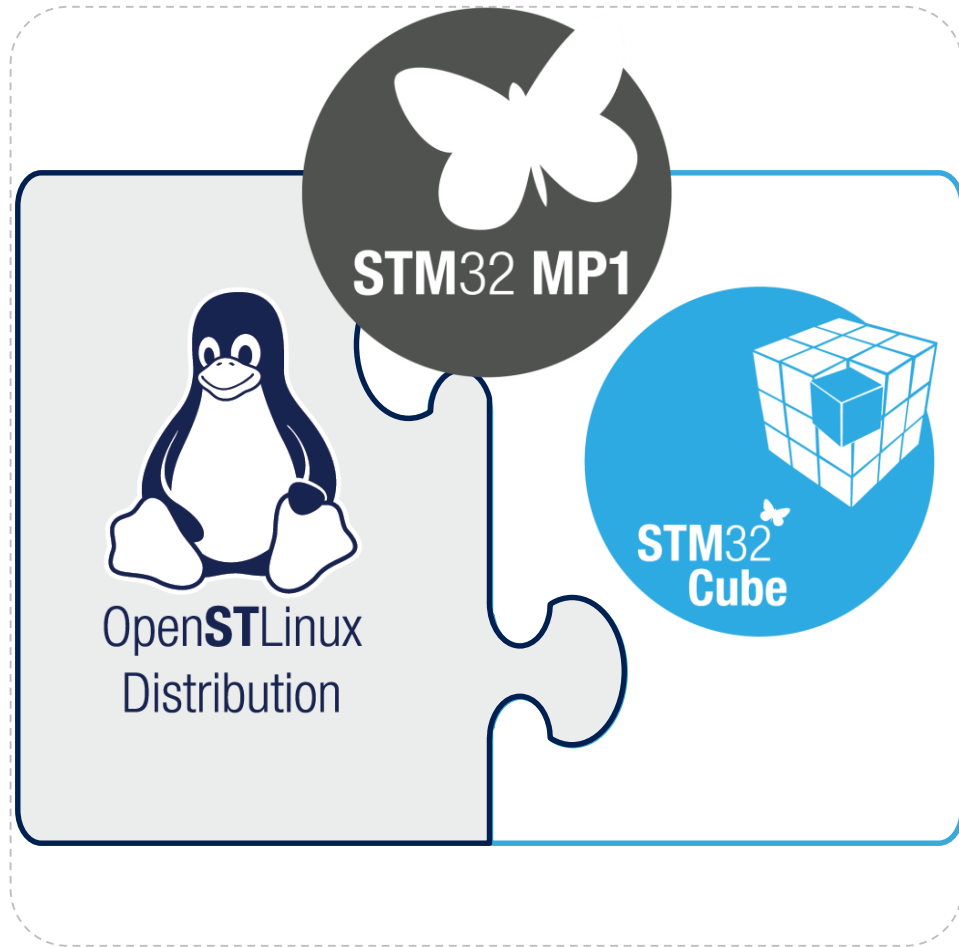# STM32MP1 Microprocessor

STM32 MP1

OpenSTLinux Distribution

STM32 Cube

General-Purpose MPU for Multiple Applications

Flexible Architecture with Rich Features
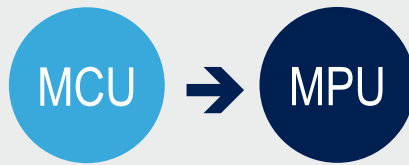
Flexible Architecture for Power Efficiency

Accelerate Development with STM32 Ecosystem

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STM32MP1: General-Purpose MPU

Suitable for All Developer Types and Multiple Applications

Developer Profile

MCU users new to MPU

MCU → MPU

Mixed MCU and MPU users

MCU + MPU

Pure MPU users

MPU

STM32 MP1

Possible Applications

Industrial

Consumer

Health & Wellness

Home

Flexible Architecture with Rich Features

Multiple Core Architecture

STM32 MP1

Display

Display Interface

Memory

DDR3
DDR3L
LPDDR2
LPDDR3
SLC NAND
SPI NAND
NOR Quad-SPI
eMMC
SD card

Memory Interface

3D GPU

arm Cortex-A7

arm Cortex-M4

Connectivity

USB	Sigma Delta Demod.	CAN FD
U(S)ART	SAI / I²S	SPI
I²C	SPDIF	Ethernet

Analog I/F

16-bit ADCs
12-bit DACs

Flexible mapping of resources and peripherals between Arm Cortex-A and Cortex-M cores

