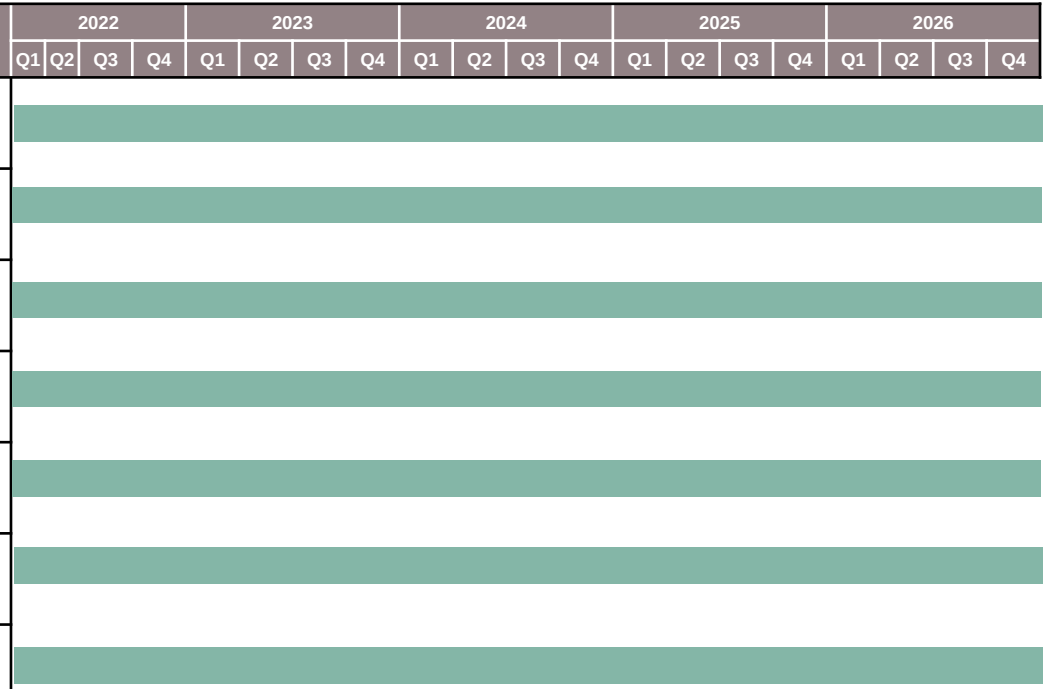
Product Roadmap

Timing Solutions

03/30/2022

Clock Synthesizer Roadmap

	Product Family	Features	(Prod) [EOL]
High Performance	CY27430	4-PLL; Maximum Frequency: 700 MHz 12 Outputs; Diff[1] & SE[1]; PCIe 3.0; VCXO[2]; EMI[3]; 0.7-ps RMS Jitter[4] 1.8 V/2.5 V/3.3 V; Ind[5]; 48-QFN	
	CY27410	4-PLL; Maximum Frequency: 700 MHz 8 Outputs; Diff & SE; PCIe 3.0; VCXO; EMI; 0.7-ps RMS Jitter 1.8 V/2.5 V/3.3 V; Auto A[6] S[7]; 48-QFN	
	CY254x/CY251x	1-4 PLL; Maximum Frequency: 200 MHz 3-9 Outputs; I²C; EMI; Low Power[8] 100-ps CCJ[9]; Ind; 1.8 V/2.5 V/3.0 V/3.3 V 8-SOIC; 8/16/20-TSSOP; 24-QFN	
Standard Performance	CY229x/CY22381x	3-4 PLL; Maximum Frequency: 166 MHz 3-8 Outputs; CMOS; Low Power 200-ps PPJ[10]; VCXO; Ind; 3.3 V/5 V 8/16/20-SOIC; 16-TSSOP	
	CY2239x	3-4 PLL; Maximum Frequency: 400 MHz 5-8 Outputs; LVPECL, CMOS; I²C 400-ps PPJ; VCXO; 3.3 V Ind; 16-TSSOP; 32-QFN	
	CY22800/801	1-PLL; Maximum Frequency: 200 MHz 1-3 Outputs; CMOS; EMI 110-ps CCJ; VCXO; Ind; 3.3 V; 8-SOIC; 8-TSSOP	
	CY22050/150	1-PLL; Maximum Frequency: 200 MHz 6 Outputs; CMOS; I²C 250-ps PPJ; Ind 2.5 V/3.3 V; 16-TSSOP	



