MHz fundamental-mode crystal
- Generates eight LVPECL /LVDS or sixteen LVCMOS output clocks
- Output frequencies ranging from 8kHz up to 1.0GHz (diff)
- Output frequencies ranging from 8kHz to 250MHz (LVCMOS)
- General Purpose I/O pins with optional support for status & control
- Programmable PLL bandwidth settings:
  - 0.5Hz, 1Hz, 2Hz, 4Hz, 8Hz, 16Hz, 32Hz, 64Hz, 128Hz, 256Hz or 512Hz
- Programmable output phase delays in steps as small as 16ps
- -40°C to 85°C ambient operating temperature



Solving Tomorrow's Timing Challenges Today

The IDT 8T49N28x UFT family of timing devices offers eight independently-programmable clocking outputs with the flexibility to apply virtually any input frequency and select virtually any output frequency. The devices' high level of integration and low jitter eliminates the need for separate frequency translation, redundancy management, and jitter attenuation devices – empowering system designers to save cost and board area by consolidating those functions into a single device. In addition, the devices offer significant flexibility in configuration and ease-of-programmability with IDT's Timing Commander software, making it useful in a variety of sockets and modes of operation with minimal design effort.

The IDT 8T49N28x devices are available with one or two PLLs in a single package, depending on the needs of the application. When configured as a frequency synthesizer, the device can utilize a low-cost, readily-available 10 MHz to 40 MHz crystal to produce any frequency from 8 kHz to 1.0 GHz, regardless of the crystal frequency used. In a frequency translator configuration, the devices accept up to four input reference clocks per PLL from 8 kHz to 875 MHz, switching between them as necessary to generate any output frequency from 8 kHz to 1.0 GHz. Each output is individually programmable as LVPECL, LVDS, or as a pair of LVCMOS signals.

Fully supported by IDT's Timing Commander GUI (graphical user interface), the 8T49N28x family can be easily programmed to meet the system's requirements without sifting through register tables in the datasheet. Additional GUI-based controls, calculations, and status monitors allow the user to experiment with and fine-tune the configuration. IDT's Timing Commander software and 8T49N28x product configuration files can be downloaded online at www.idt.com/go/TimingCommander.

For More Information
Visit www.idt.com/go/uft

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