MicroClock™ Programmable Clocks Family

The MicroClock™ programmable clock generator family offers the ultra low-power and tiny form factors demanded by miniature applications. Equipped with innovative features and low-power DCO, these devices support a wide range of battery-powered devices including wearable, hearable, System in Package (SIP) and augmented reality applications.

The embedded crystal option offers board space savings of up to 80% over conventional crystal solutions, and eliminates crystal frequency variance from part-to-part.

An internal one-time-programmable memory allows the user to store a configuration in the device, eliminating the need for programming after power up and provides flexibility on diverse platforms.

MicroClock development kits provide everything needed to validate configuration feasibility, configure a device and verify signal integrity to help designers speed time to market.

FEATURES AND BENEFITS

- Proactive Power Saving (PPS) actively switches modes according to the status of the downstream clocked component
- Dedicated OE pin for each output minimizes power consumption based on performance requirements
- Dynamic Frequency Control (DFC) allows fast changes between pre-selected frequencies for TDM or FSK interfaces
- Multiple output swing options for SOC with low swing clock requirement
- Spread Spectrum technology attenuates system EMI
- Ultra-low power consumption
- Single device adapts to clock requirements of various platforms, facilitating design re-use
- Small packages reduce board space and lower BOM costs

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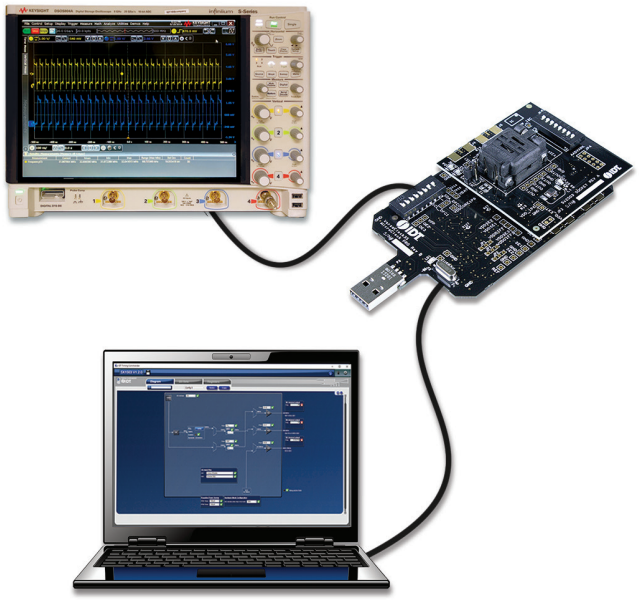
Family Products Table

	5L1503 / 5X1503[1]	5L1503L / 5X1503L[1]	5L1503S / 5X1503S[1]	5L2503 / 5X2503[1]
Power (VDD/VDDO)	1.8V			
Maximum Frequency	100 MHz			125 MHz
Output (rail to rail) Swing–OUT1	1.8V	1.8, 1.2, 1.1, 1, 0.9, 0.8V	1.8V	1.8V / 1.2V
Output (rail to rail) Swing–OUT2/3	1.8, 1.2, 1.1, 1V			1.8V
Clock to Clock Jitter	50 ps (typ)			
Spread Spectrum	NO	NO	YES	YES
I2C Interface	NO / YES	NO / YES	NO / YES	YES
Maximum OE Pin	3			
Power Consumption @ 32 KHz	< 1.5 µA	< 1 µA	< 1.5 µA	< 2 µA
PLLs	1			3
Operating Temperature	-40 to 85 °C			
Package	2.0 x 2.0 mm, 10-DFN			2.5 x 2.5 mm, 12-DFN

[1] **Devices with integrated crystal**

Complete Development Tools

The USB programming board in the MicroClock development kit facilitates communication between IDT's Timing Commander™ GUI and a blank device in the socket to enable rapid programming. The small evaluation board allows easy verification on an existing system board. These complete development tools help ease the design process and speed time to market.



To request samples, download documentation or learn more visit:
idt.com/microclock