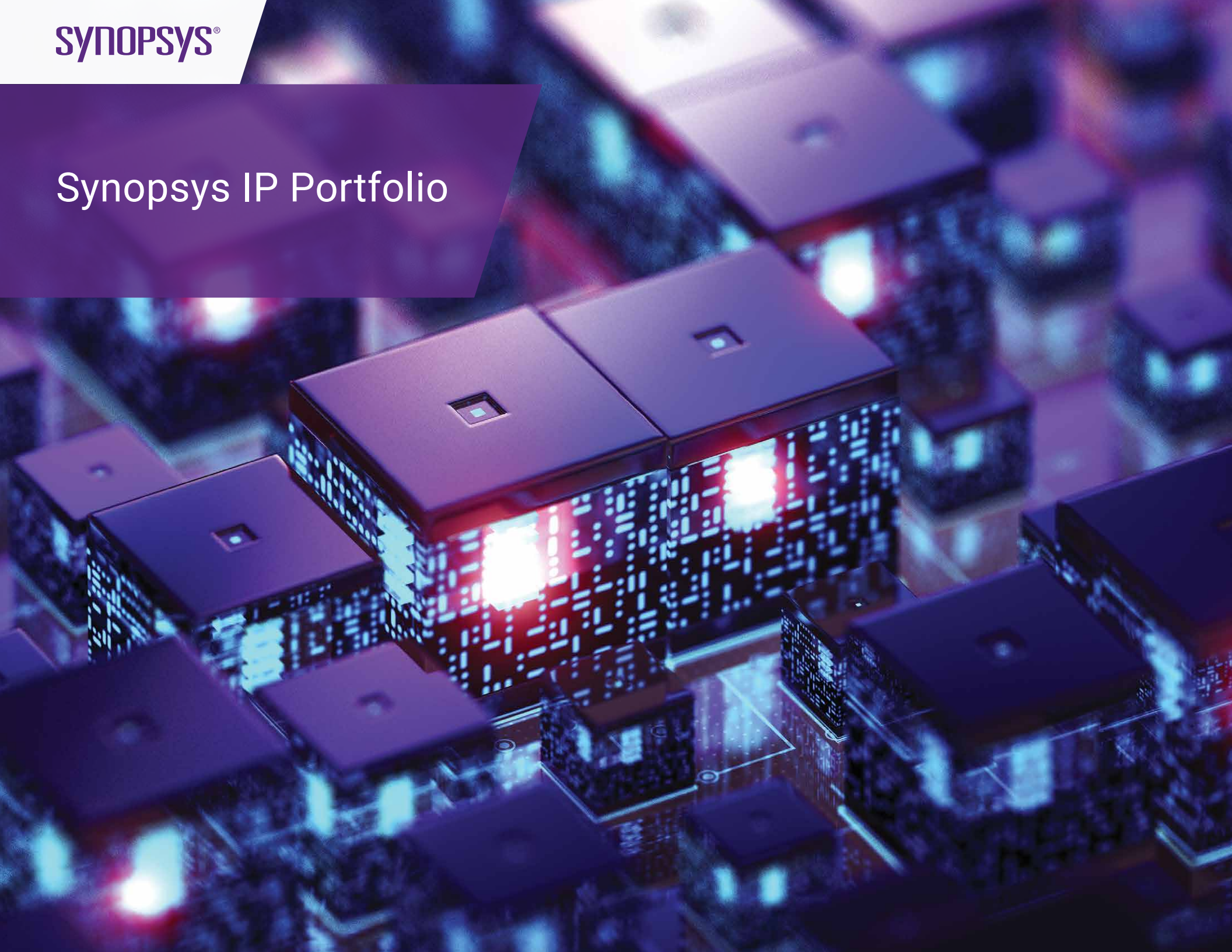


Synopsys IP Portfolio



Broad IP Portfolio

Synopsys is a leading provider of high-quality, silicon-proven semiconductor IP solutions for SoC designs. The broad Synopsys IP portfolio includes [logic libraries](#), [embedded memories](#), [interface IP](#), [security IP](#), embedded processors and [subsystems](#). To accelerate IP integration, software development, and silicon bring-up, [Synopsys' IP Accelerated](#) initiative provides architecture design expertise, pre-verified and customizable IP subsystems, hardening, and signal/power integrity analysis. Synopsys' extensive investment in IP quality, comprehensive technical support and robust IP development methodology enables designers to reduce integration risk and accelerate time-to-market.

