

New Product Update

TI's new AM62x Open Source
EVSE Development Platform with
HMI

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Agenda

- AM62 EVSE development platform overview
- AM62 Processor for EV charging
- Deeper look into the DEV platform
- AM62 EVSE HMI demo
- PINOX overview
- PHYTEC overview
- Get started with AM62 EVSE development platform

What is AM62-EVSE-DEV-PLATFORM

Smart, connected EV charging station development platform based on AM625 with HMI

Features

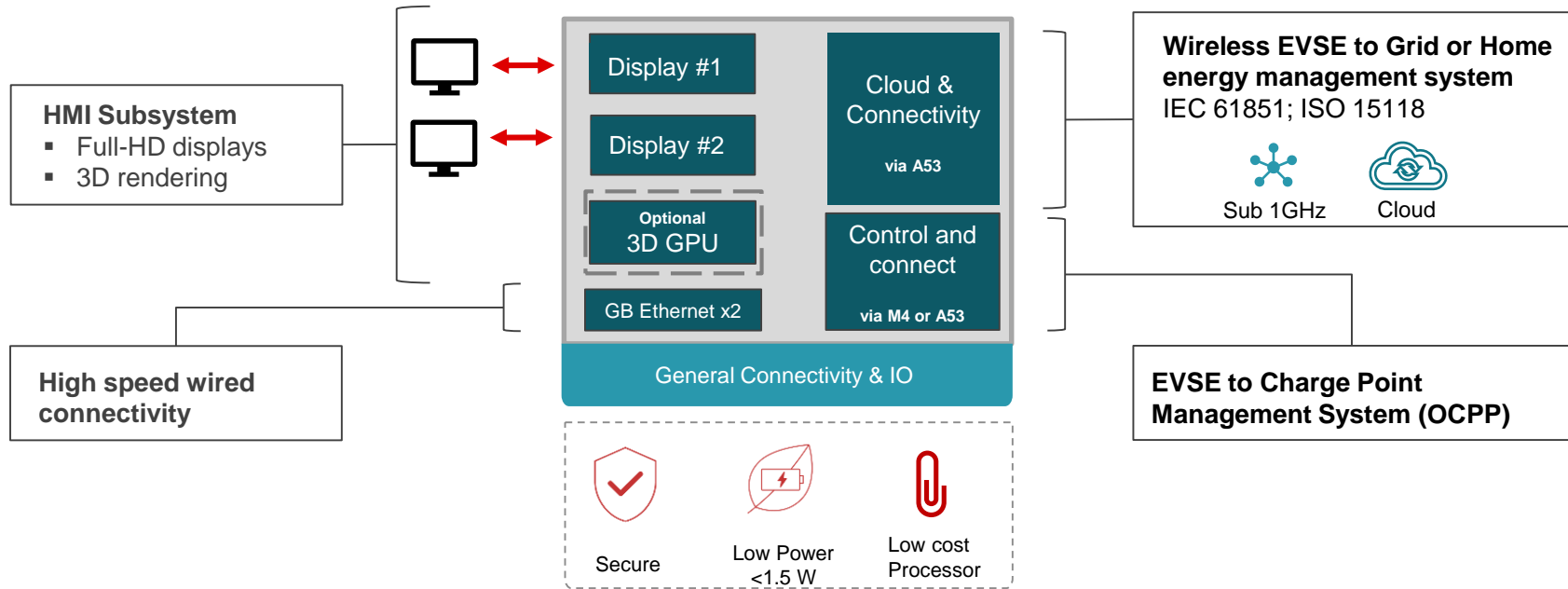
- CCS level 1 and level 2 AC charging with vehicle-to-grid (V2G) support
- Designed to meet IEC-61851 standard for basic charging
- Designed to meet ISO-15118 standards for high-level charging, including secure communication, smart charging and plug and charge
- HomePlug Green PHY interface with software to support communications for AC and DC charging
- Open charge point protocol (OCPP) version 1.6 capable system
- M.2 2230 add-in card for Wi-Fi®, Bluetooth® and sub-1 G wireless communication
- LVDS interface for full HD display when HMI is needed



