# SILVACO

## Production-Ready Offerings for Production-Ready SoCs

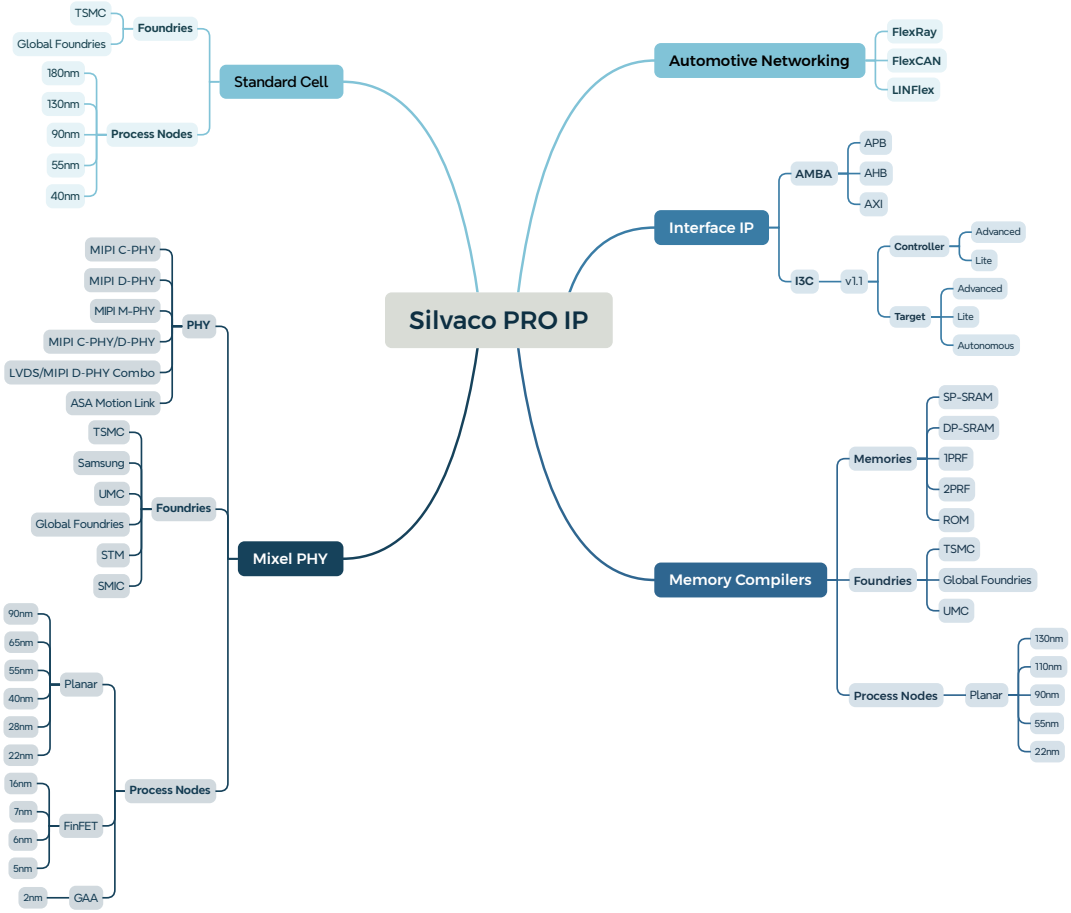
### PRO IP Product Selection Guide

Summer 2026

# Extensive Selection of PRO IP

Your largest risk is time to market. Silvaco Production Ready Offerings provide proven solutions that are available immediately for you to use in your SoC design. Whether it is MIPI C-PHY/D-PHY high-speed transport at a foundry specific process, an ultra-low leakage SP-SRAM memory compiler, a high-density standard cell library, or a industry proven automotive network protocol controller that has shipped over one billion units, Silvaco PRO IP has a solution for your application.

# Silvaco PRO IP Offerings




## Why Use Silvaco PRO IP?

Designing complex IP in-house requires significant investment in engineering, verification, and foundry qualification. Silvaco PRO IP provides production-ready building blocks, allowing your team to focus on the features that set your product apart.

## Accelerate Your Time to Market

Every month of delay erodes your competitive position and delays revenue. Silvaco PRO IP is available immediately, with complete Liberty, LEF, and GDSII deliverables that integrate directly into your design flow. Instead of spending twelve to eighteen months developing a MIPI PHY or memory compiler from scratch, your team can integrate a proven solution and move directly to system-level validation.

## Reduce Design Risk with Silicon-Proven IP

An IP block that passes simulation but fails in silicon can derail an entire program. Every Silvaco PRO IP product has been fabricated, tested, and validated in production silicon across multiple foundries and process nodes. Our automotive networking controllers alone have shipped in more than one billion units. When you integrate PRO IP, you are building on a foundation already proven in the field.

### Lower Your Total Cost of Ownership

The upfront cost of an IP license is only a fraction of the true cost of ownership for an in-house design. When you account for engineering salaries, EDA tool licenses, foundry characterization, silicon re-spins, and ongoing maintenance across process variants, internal development often exceeds licensing costs by a wide margin. PRO IP gives you immediate access to qualified IP that has already absorbed those costs.

### Focus Your Engineering on What Matters Most

A MIPI PHY, a memory compiler, or a CAN controller is essential to your SoC, but it is unlikely to be the reason your customers choose your chip. By using Silvaco PRO IP for these foundational components, your team can focus on the proprietary algorithms and application-specific optimizations that create real competitive advantage.

# Applications

## Automotive Electronics and Networking

Advanced driver assistance systems rely on high-speed camera links and in-cabin display interfaces that must operate reliably under harsh operating conditions. Silvaco MIPI C-PHY and D-PHY solutions provide the bandwidth required for multi-camera ADAS modules while meeting the thermal and noise requirements of automotive environments.

For vehicle networking, Silvaco's FlexCAN, FlexRay, and LINFlex controllers form the backbone of distributed and zonal architectures. These controllers are ISO 11898-1 compliant and support ISO 26262 functional safety workflows, making them suitable for ASIL-B applications such as steer-by-wire, brake-by-wire, and advanced chassis control systems. With MIPI D-PHY IP now integrated into ASIL-B automotive radar processors, Silvaco offers a connected solution spanning sensor input to network transport.

