

Description

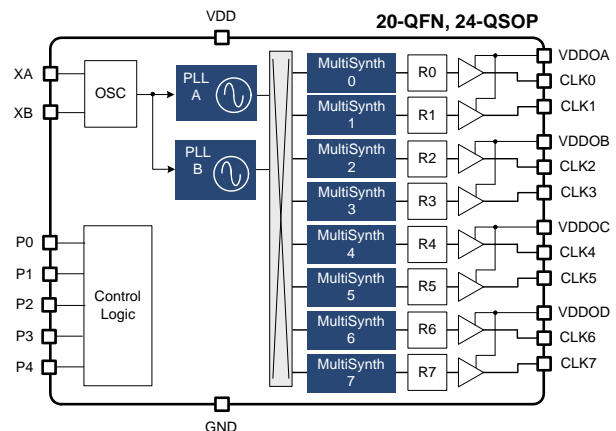
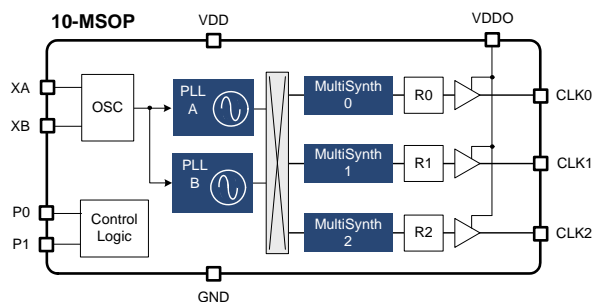
The Si5350/51 are highly flexible, programmable clock generators that can be customized to generate up to eight independent non-integer-related frequencies. The device has eight CMOS clock outputs offered in a space saving 4 mm x 4 mm 20-QFN and a 24-QSOP package, or three clock outputs offered in a 10-MSOP package. Each output has an independent MultiSynth™ fractional divider that accepts a high-frequency reference from one of the device's internal PLLs and accurately divides down the clock to generate unique, non-integer-related frequencies from 8 kHz to 133 MHz. Any combination of output frequencies can be generated by the device. All clocks are generated with 0 ppm frequency synthesis error, enabling the replacement of XOs and PLL-based clocks while simplifying design and minimizing cost. As an added feature, the Si5350/51 features an integrated VCXO which eliminates the need for pullable crystals. The Si5350 features configurable control pin options allowing the direct pin control of frequency select, output enable, spread spectrum enable and powerdown. Each outputs supports 2.5 or 3.3 V operation, eliminating the need for external level translators in mixed-supply applications.

Features

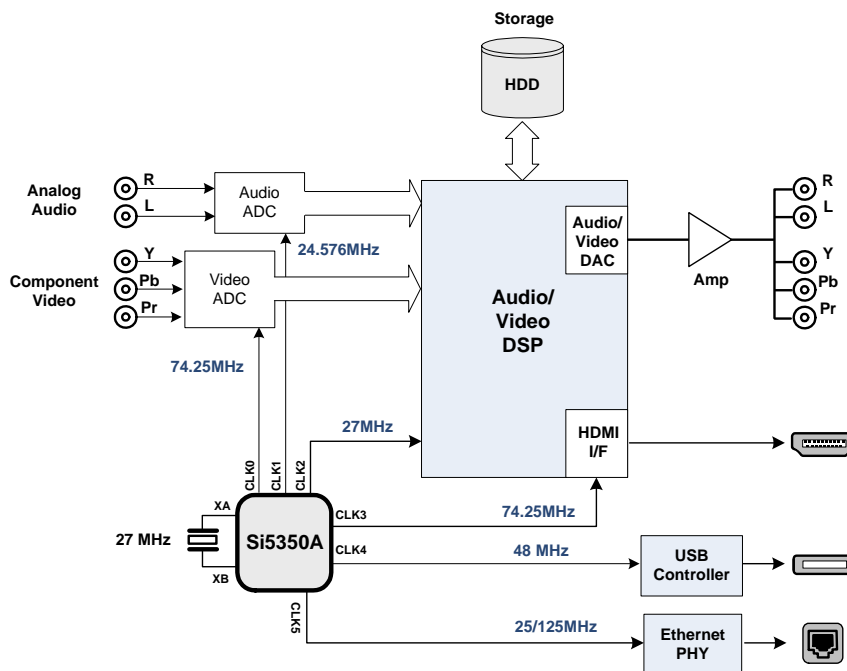
- Generates any frequency on any output
 - 8 kHz to 133 MHz
 - Exact clock synthesis: 0 ppm error
 - Similar frequency flexibility as 8 independent PLLs
- Accepts crystal or external reference clock
- <100 ps period jitter for any configuration
- Glichless switching between output frequencies
- Integrated VCXO eliminates need for pullable crystal
- Si5350 (pin) and Si5351 (I²C) versions
- User-definable control pins:
 - Frequency select, output enable, spread spectrum enable, powerdown
- Spread spectrum clock generation
 - -0.1 to -2.5% down, ±0.1 to ±1.5% center
- Factory and field-programmable versions
- Two week sample lead time for any custom clock
- Small size: 4 mm x 4 mm 20-QFN, 24-QSOP and 10-MSOP
- Industrial temperature range: -40 to +85

Applications

- HDTV, DVD/Blu-ray, set-top box
- Audio/video equipment, gaming
- Printers, scanners, projectors
- Audio DAC/CODEC
- USB Audio
- Residential gateways
- Networking/communication
- Servers, storage



Example Application—Personal Video Recorder/Blu-Ray Player



Product Family Matrix

Function	Control	Input(s)	Outputs/ Pkg	Part Number	Use
Free-running clock generator ¹	Pin	25, 27 MHz xtal	3 (10-MSOP)	Si5350A-A-GT	Field-programming ²
			8 (24-QSOP)	Si5350A-A-GU	
			8 (20-QFN)	Si5350A-A-GM	
	I2C		3 (10-MSOP)	Si5351A-A-GT	In-circuit configurable
			8 (24-QSOP)	Si5351A-A-GU	
			8 (20-QFN)	Si5351A-A-GM	
Free-running clock generator+ VCXO ¹	Pin	25, 27 MHz xtal + analog control voltage	8 (24-QSOP)	Si5350B-A-GU	Field-programming ²
			8 (20-QFN)	Si5350B-A-GM	
			3 (10-MSOP)	Si5350B-A-GT	
	I2C		8 (24-QSOP)	Si5351B-A-GU	In-circuit configurable
			8 (20-QFN)	Si5351B-A-GM	
Free-running and/or synchronous clock generator ¹	Pin	25, 27 MHz xtal	8 (24-QSOP)	Si5350C-A-GU	Field-programming ²
			8 (20-QFN)	Si5350C-A-GM	
			3 (10-MSOP)	Si5350C-A-GT	
	I2C		8 (24-QSOP)	Si5351C-A-GU	In-circuit configurable
			8 (20-QFN)	Si5351C-A-GM	

Note 1. To order a factory-customized Si5350 (e.g. Si5350A-Axxxx-GT), use ClockBuilder web-based utility www.silabs.com/ClockBuilder. Utility assigns unique part number (e.g. Si5350A-A00123-GT)

Note 2. Field programming supported using Silicon Labs development kit