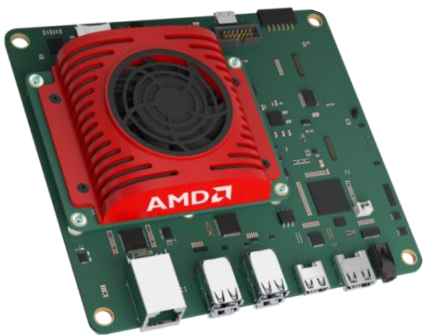# KRIA™ SOM PRODUCT SELECTION GUIDE

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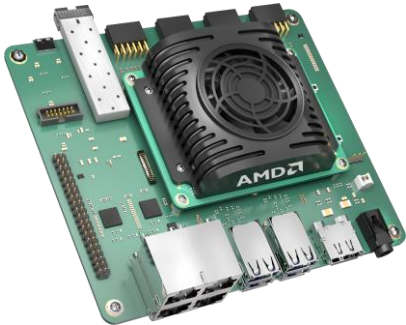
# Kria SOM Products Overview

## SOM-based Development Kits

Kria™ KV260
Vision AI Starter Kit

Kria KR260
Robotics Starter Kit

Kria KD240
Drives Starter Kit

**SK-KV260-G**
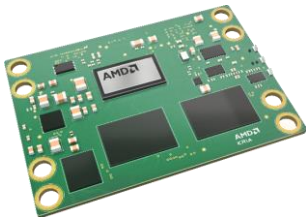
For vision and smart city applications
with latest AI models

**SK-KR260-G**

For industrial systems including
ROS2-based robotics applications

**SK-KD240-G**

For deterministic motor control
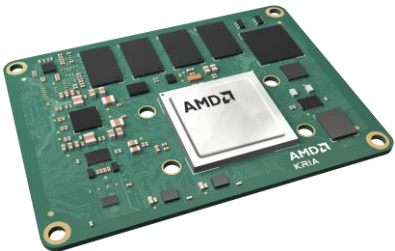and DSP applications

## Production Modules
Fully Qualified & Certified

Kria K24 SOM

Kria K26 SOM

**SM-K24-XCL2GC/I**

Cost-optimized SOM for lower power,
smaller form-factor & cost sensitive
applications

**SM-K26-XCL2GC/I**

Mid-range SOM for vision AI and robotics
applications requiring higher
performance per watt

- Connector compatible between SOMs
- Offered in C-Grade and I-Grade

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# Kria™ SOM Product Table

| Area | Parameter | K24 | K26 |
|---|---|---|---|
| Silicon Device | Zynq™ UltraScale+™ MPSoC | XCK24 (A530 InFO package, custom and optimized device for motor control and DSP apps) | XCK26 (D784 package, custom and optimized device for vision AI and robotics apps) |
| SOM to Carrier Connectors | Samtec Connector | 1x 240-pin, 1x 40-pin | 2x 240-pin |
| Form Factor | Dimensions (with heat spreader) | 60 x 42 x 11 mm | 77 x 60 x 11 mm |
| Processor Unit & Acceleration | Application Processor | Quad-core Arm® Cortex®-A53 MPCore™ at 1.33 GHz | |
| | Real-Time Processor | Dual-core Arm Cortex-R5F MPCore at 553 MHz | |
| | Graphics Processing Unit | Mali™-400 MP2 at 600 MHz | |
| | Deep Learning Processor Unit (DPU) | INT8 (852 GOPs with B2304 DPU) | Up to 1.4 TOPS with B4096 at 300 MHz |
| | Trusted Platform Module (TPM) | Infineon 2.0 | |
| Memory | On-Chip[1] | 9.4 Mb On-Chip SRAM | 26.6 Mb On-Chip SRAM |
| | On-SOM | 2 GB 32-bit LPDDR4 @ 1066 Mb/s w/ ECC configuration and 32 GB eMMC | 4 GB 64-bit DDR4 (non-ECC) and 16 GB eMMC |
| Connectivity | High-Speed PS Connectivity (GTR) | PCIe® Gen2 x4, 2x USB3.0, SATA 3.1, DisplayPort, 4x Tri-mode Gigabit Ethernet | |
| | General PS Connectivity (MIO) | 2x USB 2.0, 2x SD/SDIO, 2x UART, 2x CAN 2.0B, 2x I2C, 2x SPI, 4x 32b GPIO | |
| Transceivers | GTH 12.5 Gb/s Transceivers[4] | - | 4 (PCIe Gen3 x4, SLVS-EC, HDMI 2.0, DisplayPort 1.4)[2] |
| | GTR 6 Gb/s Transceivers | 4 | 4 |
| I/O Count | PS MIO (1.8V) | 49 | 52 |
| | PL High-Density I/O (HDIO) (3.3V) | 23 | 69 |
| | PL High-Performance I/O (HPIO) (1.8V) | 56 | 116 |
| Programmable Logic | System Logic Cells (K) | 154 | 256 |
| | DSP Slices | 360 | 1,248 |
| Integrated IP | Video Codec Unit (VCU) H.265/H.264 | - | 1x up to 32 streams (total resolution ≤ 4Kp60) |
| | PCI Express Gen 3x16 | - | 2x Gen3x8[5] |
| Power & Thermal | Typical Power | 2.5W[3] | 7.5W |
| | Maximum Power[2] | 7.5W[3] | 15W |
| | Thermal Interface | Passive (Clam shell thermal plates) | Passive (Heat spreader) |
| Speed and Temperature Grades | Commercial | -2 speed grade, low voltage and 0 to 85°C temperature range | |
| | Industrial | -2 speed grade, low voltage and −40 to 100°C temperature range | |