### Key Capabilities

- MIPI C-PHY/D-PHY for ADAS camera modules, surround view, and in-cabin displays
- FlexCAN, FlexRay, and LINFlex controllers for distributed and zonal vehicle networks
- ISO 26262 functional safety support for ASIL B rated applications
- I3C sensor aggregation for accelerometers, gyroscopes, and radar front ends

## Industrial Automation and IoT

Industrial systems require IP that operates across extended temperature ranges and over long product lifecycles. Silvaco's foundation IP and memory compilers are available on established process nodes from 180nm to 40nm, providing the stability and long-term availability industrial customers require.

For factory automation, process control, and robotics applications, Silvaco's automotive networking controllers provide fault tolerance and deterministic communication in industrial environments. CAN and LIN protocol support enables reliable data exchange among sensors, actuators, and control units in electrically noisy settings.

### Key Capabilities

- Industrial networking protocol controllers with fault-tolerant communication
- Foundation IP and memory compilers for established process nodes (180nm to 40nm)
- I3C sensor connectivity for industrial monitoring and predictive maintenance
- Standard cell libraries optimized for low leakage in always-on industrial edge devices

# Applications

## Consumer Electronics and Mobile

Smartphones, wearables, tablets, and AR/VR headsets require high-speed display and camera interfaces that minimize power consumption without compromising performance. Silvaco's MIPI C-PHY/D-PHY Combo PHY solutions support data rates up to 4.5 Gsps per lane across advanced FinFET nodes as small as 5nm, enabling next-generation display resolutions and multi-camera configurations in compact form factors.

The proprietary D-PHY RX+ topology reduces silicon area by 35% and leakage power by 50% compared with a full D-PHY Universal configuration, while still supporting full-speed production testing. This makes it particularly well suited for battery-powered devices, where every milliwatt matters. Silvaco's memory compilers further support consumer SoC designs with ultra-low-power SRAM options optimized for mobile application processors.

### Key Capabilities

- MIPI C-PHY/D-PHY Combo for smartphone display and camera link (5nm to 65nm)
- D-PHY RX+ with 35% area reduction and 50% lower leakage for battery-powered devices
- I3C connectivity for accelerometer, gyroscope, and magnetometer sensor hubs
- Ultra-low-power SP-SRAM and register file compilers for mobile application processors

## Medical Devices and Healthcare

Medical imaging systems, surgical instruments, and implantable devices present unique design challenges: strict power budgets, regulatory requirements, and the need for proven, reliable silicon. Silvaco's MIPI C-PHY and D-PHY IP supports the high-bandwidth image transfer required for endoscopy, ultrasound, and diagnostic imaging equipment, while its compact footprint helps meet the size constraints of portable medical devices.

For implantable and wearable medical devices, Silvaco's low-power memory compilers and standard cell libraries on mature process nodes deliver minimal leakage and long-term manufacturability, meeting these applications' demands. Fault-tolerant network controllers support the communication needs of connected surgical appliances and hospital-grade monitoring equipment.

### Key Capabilities

- MIPI C-PHY and D-PHY for medical imaging systems and diagnostic equipment
- Fault-tolerant network controllers for surgical appliances and connected devices
- Specialized low-power memories for implantable and long-life medical devices
- Silicon-proven IP on mature nodes for regulatory qualification and long-term supply

# MIPI PHY Solutions

The D-PHY, C-PHY, and the M-PHY are three different MIPI PHYs, specifically targeted at lower-power application such as mobile, IoT, wearables, and automotive. They operate over a very wide range of data-rates and support multiple power modes so mobile suppliers can deliver fast application response while preserving battery life. Their serial architectures with both a source synchronous separate clock and an embedded clock provide designers with choices from simplicity to high performance.

| | |
|---|---|
| C | Commercial |
| I | Industrial |
| A | Automotive |

## C-PHY/D-PHY Combo

| Foundry | Node (nm) | Process | Product Description \| Interface\| Lanes \| Speed | Grade | Part Number |
|---|---|---|---|---|---|
| TSMC | 2 | N2P | C-PHY/D-PHY ECM Universal (1T/1L, 3.0Gsps/3.0Gbps) | C, I | 20X353 |
| TSMC | 5 | N5 | C-PHY/D-PHY Combo DSI TX+ (3T/4L, 4.5Gsps/4.5Gbps) | C, I | 20X262 |
| TSMC | 5 | N5A | C-PHY/D-PHY Combo DSI TX+ (3T/4L, 4.5Gsps/4.5Gbps) | A | 20X262A |
| TSMC | 5 | N5 | C-PHY/D-PHY Combo CSI RX+ (3T/4L, 4.5Gsps/4.5Gbps) | C, I | 20X263 |
| TSMC | 5 | N5A | C-PHY/D-PHY Combo CSI RX+ (3T/4L, 4.5Gsps/4.5Gbps) | A | 20X263A |
| TSMC | 6 | N6 | C-PHY/D-PHY Combo CSI-2 RX+ (3T/4L, 6.0Gsps/4.5Gbps) | C, I | 20X287 |
| TSMC | 7 | N7 | C-PHY/D-PHY combo CSI-2 RX (3T/4L, 4.5Gsps/4.5Gbps) | C, I | 20X293 |
| TSMC | 16 | FFC | C-PHY/D-PHY Combo CSI-2 TX+ (3T/4L, 4.5Gsps/4.5Gbps) | C, I | 20X327 |
| TSMC | 16 | FFC | C-PHY/D-PHY Combo DSI RX+ (3T/4L, 4.5Gsps/6.5Gbps) | C, I | 20X341 |
| TSMC | 16 | FFC | C-PHY/D-PHY Combo Universal (3T/4L, 8.0Gsps/6.5Gbps) | C, I | 20X350 |
| TSMC | 16 | FFC | C-PHY/D-PHY Combo CSI-2 RX+ (1T/1L, 1.5Gsps/1.5Gbps) | C, I | 20X372 |
| TSMC | 22 | ULL | C-PHY/D-PHY Combo CSI-2 TX (3T/4L, 2.5Gsps/2.5Gbps) | C, I | 20X360 |
| TSMC | 22 | ULL | C-PHY/D-PHY Combo CSI-2 TX (3T/4L, 2.5Gsps/2.5Gbps) | A | 20X360A |
| TSMC | 22 | ULP | C-PHY/D-PHY Combo DSI RX (3T/4L, 2.5Gsps/2.5Gbps) | C, I | 20X281 |
| TSMC | 22 | ULP | C-PHY/D-PHY Universal (3T/4L, 4.5Gsps/4.5Gbps) | C, I | 20X245 |
| TSMC | 28 | HPC+ | C-PHY/D-PHY Combo CSI-2 TX (3T/4L, 4.5Gsps/4.5Gbps) | C, I | 20X298 |
| TSMC | 28 | HPC+ | C-PHY/D-PHY Combo CSI-2 TX (3T/4L, 4.5Gsps/4.5Gbps) | A | 20X298A |
| ST | 28 | FDSOI | C-PHY/D-PHY Combo CSI-2 TX+ (3T/4L, 3.5Gsps/2.5Gbps) | C, I | 20X325 |
| ST | 40 | LP | C-PHY/D-PHY Combo CSI-2 TX+ (3T/4L, 3.5Gsps/2.5Gbps) | C, I | 20X352 |
| ST | 40 | LP | C-PHY/D-PHY Combo CSI-2 TX+ (2T/2L, 3.5Gsps/2.5Gbps) | C, I | 20X310 |
| TSMC | 40 | ULP | C-PHY/D-PHY Combo CSI-2 TX (2T/2L, 1.5Gsps/1.5Gbps) | C, I | 20X314 |
| TSMC | 40 | ULP | C-PHY/D-PHY Combo CSI-2 TX+ (1T/1L, 2.5Gsps/2.5Gbps) | C, I | 20X319 |
| TSMC | 40 | ULP | C-PHY/D-PHY Combo CSI-2 TX+ (2T/2L, 2.5Gsps/2.5Gbps) | C, I | 20X343 |
| TSMC | 65 | LP | C-PHY/D-PHY Combo CSI-2 TX+ (1L/1T, 1.5Gsps/1.5Gbps) | C, I | 20X219 |

