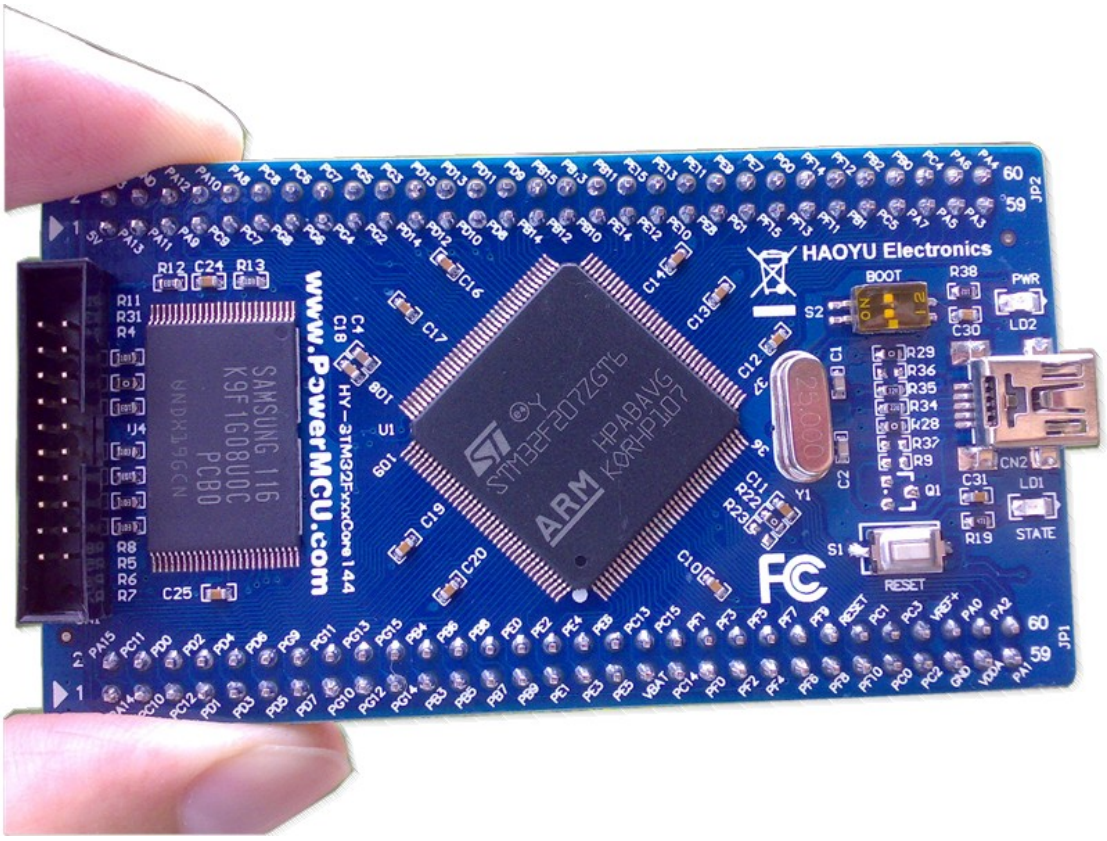
HY-STM32F2xxCore144

UserManual

V1.0



HAOYU Electronics Inc

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The HY-STM32F2xxCore144 is an easy-to-use MCU core board designed for rapid application. At the core board has a very powerful ST Microelectronics STM32F207ZG Micorocontroller, with the high-performance, high-speed 32-bit ARM Cortex M3 core processor, running at 120 MHz(150DMIPS) with 1MB flash and 128 KB RAM. A comprehensive firmware library and plenty of sample code help you get your program up and running quickly. The HY-STM32F2xxCore144 core board has a double 60-pin DIP with 2.54mm-pitch male header pins already soldered in,so it can be used with standard solderless breadboards and perfboards. All microcontroller ports are available on extension connectors.

