

# New Product Update

Design smarter multi-display HMI systems enabled by edge AI on AM67A processors

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# Agenda

- [What is TI's new line of general purpose and analytics processors](#)
- [Overview of TI's new AM67x processors](#)
- [Introduce new beagleboard.org open source platform](#)
- [Resource to help you get started today](#)

# What is TI's new line of general purpose and analytics processors?

# TI Processors | Differentiated technologies

## Technology expertise



### General purpose

Affordable, energy efficient foundational processors solutions with scalable upgrade paths.



### Audio signal processing

High performance MCUs for lowest-latency signal processing applications.



### Networking

Integrated and secure industrial solutions for robust, modern I/O and real-time, deterministic communication.



### Real-time control

Low latency real-time control solutions for robotics and factory automation at from simple to advance functions.



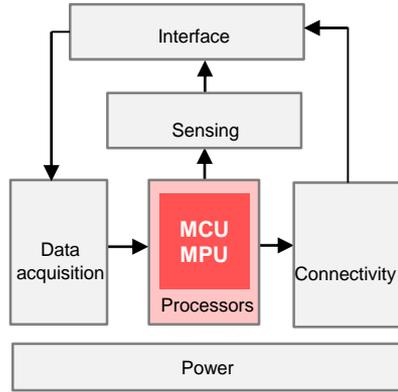
### Edge AI & analytics

Bring smart cameras, robots and intelligent machines to life with hardware-accelerated computer vision, sensor fusion and deep learning.

### Functional safety & security

Accelerate your designs with Functional Safety-Compliance & secure processors and software

# TI processors | How we scale your success



From **general-purpose controllers** to **advanced processors** our portfolio of solutions are found at the center of every system.

## Portfolio



Broadest ever portfolio, easier to use than ever before. Expanding options with lower cost and general purpose solutions and advance application accelerators

## Simpler tools and software



Scalable hardware from starter kits to EVMs, with unified software SDK's and available development options for all major operating systems.

## Ecosystem & support



Our expanding ecosystem of curated experts operate on your schedule with robust support and services to get you to production faster.

