

EDM1070XX Embedded Display Module

Order#: EDM1070AR-01 / EDM1070BR-01 (T6010261 / T6010262)



Figure-1

Product features

- Based on 32-bit ARM Cortex-M4/M0 Dual Core Microcontroller LPC4357FET256, running at frequencies of up to 204MHz
- CPU Internal 1024Kbytes of Flash, 136 Kbytes of SRAM and 16 Kbytes of EEPROM
- On board 128MB Nand Flash, 32MB SDRAM, 4MB SPI Flash (reserved) , 2Kb EEPROM
- 7inch (Resolution:800×480) TFT LCD touch screen
- Follow EMC, FCC, 3C design standard, performance and index meet related standards
- Fruitful expansion communication interfaces :
 - 3 x 3 line serial port ,RS232 voltage
 - One USB2.0 HS Deriver port ,one USB2.0 FS Host port
 - One Micro SD card interface
 - One 10/100Mbps Ethernet port
 - One RS485 port, two CAN 2.0B ports, one SPI bus, 1 I2C bus
- Four input and four output I/O interfaces implemented with isolated by optocouplers
- Support FatFs_vR0.08a file system (for SD card)
- Support uC/OS-II_v2.91 OS & emWin5.18 graphical interfaces
- Support LwIP_v1.4.0 protocol stack
- Support SPI to serial port module(up to 4 serial ports)
- Support 1.3 mega pixel OV9655 Camera module (SGPIO interface)

Hardware

Processor

- NXP LPC4357FET256/LPC1857FET256
- 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 Mbits 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的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
- Two watchdog timers

On-Board Memories

- 128MB NandFlash
- 32MB SDRAM
- 2Kb EEPROM
- 4Mb SPI Flash (spare solder pads)

Communication Interface

- Three serial interface implemented with phoenix connectors
- UART0: 3-wire serial interface, RS232 level
- UART2: 3-wire serial interface, RS232 level
- UART3: 3-wire serial interface, RS232 level
- One RS485 interface implemented with phoenix connectors
- Two CAN2.0B interfaces implemented with phoenix connectors
- Two USB interfaces
- USB2.0 Device×1, High-speed, 480Mbps
- USB2.0 Host×1, Full-speed, 12Mbps
- One 10/100Mbps Ethernet interface
- One TF card slot
- One 20-pin standard JTAG debug interface
- Four input and four output I/O interfaces implemented with phoenix connectors and isolated by optocouplers
- One 8-channel ADC interface
- One DAC interface
- One SPIFI interface
- One IIC interface
- One I2S interface

- One high-precision RTC (no battery by default)
- Spare interface for external hardware watchdog

Others

- 7-inch (800*480) TFT LCD, 16bit RGB565 mode, supporting 4-wire resistive touch-screen
- One ISP button
- One buzzer
- One 5V power output interface

Electrical Features

- Operating Temperature: 0 °C ~ 70 °C
- Storage Temperature: -40 °C ~ 85 °C
- Operating Humidity: 0% ~ 90% (Non-condensing)
- Power Supply: DC 9~24V, 150~400mA@12V
- Electrical Standards: CE, FCC and CCC
- PCB Layers: 6-layer PCB

