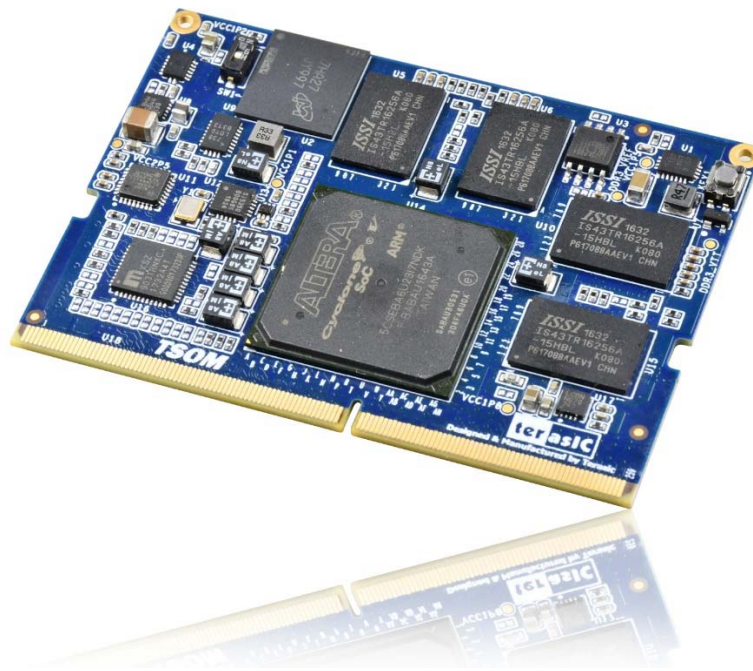


## Terasic SoC System on Module Evaluation KIT



TSoM (Terasic SoC System on Module) are small, integrated single-board computers with Cyclone® V SoCs at the core. The SoC SoM includes DDR3 memory, flash memory, power management, common interface controllers, and board support package (BSP) software to help you create a fully customized embedded design without starting from scratch.

### Specifications

#### Module

- FPGA: Cyclone V SE 5CSEBA6U23I7NDK (110K Les)
- Interface: DDR4 Edge (include 3.3V power source)
- Dimension: 50 mm x 70 mm

#### FPGA side

- DDR3 SDRAM 1GB, 32bit – 303MHz (Soft IP)
- LVDS Transmitter x15 & LVDS Receiver x17 pairs & GPIO x3 ( Total GPIO x67)
- Optional EPCS64

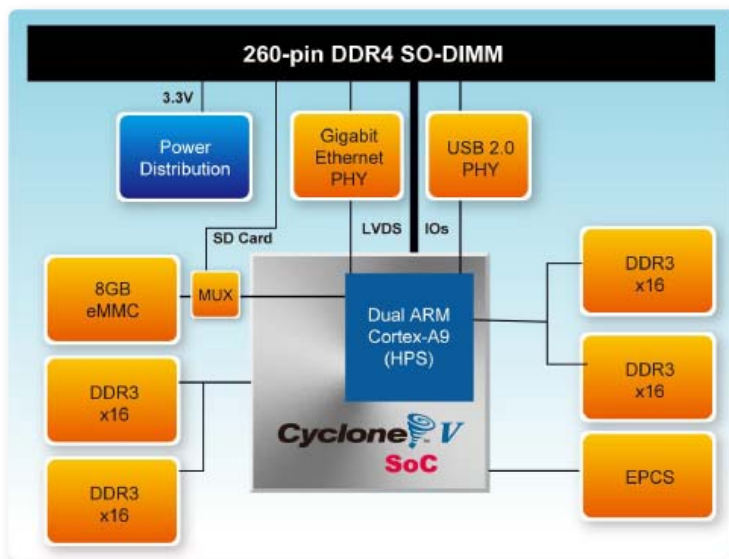
## HPS side

- Boot Selection DIP Switch: boot from eMMC or MicroSD Card
- DDR3 SDRAM 1GB, 32bit - 400MHz
- USB 2.0 PHY
- Gigabit Ethernet PHY
- 3.3V GPIO x25 (Can/UART/SPI/I2C/Trace Buses)
- 1.5V GPI x4 (Input pins)
- Optional eMMC 8GB

