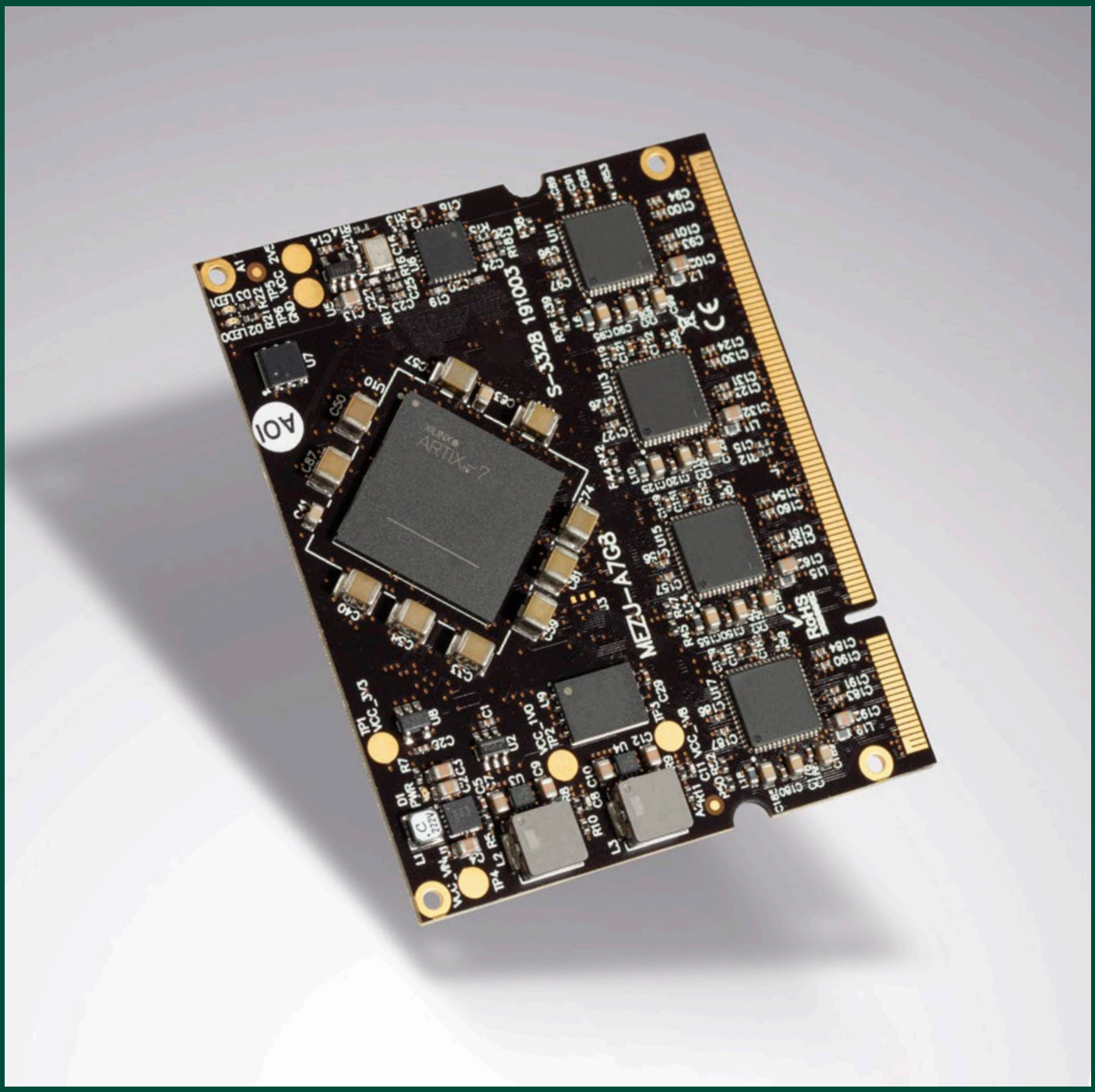
SocTek® Modules



Up to 8x 1GbE ports pluggable
module with SO-DIMM format

MEZU-A7G8 Module

Overview

MEZU-A7G8 is a pluggable System-on-Module (SoM) designed to streamline the implementation of custom-made Ethernet networking designs. This facilitates an easy integration of Ethernet industrial networks into equipment for the Electric, Transportation, Aerospace, and Industrial Automation sectors. The MEZU-A7G8 module is built on the AMD/Xilinx Artix-7 series FPGA.

