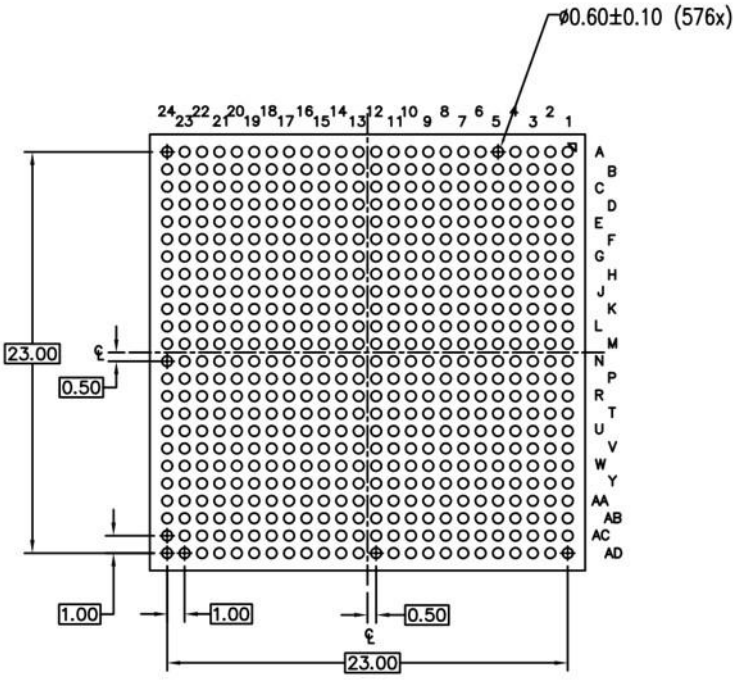
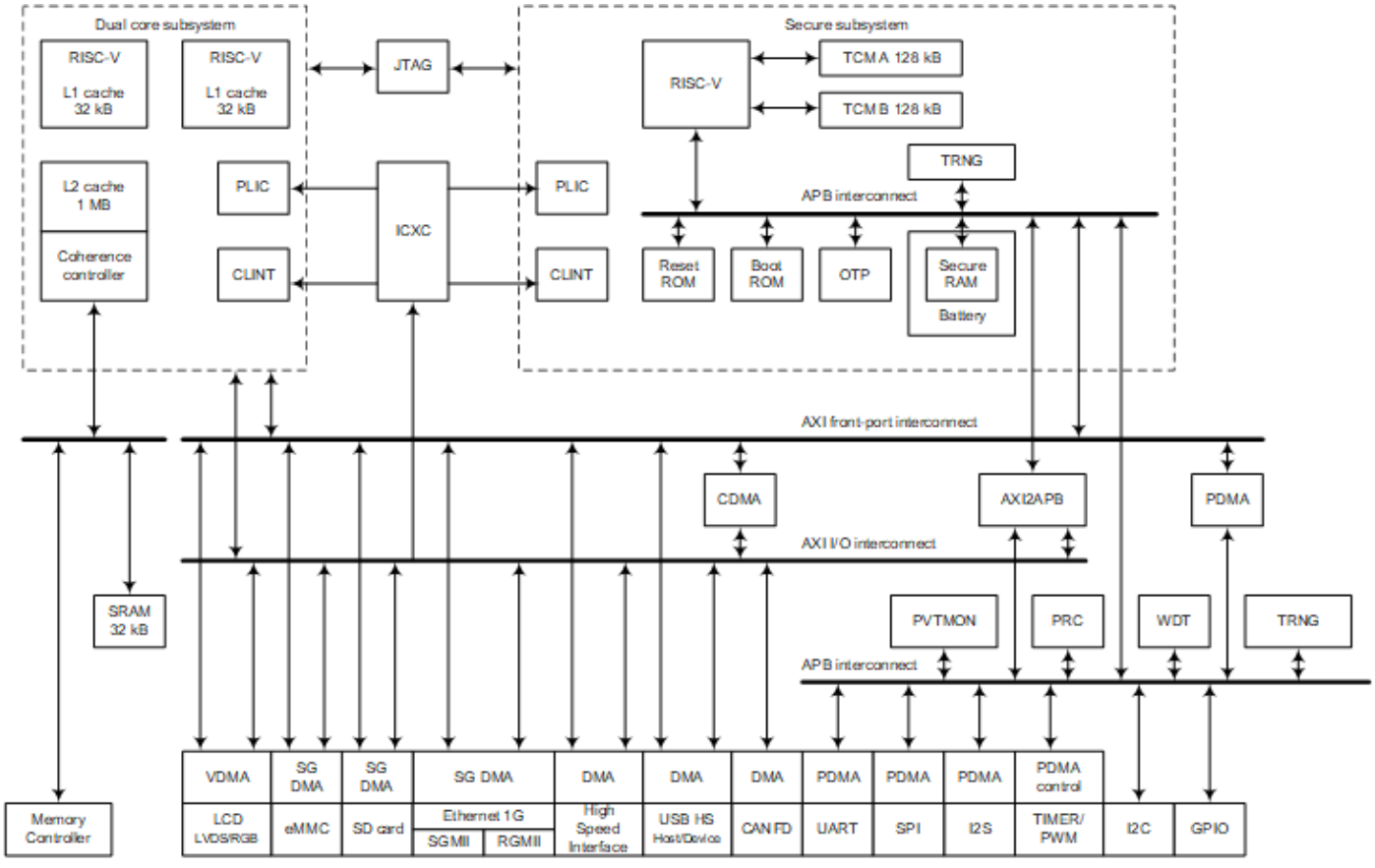
Dual Core RISC-V 64-bit Linux capable processor for embedded systems IRL1101GI



Key features:

- Dual-Core RISC-V processor
- Max power consumption 15 W (when all subsystems are turned on)
- Flexible and high-speed GPIOs ports which support 1.8/2.5/3.3V±10% IO-voltages
- External Core voltage 0.9 V±10%
- 4xGigabit Ethernet MAC (2xSGMII и 2xRGMII) makes easy to use this chip for network applications (routers, switches and so on)
- Temperature: - 40 ÷ 85 °C

Block diagram



- 2 x 64-bit RISC-V, up to 1 GHz
- 1 x 32-bit RISC-V Core, up to 1 GHz
- 2 x Ethernet 10/100/1000 (RGMII)
- 2 x Ethernet 10/100/1000 (SGMII)
- 2 x USB2.0 Host/Device (ULPI)
- 1 x eMMC 5.1
- 2 x SD/SDIO/MMC
- 4 x SPI
- 4 x CAN-FD
- 8 x UART
- 8 x I2C
- 2 x I2S
- 1 x LCD (RGB/Dual Channel LVDS)
- 32-bit Timer/PWM
- OTP 128 32-bit words
- Secure RAM
- JTAG

Design features

To achieve the best performance/power ratio our team used several techniques:

- Customized analog IPs High-Vt power switches to decrease static leakage
- Native transistors circuitry for the blocks with wide supply voltage range
- High-Vt power switches for all the digital domains (std-cells headers and footers)
- Custom SRAM based on 0.9 V-transistors with high performance and low-leakage standby mode
- High-Vt, Low-Vt and Std-Vt DDKs used to achieve the best performance
- 12-track DDK for high performance digital modules
- 9-track DDK for low speed interfaces to decrease area and leakage
- Flexible power management unit
- Flexible clock distribution system
- Optimized chip area