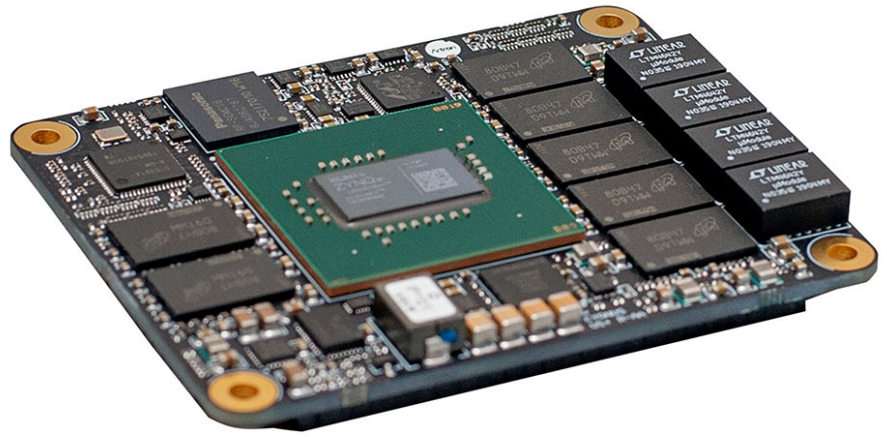# CYGNUS-US1 System-on-Module

Description

Artron Cygnus-US+ SoM is a board-level circuit that combines Zynq Ultrascale+ MPSoC device with USB 2.0 PHY, Gigabit Ethernet PHY, DDR4 SDRAM with ECC, eMMC Flash and Quad SPI Flash. Cygnus-US+ SoM presents solid, flexible and cost-effective embedded platform for building the products that require high performance and reliability.
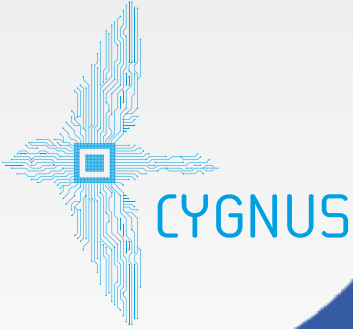
Cygnus-US+ is populated entirely with industrial grade electronic components and is suitable for use in applications demanding harsh environmental requirements.

Cygnus-US+ SoM is equipped with a Flash-based FPGA to serve as Board Management Controller (BMC). BMC drives the power-up and power-down sequences of the US+ SoC and controls the power interface between the carrier and SoM such that all bank voltages are switched on only if they are valid, thus preventing voltage swings on bank voltage rails. This architecture prevents unintentional design errors of the carrier to harm the SoC.
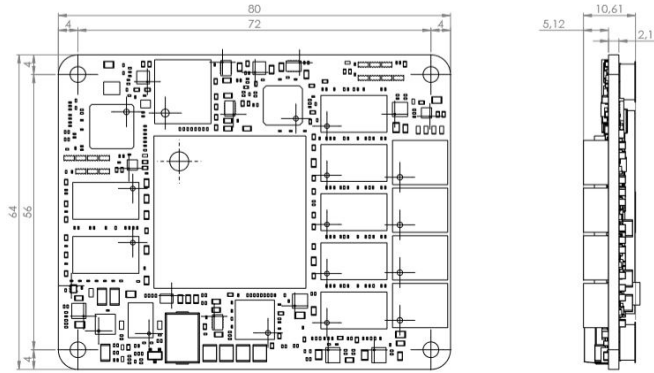
Xilinx Zynq Ultrascale+ MPSoC family integrates a feature-rich Quad-core ARM Cortex-A53 MPCore up to 1.5 GHz of Application processor, Dual-core ARM Cortex-R5 MPCore up to 600MHz, Mali™-400 MP2 of Graphics Processor and H.264/H.265 of Video Codec based processing system (PS) and Xilinx programmable logic (PL) in a single device.