This SoM enables the implementation of custom switches and/or end-equipment with robust networking capabilities. Network frame processing can be executed in hardware using specific SOC-E IP Cores.

What sets the MEZU-A7G8 module apart is its high level of firmware flexibility. It functions as a programmable platform, allowing customers to incorporate their own FPGA-based designs. Alternatively, it can be preprogrammed with a firmware based on SOC-E's IP Cores, featuring technologies like HSR/PRP/RSTP for redundancy and/or PTP for time synchronization.

To facilitate its integration into customer platform, a compatible carrier board is available for purchase. A reference firmware and FPGA design is also available from SOC-E, along with carrier design files (schematics, connector information and CAD files).

With MEZU-A7G8 module, you have the power to transform your industrial network within your reach.

Key Features

- Customizable functionality: FPGA bitstream can be customized to fit customer use case requirements.
- Multiple gigabit ethernet PHY's: includes up to 8x Ethernet PHYs, with direct connection to the programmable logic (PL) the FPGA.
- Industrial grade components only.
- Reduced time-to-market: thanks to the use of SOC-E networking IP Core portfolio, a smooth integration is possible.
- Accurate technical support: whenever using MEZU-A7G8 along with SOC-E IP Cores customers will receive first hand detailed technical advice from SOC-E support team during development & integration phases.

Technical Specifications

Communication Interfaces

- Up to 8x GbE Ethernet PHY
- Copper (10BASE-T, 100BASE-TX, 1000BASE-T) and fibre (100BASE-FX, 1000BASE-X, SFP) supported

Memory

- 256 Mb Quad SPI Flash
- 2Kbit EEPROM with unique MAC address available for the user
- 512 bit user-programmable EEPROM for key storage with SHA-256 hash algorithm protection

SoC

- AMD Artix-7 FPGA (different options available: XC7A35T / XC7A50T / XC7A75T / XC7A100T)
- FPGA resources (XC7A100T)
  - 101,440 Logic Cells
  - 63,400 Look-up Tables (LUTs)
  - 126,800 Flip-Flops
  - Total Block RAM 4.86Mb

Other Interfaces

- 26x PL GPIOs available at the board-to-board connector
- 4x LED indicators: Power-up LED, FPGA “DONE” LED and 2 General purpose LEDs
- UART, I2C and debug signals available at SO-DIMM

Physical & Electrical Characteristics

- VCC_VIN: Compatible with 3.3V
- Power consumption: typically below 5W
- Dimensions: 67.6mm(L) x 55mm(W) x 5mm(H), Weight: ~16g
- Component temperature range: -40°C to +85°C
- Operating temperature range: Depends on the thermal dissipation system installed by customer (-40°C to +55°C recommended). 65ºC ambient temperature should be easily achievable
- Storage temperature range: -40°C to +85°C

Warranty

- 2 years

Ordering Code

Ordering code
SOM00.28-ID1 (MEZU-A7G8 ID1)

To know more about other available references, please contact your sales representative.

Functionality Examples

- 8x 10/100M external ports managed Ethernet switch with IEEE1588 (PTP)
- HSR/PRP Redundancy Box (RedBox)
- HSR Ring coupler (QuadBox)

Evaluation & Design-in Kit

Description

MEZU-A7G8 brick is an out-of-the box kit that allows evaluating MEZU-A7G8 module in a plug & play approach. Either if you are looking into evaluating the module itself, or a SOC-E IP Core, MEZU-A7G8 brick is the right choice for that.

The hardware can also be used later as a development platform, what allows to shorten the development phase.

