

# New Product Update

Discover TIs newly released  
AM62Plus

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processors

# Agenda

- Overview of TI's new AM62P processor
- Overview of the Linux<sup>®</sup> and Android<sup>™</sup> software development kits (SDKs) with real-time functional safety and security
- Accessible and easy-to-use open source tools to use for development
- HMI demos available for the AM62P processor
- How to get started with AM62P processors

# Scalable general-purpose processors for HMI systems

# TI Processors | Differentiated technologies

## Technology expertise



### General purpose

Affordable, energy efficient foundational processors with scalable upgrade paths.



### Audio signal processing

High performance processors 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.



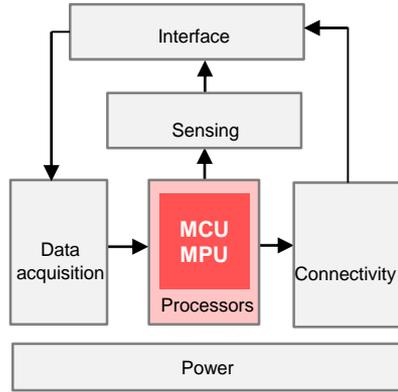
### Edge AI & analytics

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 | Released Devices



## General Purpose

## Networking

## Analytics

High

**Now**

**AM62-Plus**  
 1-4x A53, 1x R5F  
 3xDisplay, 30-50 GFLOPS  
 17x17mm, < 3W, 4K30 Dec

Medium

**New**

**AM635**  
 1-4x A53, 1x M4F  
 2xDisplay, USB2  
 13x13mm, < 1.5W

**New**

**AM625**  
 1-4x A53, 1x M4F  
 2xDisplay, 8GFLOP, USB2  
 13x13mm, < 1.5W

**Now**

**AM625SIP**  
 1-4x A53, 1x M4F, 512MB  
 LPDDR4 SIP, 2xDisplay,  
 8GFLOP, USB2  
 13x13mm, < 1.5W

**AM64x**  
 1-2x A53, 1-4x R5F  
 2x ICSSG, PCIe, USB3  
 17x17mm, < 1.5W

**AM243x**  
 1-4x R5F  
 2x ICSSG, PCIe, USB3  
 17x17mm or 11x11mm

*AM64x / AM243x 17x17mm package is P2P*

**New**

**AM62A7**  
 1-4x A53, 1x R5F, 2TOP AI  
 CSI2, 5MP ISP, USB2,  
 18x18mm, < 5W

**New**

**AM62A3**  
 1-4x A53, 1x R5F, 1TOP AI  
 CSI2, 5MP ISP, USB2,  
 18x18mm, < 5W

*AM62x / AM625SIP 13x13mm package is P2P*

Low

**AM335x**  
 1x A8, PRU-ICSS, 3D GPU  
 1xDisplay, USB2  
 15x15mm, 13mm x 13mm  
 < 1.5W

# Overview of the TI AM62P processor

# What is AM62P? | TI's new Arm®-based processors

## Action

Enable high resolution 3D rendering with low latency, high-throughput DDR memory access as well as Hardware encode/decode for enhanced system level connectivity using Linux-based systems.

## Key TI products

- AM62P, TPS6522x (PMIC)

## Key value proposition

- 4x A53 Arm® Cortex® up to 1.4GHz
- 32-bit LPDDR4 3200MT/s
- Up to 3 displays concurrently(DPI, DSI, LVDS)
- 1x CSI-RX (4L each), 300MP/s
- 50 GFLOPs GPU
- Secure Boot
- Android™ & Linux®

## Applications

*HMI, Automotive cluster, IoT gateways, Building Automation, Factory Automation & Control, test & measurement*



## For more information:

- TI.com: [www.ti.com/product/am62p](http://www.ti.com/product/am62p)

# Common HMI Design Challenges

## Increase processing needs

- Higher-Resolution and multiple displays increase processing demands
- Streaming video

## Impact on power and heat

- More processing capability generally increases power consumption and thermal management challenges
- Thinner displays and portable HMIs require non-heat sink designs

## Role of GPUs/H.264/265

- Specialized processing cores, such as GPUs, are critical for managing power efficiency
- Hardware encoder/decoder takes the workload off the CPU for more efficient performance

## Balanced Performance

- Optimized to deliver the best performance within power and thermal constraints
- Low power modes

# Design challenges and considerations

## Interface capability and flexibility

### Diverse Display needs:

- Multi display types and resolutions necessitate varied interface options

### High-Resolution Requirements:

- Support for LVDS, DPI, and MIPI DSI interfaces

## Ease of use

### Integration into products:

- Designers must be able to easily incorporate smart displays into products

### Common enablers:

- Tools that simplify common tasks and reduce the need for specialized expertise

### Support resources:

- Comprehensive documentation and training resources assist with design challenges

## Software efficiency

### Flexible hardware design:

- Allows for optimized system configuration

### Total cost of ownership:

- Important consideration for software architecture scalability and flexibility

### TI's SDK's:

- Support for Linux® and Android™

### Scalable software elements:

- Facilitates reuse across different designs to minimize costs and maintenance

**Get started today!**

# Getting started

You can start evaluating this device leveraging the following:

Content type	Content title
Product folder	<a href="#">AM62P</a>
Software Development	<a href="#">Processor-SDK</a>
Customer training series or webinar session	<a href="#">Design smarter multi-display HMI systems enabled by on AM62P processors</a>
Technical blog content or white paper	<a href="#">Top five design considerations for smart multi-display designs</a>
Selection and design tools and models	<a href="#">AM62P- product page</a>
TI Video Library	<a href="#">Scalable HMI Processors that can drive up to 3 displays simultaneously</a>
Datasheet	<a href="#">AM62P Datasheet</a>
Hardware Design Guide	<a href="#">Hardware Design Guide for AM62P</a>
Board Design and Layout	<a href="#">AM62P LPDDR4 Board Design and Layout Guidelines</a>

# The Design Gallery

## Analytics Designs

Explore AI solutions created by Texas Instruments and third party hardware and software vendors in the TI Processors ecosystem.