## C-PHY

| Foundry | Node (nm) | Process | Product Description \| Interface\| Lanes \| Speed | Grade | Part Number |
|---|---|---|---|---|---|
| TSMC | 22 | ULL | C-PHY DSI TX (3T, 2.5Gsps) | C, I | 20X345 |
| TSMC | 22 | ULL | C-PHY DSI RX (3T, 2.5Gsps) | C, I | 20X346 |
| TSMC | 40 | ULP | C-PHY CSI-2 TX+ (1T, 2.5Gsps) | C, I | 20X237 |

## D-PHY

| Foundry | Node (nm) | Process | Product Description \| Interface\| Lanes \| Speed | Grade | Part Number |
|---|---|---|---|---|---|
| TSMC | 7 | N7 | D-PHY DSI TX (4L, 4.5Gbps) | C, I | 20X294 |
| GF | 12 | LP+ | D-PHY CSI-2 RX (4L, 1.25Gbps) | C, I | 20X377 |
| GF | 12 | LP+ | D-PHY CSI-2 RX (4L, 1.25Gbps) | A | 20X377A |
| TSMC | 16 | FFC | D-PHY CSI-2 RX (4L, 1.25Gbps) | C, I | 20X317 |
| TSMC | 16 | FFC | D-PHY CSI-2 RX (4L, 1.25Gbps) | A | 20X317A |
| GF | 22 | FDX | D-PHY CSI-2 TX (4L, 2.5Gbps) | C, I | 20X271 |
| GF | 22 | FDX | D-PHY CSI-2 RX (4L, 2.5Gbps) | C, I | 20X272 |
| GF | 22 | FDX | D-PHY CSI-2 RX (2L, 2.5Gbps) | C, I | 20X273 |