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STM32MP1 Portfolio Offering

STM32MP157

Dual Arm Cortex-A7 + Cortex-M4
3D GPU – DSI – CAN FD

STM32MP153

Dual Arm Cortex-A7 + Cortex-M4
CAN FD

STM32MP151

Arm Cortex-A7 + Cortex-M4

TFBGA257 **10x10mm p0.5**
4 layers PTH PCB

smallest package for dual Cortex-A GP MPU

TFBGA361 **12x12mm p0.5**
4 layers PTH + Laser via PCB
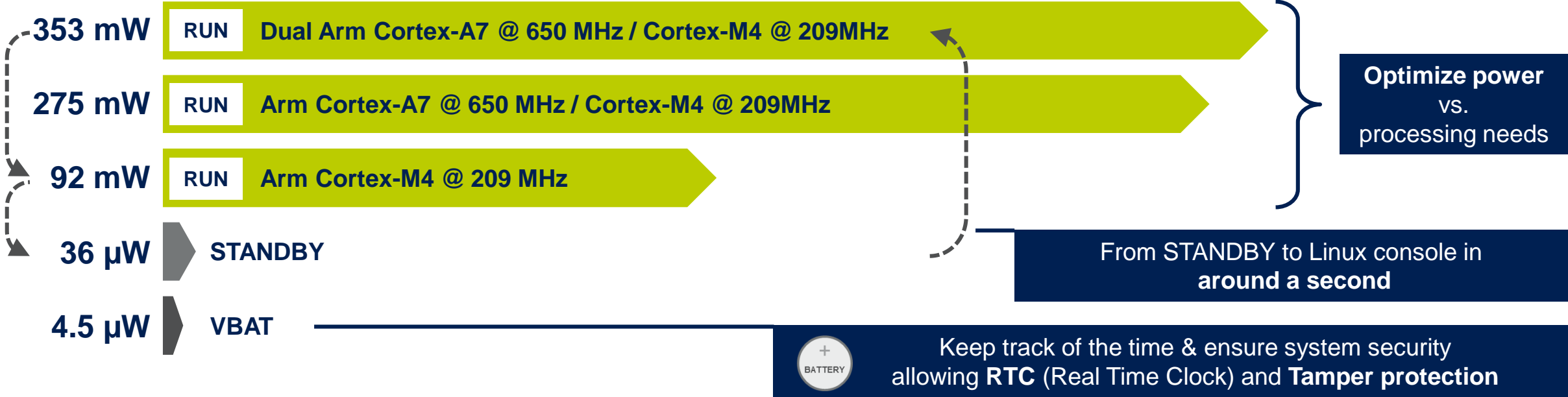
LFBGA354 **16x16mm p0.8**
4 layers PTH PCB

LFBGA448 **18x18mm p0.8**
6 layers PTH PCB

3 Product Lines ——— Optional Security ——— **4** Packages

Flexible Architecture for Power Efficiency

Dynamic Modes for Optimized Power Consumption

353 mW | **RUN** Dual Arm Cortex-A7 @ 650 MHz / Cortex-M4 @ 209MHz

275 mW | **RUN** Arm Cortex-A7 @ 650 MHz / Cortex-M4 @ 209MHz

92 mW | **RUN** Arm Cortex-M4 @ 209 MHz

36 µW | STANDBY

4.5 µW | VBAT

Optimize power vs. processing needs

From STANDBY to Linux console in **around a second**

BATTERY

Keep track of the time & ensure system security allowing **RTC** (Real Time Clock) and **Tamper protection**