### Gesture controlled HMI

This design shows integration of mmWave radar and camera sensor with AM62 to control a building access HMI with face detection and gestures to unlock a PIN controlled entry



### Face recognition for building access

Ready to evaluate and deployable solution for entry access control systems in Building Automation, Retail, Smart Appliances. Highly customized to effectively utilize the AM62 hardware to accurately detect & recognize faces in challenging conditions/environments.

[Learn more](#)



### Video doorbell with deep learning

Highly accurate people detection AI solution by PlumerAI running on AM62 Processor. The solution is optimized for battery powered products and shows scalable performance that can operate in low lighting and at various distances and backgrounds.

[Learn more](#)

## Connectivity Designs

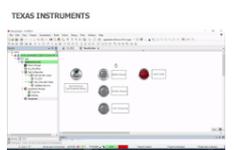
Explore demos for networking and connectivity created by Texas Instruments and third party hardware and software vendors in the TI Processors ecosystem.



### Connect to cloud with wifi

This wifi application demonstrates AM62 SK hardware that combines WL1837 solution with AM62 Processor to connect to remote access points and cloud using wifi. The wifi connection to AM62 SK EVM can be used to launch demos on the HW and report status

[Hardware](#) | [Software](#) | [Design guide](#)



### Connected factory floor with CodeSys

This demo shows how to build an industrial network with a PLC using CodeSys Control operating on an AM62x processor connected to an end point device (ex. I/O controller) operating on an AM64/AM243x microcontroller.

[Hardware](#) | [Software](#) | [Design guide](#)



### Level2 EVSE with ISO15118 & OCPP

The EV charging application contains the entire protocol flow of smart charging (between charging station and vehicle) according to ISO 15118 and supports the rapid development of L2 AC charging stations. The hardware leverages Phytac AM62 based processor module with greenPHY HW module

[Coming Soon at Embedded World 2022!!](#)

## HMI Designs

Explore HMI graphics reference created by Texas Instruments and third party hardware and software vendors in the TI ecosystem.



### Industrial HMI

Demonstrates how to design Qt based Industrial HMI demo running at 60fps for your display at full HD resolution. Design adds camera functionality to monitor operator with AI

[Hardware](#) | [Software](#) | [Design guide](#)



### Home Automation HMI: Thermostat Design

Evaluate creation of home automation HMI on AM62x processors with Thermostat Design. Design adds connectivity function with ethernet and wifi to display location based weather updates and remote configuration

[Hardware](#) | [Software](#) | [Design guide](#)



### Health Monitor HMI Design

This health monitor features Altia GUI development software and optimized code generation solutions for TI AM62x. Altia's streamlined workflow enables delivery of custom 2D/3D graphics on production hardware with safe, certifiable C code. Altia DesignServer for TI AM62x leverages all on-chip features for best performance and lowest footprint

[Learn more](#)



### Smart Warehouse HMI

The Qt Smart Warehouse HMI design on TI AM62x is an interactive multi-screen demo showcasing the



### Automotive Virtual Cluster

This application showcases the display and GPU capabilities of AM62 in automotive cluster. Design uses



### Storyboard Combo GUI Design

Creating embedded graphics on the TI AM62x just got easier. This demo image built using Crank's Storyboard



### Qt Care Patient Monitoring

Qt Care is a stylized 1920x1080 medical UI, replicating a patient monitoring screen often seen in hospitals or clinical offices. This UI replicates all 2D content. Download



### EV Charging HMI

Electrical vehicle charging HMI on TI AM62x will allow people to interact with a UI and see digital advertising. This demo image uses custom art for illustrative purposes.

## HW + SW + Design Guide

### Analytic Demos

- Gesture recognition
- Face recognition
- People detection

### HMI Demos

- Industrial HMI
- Thermostat
- Altia GUI - Health monitor HMI
- QT Smart Warehouse
- Auto Cluster
- Crank's Storyboard GUI
- QT Care - Medical UI.
- EV charging HMI

### Connectivity Demos

- WL1837 - WIFI
- CodeSys - PLC
- Level 2 EVES with ISO15118&OCPP

# SK-AM62P-LP

## AM62P Starter kit evaluation module

- Multiple display connectors support up to 3 screens
- MIPI® CSI-2 camera connector
- M.2 Connector for Wifi or Bluetooth® modules
- 2 Gigabit Ethernet ports
- UART to USB circuit for debug output
- 2 temperature sensors for monitoring SoC and LPPDDR4 thermal monitoring
- Supports Linux® and Android™ development
- Standard development tools such as Code Composer Studio™

Features & details available on the [SK-AM62P-LP product folder page](#)

**Order now & start development!**





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