## Software Support

- Linux BSP
- OpenCL BSP

## Block Diagram



## Evaluation Kit

TSOM-BB is a baseboard designed for users to evaluate the TSOM board. The TSOM-BB features includes:

## System:

- Power source : 5V DC
- On-board USB Blaster II
- DDR4 socket for TSOM installation

## FPGA side

- LED x 2, Key x 2, Switch x 2
- HDMI TX v1.4, 1080P Full-HD, Compatible with HDCP v1.4
- TMD Header x2 (support 16 GPIO)
- ADC, 8-channel, 12-bit, 500Ksps.

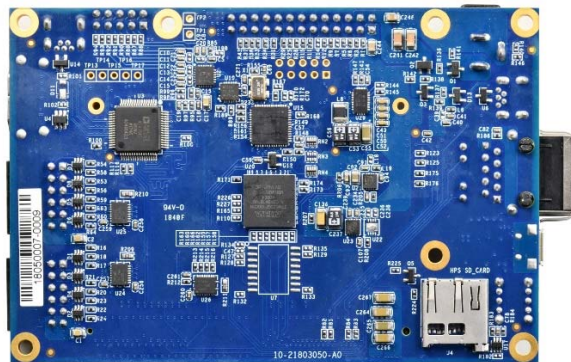
## HPS side

- MicroSD Socket
- Optional 512Mb QSPI FLASH (Need to rework Boot Selection resistor on Module)
- USB to UART (USB OTG PHY, Mini-B Connector)
- Ethernet (RJ45 Connector)
- USB OTG (Micro-AB Connector)
- 2x13 GPIO (include I2C/UART/SPI), Compatible with Raspberry Pi Expansion IO

Top view of TSOM-BB board.



Bottom view of TSOM-BB board.