Interface IP																
Die-to-Die	Process Technologies									Controllers	Supported Protocol					Verification IP
	16nm	12nm	7nm	6nm	5nm	4nm	3nm	2nm	18A		Streaming	CXS	CHI-C2C	AXI	CXL	
UCle 16G					✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
UCle 40G					✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AIB	✓															
112G XSR		✓	✓	✓	✓					✓		✓				

PCI Express	Process Technologies										Controllers	Configuration	IDE Security Module	HS Access & Test	Verification IP	Auto Grade
	40/45/55/65nm	28nm	22nm	20nm	12/14/16nm	8/10nm	7nm	5/6nm	3/4nm	2nm						
PCIe 7.0 (128G)								✓	✓	✓	Endpoint, Root Port, Dual Mode, Switch	x2, x4, x8	✓	✓	✓	
PCIe 6.x (64G)								✓	✓	✓	Endpoint, Root Port, Dual Mode, Switch	x2, x4, x8, x16	✓	✓	✓	
PCIe 5.0 (32G)					✓	✓	✓	✓	✓		Endpoint, Root Port, Dual Mode, Switch, Embedded Endpoint	x1, x2, x4, x8, x16	✓	✓	✓	✓
PCIe 4.0 (16G)		✓			✓	✓	✓	✓	✓	✓	Endpoint, Root Port, Dual Mode, Switch, Embedded Endpoint	x1, x2, x4, x8, x16	✓	✓	✓	✓
PCIe 3.1 (8G)	✓	✓	✓		✓	✓	✓	✓			Endpoint, Root Port, Dual Mode, Switch, Embedded Endpoint	x1, x2, x4, x8, x16	✓	✓	✓	✓
PCIe 2.1 (5G)	✓	✓	✓	✓	✓		✓				Endpoint, Root Port, Dual Mode, Switch, Embedded Endpoint	x1, x2, x4, x8, x16		✓	✓	✓

Interface IP											
Ethernet	Process Technologies						PCS	Controllers	MACSec	Verification IP	Auto Grade
	28nm	14/ 16nm	7nm	5nm	3nm	2nm					
224G Ethernet (200G/400G/800G/1.6T, Ultra Ethernet, ESUN, UALink)					✓	✓	✓	✓	✓	✓	
112G Ethernet (100G/200G/400G/800G, ESUN, Ultra Ethernet)			✓	✓	✓	✓	✓	✓	✓	✓	
56G Ethernet (100G/200G/400G)		✓	✓	✓	✓	✓	✓	✓	✓	✓	
RXAUI/Double XAUI (6.25 G)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1000BASE-KX, 10GBASE-KR, 10GBASE-KX4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
40GBASE-KR4, 40GBASE-CR4, XLAUI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
100GBASE-CR10, CAUI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
100GBASE-DR4/CR4, CAUI4						✓	✓	✓	✓	✓	✓
100GBASE-KR2/1		✓	✓	✓	✓		✓	✓	✓	✓	✓
SGMII	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QSGMII	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
XFI, SFI (SFF-8431)	✓	✓	✓	✓	✓		✓	✓	✓	✓	
GMII/MII, RGMII, RTBI, TBI, SMII, RMII, RevMII, XGMII, XLGMII							✓	✓	✓	✓	
IEEE TSN/AVB Standards: IEEE 802.1AS, 802.1AS-Rev, 802.1Qav, 802.1Qat, 802.1Qbv, 802.1Qbu & 802.3br								✓	✓	✓	✓
25G/50G Ethernet Consortium and IEEE specifications		✓	✓	✓	✓	✓	✓	✓	✓	✓	25G
2.5G/5.0G USXGMII		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional Enterprise Protocols											
OIF, CEI-6G/11G	✓	✓	✓	✓							
CPRI, OBSI, JESD204 A/B	✓	✓	✓	✓		✓				✓	
SRIO	✓	✓	✓	✓							

Interface IP								
HBM	Process Technologies					Controllers	Platform Architect Support	Verification IP
	7nm	6nm	5nm	3nm	2nm			
HBM4				✓	✓	✓	✓	✓
HBM3E	✓	✓	✓	✓		✓	✓	✓
HBM2E	✓	✓	✓					✓