[1] Differential and single-ended outputs
[2] Voltage Controlled Crystal Oscillation
[3] Electromagnetic interference reduction using Lexmark profile
[4] Integrated phase noise across 12-kHz to 20-MHz offset
[5] Industrial grade: -40°C to +85°C
[6] AEC-Q100: -40°C to +85°C
[7] AEC-Q100: -40°C to +105°C
[8] Power Management options
[9] Cycle-to-cycle Jitter
[10] Peak-to-peak period Jitter
[11] AEC-Q100: -40°C to +125°C

Oscillator Roadmap

High Performance

Standard Performance

Product Family	Features	(Prod) [EOL]	2020				2021				2022				2023				2024			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
CY294x	1-PLL; Maximum Frequency: 2.1 GHz 1 Output; Diff[1] & SE[1]; 40/100 GbE; VCXO[2]; 0.11-ps RMS Jitter[3]; Ind[4]; 16-QFN																					
CY51x7	1-PLL; Maximum Frequency: 2.1 GHz 1 Output; Diff & SE; 40/100 GbE; VCXO; 0.11-ps RMS Jitter; Ind; 1.8 V/2.5 V/3.3 V; WAFER/DIE																					
CY2037/ 5037	1-PLL; Maximum Frequency: 133 MHz 1 Output; CMOS; 100-ps CCJ; Ind; 3.3 V/5.0 V; WAFER																					
CY5057	1-PLL; Maximum Frequency: 170 MHz 1 Output; CMOS; EMI; <200-ps CCJ; Ind; 3.3 V/5.0 V; WAFER																					

[1] Differential and single-ended outputs
[2] Voltage Controlled Crystal Oscillation
[3] Integrated phase noise across 12-kHz to 20-MHz offset
[4] Industrial grade: -40°C to +85°C
[5] Electromagnetic interference reduction using Lexmark profile
[6] Cycle-to-cycle Jitter

Products supported by Longevity Program unless noted

Concept **Samples** **Production** **EOL - LTB** **EOL - LTS**

Clock Buffer Roadmap

Product Family	Features	(Prod) [EOL]	2020				2021				2022				2023				2024			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
CY230x/EP0x (Zero Delay)	Maximum Frequency: 220 MHz 2–9 Outputs; LVCMOS; 2.5 V/3.3 V/5 V 22-ps CCJ[3]; Ind; Auto A[4] 8/16-SOIC; 16-TSSOP; WAFER																					
CY230xNZ (Non-Zero Delay)	Maximum Frequency: 200 MHz 4–18 Outputs; LVCMOS 100-ps Op-Op Skew; Ind 2.5 V/3.3 V; 8-TSSOP, 16-SOIC																					
CY23S0x (Zero Delay)	Maximum Frequency: 133 MHz 5–9 Outputs; LVCMOS Spread Aware; 90-ps CCJ; Ind; 2.5 V/3.3 V; 8/16-SOIC; 16-TSSOP																					

Products supported by Longevity Program unless noted

Concept | Samples | Production | EOL - LTB | EOL - LTS

[1] Additive RMS Phase Jitter
[2] Industrial grade: -40°C to +85°C
[3] Cycle-to-cycle Jitter
[4] AEC-Q100: -40°C to +85°C