# MIPI PHY Solutions

## D-PHY

| Foundry | Node (nm) | Process | Product Description \| Interface\| Lanes \| Speed | Grade | Part Number |
|---|---|---|---|---|---|
| GF | 22 | FDX | D-PHY CSI-2 TX (2L, 2.5Gbps) | C, I | 20X275 |
| GF | 22 | FDX | D-PHY DSI RX (4L, 2.5Gbps) | C, I | 20X337 |
| GF | 22 | FDX | D-PHY CSI-2 TX (4L, 2.5Gbps) | C, I | 20X323 |
| GF | 22 | FDX+ | D-PHY DSI TX+ (2L, 2.5Gbps) | C, I | 20X356 |
| GF | 22 | FDX+ | D-PHY DSI TX+ (2L, 2.5Gbps) | A | 20X356A |
| GF | 22 | FDX+ | D-PHY CSI-2 RX (2L, 2.5Gbps) | C, I | 20X357 |
| GF | 22 | FDX+ | D-PHY CSI-2 RX (2L, 2.5Gbps) | A | 20X357A |
| GF | 22 | FDX+ | D-PHY DSI RX (2L, 2.5Gbps) | C, I | 20X358 |
| TSMC | 22 | ULL | D-PHY CSI-2 TX (1L, 1.5Gbps) | C, I | 20X278 |
| TSMC | 22 | ULL | D-PHY CSI-2 TX+ (4L, 2.5Gbps) | C, I | 20X312 |
| TSMC | 22 | ULL | D-PHY CSI-2 TX+ (4L, 2.5Gbps) | A | 20X312A |
| TSMC | 22 | ULL | D-PHY Universal (4L, 2.5Gbps) | C, I | 20X362 |
| TSMC | 22 | ULL | D-PHY Universal (4L, 2.5Gbps) | A | 20X362A |
| TSMC | 22 | ULP | D-PHY Universal (4L, 2.5Gbps) | C, I | 20X279 |
| TSMC | 22 | ULP | D-PHY Universal (2L, 2.5Gbps) | C, I | 20X224 |
| TSMC | 22 | ULP | D-PHY Universal (1L, 2.5Gbps) | C, I | 20X225 |
| UMC | 22 | ULL/ULP | D-PHY DSI RX (4L, 2.5Gbps) | C, I | 20X334 |
| Samsung | 28 | FDSOI | D-PHY DSI TX+ (4L, 1.5Gbps) | C, I | 20X239 |
| Samsung | 28 | FDSOI | D-PHY CSI-2 RX (2L, 1.5Gbps) | C, I | 20X240 |
| TSMC | 28 | HPC+ | D-PHY CSI-2 TX+ (4L, 2.5Gbps) | C, I | 20X231 |
| TSMC | 28 | HPC+ | D-PHY CSI-2 TX+ (4L, 2.5Gbps) | A | 20X231A |
| TSMC | 28 | HPC+ | D-PHY Universal (4L, 2.5Gbps) | C, I | 20X250 |
| TSMC | 28 | HPC+ | D-PHY CSI-2 RX+ (2L, 1.5Gbps) | C, I | 20X265 |
| TSMC | 28 | HPC+ | D-PHY CSI-2 RX+ (2L, 1.5Gbps) | A | 20X265A |
| TSMC | 28 | HPC+ | D-PHY DSI TX (4L, 2.5Gbps) | C, I | 20X302 |
| TSMC | 28 | HPC+ | D-PHY DSI TX (4L, 2.5Gbps) | A | 20X302A |
| TSMC | 28 | HPC+ | D-PHY CSI-2 RX (4L, 2.5Gbps) | C, I | 20X303 |
| TSMC | 28 | HPC+ | D-PHY CSI-2 RX (4L, 2.5Gbps) | A | 20X303A |
| TSMC | 28 | HPC+ | D-PHY CSI-2 TX (2L, 2.5Gbps) | C, I | 20X305 |
| TSMC | 28 | HPC+ | D-PHY CSI-2 TX (2L, 2.5Gbps) | A | 20X305A |
| TSMC | 28 | HPC+ | D-PHY Universal (4L, 2.5Gbps) | C, I | 20X333 |
| TSMC | 28 | HPC+ | D-PHY Universal (4L, 2.5Gbps) | A | 20X333A |
| SMIC | 28 | HPC+ | D-PHY CSI-2 TX+ (4L, 2.5Gbps) | C, I | 20X374 |
| SMIC | 28 | HPC+ | D-PHY CSI-2 TX+ (4L, 2.5Gbps) | A | 20X374A |
| TSMC | 40 | LP | D-PHY Universal (4L, 1.5Gbps) | C, I | 20X221 |
| TSMC | 40 | LP | D-PHY CSI-2 TX (4L, 2.5Gbps) | C, I | 20X300 |
| TSMC | 40 | ULP | D-PHY CSI-2 TX+ (1L, 1.5Gbps) | C, I | 20X248 |
| TSMC | 40 | ULP | D-PHY CSI-2 TX+ (4L, 1.5Gbps) | C, I | 20X256 |
| TSMC | 55 | LP | D-PHY Universal (4L, 1.5Gbps) | C, I | 20X262 |
| TSMC | 55 | ULP | D-PHY DSI TX (2L, 1.0Gbps) | C, I | 20X254 |
| TSMC | 65 | GP | D-PHY Universal (4L, 2.5Gbps) | C, I | 20X244 |
| Tower | 65 | ISC | D-PHY CSI-2 TX (4L, 1.2Gbps) | C, I | 20X260 |
| Tower | 65 | ISC | D-PHY CSI-2 TX (2L, 1.2Gbps) | C, I | 20X308 |
| TSMC | 65 | LP | D-PHY CSI-2 TX (2L, 2.5Gbs) | C, I | 20X289 |
| TSMC | 65 | LP | D-PHY CSI-2 TX (4L, 1.5Gbs) | C, I | 20X242 |
| TSMC | 90 | LP | D-PHY CSI-2 TX (4L, 2.5Gbps) | C, I | 20X233 |
| TSMC | 90 | LP | D-PHY CSI-2 TX+ (4L, 2.5Gbps) | C, I | 20X269 |

# MIPI PHY Solutions

## M-PHY

| Foundry | Node (nm) | Process | Product Description \| Interface\| Lanes \| Speed | Grade | Part Number |
|---|---|---|---|---|---|
| TSMC | 40 | G | M-PHY HS-G4 (11.66Gbps) | C, I | 20X313 |

## LVDS/D-PHY

| Foundry | Node (nm) | Process | Product Description \| Interface\| Lanes \| Speed | Grade | Part Number |
|---|---|---|---|---|---|
| GF | 22 | FDX+ | LVDS/D-PHY DSI TX+ combo (4CH/4L, 1039.5Mbps/2.5Gbps) | C, I | 20X371 |
| GF | 22 | FDX+ | LVDS/D-PHY DSI TX+ combo (4CH/4L, 1039.5Mbps/2.5Gbps) | A | 20X371A |
| TSMC | 28 | HPC+ | LVDS/D-PHY CSI-2 RX Combo (4CH/4L, 600Mbps/1.5Gbps) | C, I | 20X285 |
| Tower | 65 | BSB | LVDS/D-PHY CSI-2 TX Combo (3CH/4L, 600Mbps/1.2Gbps) | C, I | 20X316 |

## LVDS

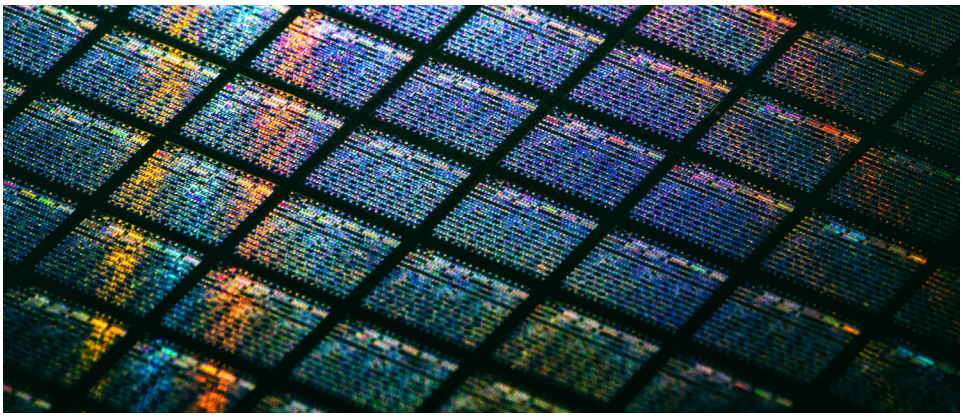
| Foundry | Node (nm) | Process | Product Description \| Interface\| Lanes \| Speed | Grade | Part Number |
|---|---|---|---|---|---|
| TSMC | 40 | LP | LVDS TX (4CH, 1000Mbps) | C, I | 20X330 |
| TSMC | 40 | LP | LVDS TX (4CH, 1000Mbps) | A | 20X330A |
| TSMC | 40 | LP | LVDS RX (4CH, 1000Mbps) | C, I | 20X331 |
| TSMC | 40 | LP | LVDS RX (4CH, 1000Mbps) | A | 20X331A |
| UMC | 40 | ULP | LVDS TX+ (4CH, 770Mbps) | C, I | 20X215 |
| UMC | 40 | ULP | LVDS TX+ (4CH, 770Mbps) | A | 20X215A |

