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### About Arm Flexible Access

Arm Flexible Access lowers the barriers to rapid innovation and opens the doors to leading technology with upfront access to a wide range of Arm IP, support, tools, and training.

For a single annual fee, you can evaluate and design automotive solutions before committing to production, jumpstart the concept-to-compute journey, and join one of the world's largest, most prolific, and creative communities of technology leaders.

For more information, contact your Arm account manager today or visit <https://www.arm.com/solutions/automotive/contact-us>

### How does Arm Flexible Access work?

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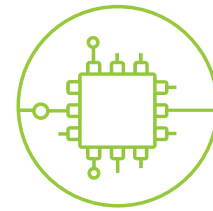
#### Access

- Widest range of Arm IP, tools and services
- Annual access fee covers design rights
- Any or all of the IP package is downloadable at any time



#### Design

- Freedom to start, change or stop projects as needed
- Model your workload across included IP for best-fit design
- World-wide access to Arm training and support



#### Manufacture














- Licensing payment only for IP used at tape out, not before
- Transparent and simple business terms

## Arm IP for Automotive Applications - available under Flexible Access

The list of Arm IP shown in the tables below has been filtered specifically for automotive applications.

For the full list of products included within Arm Flexible Access please visit the following page:

<https://www.arm.com/products/flexible-access/product>

Product	Description	Safety Packages Available 	Automotive Application
<b>Cortex Processors</b>			
Cortex-A Series	Cortex-A53 Processor 	Low-power processor with 32-bit and 64-bit capabilities, applicable in a range of devices requiring high performance in power-constrained environments.	Cortex-A Automotive Applications: <ul style="list-style-type: none"> <li>Advanced Driver-Assistance Systems (ADAS)</li> <li>Connectivity</li> <li>In-Vehicle Infotainment (IVI)</li> <li>Cabin audio</li> </ul>
	Cortex-A35 Processor 	Ultra-high efficiency smart device processor, the smallest and most power-efficient 32-bit and 64-bit Arm application processor.	
	Cortex-A34 Processor 	Low-power 64-bit only processor with ultra-high efficiency.	
	Cortex-A32 Processor 	Low-power 32-bit only processor with ultra-high efficiency.	
Cortex-R Series	Cortex-R52 Processor 	Designed for advanced silicon processes requiring high-performance and cost-effective processing. Delivers real-time performance for functional safety.	Cortex-R Automotive Applications: <ul style="list-style-type: none"> <li>ADAS Radar</li> <li>Chassis</li> <li>Connectivity</li> <li>Powertrain</li> <li>Sensor applications</li> <li>Safety island for ADAS &amp; IVI</li> </ul>
	Cortex-R5 Processor 	Offers high-performance computing solutions for embedded systems that require reliability, high availability, fault tolerance, and real-time responses.	
Cortex-M Series	Cortex-M33 Processor 	Optimized for cost and power-sensitive microcontroller and mixed-signal applications. Designed for applications requiring efficient security or digital signal control. Includes Arm TrustZone security.	Cortex-M Automotive Applications: <ul style="list-style-type: none"> <li>Body Electronics</li> <li>Gateway</li> <li>SoC management</li> <li>Sensors</li> </ul>
	Cortex-M23 Processor 	Smallest and lowest-power microcontroller with Arm TrustZone security, ideal for applications requiring software isolation and security.	
	Cortex-M7 Processor 	The highest performance CPU in the energy-efficient Cortex-M processor family and includes digital signal processing (DSP) instructions.	
	Cortex-M4 Processor 	Designed to address applications requiring digital signal processing, with a blend of efficient, easy-to-use control and signal processing capabilities.	
	Cortex-M3 Processor 	Designed for cost-sensitive and power-constrained solutions in a broad range of devices. Balanced between area, performance, and power.	
	Cortex-M0+ Processor 	The smallest footprint and lowest power requirements of all Cortex-M processors, suitable for a wide variety of applications, including sensors and wearables.	