Timing Solutions Portfolio

› Programmable | High-Performance | EMI Reduction | Automotive

	Clock Synthesizers	Oscillators	Clock Buffers
High Performance	**CY27410** 4-PLL; Max Freq: 700 MHz 12 Outputs; Diff[1] & SE[1]; PCIe 3.0 VCXO[2]; EMI[3]; 0.7-ps RMS Jitter[4] 1.8 V/2.5 V/3.3 V; Ind[5]; 48-QFN **CY27430** 4-PLL; Max Freq: 700 MHz 8 Outputs; Diff & SE; PCIe 3.0 VCXO; EMI; 0.7-ps RMS Jitter 1.8 V/2.5 V/3.3 V; Auto A[6] S[7]; 48-QFN **CY29430** 1-PLL; Max Freq: 2.1 GHz 1 Output; Diff & SE; 40/100 GbE VCXO; 0.11-ps RMS Jitter; Ind 16-QFN	**CY51x7** 1-PLL; Max Freq: 2.1 GHz 1 Output; Diff & SE; 40/100 GbE VCXO; 0.11-ps RMS Jitter; Ind 1.8 V/2.5 V/3.3 V; WAFER/DIE	
Standard Performance	**CY254x/CY251x** 1–4 PLL; Max Freq: 200 MHz 3–9 Outputs; I²C; EMI; Low Power[9] 100-ps CCJ[10]; Ind; 1.8/2.5/3.0/3.3 V 8-SOIC; 8/16/20-TSSOP; 24-QFN **CY229x/CY22381x** 3–4 PLL; Max Freq: 166 MHz 3–8 Outputs; CMOS; Low Power 200-ps PPJ[11]; VCXO; Ind; 3.3/5 V 8/16/20-SOIC; 16-TSSOP **CY2239x** 3–4 PLL; Max Freq: 400 MHz 5–8 Outputs; LVPECL, CMOS; I²C 400-ps PPJ; VCXO; 3.3 V Ind; 16-TSSOP; 32-QFN **CY22800/801** 1-PLL; Max Freq: 200 MHz 1-3 Outputs; CMOS; EMI 110-ps CCJ; VCXO; Ind 3.3 V; 8-SOIC; 8-TSSOP **CY22050/150** 1-PLL; Max Freq: 200 MHz 6 Outputs; CMOS; I²C 250-ps PPJ; Ind[5] 2.5/3.3 V; 16-TSSOP	**CY2037/ 5037** 1-PLL; Max Freq: 133 MHz 1 Output; CMOS 100-ps CCJ; Ind 3.3/5.0 V; WAFER **CY5057** 1-PLL; Max Freq: 170 MHz 1 Output; CMOS; EMI <200-ps CCJ; Ind 3.3/5.0 V; WAFER	**CY230x/EP0x (Zero Delay)** Max Freq: 220 MHz 2–9 Outputs; LVCMOS ; 2.5/3.3/5 V 22-ps CCJ; Ind[5]; Auto A 8/16-SOIC; 16-TSSOP; WAFER **CY230xNZ/ 2994x (Non-Zero Delay)** Max Freq: 200 MHz 4–18 Outputs; LVCMOS 100-ps Op-Op Skew; Ind 2.5/3.3 V; 8-TSSOP, 16-SOIC **CY23S0x (Zero Delay)** Max Freq: 133 MHz 5–9 Outputs; LVCMOS Spread Aware; 90-ps CCJ; Ind 2.5/3.3 V; 8,16-SOIC; 16-TSSOP

[1] Differential and single-ended outputs
[2] Voltage Controlled Crystal Oscillation
[3] Electromagnetic interference reduction using Lexmark profile
[4] Integrated phase noise across 12-kHz to 20-MHz offset
[5] Industrial grade: -40°C to +85°C
[6] AEC-Q100: -40°C to +85°C
[7] AEC-Q100: -40°C to +105°C
[8] Additive RMS phase jitter
[9] Power Management options
[10] Cycle-to-cycle jitter
[11] Peak-to-peak period jitter
[12] AEC-Q100: -40°C to +125°C

Status	Conce	Developme	Samplin	Production	EOL
Availability			QQYY	QQYY	QQYY

CY27410: High-Performance 4-PLL Clock Generator

Applications

Multifunction printers, digital TVs, Blu-ray recorders, home gateways, femtocells, routers, and switches