# Standard Cell

Custom standard cell libraries deliver optimized performance, power, and area tailored to specific process nodes and application needs. Designed for advanced and mature technologies, they enable higher frequency, lower leakage, and improved yield. With configurable architectures, multiple VT options, and foundry-qualified views, custom libraries accelerate SoC differentiation while reducing risk across automotive, industrial, and high-reliability designs and long-term manufacturability globally.

† Custom PVT characterization available upon request

| Foundry | Node (nm) | Process | Voltage ($V_N$) | Track Height | Libraries† | | | Transistor VTs | | | | | | Gate Length (nm) | Part Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | CORE | PMK | ECO | RVT | LVT | HVT | UHVT | ULVT | ELVT | | |
| GF | 28 | SLP | 0.9 | 8T | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | 30, 34, 38 | 70350 |
| TSMC | 40 | LP | 1.1 | 7T | ✓ | | | ✓ | ✓ | ✓ | | | | 35, 40 | 70351 |
| GF | 55 | LPx | 0.9 | 7T | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | 60 | 70353 |
| GF | 55 | LPx | 3.3 | 10T | ✓ | | | ✓ | | | | | | 500 | 70354 |
| UMC | 55 | LPeFLASH | 0.9 | 7T | ✓ | | | ✓ | ✓ | ✓ | | | | 60 | 70355 |
| TSMC | 65 | LP | 1.2 | 12T | ✓ | | | ✓ | ✓ | ✓ | | | | 65 | 70356 |
| TSMC | 110 | LP | 1.2 | 7T | ✓ | ✓ | ✓ | ✓ | | | | | | 110 | 70357 |
| GF | 130 | LP | 1.2 | 7T | ✓ | | | ✓ | ✓ | | | | | 110 | 70359 |
| TSMC | 180 | LP | 1.8 | 7T | ✓ | ✓ | ✓ | ✓ | | | | | | 180 | 70360 |
| GF | 180 | Bi-CMOS | 3.3 | 7T | ✓ | | | ✓ | | | | | | 500 | 70361 |



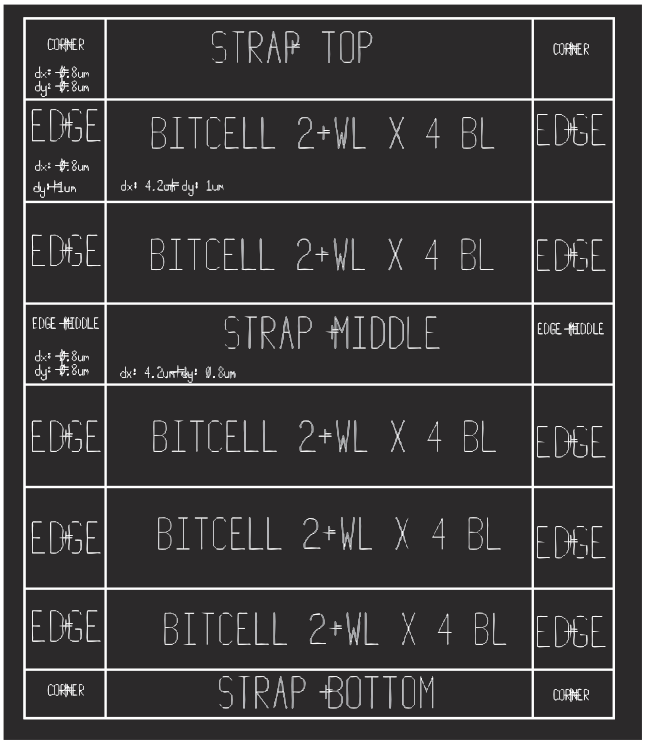
### Applications:

- Low-Power SoCs: Mobile, IoT, and Wearables
- High-Density → Increased GDPW → Reduced Program Cost
- Reduced Cost per Function
- Reduced Interconnect Length
- Increased Power Efficiency
- Foundry Enablement

# Advanced Memory Compilers

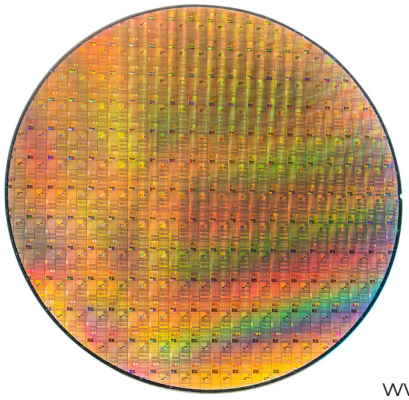
Silvaco's advanced memory compiler portfolio delivers silicon-proven SP-SRAM, DP-SRAM, ROM, and register file IP across leading foundry nodes. Each compiler generates fully characterized, DRC/LVS-clean instances and provides comprehensive Liberty, LEF, and GDSII deliverables. Optimized for area, power, and performance, our memory IP enables rapid, configuration-driven design integration for automotive, consumer, industrial, and IoT applications.

