MINI4357 Core Board

Order#: T400432

Figure 1: Interfaces and components

**Hardware**

**Processor**

- NXP LPC4357FET256 dual-core microcontroller based on 32-bit ARM Cortex-M4/M0, operating at up to 204MHz
- Integrating hardware a floating-point unit
- Integrating a 1024KB Flash, a 136 KB SRAM and a 16KB EEPROM
- Integrating a LCD controller with support of 24bpp true-color mode and a resolution of up to 1024×768
- An USB 2.0 high-speed Host/Device/OTG interface with on-chip PHY and support of DMA transmission
- An USB 2.0 high-speed Host/Device interface with on-chip PHY and ULPI which support external high-speed PHY
- A 10/100 Mbps Ethernet MAC MII/RMII interface
- A four-wire SPI flash interface (SPIFI) with data transfer rate of up to 40Mbps per channel
- Two CAN 2.0B, four UART, two I2S, two I2C, two SSP, one SPI buses
• Four 32-bit general purpose timer, two standard PWM, one motor control PWM with Quadrature encoder interface
• 400KHz Two 10-bit ADCs operating at up to 400KHz, one 10-bit DAC operating at up to 400KHz
• Serial GPIO interface (SGPIO)
• 164 general-purpose I/O interfaces
• Internal two watchdog timers

On-Board Memories
• 128MBNandFlash
• 32MB SDRAM
• 2Kb EEPROM
• 4Mb SPI Flash (spare solder pads)

Communication Interface
• Two SPI interfaces
• Three 3-wire UART interfaces
• One touch-screen interface (16-bit 256RGB)
• One I2C interface
• One I2S interface
• Two USB interfaces
• Two CAN interfaces
• One SDIO interface
• One 10/100Mbps Ethernet interface

Electrical Features
• Operating Temperature: 0 ℃ ~ 70 ℃
• Storage Temperature: -40 ℃ ~ 85 ℃
• Operating Humidity: 0% ~ 90% (Non-condensing)
• Power Supply: DC5V/0.8A
• PCB Layers: 6-layer PCB

System Block Diagram

![System Block Diagram](image)

**Figure-2** System block diagram
System Features

- Supporting uC/OS-II_v2.91 operating system
- Supporting emWin5.18 graphic interface
- Supporting FatFs_vR0.08a filesystem
- Supporting LWIP_v1.4.0 protocol stack

Development Environments

- IAR EWARM Integrated Development Environment
  - All the drivers can work with IAR EWARM V6.40 or higher;
- Keil MDK-ARM Integrated Development Environment
  - All the drivers and applications can work with Keil MDK-ARM V4.60 or higher.

Debugging Tools

- ULINK2
  - ULINK2 is recommended to be used under Keil MDK-ARM for best debugging performance;
- JLINK-V9.1
  - JLINK-V9.1 is recommended to be used under IAR EWARM for best debugging performance