# TI processors portfolio | Scalability

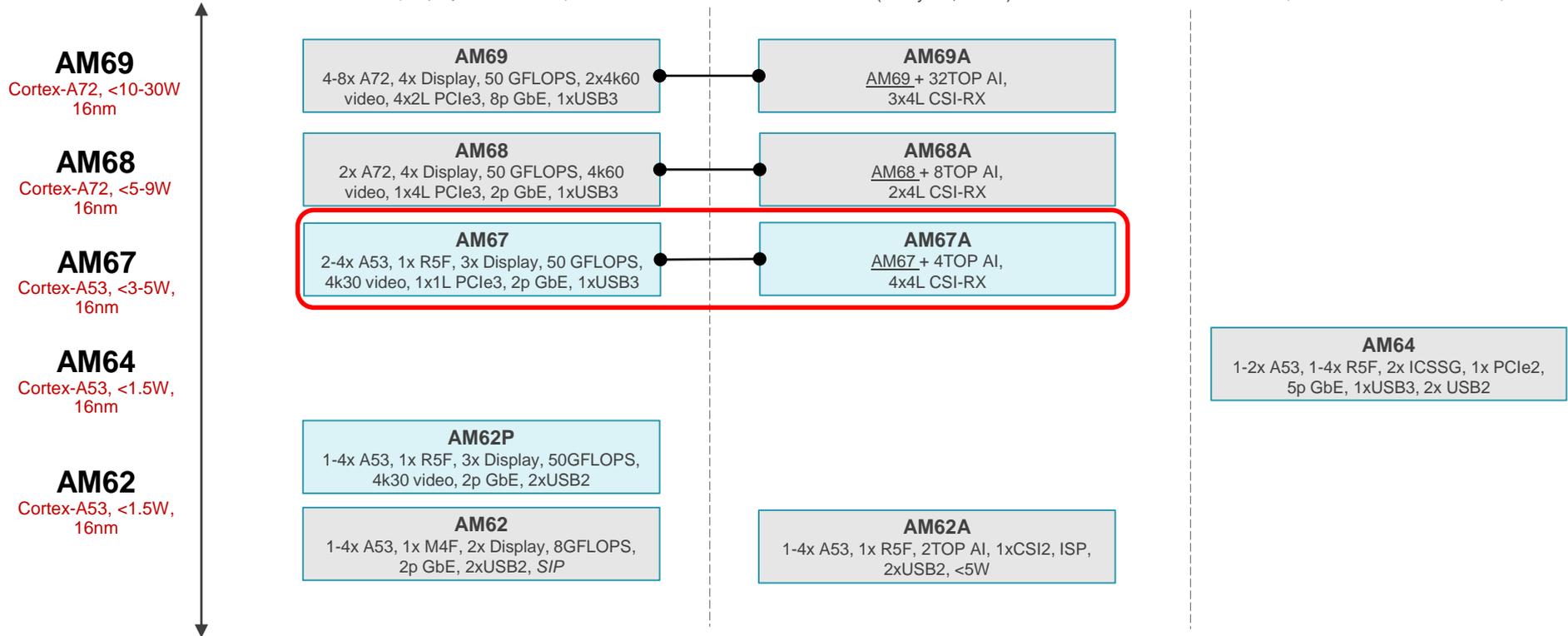
Sampling      Production

●—● Pin-pin compatible

## General purpose (Displays, multimedia)

## Edge AI & signal processing (Analytics, DL/AI)

## Networking (PRU-ICSS, Ethernet, PCIe)



# Overview of TI's new AM67x processor

# AM67x: Design smarter multi-display HMI systems

Lower-cost, lower-power, richly connected edge AI processor for general compute applications

**Differentiate w/  
high performance  
and connectivity**

*Unlock low-cost applications that  
require GPU, PCIe3, USB3, 4 TOPs  
AI*

**Power-efficient  
architecture**

*Deploy anywhere with simpler  
thermal designs*

**Open-source  
development**

*Build with open source  
beagleboard.org hardware, mainline  
Linux and open AI frameworks at  
dev.ti.com.*

# What is AM67x?

Arm-based processors bring AI to multi-display HMI systems

## Action

Enable high resolution 3D rendering with low latency, high-throughput DDR memory access as well as USB3 and PCIe Gen 3 for enhanced system level connectivity using Linux-based systems.

## Key TI Products

- AM67, AM67A, TPS6522x(PMIC)

## Key value proposition

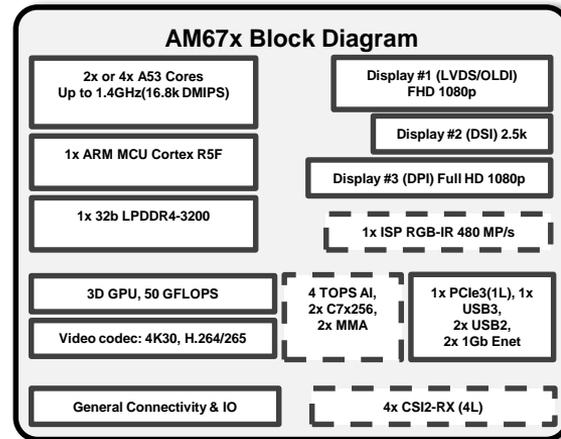
- 4x A53 ARM Cortex up to 1.4GHz
- Up to 3 displays concurrently(DPI, DSI, LVDS)
- Up to 4 TOPS AI/ML, shared C7x DSP/MMA
- 4x CSI-RX (4L each), 480MP/s ISP
- 50 GFLOPs GPU
- 1x PCIe Gen 3(1L), 1x USB3.0, 2x USB2, 2x SGMII

## Applications

*HMI, IoT gateways, machine vision, video surveillance, off-highway vehicle applications, test & measurement*



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**For more information:**

- TI.com Product Folder: [LINK](#)

**Introduce BeagleY<sup>®</sup>-AI evaluation  
platform to get started today**

# What is BeagleY-AI?

Low cost, high-performance community board

## Action

BeagleY-AI combines the powerful-yet-efficient AM67A AI vision processor, flexible multimedia interfaces, wired and wireless connectivity to put intelligent robotics, automation, user interface designs within reach—right out of the box!

