

VersaClock™ III Programmable Clocks

IDT VersaClock products save cost, reduce board space and greatly increase versatility in consumer, data communications, telecommunications and networking applications.

VersaClock III Software optimizes configurations

- Automatic analysis and adjustment of spread spectrum, loop bandwidths and outputs
- Provides clock to pin locking and multi-register configuration
- Bit-level manipulation
- Direct software interface with VersaClock III evaluation board
- Free download from www.idt.com/go/versaclock

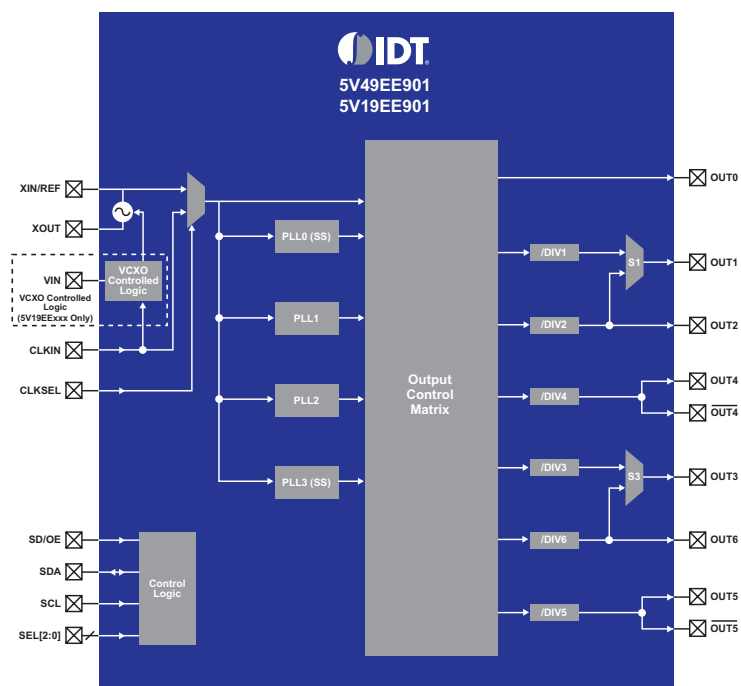
Multi purpose clock provides many solutions

VersaClock™ products allow designers to save board space 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.

There are four internal PLLs, each individually programmable, allowing for up to seven unique frequencies. These frequencies are generated from a single reference clock, which can come from one of two redundant clock inputs. A glitchless automatic or manual switchover function allows the redundant clock to be selected during normal operation.

VersaClock devices are highly configurable and can be programmed through the use of the I²C interface. 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 products from IDT provide an almost universal solution for a variety of high performance clock applications.



OUT1 & OUT2, OUT4 & $\overline{\text{OUT4}}$, OUT3 & OUT6, and OUT5 & $\overline{\text{OUT5}}$ pairs can be configured to be LVDS, LVPECL or HCSL, or two single-ended LVTTTL outputs.

VersaClock III Evaluation board

- Direct USB interface
- Configure device using VersaClock software
- Crystal or SMA clock input
- On board programmable LDOs for optimized VDDO settings
- Matched differential output traces
- Multiple daughtercards with sockets available to program additional devices

Features

- Four internal PLLs
- Internal non-volatile EEPROM
- Fast (400 kHz) mode I²C serial interface for device configuration
- Output frequency range: 4.9 kHz to 500 MHz
- Input clock frequency range: 1 MHz to 200 MHz
- Reference crystal input with programmable linear load capacitance
 - Crystal frequency range: 8 to 50 MHz
- Two PLLs support spread spectrum generation
- Fractional divide capability on one PLL
- Optional integrated VCXO
- Each PLL has a 7-bit reference divider and a 12-bit feedback divider
- 8-bit output divider clocks
- Programmable loop bandwidth settings
- Programmable output inversion to reduce jitter
- I/O Standards:
 - Outputs – 1.8/2.5/3.3 V LVTTTL / LVCMOS (device dependent)
 - Outputs – LVPECL, LVDS and HCSL
 - Inputs – LVTTTL / LVCMOS
- Redundant clock inputs with glitch-less auto switchover
- -40 to +85C industrial temperature operation

VersaClock III Parts

XO	Package	Output No.	Output Type	VDDO *
5V49EE901	TSSOP28	9	LVTTTL, LVPECL, LVDS, HCSL	No
	QFN32 (5x5mm)	9	LVTTTL, LVPECL, LVDS, HCSL	No
5V49EE902	QFN32 (5x5mm)	9	LVTTTL, LVPECL, LVDS, HCSL	Yes - 4
5V49EE903	TSSOP28	9	LVTTTL	No
	QFN32 (5x5mm)	9	LVTTTL	No
5V49EE904	QFN32 (5x5mm)	9	LVTTTL	Yes - 4
5V49EE701	QFN28 (4x4mm)	7	LVTTTL, LVPECL, LVDS, HCSL	No
5V49EE702	QFN28 (4x4mm)	7	LVTTTL, LVPECL, LVDS, HCSL	Yes - 3
5V49EE703	QFN28 (4x4mm)	7	LVTTTL	No
5V49EE704	QFN28 (4x4mm)	7	LVTTTL	Yes - 3
5V49EE501	QFN24 (4x4mm)	5	LVTTTL, LVPECL, LVDS, HCSL	No
5V49EE502	QFN24 (4x4mm)	5	LVTTTL, LVPECL, LVDS, HCSL	Yes - 2
5V49EE503	QFN24 (4x4mm)	5	LVTTTL	No
5V49EE504	QFN24 (4x4mm)	5	LVTTTL	Yes - 2

VCXO	Package	Output No.	Output Type	VDDO *
5V19EE901	TSSOP28	9	LVTTTL, LVPECL, LVDS, HCSL	No
	QFN32 (5x5mm)	9	LVTTTL, LVPECL, LVDS, HCSL	No
5V19EE902	QFN32 (5x5mm)	9	LVTTTL, LVPECL, LVDS, HCSL	Yes - 4
5V19EE903	TSSOP28	9	LVTTTL	No
	QFN32 (5x5mm)	9	LVTTTL	No
5V19EE904	QFN32 (5x5mm)	9	LVTTTL	Yes - 4
5V19EE603	QFN28 (4x4mm)	6	LVTTTL	No
5V19EE604	QFN28 (4x4mm)	6	LVTTTL	Yes - 3
5V19EE403	QFN24 (4x4mm)	4	LVTTTL	No
5V19EE404	QFN24 (4x4mm)	4	LVTTTL	Yes - 2

* VDDO capability allows 1.8-3.3V output operation

Discover what IDT know-how can do for you.

www.IDT.com/go/versaclock



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