Linkedloops Zynq 7000 SoC System On Module (SoM)

Linkedloops™ Zynq 7000 SoC SoM is a high-performance System-On-Module (SoM) designed around the Xilinx Zynq-7000 XC7Z020CLG400-1 SoC, providing a versatile solution for a wide range of embedded applications. With the integration of both dual-core ARM Cortex-A9 processors and FPGA fabric, this module delivers the best of both software programmability and hardware acceleration. The SoM is designed with scalability in mind, allowing migration between Zynq-7000 series devices, such as the XC7Z010, XC7Z015, XC7Z020, and XC7Z030, in a pin-compatible layout for maximum flexibility. The SoM is plug-in module for any custom carrier board, reducing board design cycle time and complexity.

Fig : SoM Front View

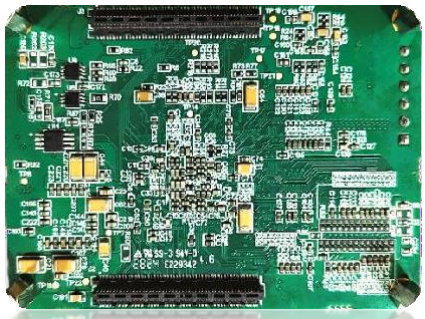

Fig : SoM Back View

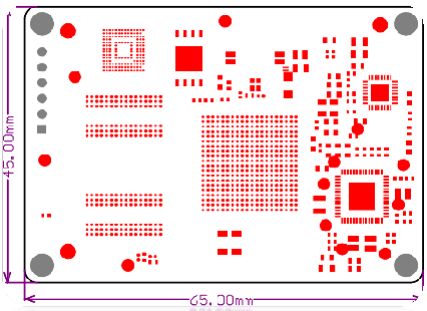

Fig : Mechanical Diagram

TECHNICAL FEATURES :

SoC Options :

- XC7Z010-1CLG400 : Entry-level SoC, for lightweight applications.
- XC7Z015-1CLG400 : Mid-range SoC with increased FPGA resources.
- XC7Z020-1CLG400 : Standard SoC with balanced
- ARM and FPGA resources.
- XC7Z030-1CLG400 : High-performance SoC with higher resource density.

Pin-Compatible Zynq SoCs :

- Supports XC7Z010, XC7Z015, XC7Z020, and XC7Z030, allowing smooth migration across performance levels.

Memory :

- DDR3 SDRAM : 1GB (expandable as needed) for efficient system operation.
- eMMC Flash Storage : 16GB for mass storage, ideal for operating systems, data logging, and firmware storage.
- QSPI Flash : 32MB/64MB of QSPI Flash, dedicated for fast boot-up sequences.

Connectivity :

- USB 2.0 PHY : Enables fast USB connectivity for peripheral expansion and debugging.
- User I/O (via Board-to-Board Connectors) : 113 User I/O : XC7Z010 (100 PL, 13 PS MIO). 148 User I/O : XC7Z015 and XC7Z030 (135 PL, 13 PS MIO)

Power Management :

- PMIC : High-efficiency Power Management IC providing stable power sequencing to the SoC, memory, and peripherals.
- Power Modes : Supports dynamic power-down.

PCB Specifications :

- PCB Size : 65mm x 45mm.
- PCB-to-PCB Connectors : Two 100-pin SMD high- speed connectors.

Clocks and Timing :

- 33.33 MHz oscillator : Primary clock source for PS operations.
- Programmable PLLs : Flexible clock management to enable precise synchronization for FPGA and ARM subsystems.

Heatsink and Thermal Management:

Heatsink Mounting Support : Mounting holes compatible with standard heatsinks to ensure effective thermal dissipation for high-performance applications.

Boot and Reset Options :

- QSPI Boot : 32MB/64MB QSPI Flash for fast and reliable boot.
- JTAG Boot: Provides a flexible boot option for development and debugging.
- Reset Circuit : Provides clean power-on reset and error-handling resets.

TARGET APPLICATIONS :

- Embedded Vision Systems Industrial Automation
- Test & Measurement Equipment
- Motor Control Systems Software-Defined Radio (SDR) IoT and Embedded Computing

SERVICES PROVIDED BY LINKEDLOOPS:

- RTL Design Services for custom logic.
- In-built IP Solutions for faster development. Carrier Board Design for custom applications.
- After-Sales Support: Technical assistance and updates.

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