Typ @ VDDCORE = 1.2V, VDD = 3.3V @ 25 °C, Peripherals OFF

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A Fully Integrated Design Suite
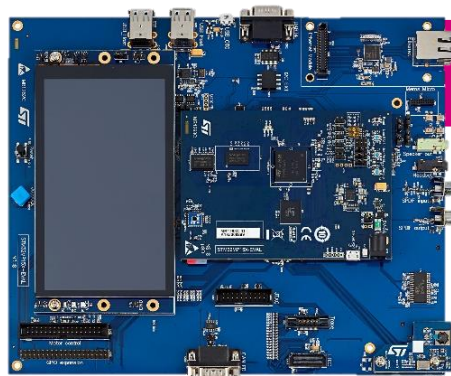
Leveraging the STM32Cube Environment
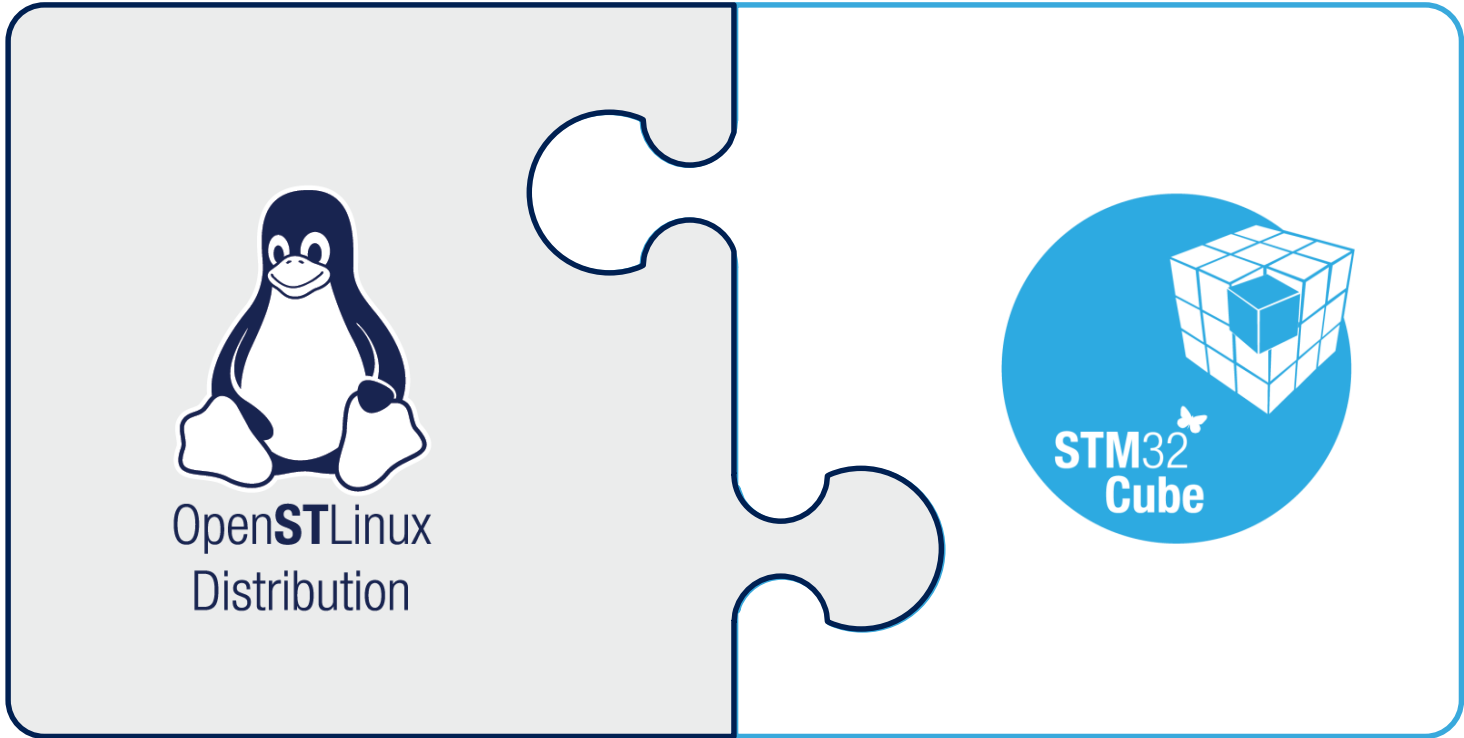
STM32MP1 Embedded Software Distribution

STM32MP1 Hardware Solutions

Speed-up evaluation, prototyping and design

Available at **$399**

Available at **$99**

Available at **$69**

Evaluation Board	Discovery Board	Boards & SoMs

Full feature STM32MP1 evaluation
• STM32MP157A-EV1
• STM32MP157C-EV1
	Flexible prototyping & demo
	• STM32MP157A-DK1
	• STM32MP157C-DK2
	  + MIPI DSI WVGA display
	  + Wi-Fi/BT combo module
		3rd Parties Boards for prototyping and production
		• Board Specification from Linaro (96boards.org)
		• Commercial SoM w/ different forms

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Speed-up evaluation, prototyping and design