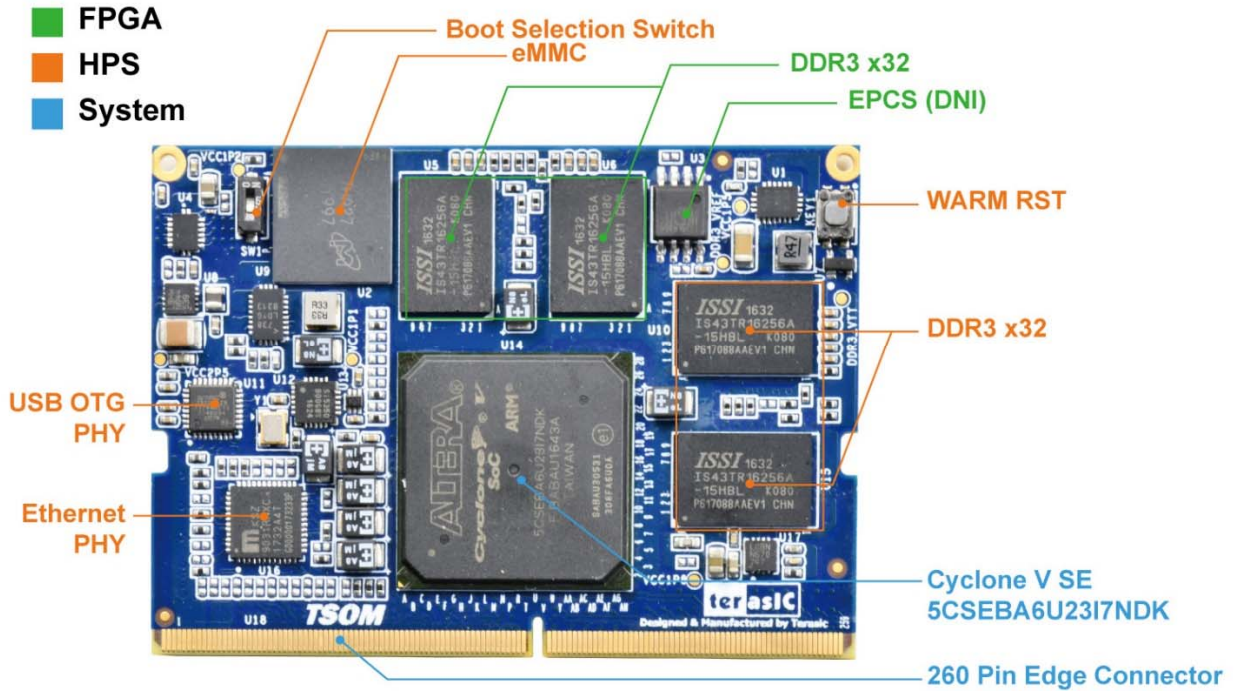


TSOM installed on the TSOM-BB board.