DDR	Process Technologies											Controllers	Inline Memory Encryption (IME) Security Module	Platform Architect Support	Verification IP	Auto Grade
	40/45nm	28nm	22nm	14/16nm	12nm	10nm	7nm	5nm	3nm	2nm	18A					
LPDDR6									✓	✓		Memory controller		✓	✓	✓
LPDDR5X				✓	✓		✓	✓	✓	✓		Memory controller	✓	✓	✓	✓
LPDDR5				✓	✓		✓	✓	✓	✓		Memory controller	✓	✓	✓	✓
LPDDR4		✓	✓	✓	✓	✓	✓	✓				Protocol controller, Memory controller	✓	✓	✓	✓
LPDDR4X				✓	✓		✓	✓	✓			Protocol controller, Memory controller	✓	✓	✓	✓
LPDDR3		✓	✓	✓	✓	✓						Protocol controller, Memory controller		✓	✓	
LPDDR2		✓										Protocol controller, Memory controller		✓	✓	
DDR5 Gen2 MRDIMM									✓			Memory controller		✓	✓	
DDR5				✓	✓	✓	✓	✓	✓		✓	Memory controller	✓	✓	✓	
DDR4		✓	✓	✓	✓	✓	✓	✓				Protocol controller, Memory controller		✓	✓	
DDR3	✓	✓	✓	✓	✓	✓						Protocol controller, Memory controller		✓	✓	
DDR2	✓											Protocol controller, Memory controller		✓	✓	

CXL	Process Technologies							Controllers	Configurations	IDE Security Module	Verification IP
	14/16nm	10nm	7nm	6nm	4/5nm	3nm	2nm				
CXL 4.0 (128G)					✓	✓	✓	Device, Host, Dual Mode, Switch Port	x2, x4, x8, x16	✓	✓
CXL 3.x (64G or 128G)				✓	✓	✓	✓	Device, Host, Dual Mode, Switch Port	x2, x4, x8, x16	✓	✓
CXL 2.0 (32G)	✓	✓	✓	✓	✓	✓		Device, Host, Dual Mode, Switch Port	x1, x2, x4, x8, x16	✓	✓

Interface IP									
CCIX	Process Technologies							Controllers	Verification IP
	14/16nm	12nm	7nm	6nm	4/5nm	3nm	2nm		
CCIX 1.1	✓	✓	✓	✓	✓	✓	✓	Endpoint, Root Port, Dual Mode, Switch	✓

UALink	3nm	2nm	Bandwidth	Controllers	Configurations	UALinkSec_200 Security	Verification IP
UALink	✓	✓	200Gbps	UPLI Interface	x1, x2, x4	✓	✓

USB	Processes															Controllers/Features	HS Access & Test	Verification IP
	55/65nm	22/28/40/45nm	20nm	14/16nm	12nm	11nm	10nm	8nm	7nm	6nm	5nm	4nm	3nm	2nm	18A			
USB4					✓				✓	✓	✓		✓		✓	Device Router, Host Router	✓	✓
USB-C 3.2/ DisplayPort 1.4 TX					✓				✓		✓	✓	✓	✓		Host, Dual Role, DisplayPort TX, HDCP ESM, DSC	✓	✓
USB 3.2									✓	✓	✓	✓				Host, Device, Dual Role	✓	✓
USB-C 3.1/ DisplayPort 1.4		✓		✓	✓	✓	✓		✓	✓	✓	✓				Host, Dual-Role, DisplayPort TX, HDCP ESM, DSC	✓	✓
USB-C 3.1				✓	✓			✓	✓	✓	✓	✓	✓			Host, Device, Dual-Role	✓	✓
USB 3.1		✓		✓	✓	✓	✓	✓	✓	✓	✓				✓	Host, Device, Dual-Role	✓	✓
USB-C 3.0	✓	✓		✓	✓											Host, Device, Dual-Role	✓	✓
USB 3.0	✓	✓	✓	✓	✓	✓	✓									Host, Device, Dual-Role	✓	✓
USB 2.0/USB-C 2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			Host, Device, Dual-Role	✓	✓
eUSB2											✓	✓	✓	✓	✓	Host, Device, Dual-Role	✓	✓

Interface IP

MIPI	Process Technologies											Controllers	Verification IP	Auto Grade
	40/ 45nm	22/ 28nm	20nm	14/ 16nm	12nm	8nm	6/7nm	5nm	4nm	3nm	2nm			
C/D-PHY				✓	✓		✓	✓	✓	✓	✓	CSI-2, DSI/DSI-2	✓	✓
D-PHY	✓	✓	✓	✓	✓	✓	✓					CSI-2, DSI/DSI-2	✓	✓
M-PHY				✓	✓	✓	✓	✓	✓	✓	✓	UFS, UniPro	✓	✓
CSI-2												Host, Device	✓	✓
DSI/DSI-2												Host, Device	✓	✓
DSC												Encoder, Decoder	✓	✓
DSI + DSC												DSI/DSI-2 + DSC Encoder	✓	
UniPro												v1.6, v1.8, v2.0	✓	
I3C												Multi-role, Target-Lite, Autonomous Target	✓	✓