| Foundry | Node (nm) | Process | Memory Type | Retention | Size (bits) | Mux | Voltage | | Part Number |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Single Supply | | |
| | | | | | | | Periph | Array | |
| GF | 22 | FDX | 1 Port Register File | No | 128-40k | 8 | 0.8 | | 61250 |
| GF | 22 | FDX+ | Single-Port SRAM | No | 256-1,024k | 4, 8, 16 | 0.8 | | 61251 |
| TSMC | 40 | uLP | Dual-Port SRAM | Yes | 64-288k | 4 | 0.9 | 1.1 | 61252 |
| TSMC | 40 | ULP eFlash | Dual-Port SRAM | Yes | 64-288k | 4 | 0.9 | 1.1 | 61253 |
| TSMC | 40 | LP | Single-Port SRAM | No | 256-576k | 4 | 1.1 | | 61254 |
| TSMC | 40 | ULP eFlash | Via ROM | N/A | 1k-1,152k | 8 to 128 | 1.1 | | 61255 |
| TSMC | 55 | ULP eFlash | 1 Port Register File | Yes | 64-32k | 2, 4 | 1.2 | | 61256 |
| TSMC | 55 | HV | 2 Port Register File | No | 1k-640k | 4 | 1.2 | | 61257 |
| TSMC | 55 | ULP eFlash | 2 Port Register File | No | 128-64k | 4 | 1.2 | | 61258 |
| TSMC | 55 | LP eFlash | Dual-Port SRAM | No | 256-32k | 8 | 1.2 | | 61259 |
| TSMC | 55 | ULP eFlash | Dual-Port SRAM | No | 128-64k | 4 | 1.2 | | 61260 |
| TSMC | 55 | HV | Single-Port SRAM | No | 512-320k | 8, 16 | 1.2 | | 61261 |
| TSMC | 55 | ULP eFlash | Via ROM | N/A | 512-512k | 8 to 128 | 1.2 | | 61262 |
| GF | 55 | LPx | Single-Port SRAM | Yes | 320k | 4, 8, 16 | 1.2 | | 61263 |
| TSMC | 90 | LP eFlash | Dual-Port SRAM | Yes | 256-80k | 8 | 1.2 | | 61264 |
| TSMC | 110 | HV | 1 Port Register File | No | 128-20k | 4, 8 | 1.5 | | 61265 |
| UMC | 110 | eFlash | Single-Port SRAM | Yes | 256-320k | 4, 8, 16 | 1.5 | | 61266 |
| TSMC | 130 | BCD | Single-Port SRAM | No | 128-64k | 4, 8, 16 | 1.5 | | 61267 |
| TSMC | 130 | BCD Plus | Single-Port SRAM | No | 128-64k | 4, 8, 16 | 1.5 | | 61268 |




## Applications:

- Edge computing
- IoT, low power, low-leakage, and low energy
- Industrial automation, process control, and robotics
- Custom SoC designs
- Display drivers and DDICs
- Security and cryptographic processors
- Audio and voice processing ASICs



# Silicon Proven Synthesizable Soft IP Solutions

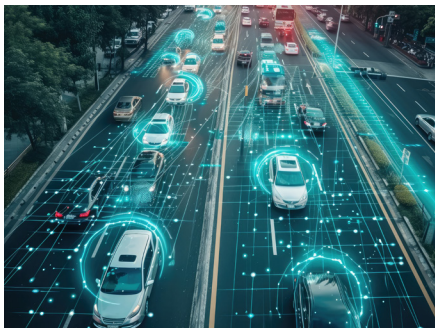
Silvaco delivers production-proven soft IP for AMBA, I3C, and automotive networking, enabling rapid, low-risk SoC integration. Our AMBA interconnect and peripherals scale from MCU to complex SoCs. I3C controller IP supports high-performance sensor and system management with robust verification. Automotive network controllers, including CAN and CAN-FD, are optimized for safety-critical designs, offering configurability, portability, and seamless integration into automotive-grade development flows. Backed by Silvaco's global support and flexible licensing for differentiated automotive and embedded platforms.

# Automotive Networking Protocol Controllers

| Part Number | Product | Description | Product Grade | Gate Count |
|---|---|---|---|---|
| 70052 | LINFlexD Controller | LIN 1.3, 2.0, 2.1 and 2.2, IPS / APB interface | C, I, A | 22k - 23k |
| 70017 | FlexCAN Controller | CAN 2.0B, Full-CAN with CAN-FD, IPS / APB interface | C, I, A | 25k - 61k |
| 70034 | MultiCAN Controller | CAN 2.0B, Full-CAN, Twin CAN, TTCAN, IPS / APB Interface | C, I, A | 34k - 87k |
| 70018 | FlexRay Controller | FlexRay 2.1, AMBA AHB | C, I, A | 76k - 141k |

## Applications:

- Fault-Tolerant communication link for steer and brake by wire systems
- Automotive (ISO 11898-1) compliant network for distributed and zonal architectures
- Traditional and flexible data-rate CAN for network traffic optimization
- Low-cost automotive single-wire interface ideal for buttons, switches, and actuators



# AMBA IP Cores and Subsystems

The AMBA ecosystem underpins modern SoC design, delivering open, standardized interfaces that enable scalable, interoperable systems. Covering AXI, AHB, APB, and emerging extensions, AMBA connects processors, accelerators, memories, and peripherals from MCU to complex platforms. With industry adoption, rich IP availability, and mature tooling, AMBA accelerates integration, reduces risk, and supports innovation across automotive, mobile, infrastructure, and embedded markets worldwide.

| AXI Products | | |
|---|---|---|
| Product | Description | Part Number |
| AXI QSPI Controller | AXI-4, XIP support, DMA, Quad/Dual mode, full/half duplex operation | 70105 |
| AXI / SPI Slave Bridge | Read/write access to AXI subsystem registers and memories | 70146 |
| AXI 5-Master SRAM Controller | Low Latency with zero or one cycle access to 64-bit SRAM | 70151 |
| AXI External Memory Controller | AXI-4, AHB, 8/16/32 and 64-bit external modes up to 4 external devices | 70187 |

