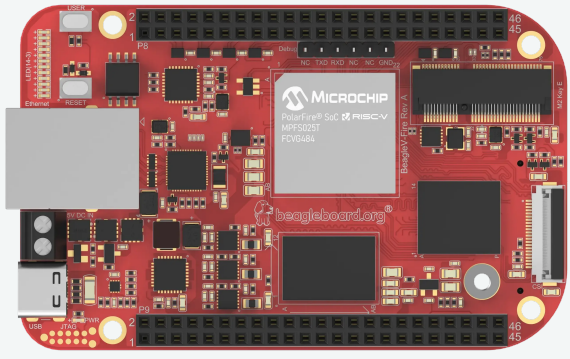
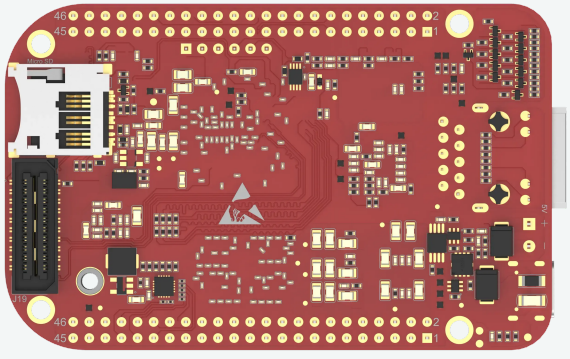
This is the latest (main) BeagleBoard documentation. If you are looking for stable releases, use the drop-down menu on the bottom-left and select the desired version.

# Introduction ¶

BeagleV®-Fire is a revolutionary SBC powered by the Microchip's PolarFire® MPFS025T FCVG484E 5x core RISC-V System on Chip (SoC) with FPGA fabric. BeagleV®-Fire opens up new horizons for developers, tinkerers, and the open-source community to explore the vast potential of RISC-V architecture and FPGA technology. It has the same P8 & P9 cape header pins as BeagleBone Black allowing you to stack your favourite BeagleBone cape on top to expand it's capability. Built around the powerful and energy-efficient RISC-V instruction set architecture (ISA) along with its versatile FPGA fabric, BeagleV®-Fire SBC offers unparalleled opportunities for developers, hobbyists, and researchers to explore and experiment with RISC-V technology.



## Detailed overview

*Table 70 BeagleV-Fire features*

| Feature | Description |
| --- | --- |
| Processor | MPFS025T-FCVG484E |
| Memory | 2GB (1Gb x 16)- 1866MHz 3733Mbps, LPDDR4 |
| Storage | Kingston 16GB eMMC |
| Wireless | 1x M.2 Key E, support 2.4GHz/5GHz WiFi module |
| Ethernet | • PHY: Realtek RTL8211F-VD-CG Gigabit Ethernet phy<br>• Connector: integrated magnetics RJ-45 |
| USB C | • Connectivity: Flash/programming support<br>• Power: Input: 5V @ 3A |
| Other connectors | • 1x SYZYGY High speed connector<br>• microSD card slot<br>• CSI connector compatible with BeagleBone AI-64, BeagleV-Ahead, Raspberry Pi Zero / CM4 (22-pin) |

## Board components location

This section describes the key components on the board, their location and function.