Embedded Flash Storage	Process Technologies										Controllers	Inline Encryption	Verification IP	Auto Grade
	28nm	14/ 16nm	12nm	8nm	7nm	6nm	5nm	4nm	3nm	2nm				
UFS											✓	✓	✓	✓
UniPro											✓		✓	
M-PHY		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
eMMC	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
SD	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	
SDIO	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓	

HDMI / DisplayPort	Process Technologies											Controllers	HDCP 2.3 Security Module	Verification IP	Auto Grade
	40/ 45nm	28nm	22nm	14/ 16nm	12nm	8nm	7nm	6nm	5nm	4nm	3nm				
HDMI 2.1				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
HDMI 2.0	✓	✓	✓	✓	✓	✓						✓	✓	✓	
HDMI 1.4	✓											✓		✓	
DisplayPort 2.1											✓	✓	✓	✓	✓
DisplayPort 1.4				✓	✓		✓		✓	✓		✓	✓	✓	✓

SoC Infrastructure IP		
Datapath IP	Synthesizable IP (Verilog)	Simulation Models (C++)
Support for AI Floating-Point Inputs	✓	✓
Combinational Floating Point	✓	✓
Pipelined Floating Point	✓	✓
Multi-format (SIMD) Floating Point	✓	✓
Fixed-Point Elementary Functions	✓	✓
Floating Point Elementary Functions	✓	✓
Pipelined Floating Point Elementary Functions	✓	✓

AMBA	Synthesizable IP	Verification IP	Auto Grade
AMBA APB 3/4, AHB 2/5, AXI 3/4, ACE-Lite interconnect fabric, bridges, interconnect matrices and infrastructure IP	✓	✓	
AHB controller	✓	✓	
AXI DMA controllers	✓	✓	✓
SSI Controller (SPI/xSPI)	✓	✓	✓
xSPI Soft PHY	✓		
I2C/SMBus Controller	✓	✓	
I2S/TDM Controller	✓	✓	
UART Controller	✓	✓	
AVSBus Controller	✓	✓	
eSPI Controller	✓	✓	
AMBA Advance peripherals (I ² C, I ² S, UART, SSI)	✓	✓	
Timers, WDT, RTC, interrupt controllers, GPIOs	✓	✓	

Foundation IP

Embedded Memories	Process Technologies														
	65nm	55nm*	40/ 45nm*	28nm	22nm*	14/ 16nm*	12nm*	10nm	8nm*	7/ 6nm*	5nm*	4nm	3nm*	2nm	18A
Ultra-High Density Single Port SRAM (UHD SP SRAM)					✓	✓	✓			✓	✓	✓	✓	✓	✓
Ultra-High Density Two Port SRAM (UHD 2P SRAM) / P2P SRAM				✓	✓	✓			✓	✓	✓	✓	✓		
Ultra-High Density Two Port Register File (UHD 2P RF) / P2P RF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ultra-High Density One Port Register File (UHD 1P RF)					✓		✓			✓	✓	✓	✓	✓	✓
Ultra-High Speed Single Port SRAM (UHS SP SRAM)									✓			✓	✓		
Ultra-High Speed Two Port Register File (UHS 2P RF)												✓			
High Speed Single Port SRAM (HS SP SRAM)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
High Speed ROM (HS ROM)											✓		✓	✓	
High Speed Pseudo 4P/QP SRAM (HS P4P/QP SRAM)				✓		✓				✓					
High Speed Pseudo 2P SRAM (HS P2P SRAM)					✓								✓	✓	✓
High Speed Dual Port SRAM (HS DP SRAM)	✓	✓	✓	✓		✓	✓	✓	✓			✓			
High Speed Asynchronous Two Port Register File			✓	✓		✓									
High Speed Two Port Register File (HS 2P RF)					✓			✓	✓		✓		✓	✓	✓
High Speed One Port Register File (HS 1P RF) (Cache)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
High Performance Core (HPC) Design Kit			✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		
High Density Single Port SRAM (HD SP SRAM)	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
High Density ROM (HD ROM)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
High Density Dual Port SRAM (HD DP SRAM)	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓	
High Density Three Port Register File (HD 3P RF)											✓				
High Density 2P, 3P Async Latch Based Compiler				✓		✓				✓					
High Density Two Port Register File (HD 2P RF)	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓			
High Density One Port Register File (HD 1P RF)	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Extreme-High Density Two Port Register File (EHD 2P RF)											✓	✓		✓	
Extreme-High Density One Port Register File (EHD 1P RF)											✓	✓		✓	
Ultra-Low Power Two Port RF (ULP 2P RF)													✓		
Ternary Content-Addressable Memory (TCAM)	✓		✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	
Multi-Port Memories										✓					
eMRAM					✓	✓									