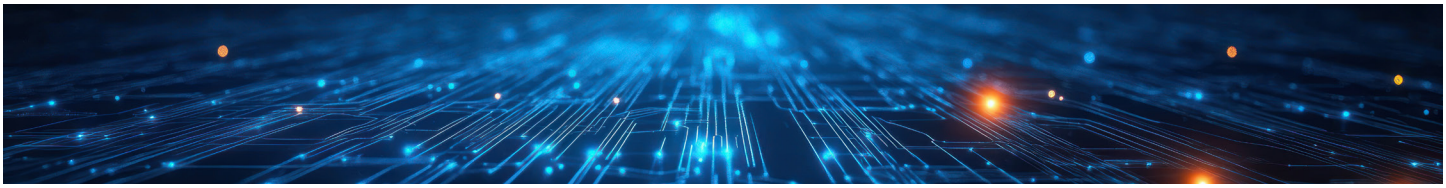
| AHB Products | | |
|---|---|---|
| Product | Description | Part Number |
| AHB Octal / Quad SPI Controller | AHB, 4/8/32-bit operation, full/half duplex, dual/quad modes | 70161 |
| AHB Arbiter | AHB 2.0, up to four masters using round-robin mechanism | 70110 |
| AHB DES / Triple DES | AHB 2.0, AHB DES/TDES mode, DMA master, elliptical curve | 70121 |
| AHB AES with DMA | AHB 2.0, 1/4-channel, single/programmable burst, linked-list support | 70122 |
| AHB Single/Quad DMA Controller | AHB 2.0, 1/4-channel, single/programmable burst, linked-list support | 70119 |
| SPI Slave to AHB-Lite Master | Read/write access to AHB-Lite sub-system | 70113 |
| AHB-Lite Slave to SPI Master | Supports 4 slaves and all SPI modes | 70147 |
| AHB External Bus Interface | Supports 8-bit, 16-bit, 32-bit access | 70116 |
| AHB TFT LCD Controller | Supports 24-bit, 16-bit, 8-bit color LCD panels | 70120 |
| AHB SRAM Controller | AHB-Lite, Zero wait state 8-bit, 16-bit, 32-bit access to SRAM | 70117 |
| AHB Quad SPI Controller with Execute in Place (XIP) | AHB 4 to 32 bit serial transmit and receive, full/half duplex | 70115 |
| AHB Single Channel DMA Controller | AHB 2.0, single channel, single/programmable burst, linked-list support | 70118 |
| AHB Parallel Flash Controller | AHB bus to Parallel SuperFlash device supports 8/16/32-bit external modes, 8/16/32-bit AHB access | 70150 |

# AMBA IP Cores and Subsystems

| APB Products | | |
|---|---|---|
| Product | Description | Part Number |
| APB GPIO | APB 2.0, scalable up to 32 I/Os, interrupt support, software configurable | 70127 |
| APB Real Time Clock | APB 2.0, clock/calendar BCD format with interrupt support | 70128 |
| APB Interrupt Controller | APB 2.0, up to 32 independent channels | 70123 |
| APB Pulse Width Modulator | APB 2.0, prescalar/non-prescalar mode, 4-bit prescalar | 70129 |
| APB Timer | APB 2.0, 32-bit counter/timer, 10-bit prescaler, RTOS time base | 70124 |
| APB UART | APB 2.0, programmable baud rates, DMA interface, interrupt support | 70126 |
| APB Windowed Watchdog Timer | APB 2.0, 32-bit counter/timer, 12-bit prescaler, interrupt support, DFT support, windowing | 70125 |
| APB SPI Controller | APB 2.0, single lane SPI, Master or Slave | 70132 |
| I2C Master/Slave Controller | I2C V2.1, APB 2.0, SMEBus 2.0, ACCESS.Bus | 70026 |

| AMBA Bus Fabric & Bridges | | |
|---|---|---|
| Product | Description | Part Number |
| AHB Multi Fabric | AHB-Lite, Support up to 8 masters and 12 slaves | 70107 |
| AXI Multi Fabric | AXI 4, Support up to 4 masters and 8 slaves | 70101 |
| AXI / AHB Bridge | AXI 4, AHB Lite, 2-clock domains with FIFO support | 70102 |
| AHB / AXI Bridge | AXI 4, AHB Lite, 2-clock domains with FIFO support | 70145 |
| AHB / APB Bridge | APB 3.0, 2.0, low latency, low gate count | 70111 |
| AHB Bus Channel + Decoder | AHB-Lite, supports up to 16 slaves | 70108 |
| APB Bus Channel + Decoder | APB 3.0, 2.0, supports up to 16 slaves | 70109 |
| AHB-Lite to AHB-Lite Asynchronous Bridge | Bridge asynchronous AHB-Lite domains for any clock frequency ratio | 70148 |
| APB to AHB-Lite Asynchronous Bridge | Bridge asynchronous APB and AHB-Lite domains for any clock frequency ratio | 70149 |
| AXI / APB Bridge | AXI 4 Lite, APB 2.0, APB 3.0 | 70103 |

| AMBA Subsystems | | |
|---|---|---|
| Product | Description | Part Number |
| AHB Low-power | AHB 2.0, APB 3.0, power management, boot code, basic kernel support | 70140 |
| AHB Performance ARM-M0 | AHB-Lite, APB 2.0, PMU, RTOS/kernel support, DMA | 70141 |
| AHB Performance ARM-M3 | AHB-Lite, APB 2.0, PMU, RTOS/kernel support, DMA | 70142 |
| AHB Secure M3 | AHB 2.0, APB 3.0, Secure AHB Fabric, SRAM and ROM Parameterized MPUs, PMU, RTOS/Kernel support, DMA | 70158 |
| AXI Performance | AXI 4, AHB-Lite, APB 2.0 multi-layer fabric, QSPI RTOS/Linux support | 70143 |



# MIPI I3C Interface Products

| MIPI v1.1 Compliant | | |
|---|---|---|
| Product | Description | Part Number |
| I3C Advanced Controller | I3C V1.1, APB 3.0, SDR, IBI | 76016 |
| I3C Advanced Controller Lite | I3C V1.1, APB 3.0, SDR | 70182 |
| I3C Advanced Target | I3C V1.1, APB 3.0, SDR, IBI | 76002 |
| I3C Advanced Target Lite | I3C V1.1, APB 3.0, SDR | 70183 |
| I3C Autonomous Target | I3C V1.1, APB 3.0, SDR, IBI | 76005 |

# Why Trust Silvaco?

When you integrate third-party IP into your SoC, you are betting on your supplier's ability to deliver working silicon on schedule. Silvaco's Production Ready Offerings are designed to reduce that risk. Every PRO IP product is silicon-proven, fully characterized, and backed by a global team with decades of experience in semiconductor IP development and support.