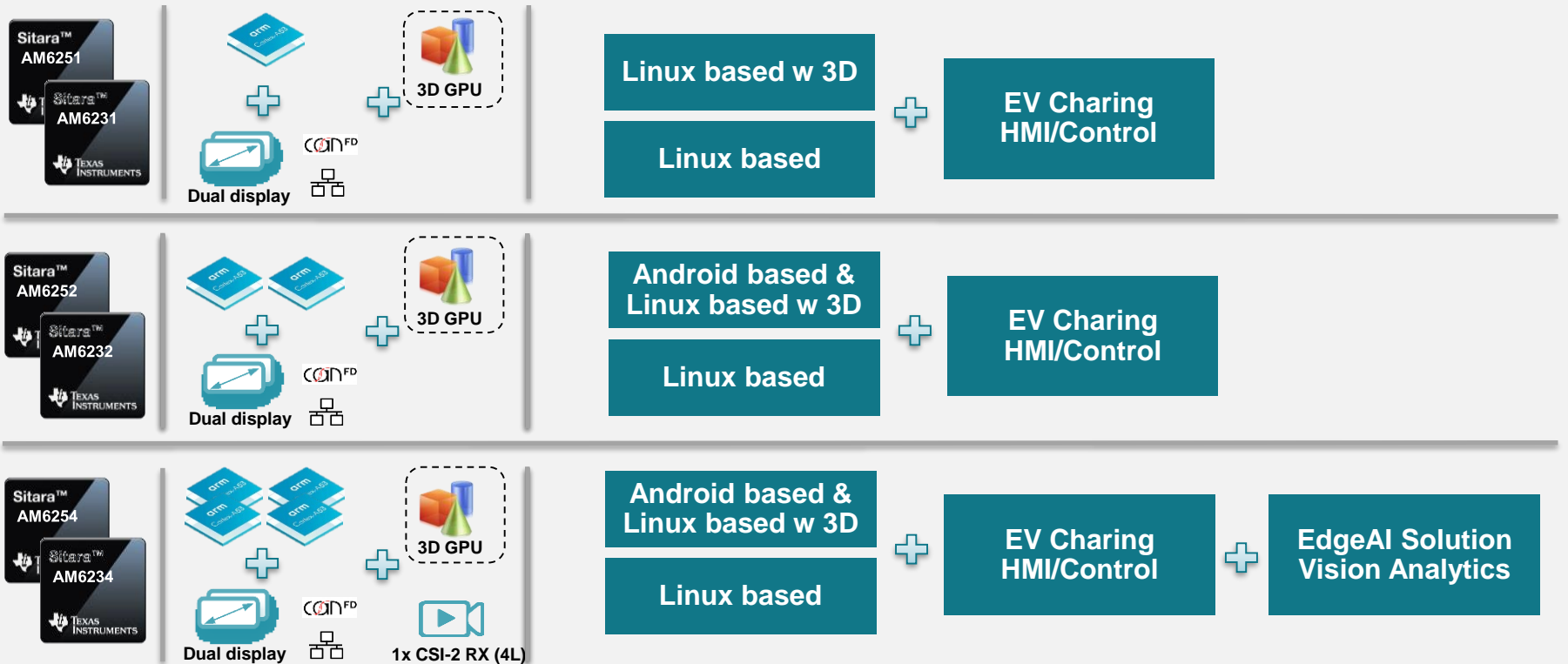
AM62x processor platform | EV charging

Revolutionizing development of low cost EV charging solutions with:

- Efficient and affordable single chip solution for secure OCPP + cloud
- Ready to deploy - scalable, multi-display options for HMI
- Easy wired and wireless connectivity for residential and commercial use-cases



Sitara AM62x | Scalable platform design for EV charging



Deeper look into the DEV Platform

Accelerate your time to market with Third Party SOM vendors and Open Source Stacks

- PIONIX Open Source Software Stack
 - [LFENERGY-EVEREST](#)
- Processor SOM & Carrier Board
 - [PHYTC-3P-KIT-AM62](#)
 - [Sitara SK-AM62B-P1](#)
- Demo GUI Software
 - Flutter-based UI from PIONIX
 - [ALTIA-3P-GUI-DEV](#)
 - [QT-3P-GUI-EVSE](#)
- [TIDA-010239](#): AC level 2 charger platform reference design



- 1. Display panel**
10.1" LVDS 1920x1200
Touch-Enabled TFT LCD
- 2. Processor SOM & carrier board**
PHYTC-3P-KIT-AM62
development kit
- 3. Wireless connectivity**
WL1807MOD and CC1352P7
wireless M.2 expansion board
- 4. HomePlug green PHY**
Adapter board from processor
to analog for PLC communication
- 5. Analog reference design**
TIDA-010239