*Available in Consumer and Automotive

Foundation IP

Logic Libraries	Process Technologies														
	65nm	55nm	40/ 45nm	28nm	22nm	14/ 16nm*	12nm*	8nm*	7nm*	6nm	5nm*	4nm	3nm*	2nm	18A
Ultra-Performance Library													✓		
Ultra-Performance POK													✓		
High-Speed Library	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
High-Speed POK	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
High-Density Library	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
High-Density POK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UHD Library	✓	✓	✓	✓	✓	✓		✓				✓	✓		
UHD POK	✓	✓	✓	✓	✓	✓		✓				✓	✓		
Extreme High Density (EHD) Library							✓								
EHD POK							✓								
Ultra-low leakage (thick oxide)			✓		✓	✓	✓								
High-Performance Core (HPC) Design Kit			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Available in Consumer and Automotive

Non-Volatile Memory	Process Technologies												Bit Counts	Endurance (Write Cycles)
	150/ 180nm	110nm	130nm	80/ 90nm	55/ 65nm	40nm	28nm	22nm	16nm	12nm	4/5/6/ 7nm	3nm		
One-Time Programmable (OTP)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	16 bit to 1 Mbit	1 per instance
Secure Storage Solution for OTP											✓	✓	16Kb to 128Kb	1 per instance
Multi-Time Programmable (MTP) Medium-Density	180nm												16 bit to 512 Kbit	Up to 1,000
MTP EEPROM	180nm		✓		✓	✓							128 bit to 8 Kbit	Up to 1,000,000
MTP ULP	✓												64 bit to 4 Kbit	Up to 100,000
Few-Time Programmable (FTP) Trim	✓	✓	✓	✓									64 bit to 4 Kbit	Up to 1,000
Auto Grade OTP			✓					✓			✓		Up to 1 Mbit	1 per instance
Automotive AEC-Q100 Compliant OTP	✓				✓	✓	✓		✓		✓		Up to 1 Mbit	1 per instance
Automotive AEC-Q100 Compliant MTP	✓		✓										128 bit to 8 Kbit (Up to 256Kb for Medium Density)	Up to 10,000

Foundation IP										
I/O Products	Process Technologies									
	22nm	14/16nm	12nm	8nm	6/7nm	5nm	4nm	3nm	2nm*	18A
GPIO	✓	✓	✓		✓	✓	✓	✓	✓	✓
I3C/I2C IO					✓	✓	✓	✓		✓
LVDS IO			✓		✓	✓	✓	✓	✓	✓
SDeMMC	✓		✓	✓		✓	✓	✓		
RGMII									✓	
Crystal Oscillator IO						✓	✓	✓		✓
3DIO						✓		✓		
High-Speed Test IO								✓		

*Available with PDK 1.0

Silicon Lifecycle Management IP

Silicon Lifecycle Management (SLM) IP	Process Technologies										
In-Chip PVT Monitor IP	28nm	16nm	14nm	12nm	7nm	6nm	5nm	4nm	3nm	2nm	18A
Process Detector	✓	✓		✓	✓*	✓	✓*	✓	✓	✓	✓
Voltage Monitor	✓	✓		✓	✓*	✓	✓*	✓	✓	✓	✓
Temperature Sensor	✓	✓	✓	✓	✓*	✓	✓*	✓	✓	✓	✓
Digital Distributed Temperature Sensor									✓	✓	
Distributed Temperature Sensor						✓	✓*	✓	✓	✓	✓
Thermal Diode		✓		✓	✓	✓	✓*	✓	✓	✓	✓
Catastrophic Temperature Sensor						✓	✓	✓	✓	✓	
Glitch detector										✓	
Digital Glitch Detector									✓	✓	
Power on Reset/Brown out Reset										✓	
Voltage Reference										✓	
Other IP					Soft IP						
PVT Controller; Path Margin Monitor; Clock & Delay Monitor, Adv. Clock Generator					✓*						
Controller Software Driver					✓						
IP Test Automation	Embedded Memories		Non-Volatile Memories		Speciality Memories		DRAM Memory		Interface IP Test		PVT Monitor IP Test
Hierarchical test for multiple IP cores									✓*		✓*
Memory test, repair and diagnostics	✓*		✓		✓*		✓				