Features

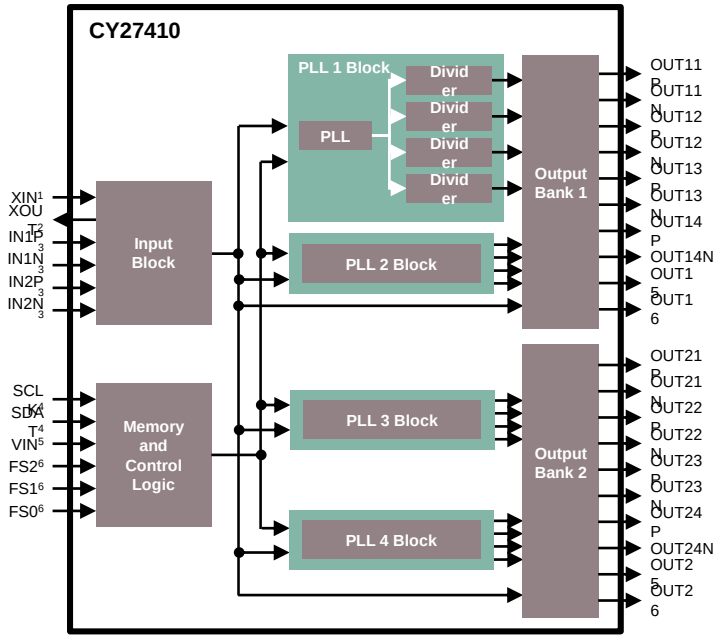
- **Twelve Outputs**
  - Eight configurable (differential or single-ended)
  - Four single-ended
- **Specifications**
  - High frequency: 700-MHz differential, 250-MHz single-ended
  - RMS phase jitter <0.7 ps (typical)
  - Reference clock support for PCIe 3.0, SATA 2.0, and 10 GbE
  - Industrial temperature grade
- **Additional Features**
  - Pin select and I²C programming
  - Configurable as zero or non-zero delay buffer
  - Glitch-free frequency switching
  - Frequency select option to choose from eight preprogrammed configurations
  - Early/late clocks
  - PLL cascading
  - Voltage-controlled frequency synthesis (VCFS)
- **RoHS-Compliant Package**
  - Available in a 7 mm x 7 mm 48-pin QFN package

Collateral

Datasheet: 4-PLL High-Performance Clock Generator (CY274X)

[1] Crystal input
[2] Crystal output
[3] Reference clock inputs
[4] Serial port
[5] Voltage input pin for VCFS
[6] Frequency select inputs

Four-PLL Spread-Spectrum Clock Generator



Availability

Production: Now

CY27430: High-Performance 4-PLL Clock Generator

Applications

Car infotainment and navigation systems

Features

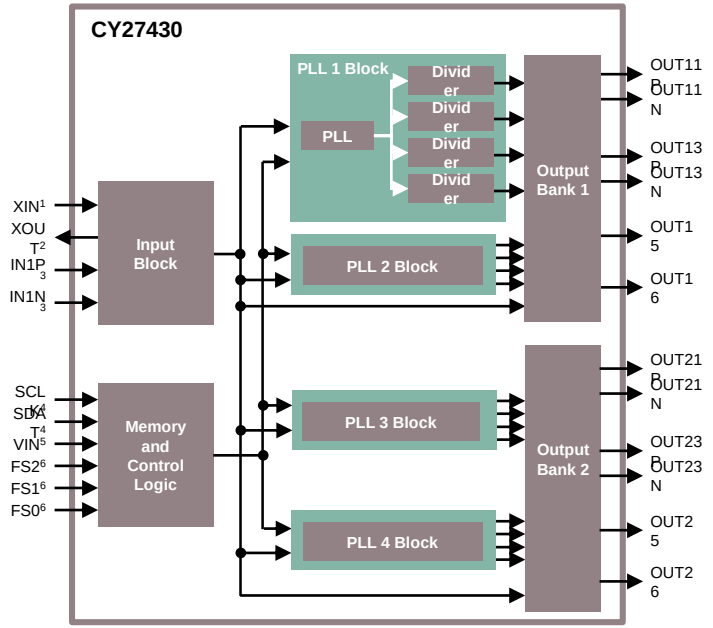
- **Eight Outputs**
  - Four configurable (differential or single-ended)
  - Four single-ended
- **Specifications**
  - High frequency: 700-MHz differential, 250-MHz single-ended
  - RMS phase jitter <0.7 ps (typical)
  - Reference clock support for PCIe 3.0, SATA 2.0, and 10 GbE
  - AEC Q-100 qualified (-40°C to +105°C)
- **Additional Features**
  - Pin select and I²C programming
  - Configurable as zero or non-zero delay buffer
  - Glitch-free frequency switching
  - Frequency select
  - Early/late clocks
  - PLL cascading
  - Voltage-controlled frequency synthesis (VCFS)
- **RoHS-Compliant Package**
  - Available in a 7 mm x 7 mm 48-pin QFN package