App brief: [Development Platform for a Smart, Connected AC Level 2 EV Charging Station](#)

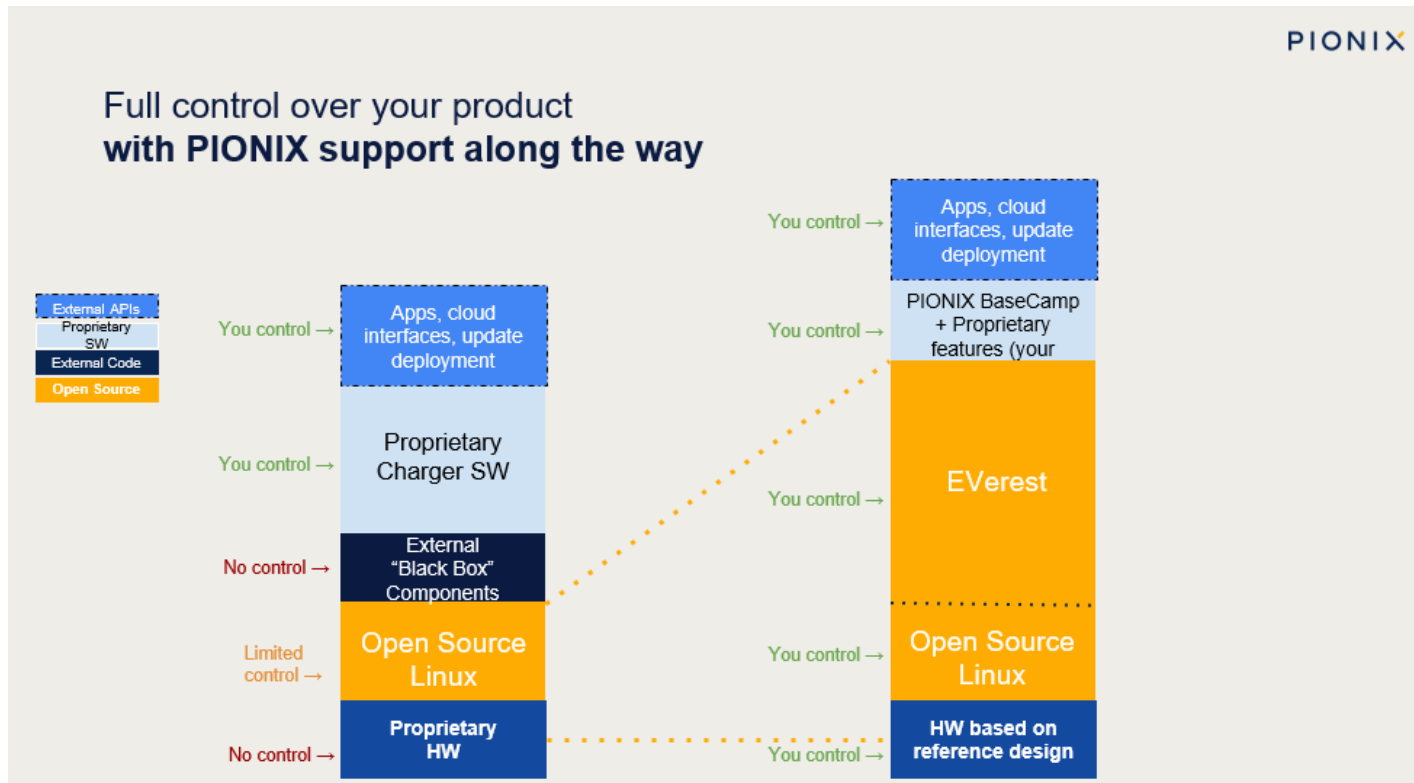
AM62x EV charging in action | Demo

- AM62x Demo showcased in Trade shows
- Easily connect through the system w/ Matter, WiFi & Sub-1GHz



[Link to video](#)