On-Board Interfaces

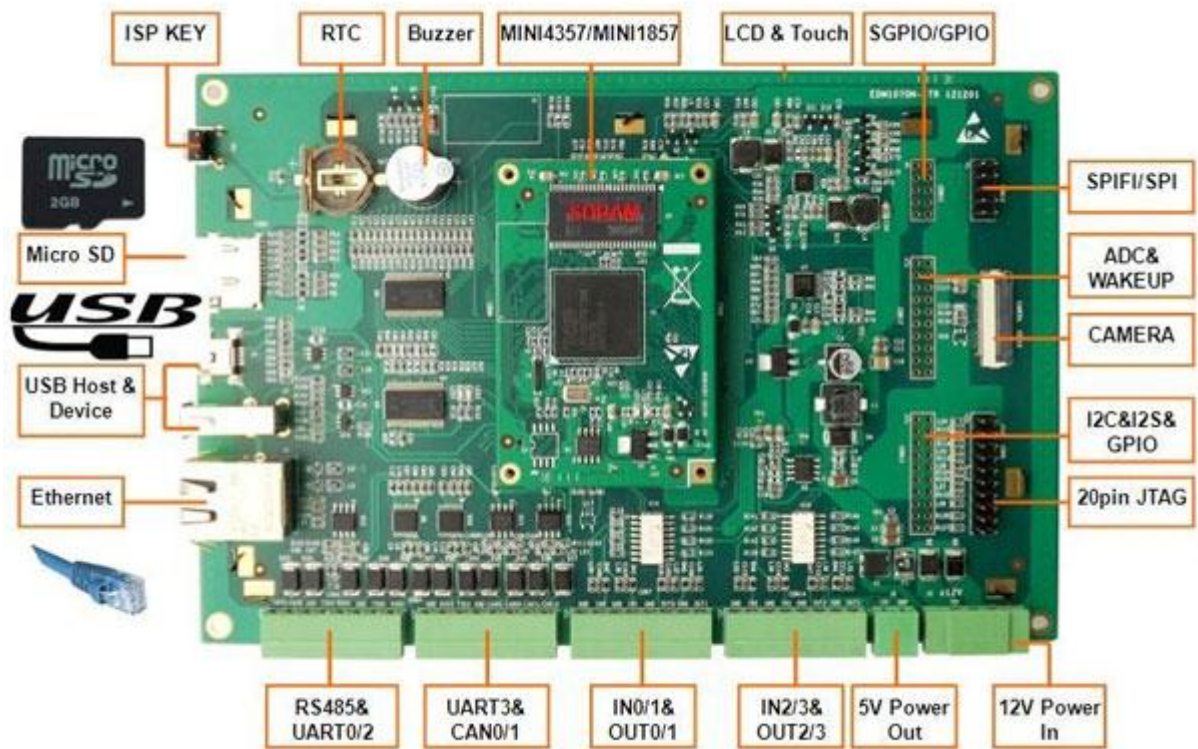


Figure-2 On-board interfaces

System Block Diagram

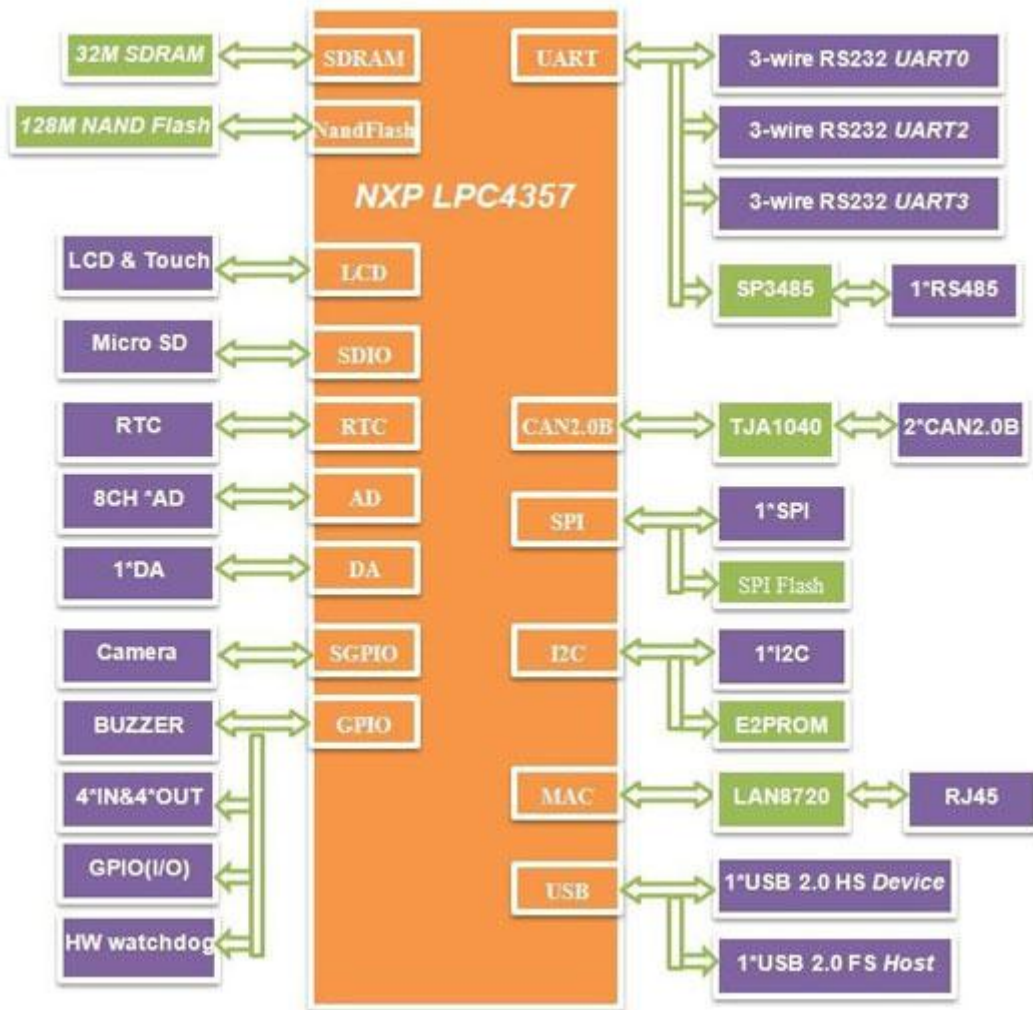



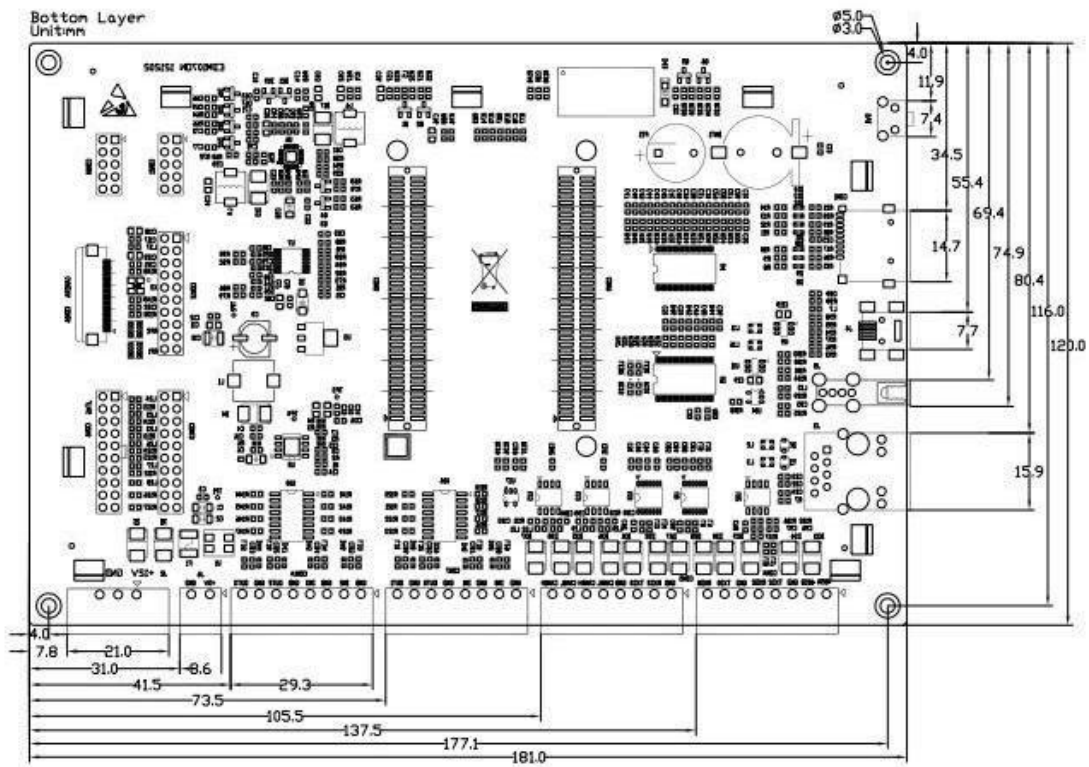


Figure-3 System block diagram

Table 1 Legend of Block Diagram

Legends	Descriptions
	Interface modules of CPU
	Chips or spare solder pads on the board
	Interfaces on the board

Hardware Dimensions (mm)



Hardware dimensions

System Features

- Supporting uC/OS-II_v2.91 operating system
- Supporting emWin5.18 graphic interface
- Supporting FatFs_vR0.08 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

Drivers and Example Applications

- Basic peripheral driver examples;
- BSP example applications based on uC/OS-II_v2.91 real-time operating system
- BSP example applications based on emWin5.18 (GUI)
- Example applications of OV9655 Camera implemented through SGPIO