1. On-Chip Memory (Mb) = Max. Distributed RAM + Total Block RAM + UltraRAM
2. Estimated and subject to change based on actual hardware evaluation
3. Estimated values based on theoretical data
4. For the I-grade SOM, the data rate is 10.3125 Gb/s (only C-grade offers 12.5 Gb/s)
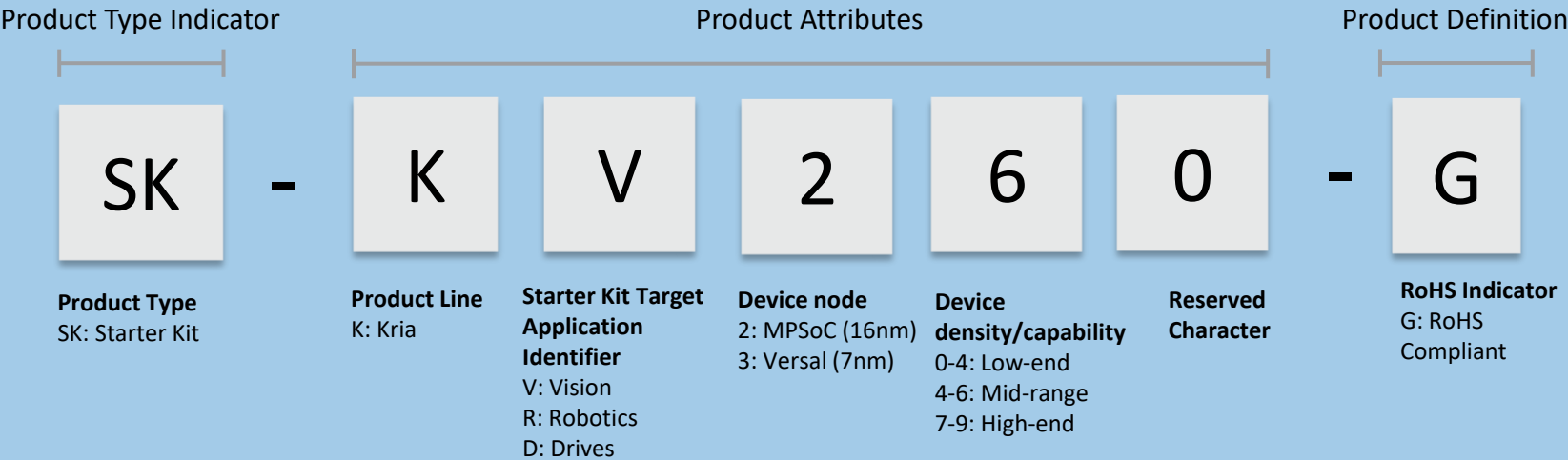5. PCIe block configuration dependent on available transceivers
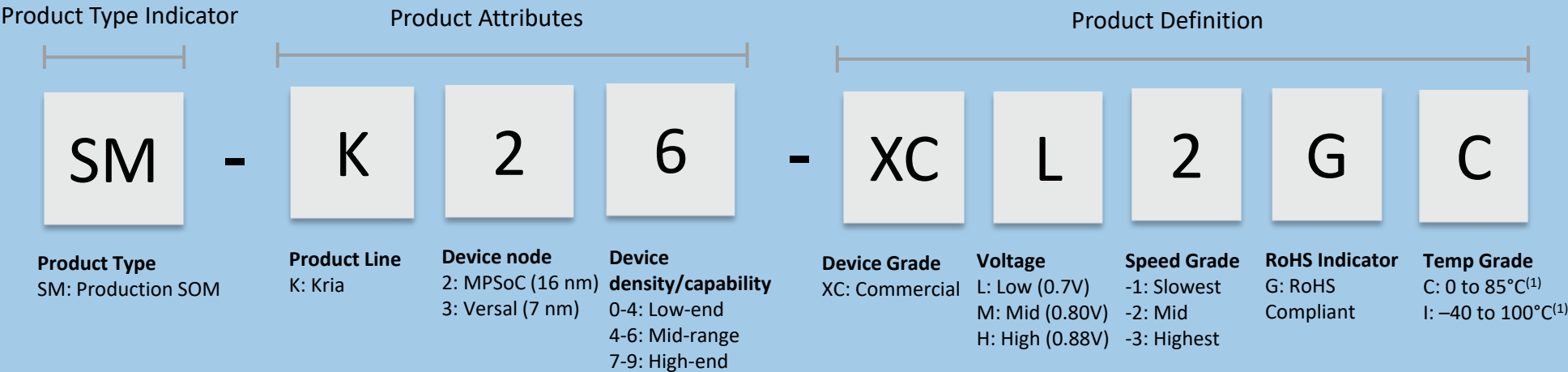
XMP499 (v1.0)

