VersaClock® Low Power Programmable Clocks

IDT Integrated Device Technology

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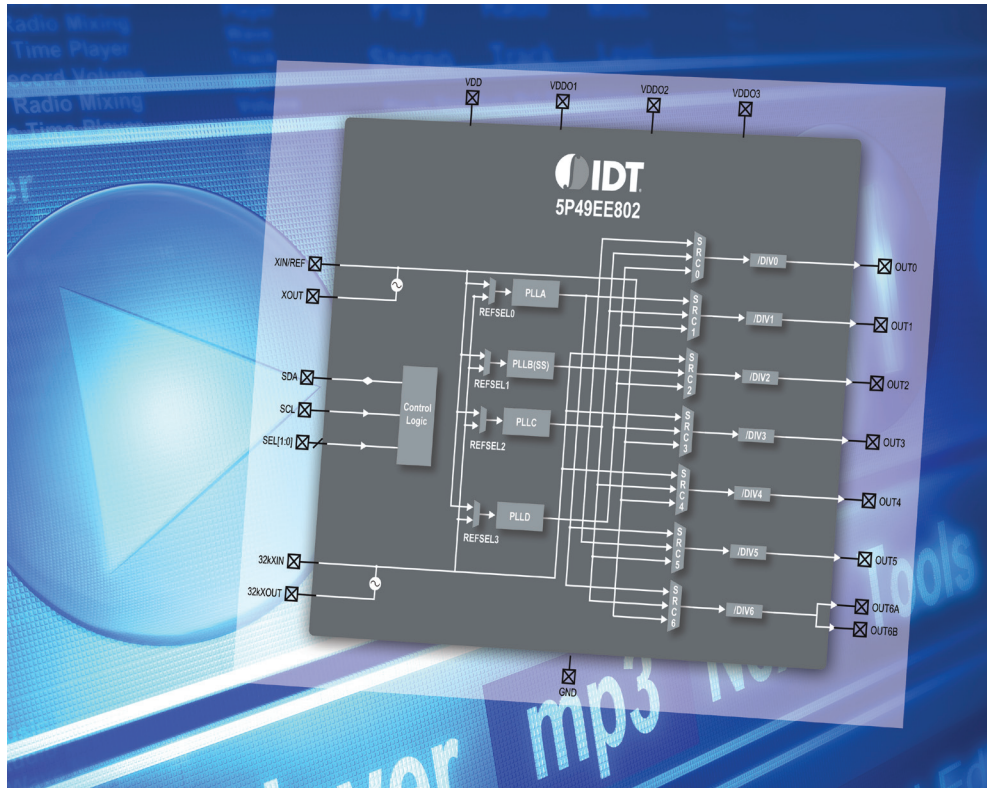
KEY FEATURES

- Low Power PLLs
  - 4-8mW per clock output
  - 20µW in power down mode
  - 200µW power down with 32.768 kHz active
- Supports clock input, TCXO on crystal input
- 32.768 kHz clock support
- Spread spectrum for EMI reduction
  - Unique video spread capability
- Small 3x3mm and 4x4mm QFN package
- Synthesizes kHz to120MHz outputs
- Less than 200ps (pico seconds) cycle-cycle jitter (typical)
- 1.8-3.3V LVTTL or LVDS outputs

TARGET APPLICATIONS

- Smart Books
- eBooks
- Mobile handsets
- Digital still cameras
- Camcorders
- MP3 or media player
- Portable medical equipment
- Point-of-sale terminals