Collateral

Preliminary Datasheet: Contact Sales

[1] Crystal input
[2] Crystal output
[3] Reference clock inputs
[4] Serial port
[5] Voltage input pin for VCFS
[6] Frequency select inputs

Four-PLL Spread-Spectrum Clock Generator



Availability

Production: Now

CY29430: High-Performance 1-PLL Clock Synthesizer

Applications

Routers, switches, base stations, storage area networks, network backplanes, wireless infrastructure, military/aerospace, video, test and measurement

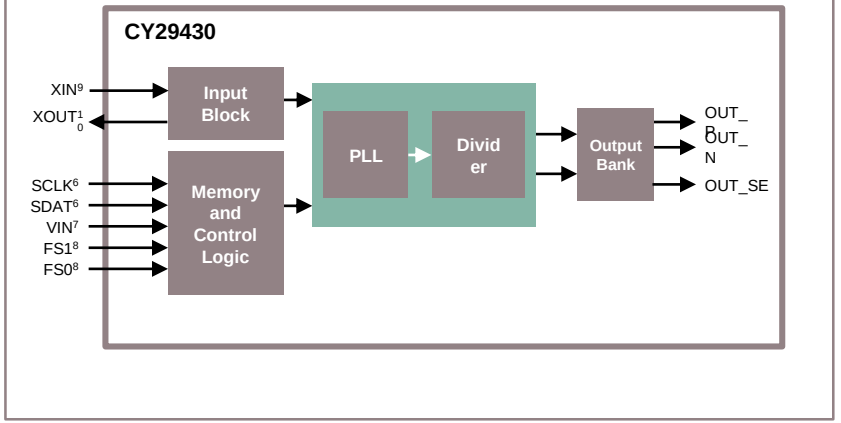
Features

- **Outputs**
  - LVPECL[1], LVDS[2], HCSL[3],CML[4], and LVCMOS outputs
- **Specifications**
  - High frequency: 2.1-GHz differential, 250-MHz single-ended
  - RMS phase jitter [5]: ~110 fs typical (12-kHz to 20-MHz frequency offsets) for output greater than 150 MHz
  - Voltage-controlled frequency synthesis (VCFS) with tuneable pull range of 50 ppm to 275 ppm
  - Frequency Select option to choose from four pre-programmed configurations
  - Pin select and I²C programming
  - VDD support: 1.8 V, 2.5 V, and 3.3 V
  - Industrial temperature grades (-40°C to +105°C)
- **RoHS-Compliant Package**
  - Available in a 3 mm x 3 mm 16-pin QFN[9] package

Collateral

Datasheet: 1-PLL High-Performance Clock Synthesizer (CY29430)

High-Performance 1-PLL Clock Synthesizer



Availability

Production: Now

[1] Low-voltage positive emitter coupled logic
[2] Low-voltage differential signaling
[3] High-speed current steering logic
[4] Current mode logic
[5] The uncertainty of the clock rising and falling edge timing
[6] I²C input
[7] Voltage input pin for VCFS
[8] Frequency select inputs
[9] Quad Flat No-leads

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