**Silicon-Proven at Scale**
Silvaco's MIPI PHY IP is in production at many of the world's largest semiconductor and system companies and is deployed in mission-critical applications across mobile, automotive, IoT, and consumer electronics. Our automotive networking controllers alone have shipped more than one billion units worldwide. This is not IP that works only in simulation; it is IP that works in the field, at volume, in products your customers depend on every day.

**Broad Foundry Coverage**
Silvaco PRO IP is available across a wide range of foundries and process nodes, giving you the flexibility to choose the manufacturing partner and technology that best fit your application. Our portfolio spans TSMC, Samsung, GlobalFoundries, UMC, Tower, and STMicroelectronics, with process-node coverage from 180nm planar to 5nm FinFET. Whether you are designing a cost-sensitive IoT sensor on a mature node or a high-performance mobile processor on an advanced process, Silvaco offers qualified IP ready for your design.

**Quality You Can Verify**
Silvaco holds ISO 9001 certification for its complete suite of TCAD, EDA, and IP products, reflecting a company-wide commitment to quality management, customer satisfaction, and continuous improvement. For automotive customers, our MIPI PHY IP supports ISO 26262 functional safety workflows and is ASIL-B compliant for integration into safety-critical radar and sensor processing systems.

Every PRO IP delivery includes fully characterized, DRC/LVS-clean instances and comprehensive Liberty, LEF, and GDSII deliverables. Our memory compilers generate configuration-driven output optimized for area, power, and performance, with foundry-qualified views that accelerate your path to tapeout.

**A Complete IP Platform**
Silvaco is not a single-product IP vendor. Our PRO IP portfolio covers the essential building blocks of modern SoC design: high-speed MIPI PHY and LVDS interfaces for connectivity, advanced memory compilers for on-chip storage, high-density standard-cell libraries for logic implementation, AMBA interconnect and peripherals for system integration, and automotive networking controllers for in-vehicle communication. By sourcing these components from a single, qualified supplier, you simplify vendor management, reduce integration risk, and ensure a consistent level of support across your entire design.

**Global Support and Flexible Licensing**
Silvaco's engineering and support teams operate globally, giving you direct access to the designers who built the IP you are integrating. Our licensing model is flexible enough to accommodate everything from early-stage evaluation to high-volume production, so you can scale your engagement as your program matures. From initial IP selection through tapeout and beyond, Silvaco is committed to your success.

**Ready to get started?**
Contact Silvaco to discuss your design requirements, request an evaluation, or learn more about how PRO IP can accelerate your next SoC.

SILVACO

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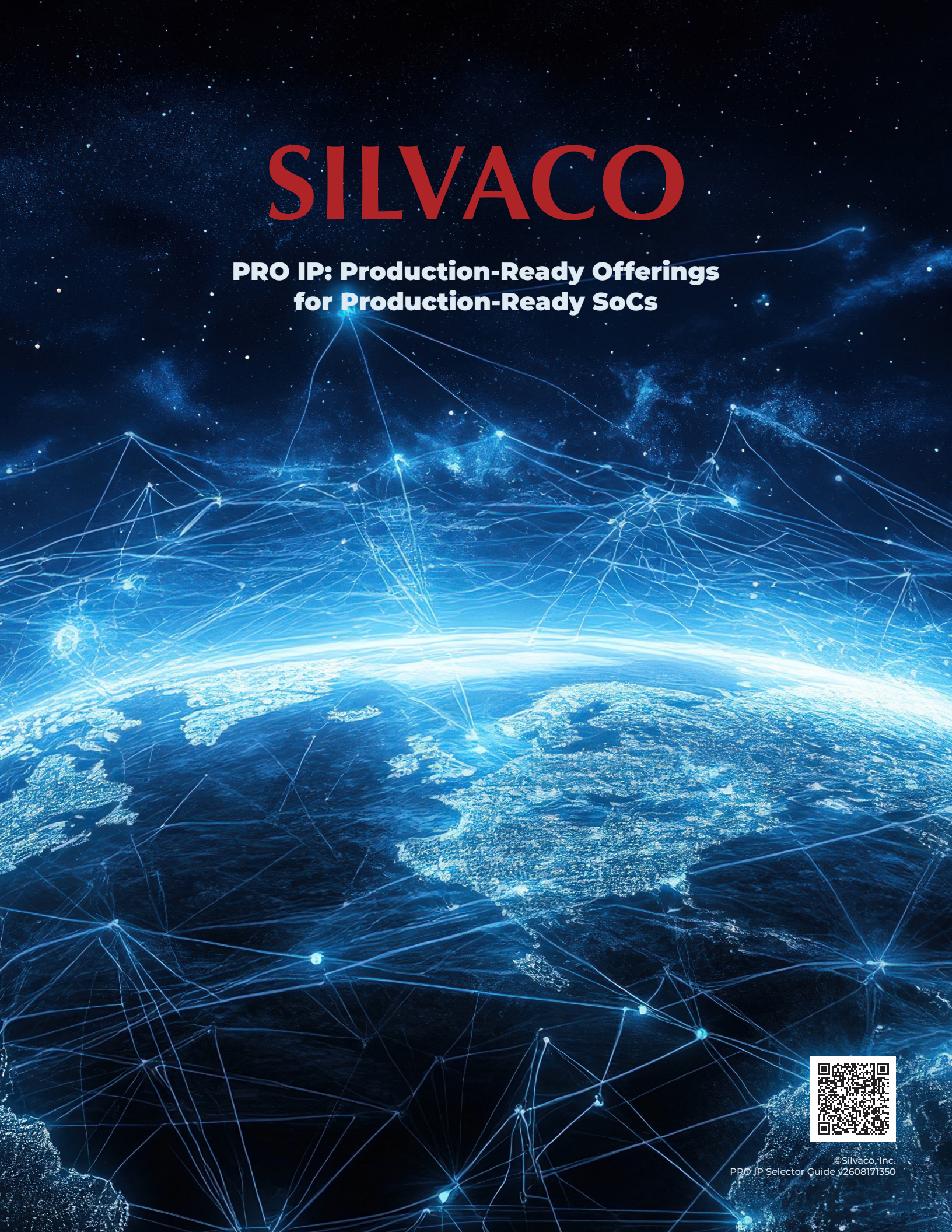
# SILVACO

## PRO IP: Production-Ready Offerings for Production-Ready SoCs



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