Flexible processor development model for EVSE

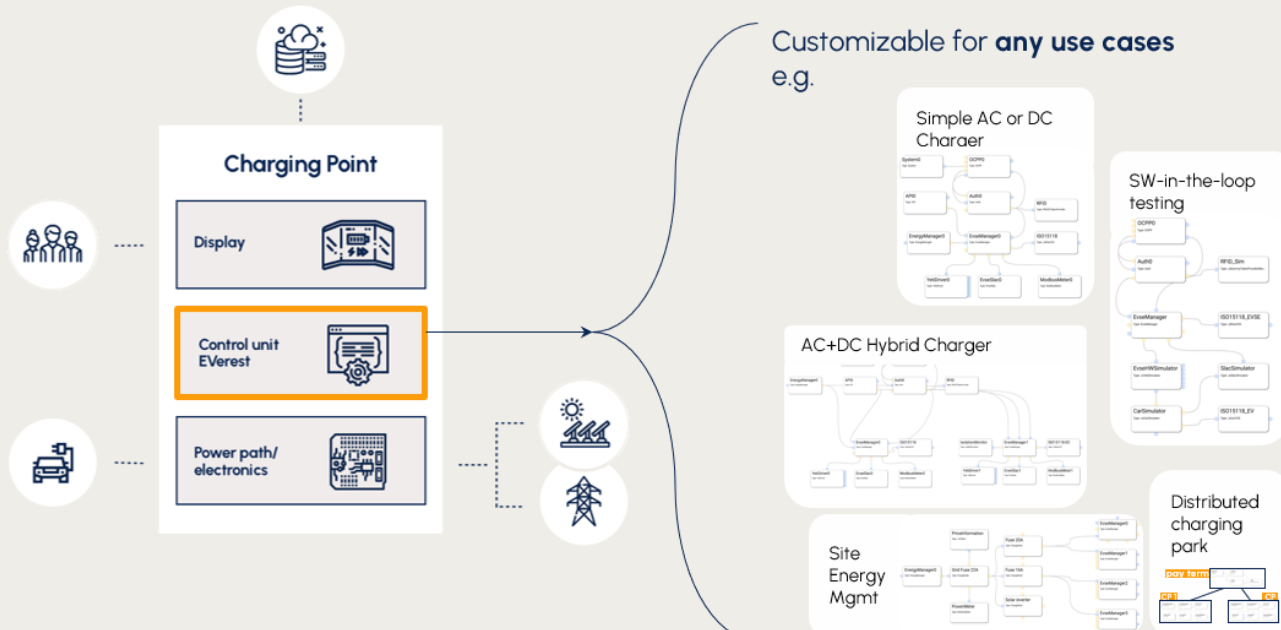


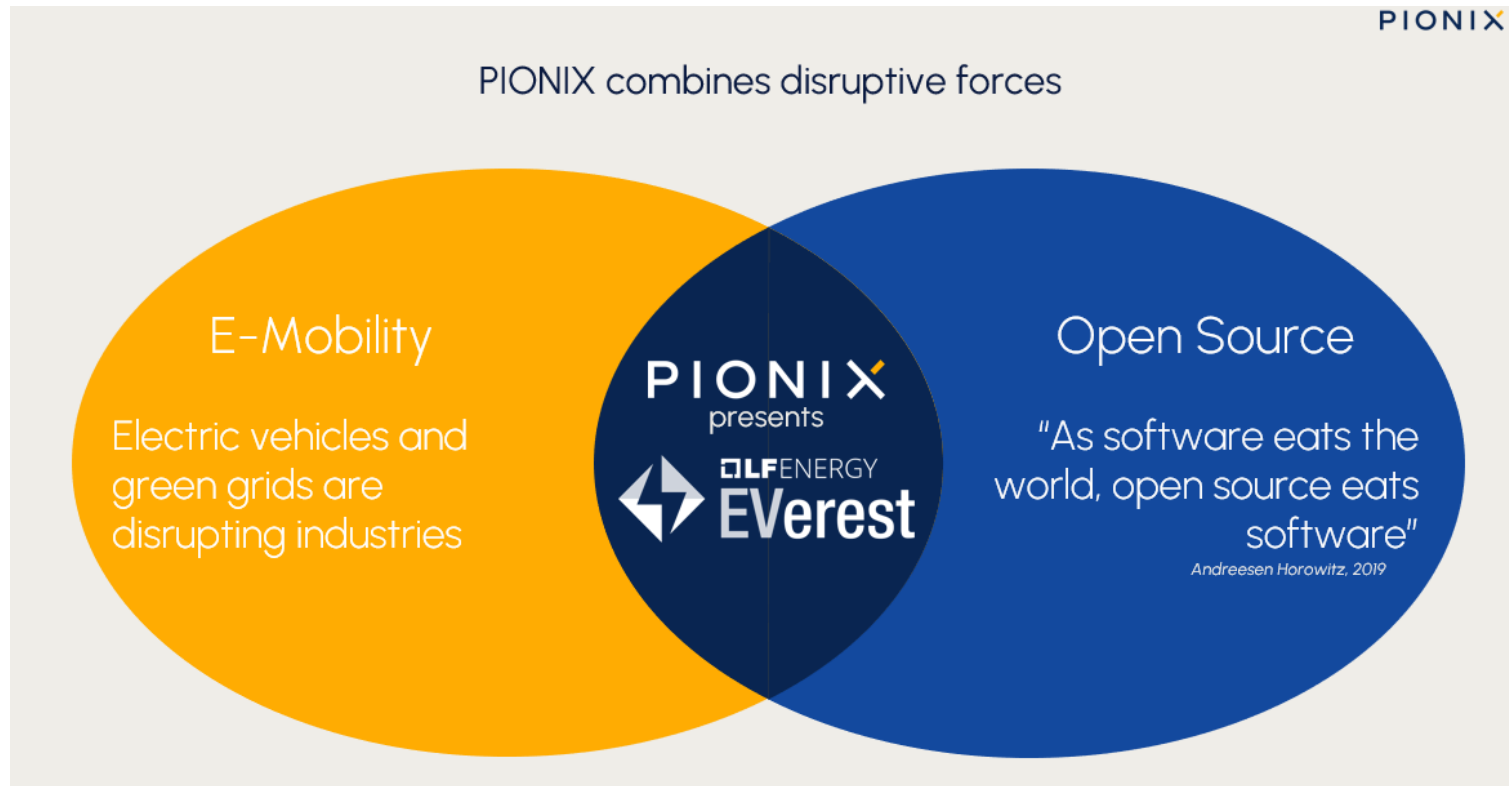
Everest explained

What is EVERest ?

A versatile software stack for any private or public charging point

PIONIX





Everest software stack

PIONIX

Everest – the **complete** seamless software stack
Not just a bunch of single protocols...

Everest can be easily customized and extended. **Already available:**

Charging standards & protocols

- IEC61851/SAE J1772 Basic PWM Charging
- ISO15118-2 AC and DC
- DIN SPEC 70121 DC
- SLAC
- DC: Isolation monitoring support
- AC/DC: Powermeters
- Type 1 J1772, Type 2, CCS Combo Type 1, CCS Combo Type 2, NACS/Tesla

OCPP & External Backends

- OCPP 1.6J with all optional profiles
- OCPP 1.6 Plug and Charge (AC+DC)
- OCPP 2.0.1 / 2.1 basic functionality
- Autocharge
- Authentication management with multiple providers/validators
- System management (reboot, upgrade, ...) e.g. via OCPP

External devices

- External API / UI interface
- Sunspec + Modbus

Tools & Features

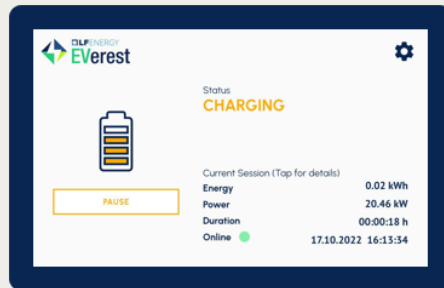
- Basic Energy Management
- Display app based on Flutter / Node Red
- Software in the Loop simulations of HW and Cars



2023 Roadmap -

Priorities depending on Community priorities:

- All further OCPP 2.0.1 / 2.1 profiles and options
- ISO15118-20
- Dynamic (and remote) connections / dependencies
- Advanced Energy Management
- IEEE 2030.5
- ADR
- EEBus



PHYTEC - SOM

PHYTEC | System on Module (SOM)