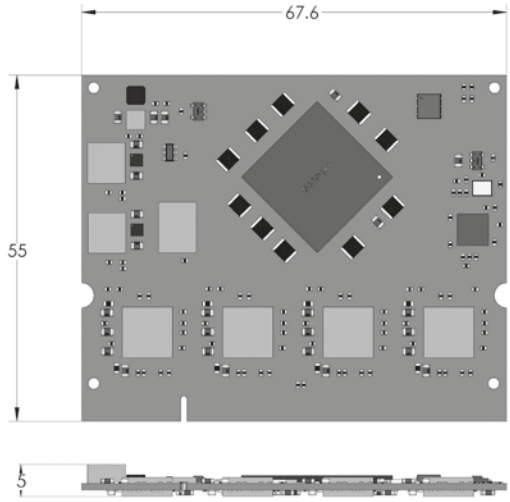
Features

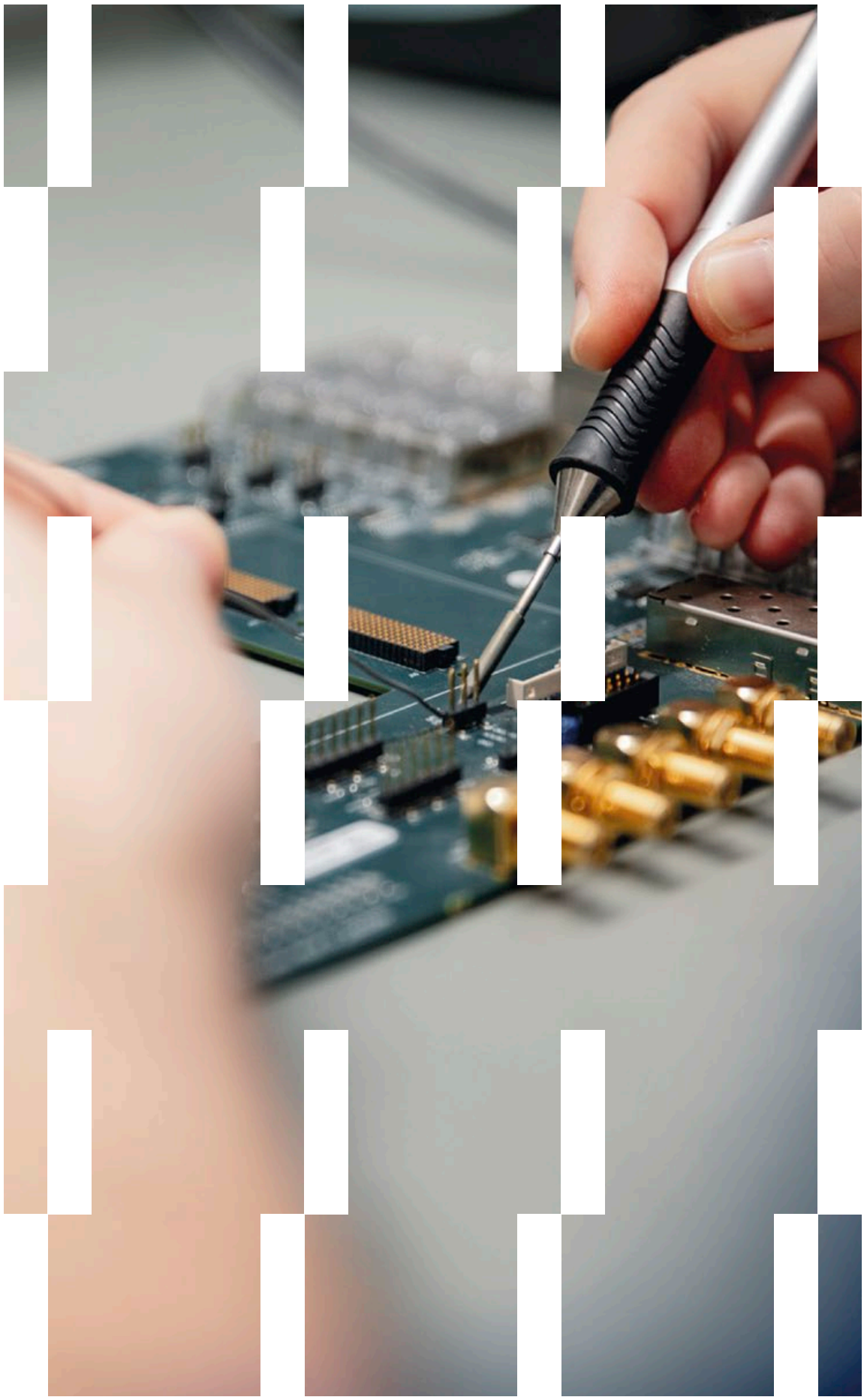
- 8x RJ45 and 8xSFP cages (combo) for 1000BASE-T, 100BASE-TX, 10BASE-T, 100BASE-FX or 1000BASE-X
- USB to UART bridge
- 2x Buttons (GP I/O)
- 2x PMOD connectors
- JTAG Connector
- 2x LEDs (GP I/O)
- 2x SMA connectors (GP I/O)

MEZU-A7G8 brick consists of the following package

- MEZU-A7G8 module (1x)
- Carrier board (1x)
- Reference firmware (predefined image) preloaded into non-volatile flash memory storage (1x)
- Power supply (1x)
- Fibre/Copper SFP modules (optional, purchased separately)

Dimensions





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By

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SOC-E®

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