* Automotive Grade

Security IP				
Security	Synthesizable IP	Software	Safety Compliant	Verification IP
Cryptography IP	✓	✓	✓	
Physical Unclonable Function (PUF)	✓	✓	✓	
Security Protocol Accelerators	✓	✓	✓	
Hardware Secure Modules with Root of Trust	✓	✓	✓	
HDMI/DisplayPort/USB Type C Content Protection (HDCP 2.3)	✓	✓		✓
PCIe & CXL Integrity and Data Encryption (IDE)	✓	✓	✓	✓
DDR/LPDDR Inline Memory Encryption (IME)	✓	✓		✓
Ethernet Media Access Control Security (MACsec)	✓	✓	✓	✓
UALink Security (UALinkSec)	✓	✓		✓
MIPI CSE 2.0 Security	✓	✓	✓	✓

IP Accelerated Initiative

With Interface IP Accelerated Solutions, Synopsys has augmented its broad portfolio of silicon-proven Synopsys IP with IP subsystems, signal integrity/power integrity analysis and IP hardening, and comprehensive silicon bring-up support to accelerate your product development cycle.

IP Subsystems support many protocols and deliverables for IP integration including configuration scripts, test environment, test scripts, linting, CDC checks, RDC checks, synthesis scripts and implementation scripts. The subsystems also include AMBA or native bus, clock management, reset, DMA, interrupts, memory, power management, debug and test logic.

Hardening and SIPI provide a GDSII for integration in an SoC and include On-chip decoupling capacitance, power and ground pins, PHY & SDRAM termination strategy, SoC package design, PCB stack-up and trace width/spacing, performance at required data rate, read/write/address, and command/control timing budgets.

With your vision and our expertise, we can tune our IP to your SoC, enabling your team to focus on product differentiation.

IP Subsystems				
Interface IP Subsystems	Supported IP	Multi-Protocol Support	Integrated Logic	Included Scripts
IP Protocol-Specific Subsystems	PCIe/CXL, DDR, HBM, UCle, Ethernet, UAL, MACsec, MIPI (CSI, DSI, UFS), USB, PCIe5/4 Switch	✓	AMBA or native bus, clock management, reset, DMA, interrupts, memory, power management, debug and test logic	Configuration scripts, test environment, test scripts, linting, CDC checks, RDC checks, synthesis scripts, implementation scripts

Interface IP Subsystems	Supported Protocols	Auto Grade	UVM	VC SpyGlass	SRAM/MBIST	UPF	DFT
PCIe/CXL	PCIe-CXL-IDE, PCIe-Ethernet, PCIe-USB	ASIL B	✓	✓	✓	✓	✓
DDR, LPDDR	DDR5/4, LPDDR6/5/4						
HBM	HBM4/3, cHBM						
UCle-A, UCle-S	UCle-A 3/2, UCle-S 3/2, cHBM						
Ethernet, UAL	Ethernet 1.6T/800/400/200/100/10/1G, UAL, MACsec, Ethernet-PCIe, Ethernet-USB						
USB	USB-DP, USB-DP-HDMI, USB-PCIe, USB-Ethernet, eUSB						
MIPI	CSI, DSI, UFS						

IP Hardening

Supported IP	Multi-protocol Support	Synthesis to GDSII	Floor Planning	Scan Insertion	Power Grid	Skew Balancing	RDL Routing	Bump Assignment	IR/EM-Analysis	DRC/LVS	GLS
DDR/LPDDR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HBM											
PCIe/CXL											
Ethernet, MACsec, UAL											
UCIe											

Signal/Power Integrity Analysis

Supported IP	Multi-protocol Support	Floorplan Review	Pre/Post Layout Analysis	Decap Cell Size/Placement	Power Impedance Simulations	Eye Quality Analysis	End to End Analysis	Timing Budget Analysis	Signal Quality PVT Corner Analysis	Full Report
DDR/LPDDR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HBM										
PCIe										
Ethernet, MACsec, UAL										
UCIe										

For more information on Synopsys IP, visit [synopsys.com/ip](https://www.synopsys.com/ip).