# Kria™ Starter Kit Product Table

| Comparison Metric | Feature | KV260 Vision AI Starter Kit | KR260 Robotics Starter Kit | KD240 Drives Starter Kit |
|---|---|---|---|---|
| SOM used on the Starter Kit | Non-Production SOM[1] | | K26 SOM | K24 SOM |
| SOM to Carrier Connector | Samtec Connector | 1x 240-pin | 2x 240-pin | 1x 240-pin, 1x 40-pin |
| Networking/Comms | RJ-45 | 1x | 4x (2x Processor Sub-system (PS), 2x Programmable Logic (PL)) | 3x (1x PS, 2x PL) |
| | SFP+ | - | 1x for GigE Vision | - |
| | RS-485 | - | - | 1x (PS-based) |
| | CAN | - | - | 1x (PS-based) |
| Debug & Trace | JTAG PC4 Header (Debug) | | Yes | |
| Security | | | Zynq™ UltraScale+™ MPSoC hardware root of trust (RoT) in support of secure boot. Infineon TPM2.0 in support of measured boot. | |
| Expansion Connectors | Pmod (12-pin) | 1x | 4x | 1x (for IMU, supporting interfaces) |
| | Expansion | - | Raspberry Pi HAT header (26 I/Os) | - |
| Memory/Boot Options | PS (capacity / width) | | 4GB (4 x 512Mb x 16 bit) [non-ECC] | 2GB LPDDR (2 channel x 256 Mb x 16 bit/channel) [non-ECC] |
| | QSPI | | 512 Mb QSPI, Primary Boot Option | |
| | microSD Card | | Yes (up to 64GB), Secondary Boot Option | |
| Camera | MIPI | 2x IAS interface (+AP1302 ISP) | - | - |
| | SLVS-EC | - | 1x (Gen2 x 2 lane) | - |
| | Raspberry Pi | Yes | - | - |
| | USB 3.0 / 2.0 Downstream | | x4 (Host, can also be used for other peripherals) | 2x (Host, can also be used for other peripherals) |
| Video | HDMI Out | Yes | - | - |
| | DisplayPort Out | | Yes | - |
| | Video Codec Unit | | Yes – 4K60p; H.264/265 Video Codec | - |
| Motors Control Interfaces and Sensor Peripherals | 3-Phase Motor Connector | | - | x1 |
| | QEI Connector | | - | x1 Single Ended and x1 Differential, (with on board 2-pin header that is used to choose one of them) |
| | Torque Sensor Connector | | - | x1 |
| | Brake Control Connector | | - | x1 |
| | DC Link Connector | | - | x1 |
| | 1-Wire Interface | | - | x1 |
| Supported Accessories[2] | Accessory packs sold by AMD | Kria™ KV260 Basic Accessory Pack (BACCP) Kria KV260 Power Supply and Adapter | Sony IMX547 Camera Kit (Offered in Color and Monochrome Versions) | Motor Accessory Pack (MACCP) |

1. Defeatured version of the production SOM, lacks eMMC boot options and is not fully qualified for reliability in harsh environments
2. Accessories are sold separately

# Kria™ SOM Products Ordering Information



**Product Type Indicator**

**Product Attributes**

**Product Definition**

| SM | - | K | 2 | 6 | - | XC | L | 2 | G | C |

**Product Type**
SM: Production SOM

**Product Line**
K: Kria

**Device node**
2: MPSoC (16 nm)
3: Versal (7 nm)

**Device density/capability**
0-4: Low-end
4-6: Mid-range
7-9: High-end

**Device Grade**
XC: Commercial

**Voltage**
L: Low (0.7V)
M: Mid (0.80V)
H: High (0.88V)

**Speed Grade**
-1: Slowest
-2: Mid
-3: Highest

**RoHS Indicator**
G: RoHS Compliant

**Temp Grade**
C: 0 to 85°C[1]
I: −40 to 100°C[1]

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**Product Type Indicator**

**Product Attributes**

**Product Definition**

| SK | - | K | V | 2 | 6 | 0 | - | G |

**Product Type**
SK: Starter Kit

**Product Line**
K: Kria

**Starter Kit Target Application Identifier**
V: Vision
R: Robotics
D: Drives

**Device node**
2: MPSoC (16nm)
3: Versal (7nm)

**Device density/capability**
0-4: Low-end
4-6: Mid-range
7-9: High-end

**Reserved Character**

**RoHS Indicator**
G: RoHS Compliant

Note:
1. The K26 SOM maximum operating temperature is the temperature below which the product will operate at the specified clock speeds.

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XMP499 (v1.0)

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