IDT VersaClock LP (Low-Power) products save cost, reduce power and board space and greatly increase versatility in battery powered consumer and computing applications.
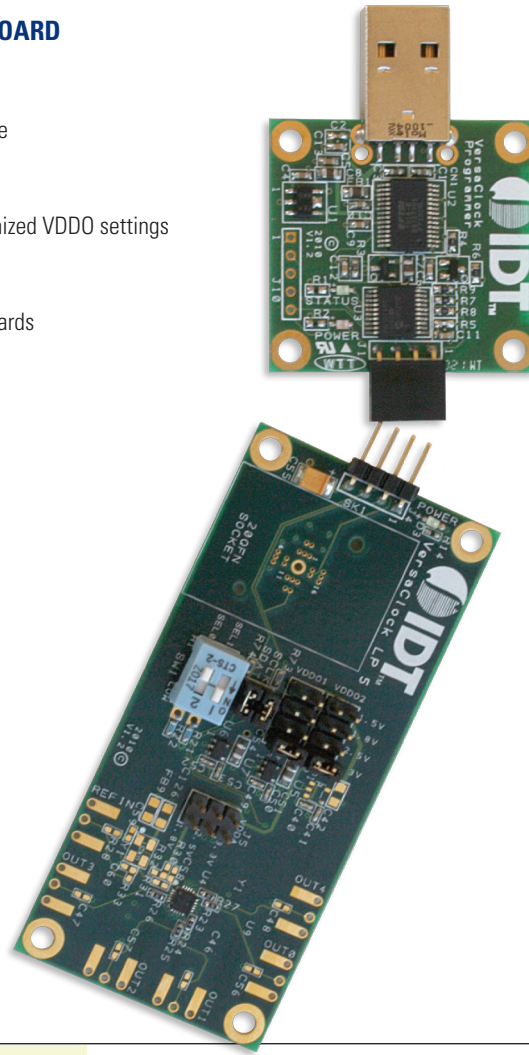
Low-power clock provides many solutions

VersaClock® LP products from Integrated Device Technology allow the designer to save board space, power consumption and cost by replacing crystals, oscillators and buffers with a single timing device. Exceptional versatility and configurability allow for maximum freedom in the design process. VersaClock LP devices may be used in any battery powered application, such as mobile handsets, digital cameras, camcorders, eBooks, or Smart books.

There are four internal PLLs, each individually programmable, allowing for up to eight unique frequencies. The frequencies are generated from a single reference clock or crystal. When used with a TCXO (Temperature Compensated Crystal Oscillator) input, all outputs will track the source accuracy, allowing consolidation of multiple TCXOs.

VersaClock devices can be programmed through the use of the I²C interfaces. The programming interface enables the device to be programmed when it is in normal operation. An internal EEPROM allows the user to save and restore the configuration of the device without having to reprogram it on power-up. VersaClock LP products from IDT provide an almost universal solution for a variety of high performance clock applications.

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VERSACLOCK LP EVALUATION BOARD

- Direct USB interface
- Program device using VersaClock software
- Crystal or TCXO clock input
- On board programmable LDOs for optimized VDDO settings
- Matched differential output traces
- Interfaces to multiple socket daughtercards to program additional devices

FEATURES

- Four internal PLLs
- 1 PLL supports spread spectrum generation, including video spread mode
- Internal non-volatile EEPROM
- Each PLL has a 7-bit pre-scaler and a 12-bit feedback divider
- Outputs may be independently programmed to VDDO settings
- On-chip 32.768 kHz oscillator provides real time clocksource and may be used for low power for processor clocks generation
- Fast (400 kHz) mode I²C serial interface for device configuration
  additional devices
- 7-bit output divider clocks
- Input frequency range: 1MHz to 50 MHz, 32 kHz crystal (on some devices)
- Programmable loop bandwidth settings
- Output frequency range: 5 kHz to 120 MHz
- -40 to +85°C industrial temperature operation
- Reference crystal input with programmable linear load capacitance
  - Crystal frequency range: 8 to 50 MHz (maximum crystal range is best effort)
- I/O Standards:
  - Outputs: 1.8-3.3 V LVTTL / LVCMOS
  - Outputs: 3.3 V LVDS
  - Inputs: LVTTL / LVCMOS, Buffered Sine wave

VERSACLOCK LP SOFTWARE OPTIMIZES CONFIGURATIONS

- Automatically optimizes spread spectrum, loop band widths and outputs
- Provides lock to pin locking and simultaneous, multi-register configuration
- Bit-level manipulation
- Direct software interface with VersaClock LP evaluation board
- Free download from *www.IDT.com/go/VersaClockLP*

Discover what IDT know-how can do for you:
www.IDT.com/go/VersaClockLP

VersaClock LP Parts

Part No	Package	Output No.	32 kHz Support	Output Type	Output Type
5P49EE801	QFN28 (4x4mm)	8	Yes	LVTTL LVDS (1 pair)	3
5P49EE802	QFN28 (4x4mm)	8	Yes	LVTTL	3
5P49EE601	QFN24 (4x4mm)	6	Yes	LVTTL LVDS (1 pair)	3
5P49EE602	QFN24 (4x4mm)	6	Yes	LVTTL	3
5P49EE502	QFN20 (3x3mm)	5	No	LVTTL	2

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