### Front components location

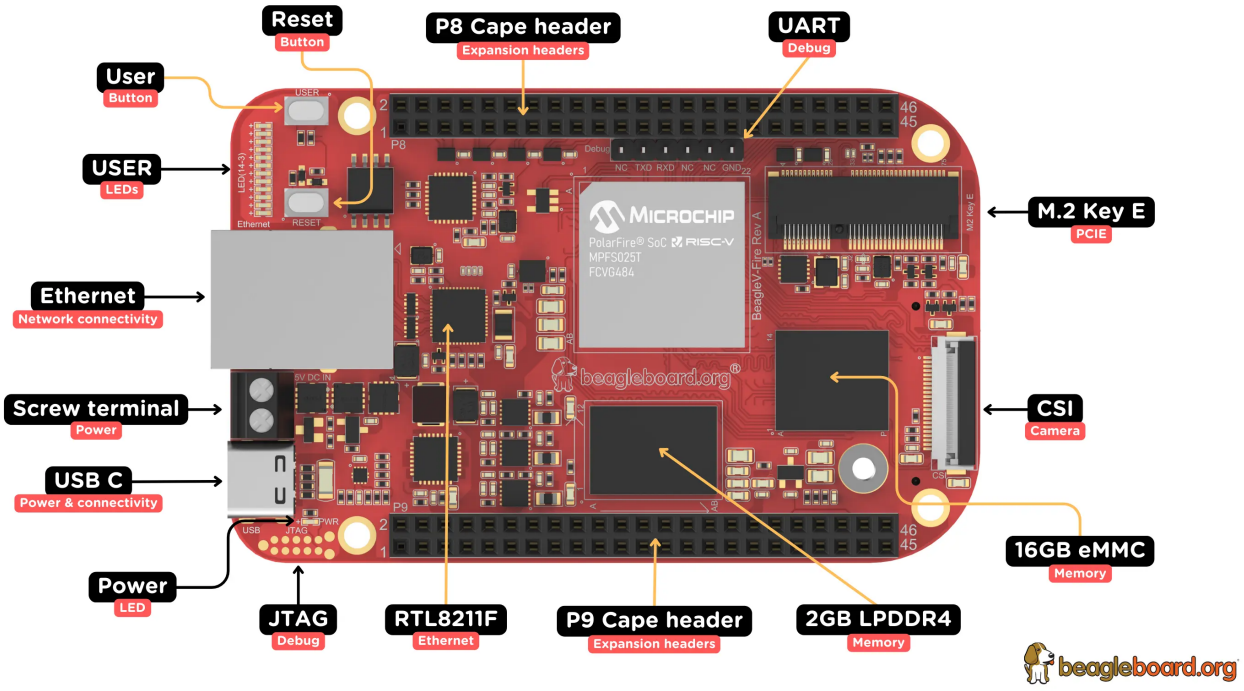



Fig. 227 *BeagleV-Fire board front components location*

*Table 71 BeagleV-Fire board front components location*

| Feature | Description |
|---|---|
| Power LED | Power (Board ON) indicator |
| JTAG (MPFS025T) | MPFS025T SoC JTAG debug port |
| RTL8211F | Gigabit IEEE 802.11 Ethernet PHY |
| P8 & P9 cape header | Expansion headers for BeagleBone capes. |
| 2GB RAM | 2GB (1Gb x 16)- 1866MHz 3733Mbps, LPDDR4 |
| 16GB eMMC | Kingston 16GB eMMC Flash storage |
| CSI | 22pin MIPI Camera connectors |
| M.2 Key E | PCIE M.2 Key E connector |
| UART debug header | 6 pin UART debug header |
| Reset button | Press to reset BeagleV-Fire board (MPFS025T SoC) |
| User button | User defined (custom) action button |
| User LEDs | 12x user programmabkle LEDs to show various board status during boot. |

| Feature | Description |
| --- | --- |
| GigaBit Ethernet | 1Gb/s Wired internet connectivity |
| Barrel jack | Power input |
| USB C | Power, connectivity, and board flashing. |

## Back components location

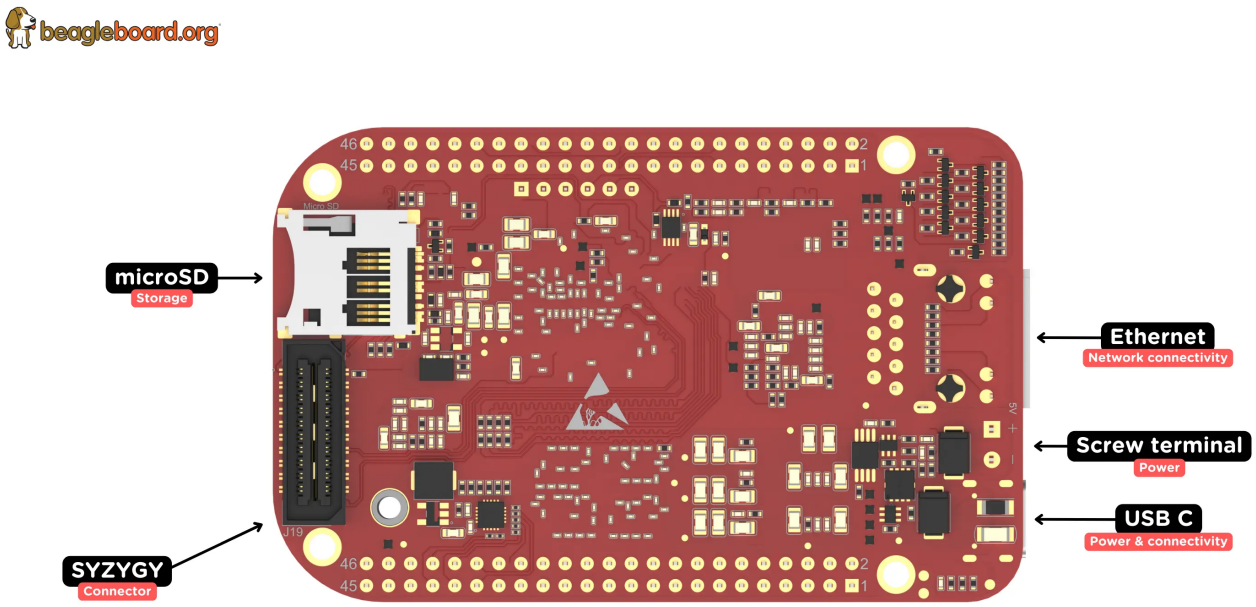



Fig. 228 *BeagleV-Fire board back components location*

*Table 72 BeagleV-Fire board back components location*

| Feature | Description |
| --- | --- |
| microSD | microSD card slot |
| SYZYGY | SYZYGY High speed connector |