GPU Processing		
Mali-G52 Graphics Processor	Designed to bring premium visual experiences to mainstream markets with heightened machine learning capabilities.	Automotive Applications: <ul style="list-style-type: none"> <li>• IVI &amp; Digital Cockpit</li> <li>• ADAS</li> </ul>
Corelink Interconnect		
CoreLink CCI-550 Cache Coherent Interconnect	Full coherency with up to six clusters including. big.LITTLE and coherent accelerators. High performance and power efficiency with integrated snoop filter.	Automotive Applications: <ul style="list-style-type: none"> <li>• Cabin audio</li> <li>• Connectivity</li> <li>• IVI</li> <li>• ADAS</li> </ul>
CoreLink NIC-450 Network Interconnect	Highly configurable topology with network-on-chip properties for building high-performance, optimized, AMBA-compliant SoC connectivity, including QoS and Thin links.	
CoreLink NIC-400 Network Interconnect	Highly configurable topology with network-on-chip properties for building high-performance, optimized, AMBA-compliant SoC connectivity.	
CoreLink ADB-400 AMBA Domain Bridge	An asynchronous bridge between two components or systems that can be in a different power, clock, or voltage domains.	General purpose component for a wide range of automotive applications
CoreLink XHB-400 AXI4-AHB Bridge	Converts AXI4 protocol to AHB-Lite protocol via an AXI4 slave interface and an AHB-Lite master interface.	
System Controllers		
CoreLink DMA-330 AXI DMA Controller	A high-performance DMA controller that can boost the performance and reduce the power consumption in AXI-based systems.	General purpose component for a wide range of automotive applications
CoreLink DMA-230 AHB Micro DMA Controller	Low gate count (3-10k gates) micro-DMA engine targeting AHB-based Cortex-M systems.	
CoreLink GIC-500 Generic Interrupt Controller	Detects, manages, virtualizes, and distributes interrupts for Armv8.0-A processors. Configurable up to 128 single-threaded cores and 960 shared interrupts.	Automotive Applications: <ul style="list-style-type: none"> <li>• Cabin audio</li> <li>• Connectivity</li> <li>• IVI</li> <li>• ADAS</li> </ul>
CoreLink GIC-400 Generic Interrupt Controller	Detects, manages, and virtualizes interrupts for Armv7 processors. Configurable up to 8 cores and 480 shared interrupts.	
CoreLink TZC-400 TrustZone Address Space Controller	Performs security checks on transactions to memory or peripherals, configurable up to 8 regions.	General purpose component for a wide range of automotive applications
CoreLink MMU-500 System Memory Management Unit	System memory management unit that includes caching and memory virtualization. Enforces memory protection and access control, and is designed for use in a virtualized system where multiple guest operating systems are managed by a hypervisor. Supports Armv8-A and Armv7-A.	Automotive Applications: <ul style="list-style-type: none"> <li>• Connectivity</li> <li>• IVI</li> <li>• ADAS</li> </ul>
BP140 AXI Internal Memory Interface	AXI to on-chip SRAM interface.	General purpose component for a wide range of automotive applications
BP141 TrustZone AXI Memory Interface	AXI to on-chip SRAM interface with support for Arm TrustZone protection for secure memory regions.	

## Peripheral Controllers

PL011 UART Universal Asynchronous Receiver/Transmitter	Peripheral controllers for UART, SPI and real-time clock.	General purpose component for a wide range of automotive applications
PL022 SPI Synchronous Serial Port		
PL031 RTC Real Time Clock		

## CoreSight Debug & Trace

CoreSight SoC-400 Debug and Trace	Configurable components, including debug access trace generation manipulation and output, cross triggering, and time stamping.	Automotive applications: <ul style="list-style-type: none"> <li>• Used in silicon bring-up</li> <li>• Metrology</li> <li>• Software debug and optimization</li> </ul>
CoreSight SDC-600 Secure Debug Channel	Addresses device security needs by allowing silicon and tool vendors to enforce protection and police debug access, and by working closely with cryptographic elements and debug certificate authentication.	
CoreSight STM-500 System Trace Macrocell	Trace source for real-time software instrumentation with no impact on system behavior or performance. Extends the low-cost, real-time visibility of software and hardware execution to all software developers. Supports 64-bit memory interfaces.	
CoreSight System Trace Macrocell	System Trace Macrocell supporting 32-bit memory interfaces.	
CoreSight Trace Memory Controller	A configurable trace component to terminate trace buses into buffers, FIFOs, or alternatively, to route trace data over AXI to memory or off-chip to interface controllers.	

## Design Kits

Corstone-101 foundation IP	Contains a pre-integrated, verified subsystem and system IP that brings together all core elements for an SoC. Includes the CoreLink SSE-050 subsystem built around a Cortex-M3 processor. Other elements include CMSDK, AHB Flash Cache, RTC, TRNG, and a generic eFlash controller.	Automotive Applications: <ul style="list-style-type: none"> <li>• Body electronics</li> <li>• Gateway</li> <li>• SoC management</li> <li>• Sensors</li> </ul>
Corstone-201 foundation IP	Incorporates the Arm SSE-200 subsystem for Cortex-M33 and the SSE-123 example subsystem built around the Cortex-M23. The subsystems provide a solid base for either mainstream or constrained device SoC design, with Arm TrustZone support for deep-rooted security.	

## Virtual System Models

Virtual System Models	<p>Fixed configuration systems for select CPUs within the mainstream package for benchmarking, performance analysis, and software development ahead of silicon.</p> <p>Fast and Cycle Model variants for each system. Software packages include prepackaged benchmarks and the ability to add own software.</p>	General purpose component for a wide range of automotive applications
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## Safety Packages



Cortex-A53 Safety Package	<p>Safety Packages provide information used by chip developers when creating SoCs for functional safety applications and for easing the process of obtaining safety certification. They contain documentation specific for an individual processor.</p> <p>Cortex-R52, Cortex-M4, Cortex-M3, and Cortex-M0+ Safety Packages also provide access to their respective Software Test Library (STLs) to enable integration of the library.</p>	<p><a href="https://www.arm.com/why-arm/technologies/safety">https://www.arm.com/why-arm/technologies/safety</a></p>
Cortex-R52 Safety Package		
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Cortex-M4 Safety Package		
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Cortex-M0+ Safety Package		