

## BLACKGOLD FPGA EP2C8Q208C8N NIOS II board

Developed by: BLACKGOLD

Items include:

- 1 x FPGA development board core board black gold
- 1 x Black gold FPGA development board expansion board
- 1 x USB BLASTER
- 2 x Transparent protective plate
- 1 x 5V/2A power supply
- 1 x 12864 onboard LCD

Features

1. all gold to build, exquisite, top quality;
2. the core plate and bottom plate separation mode, the follow-up upgrades for your convenience and floor can be used repeatedly;
3. core board can operate independently, all the leads 100 IO ports, extension of your experiment is well prepared, can also be used in your project and shorten the project development cycle;
4. 64 Mbit of SDRAM, 16Mbit chip configuration for NIOS development to provide the perfect support;
5. Onboard 12864 dot matrix LCD with a reasonable key for the man-machine interface development with the provision of a guarantee;
6. ENC28J60 + HR911102A perfect match to provide a favorable development for the network of support;
7. CH376 USB host mode and the perfect support for the chip device mode, built-in USB communication protocol and the basic firmware, built to handle mass storage device Mass-Storage dedicated communication protocol firmware, built-in SD card, communication interface firmware, built-in FAT16, FAT32 and FAT12 file system management firmware to support popular USB storage device (including the U disk / USB drive / USB flash disk / USB card reader) and the SD card (including the standard-capacity SD card and high capacity HC-SD card and MMC card compatible protocols and TF card )

Core board configuration

1. the core board configuration Cyclone II FPGA chip is a series of EP2C8Q208C, with 8,256 LEs, 36 M4K RAM blocks (4Kbits plus 512 parity bits), while a 165,888 bit of RAM, support for 18 Embedded multipliers and 2 PLL,
  2. the core board is equipped with a 64Mbit of SDRAM, running NIOS soft-core for providing effective protection, the chip is the clock frequency of 143MHz, experiments show, NIOS II soft core frequency can be a smooth run 120MHz, the speed is very fast
  3. 16 Mbit configuration of chips also add much color to this core board, not only can store configuration information, and also can store the NIOS II software program
  4. 20 M of the active crystal is also essential, he is the source of the system clock; 4 LED for debugging, but also provides many convenient; reset button, re-configure the buttons, a configuration can not be less light ; also supports AS mode and JTAG mode.
- Can run independently of the floor alone, for the interface with a 5V power supply, high-quality red switch, for safety has also joined the self-recovery fuse. Of course, is not less expansion port, in addition to the 38 IO SDRAM extraoral occupied, all other extensions of 100 IO

the expansion board configuration

1. the support network function, configuration, network interface chip ENC28J60
2. supports USB functions, the chip configuration CH376
3. the support board 128 \* 64 dot matrix LCD
4. support for real-time clock (RTC), configure the DS1302 chip
5. support EEPROM, configuration of the 24LC04 chip. 24LC04 is a 512 \* 8bit's EEPROM, IIC interfaces support
6. support PS / 2 interface, you can achieve PS / 2 keyboard and mouse interface
7. support RS232 serial interface, can send and receive serial data
8. support the six were positive digital control, dynamic scanning can be achieved
9. 5 separate keys, you can match with the LCD, the perfect man-machine interface structure
10. VGA port, each color line has three colors, red, green and blue. R, G, B signals can show different combinations of 8 colors;
11. support the buzzer, to support a simple music player
12. 4 a LED, lights, water testing can be realized