Features

- Available SoC Models
  - XCZU7EV-2FBVB900I
  - XCZU4EV-2FBVB900I
  - XCZU7EG-2FBVB900I
  - XCZU4EG-2FBVB900I
  - XCZU7CG-2FBVB900I
  - XCZU4CG-2FBVB900I
- 3 connectors, 2x180 pin (Samtec QSH-090), 1x120 pin (Samtec QSH-060)
- Wide Operating Input Voltage Range (4.5V – 15V)
- Wide Operating Temperature Range (-40°C to 85°C)
- Flash-based Board Management Controller
- 10/100/1000 Gbit Ethernet Transceiver PHY
- USB 2.0 PHY
- 16Gbit (up to 32Gbit) DDR4 SDRAM with ECC connected to PS
- 8Gbit (up to 16Gbit) DDR4 SDRAM (32-bit data width) connected to PL
- 2x 4bit QSPI NOR Flash (up to 2Gbit)
- eMMC Flash up to 1024Gbit for non-volatile user data storage and boot storage
- 26x User Configurable PS I/O
- 48x User Configurable HD I/O
- 68x User Configurable HP I/O
- 16x GTH Transceivers with data rates up to 16.3Gbps
- 4x GTR Transceivers with data rates up to 6.0Gbps
- Petalinux compiled BSP and reference designs available on our website
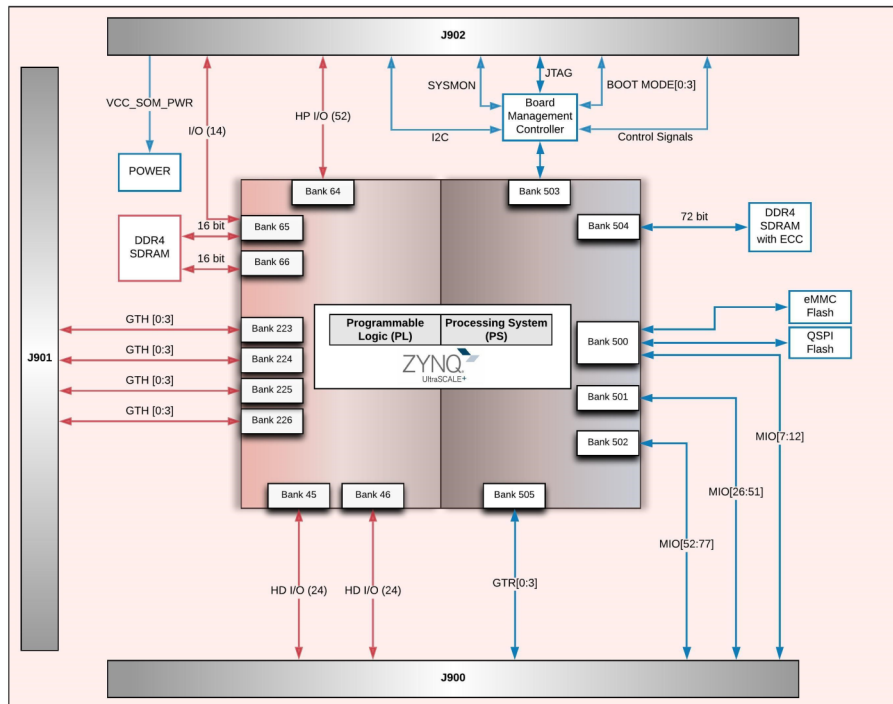
Mechanical Properties

Dimensions	
Size	80 x 64 mm
Top Height	5.12 mm
Bottom Height	5.38 mm (incl.PCB)
Mounting Holes	Ø 3.2 mm
Weight	50 g

Ordering Information

Part Number	Definition	Pricing
ART-CYG-US1Q-07EV	SoM equipped with XCZU7EV	
ART-CYG-US1Q-04EV	SoM equipped with XCZU4EV	
ART-CYG-US1Q-07EG	SoM equipped with XCZU7EG	Contact us
ART-CYG-US1Q-04EG	SoM equipped with XCZU4EG	
ART-CYG-US1Q-07CG	SoM equipped with XCZU7CG	
ART-CYG-US1Q-04CG	SoM equipped with XCZU4CG	

Related Products	Definition	Pricing
ART-CYG-US1-CB	Carrier Board	Contact us
ART-CYG-US1-HS	Heatsink	

Block Diagram

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