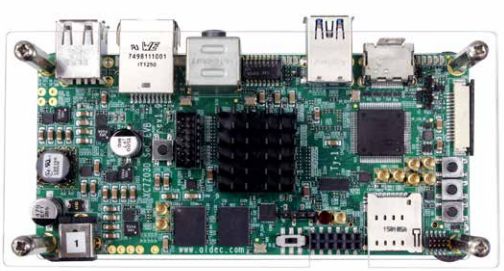
TySOM™ | Educational Development Kit

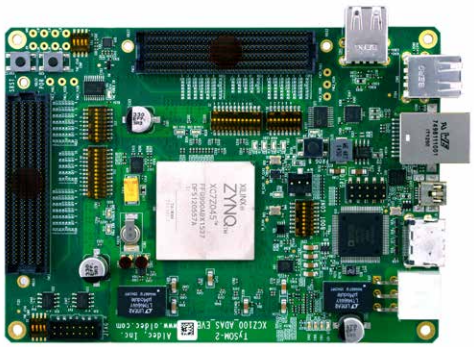
High-Performance Embedded Development

TySOM™ Educational Kit is designed for the university courses related to the embedded system design, digital system design and hardware design. The kit includes Riviera-PRO™ Advanced Verification Platform and a TySOM embedded development board (TySOM-1A-7Z010, TySOM-1-7Z030, TySOM-2A-7Z030, TySOM-2-7Z045/100) based on Xilinx® Zynq™ device that contains single Zynq chip (FPGA + Dual ARM® Cortex™-A9), memories (DDR3, uSD), communication interfaces (Ethernet, USB, Pmod, JTAG) and multimedia interfaces (HDMI IN/OUT, LCD and camera connector). It also comes with a selection of rich tutorials and reference designs from basic to advanced level to help professors and students start their projects using this kit.

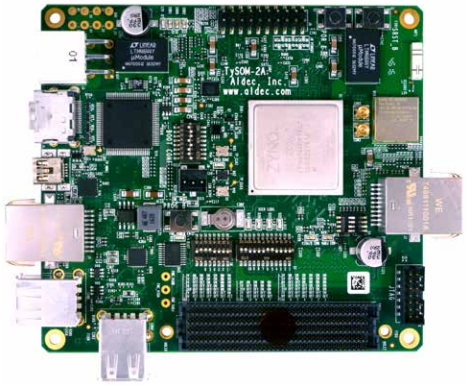


TySOM-1-7Z030

TySOM-1A-7Z010



TySOM-2-7Z100



TySOM-2A-7Z030

Top Benefits

- **High-Performance RTL Simulator with HW/SW Co-verification platform using QEMU**
- **Zynq Development Board (FPGA + dual ARM® Cortex-A9 core) with Digilent® Pmod™ expansions**
- **Complete reference designs and tutorials from basic to advanced level**
- **Pre-Validated Ubuntu Embedded Host Reference Design**
- **Target applications: IoT, Factory Automation, UAV, Automotive, Robotics and Computer Vision**

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THE DESIGN VERIFICATION COMPANY

TySOM™ | Educational Development Kit

TySOM-1

TySOM-1A

TySOM-2

TySOM-2A

SoC	XC7Z030 FBG484	XC7Z010 CLG225	XC7Z045/100 FFG900	XC7Z030 FFG676I
DDR3	512MB	512MB	1GB	1GB
SPI Flash	16MB	128MB	16MB	16GB
uSD/SD/EMMC	uSD	uSD	uSD	uSD
I2C EEPROM	64KB	64KB	64KB	64KB
USB 2.0	×2	×1	×4	×4
USB3.0	2	-	-	-
UART/USB → UART	×2 UART	×1 USB → UART	×1 USB → UART	×1 USB → UART
Ethernet	×1	×1	×1	×2
Audio IN/OUT	V	-	-	×2 (×1 IEEE1588)
HDMI/VGA	HDMI	HDMI IN/OUT	HDMI	-
mPCIe	V	-	-	-
FMC	-	-	x2	x1
Pmod	2×6	2×6	-	-
GPIO	43	×5	×6	14
GTX	×1 on MMCX con	-	×16 on FMC con	×4 on FMC con
Miscellaneous	mPCIe, Touch pannel & LCD connector, RTC, temperature & accelerometer sensor, XADC	Accelerometer, XADC	temperature & accelerometer sensor, RTC, XADC	Wi-Fi/Bluetooth, temperature & accelerometer sensor, RTC, XADC
User DIP Switch/LED	×8/×8	×3/×2	×8/×4	×8/×4
Size (mm x mm)	60×130	35×85	140×120	105×115

Reference Design and Tutorials

With the growing popularity of Zynq-based embedded systems and designs, the subject of running GUI-based Linux OS remains the most popular task for Zynq beginners and advanced users. It allows you to turn your small board into a full-stacked Linux box, compile and run complex Linux applications and learn the basics of the main Linux concepts and frameworks. This kit includes, but not limited to the following Linux based and standalone OS based reference designs:

- **Complete reference design from the basic to the advanced level design**
- **Configuring and compiling Linux kernel image and adding GUI**
- **Starting with Vivado HLS to create HW/SW projects**
- **Communicating with the peripherals on the board such as accelerometer**
- **Creating HW/SW projects based on Pmod modules such as Wi-Fi, Temperature, luminance, OLED and etc.**
- **High speed video processing project by offloading edge detection algorithms to the FPGA**
- **Automotive Driving Assistant System (ADAS) reference design**
- **IoT gateway demo design utilizing Wi-Fi and Bluetooth sensors**
- **Face and drowsiness detection demo design**

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