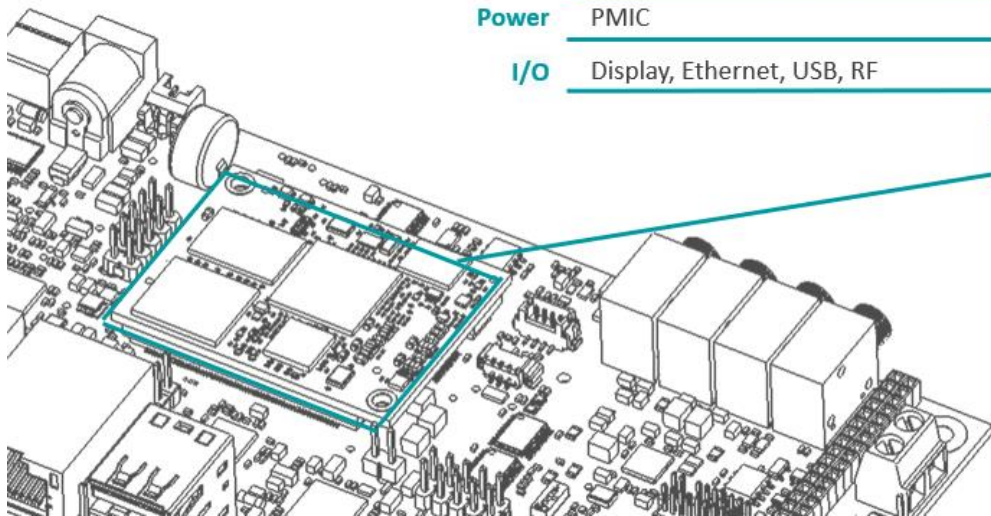
PHYTEC Designs and Manufacturers Embedded System on Modules (SOMs)

What is a SOM?

Processor	MCU, MPU
RAM	SDRAM, DDR2, DDR3, DDR4
Flash	Nor, Nand, eMMC
Power	PMIC
I/O	Display, Ethernet, USB, RF



Connectors or DSC



phyCORE-AM62x System on Module (SOM)

PHYTEC SOMs take everything common to an Embedded System and modularize it

- ✓ Insert-ready solution to reduce your time to market
- ✓ High Quality Industrial design
- ✓ 15+ year Lifecycle Management

phyCORE-AM62x

PHYTEC | phyCORE-AM62x

CPU	1.4 GHz ARM® Cortex®-A53 / ARM® Cortex®-M4F
Memory	DDR4: 2 GB default / 4 GB max eMMC: 16 GB default / 128 GB max 64 MB up to 256 MB (Octal SPI/Dual SPI Flash) EEPROM: 4 kB
Expansion	1x GPMC, 3x SD/SDIO/MMC
Serial	8x UART, 1x CAN-FD, 5x I2C, 3x SPI/SSP
USB	2x 2.0 Dual Role
Network	2x 10/100/1000 (1x onboard / 1x RGMII)
Graphics	3D GPU - OpenGL 3.x/2.0/1.1, Vulkan 1.2
Display	OLDI/LVDS (4 lanes - 2x) and Parallel Display (24bpp)
Mechanical Specifications	240 pins, 43 x 32 mm, (40 x 40 mm DSC)
Miscellaneous	PRU-ICSS, eCAP , eQEP , MIPI CSI, McASP , Security
Temp	-40 to 85C

Get more information: <https://www.phytec.com/product/phycore-am62x/>

PHYTEC



phyBOARD-AM62x Dev Kit

PHYTEC | phyBOARD-AM62x Dev Kit

PHYTEC

SOM	phyCORE-AM62x (AM6254, 2GB DDR4, 16 GB eMMC)
SD card	microSD slot
USB	1x USB 2.0 Micro-AB connector 1x USB 2.0 Standard A connector 1x USB-C DRP
Ethernet	2x RJ45 1Gbit/s
Audio	Line-in, Lin-out, Mic, Speaker
Display	60-pin LVDS display FPC HDMI (Parallel to HDMI converter)
Camera	MIPI CSI <u>phyCAM-M</u> (VM-016 interface) FPC
Expansion	M.2 connector for WiFi/BT 60-pin 2.54mm expansion header
Miscellaneous	Standard interfaces: CAN, UART, SPI, I2C, GPIO Debug via FTDI (micro USB Connector), User LEDs, User Button, Boot switches, JTAG
Mechanical Specifications	160 x 77.6 mm
Temp	-40 to 85C



Available Now: \$199.00

Getting started

You can start evaluating this device leveraging the following:

Content type	Content title	Link to content or more details
Product folder	AM62-EVSE-DEV-PLATFORM Smart, connected EV charging station development platform based on AM625 with HMI	Link
Technical blog content or white paper	Application Brief Overview Smart, Connected AC level 2 EV Charging Station	Link
Development tool or evaluation kit	DEV-EVSE-ACL2-AM62 Development platform for AC Level 2 EVSE based on AM62x MPU	Link

Visit www.ti.com/npu

For more information on the New Product Update series, calendar and archived recordings



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