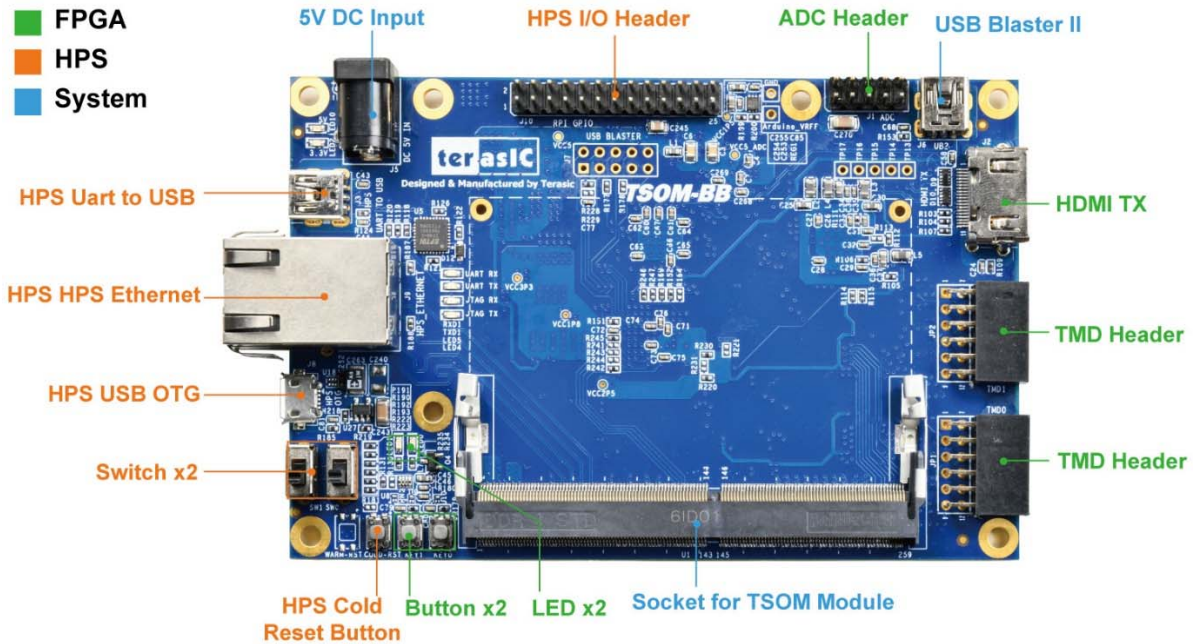


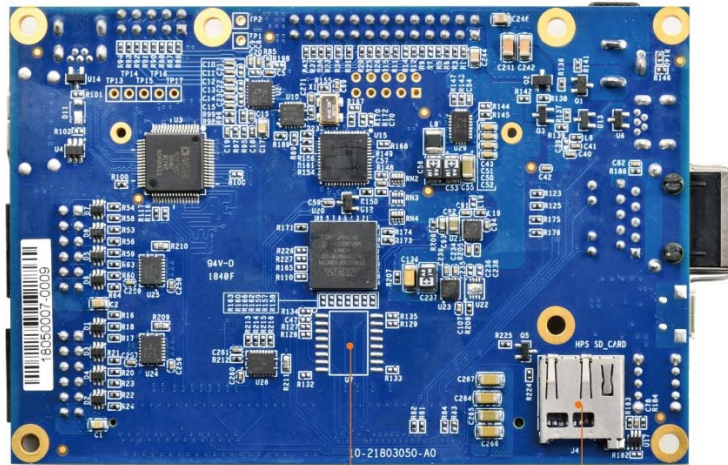
# Layout

## TSOM Module



## TSOM Baseboard



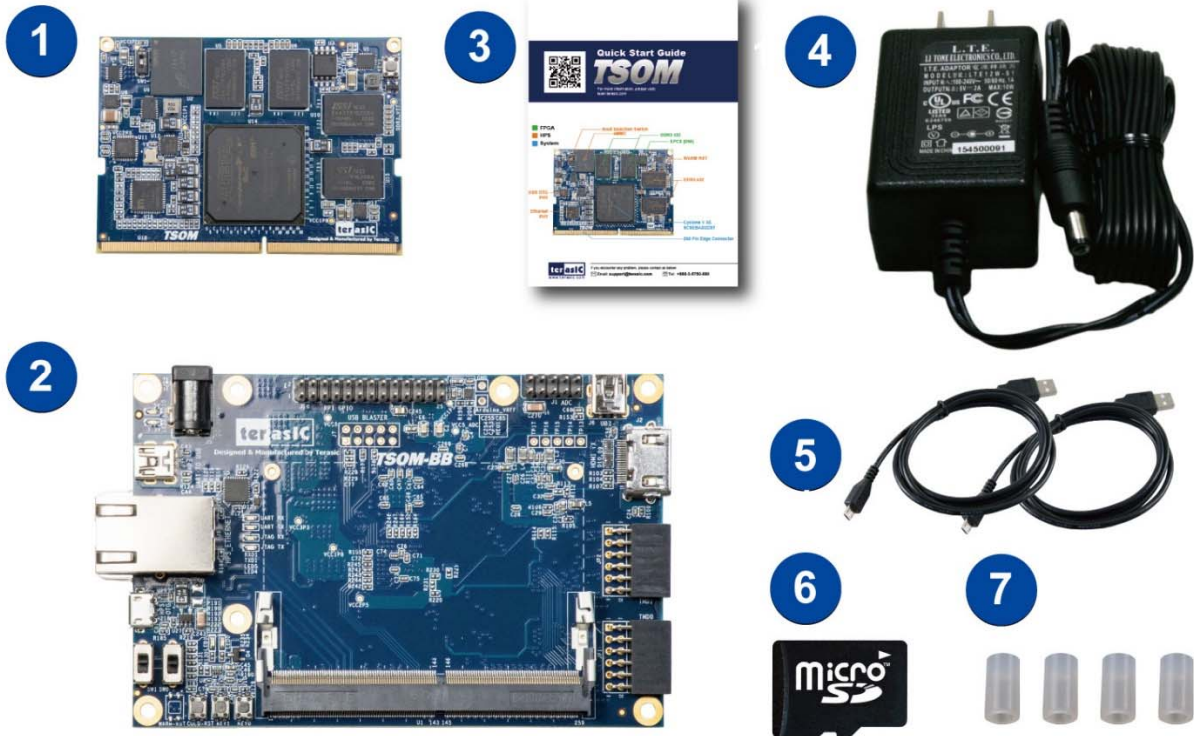


HPS QSPI Flash (DNI)

HPS MicroSD Socket

Please note that all the source codes are provided "as-is". For further support or modification, please contact **Terasic Support** and your request will be transferred to Terasic Design Service. More resources about IP and Dev. Kit are available on [Intel User Forums](#).

### Kit Contents



## TSOM Module

- TSOM Module

## TSOM Evaluation Kit

1. TSOM Module (installed)
2. TSOM Baseboard
3. Quick Start Guide
4. Power DC Adapter (5V)
5. Type A to Mini-B USB Cable x2
6. microSD card (installed)
7. Four Silicon Footstands

No	Title
1.	<b>[TSoM] Terasic SoC System on Module Evaluation KIT</b> Part No: P0581 ▶ Weight: 500g
2.	<b>TSOM Module</b> Part No: S0533 ▶ Weight: 500g