## Key TI Products

- AM67, AM67A, TPS65219x(PMIC), TPS6287x(PMIC)

## Key value proposition

- 4x A53 Arm Cortex® up to 1.4GHz
- Up to 3 displays concurrently(HDMI, DSI, LVDS)
- Bring AI to your system up to 4 TOPS, shared C7x DSP/MMA
- 2x CSI connectors, 1x shared with DSI
- 50 GFLOPs GPU
- 1x PCIe Gen 3(1L), 1x 1Gb Ethernet, 4x USB3 ports

## Applications

*HMI, IoT gateways, machine vision, video surveillance, off-highway vehicle applications, test & measurement*



For more information:

- TI.com Product Folder: [LINK](#)

# Partnership | TI & beagleboard.org

Low cost, high-performance community board



## Market Oriented

- Low cost entry to evaluate AM67
- Small form factor (85mm x 56mm)
- Board fit for industrial designs
- Long-term support by community, beagleboard.org, and TI
- Scale to broad market with ecosystem accessories for self-service reference designs
- Directly purchase from trusted distributors



## BeagleY-AI : Features

### Total TI solution!



- Three(3) concurrent displays –
  - Mini HDMI - Full HD 1080p
  - DSI – 2k
  - OLDI – 2k
- Up to 4TOPS AI/DSP
- 4k30 video CODEC enc/dec
- 32b LPDDR4-3200(4GB and 8GB SKUs)
- WL1835MOD – WiFi, Bluetooth, BLE
- 4x USB3 type A
- 1x RJ Enet port w/ POE and TSN
- 2x 4L CSI2-RX MIPI camera connector

## Software & Demos

- Multiple Display HMI (3 display1 Camera)
- TI Yocto Linux SDK
- Debian support through beagleboard.org



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UI made by KDAB using QT

**Get started today!**

# Getting started

You can start evaluating this device leveraging the following:

Content type	Content title	Link to content or more details
Product folder	AM67 AM67A	<a href="http://www.ti.com/product/AM67">www.ti.com/product/AM67</a> <a href="http://www.ti.com/product/AM67A">www.ti.com/product/AM67A</a>
Reference design	BEAGLEY-AI	<a href="http://www.ti.com/tool/BEAGLEY-AI">www.ti.com/tool/BEAGLEY-AI</a> <a href="https://www.beagleboard.org/boards/beagley-ai">https://www.beagleboard.org/boards/beagley-ai</a>
Customer training series or webinar session	Design smarter multi-display HMI systems enabled by edge AI on AM67A processors	<a href="https://dev.ti.com/tirex/explore/node?node=AAz9Dxht0WINjAge02XsaQ">https://dev.ti.com/tirex/explore/node?node=AAz9Dxht0WINjAge02XsaQ</a>
Technical blog content or white paper	Top five design considerations for smart multi-display designs	<a href="https://www.ti.com/lit/pdf/spradi1">https://www.ti.com/lit/pdf/spradi1</a>
Selection and design tools and models	AM67 or AM67A product page	<a href="https://www.ti.com/microcontrollers-mcus-processors/arm-based-processors/products.html">https://www.ti.com/microcontrollers-mcus-processors/arm-based-processors/products.html</a>
Development tool or evaluation kit	BeagleY-AI – beagleboard.org EVM J722SXH01EVM – TI EVM	<a href="https://www.beagleboard.org/boards/beagley-ai">https://www.beagleboard.org/boards/beagley-ai</a> <a href="https://www.ti.com/tool/J722SXH01EVM">https://www.ti.com/tool/J722SXH01EVM</a>



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