Available at
$399

Available at
$99

le at
69

18mm x 18mm
Standard IC Package

OSD32MP15x

Up To
1GB DDR3

STPMIC1
PMIC

302 Ball BGA
1mm Pitch

Passives

MEMs Oscillators

4KB EEPROM

ST STM32MP15x
Dual Arm® Cortex®-A7
Arm® Cortex®-M4

Eval

Full feature

- STM32MP1
- STM32MP1

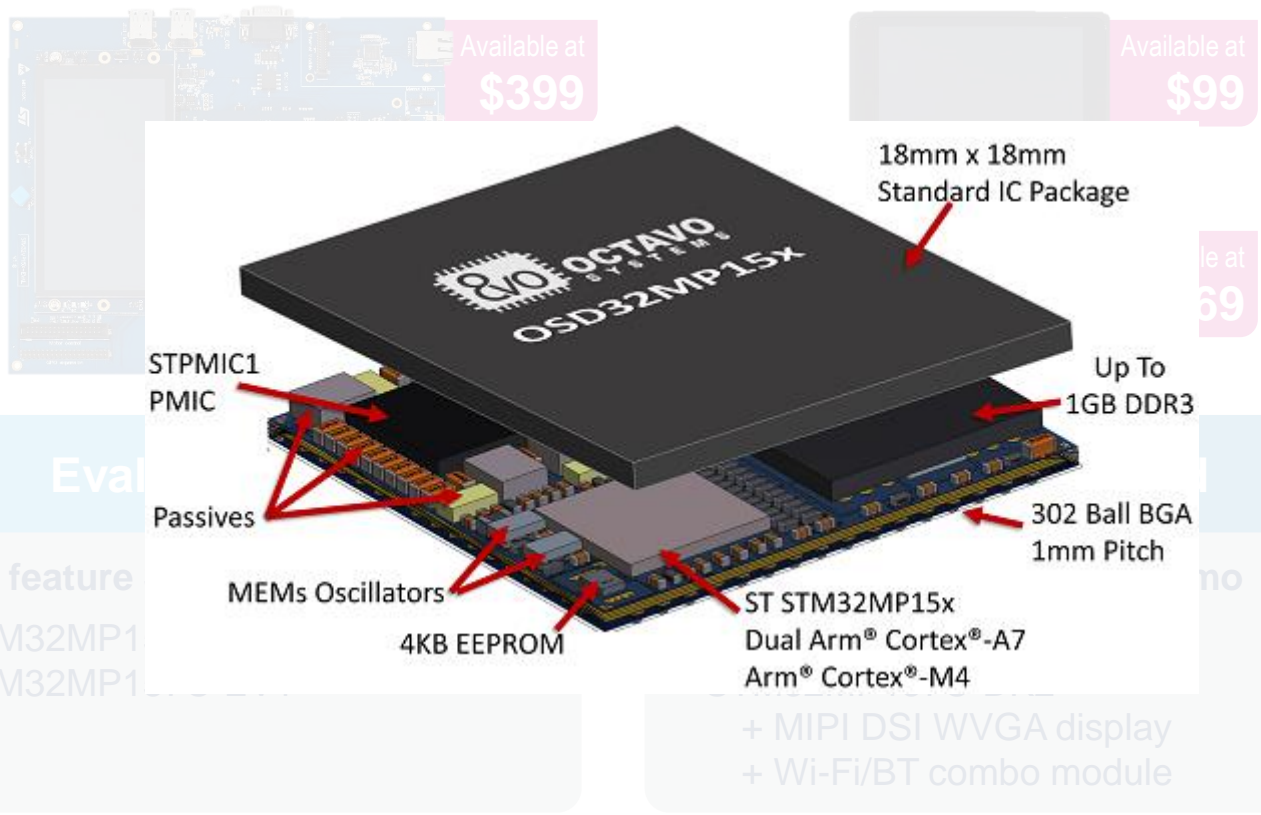+ MIPI DSI WVGA display
+ Wi-Fi/BT combo module

Boards & SoM*s

3rd-Party Boards for prototyping and production

- Board Specification from Linaro (96boards.org)
- Commercial SoM w/ different forms

Software, Training and Services
a Broad Ecosystem to Support Development

STM32 MPU wiki by *ST*

**ST's wiki user guide
for beginners and experts
https://wiki.st.com/**

**Large selection of partners
already engaged for:**

- Graphics UI
- Security
- Training and services

bootlin

Crank software inc.

PROVE & RUN

ENEA

Witekio
EMBEDDING SUCCESS

Partner Program

timesys

Qt

TARA Systems

STM32MP1 Partner Ecosystem