Features

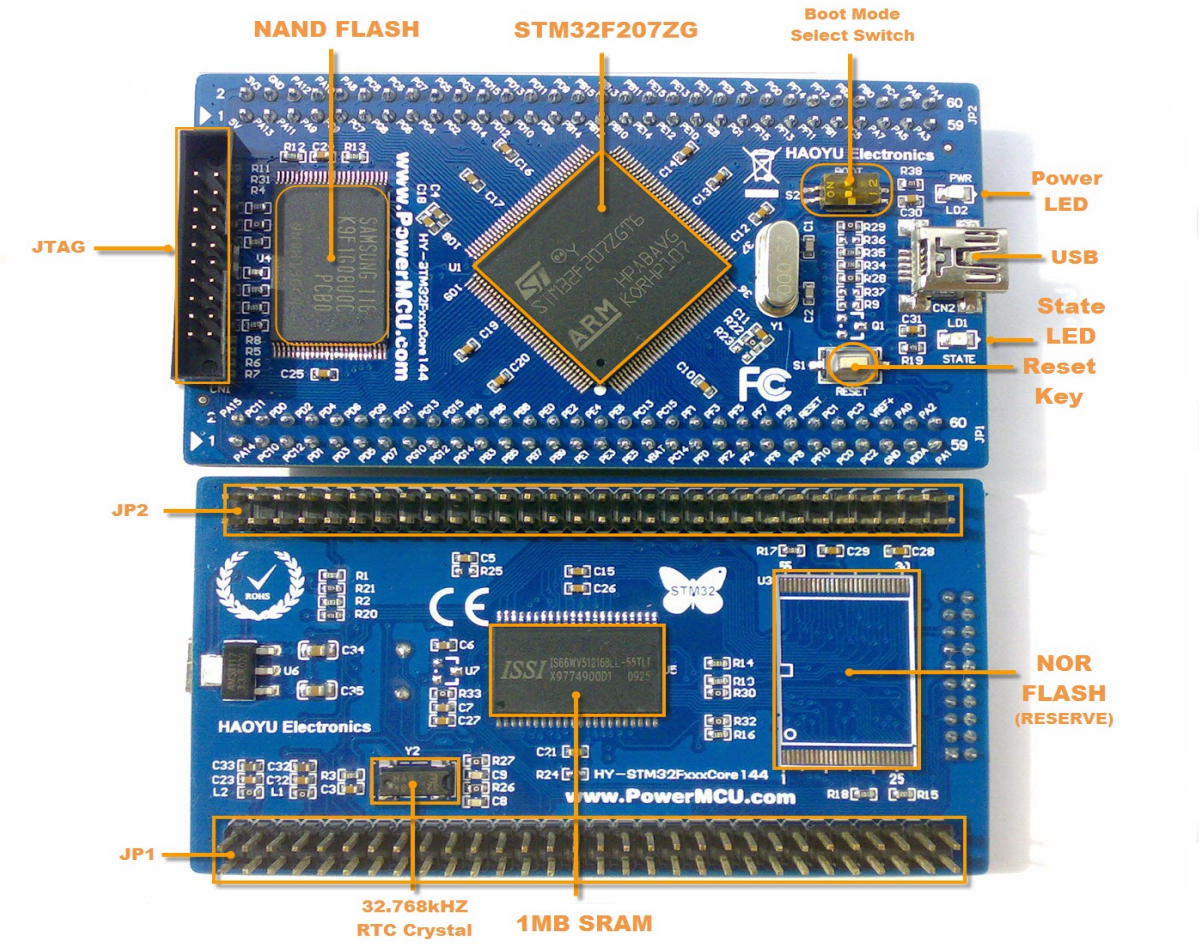
- CPU: STM32F207ZGT6 frequency up to 120 MHz、1MB flash、128KB RAM

  Ethernet, USB OTG, USB2.0 high speed,CAMERA, FSMC, SPI, 3xI2C,

  6xUSART, 2xCAN, 112xfast GPIOs, PWM, 3xADC 12bit, 2xDAC 12bit, DMA
- 25 Mhz main crystal oscillator, 32768 Hz RTC crystal
- USB connector
- RESET button
- Boot select switch
- status LED,On-board LEDs can be used for feedback
- power supply LED
- standard ARM JTAG 20PIN 2.0mm Debug port,JTAG/SWD mode (largess 2.54mm to 2.0mm JTAG conversion board)
- on board voltage regulator 3.3V with up to 800mA current
- on board extension 1MB to 8MB PSRAM or SRAM(default 1MB SRAM),128MB NAND FLASH, NOR FLASH(reserve)
- double 60-pin DIP header pins,extension headers for all ports
- Can be powered by USB or an external 5V supply

- Compact module: 85 mm × 46 mm
- Easy to Install and Remove
- Easy-to-use, uses the ARM RealView compile engine,API-driven development using libraries with intuitive interfaces

Hardware Description



Pin Function Description

Two male headers JP1 and JP2 can be used to connect with main board or standard wrapping board to HY-STM32F2xxCore144 board. All total 112 GPIOs are available on it.

Extension Connector JP1

Pin	Pin name	Use function	Alternate function	Other function
1	PA14	JTCK-SWCLK	JTCK-SWCLK	
2	PA15	JTDI	JTDI/SPI3_NSS/I2S3_WS/TIM2_CH1_ETR /SPI1_NSS	
3	PC10	PC10	SPI3_SCK/I2S3_CK/UART4_TX/SDIO_D2 /DCMI_D8/USART3_TX	
4	PC11	PC11	UART4_RX/SPI3_MISO/SDIO_D3 DCMI_D4/USART3_RX	
5	PC12	PC12	UART5_TX/SDIO_CK/DCMI_D9/SPI3_MOSI /I2S3_SD/USART3_CK	
6	PD0	FSMC_D2	FSMC_D2/CAN1_RX	
7	PD1	FSMC_D3	FSMC_D3/CAN1_TX	
8	PD2	PD2	TIM3_ETR/UART5_RX /SDIO_CMD/DCMI_D11	
9	PD3	PD3	FSMC_CLK/USART2_CTS	
10	PD4	FSMC_NOE	FSMC_NOE/USART2_RTS	
11	PD5	FSMC_NWE	FSMC_NWE/USART2_TX	
12	PD6	FSMC_NWAIT	FSMC_NWAIT/USART2_RX	
13	PD7	FSMC_NCE2	USART2_CK/FSMC_NE1/FSMC_NCE2	
14	PG9	FSMC_NE2	USART6_RX/FSMC_NE2/FSMC_NCE3	
15	PG10	FSMC_NE3	FSMC_NCE4_1/FSMC_NE3	
16	PG11	PG11	FSMC_NCE4_2/ETH_MII_TX_EN	
17	PG12	PG12	FSMC_NE4/USART6_RTS	
18	PG13	PG13	FSMC_A24 /USART6_CTS /ETH_MII_TXD0/ETH_RMII_TXD0	
19	PG14	PG14	FSMC_A25 / USART6_TX /ETH_MII_TXD1/ETH_RMII_TXD1	

20	PG15	PG15	USART6_CTS/DCMI_D13	
21	PB3	JTDO/TRACESWO	JTDO/ TRACESWO/SPI3_SCK / I2S3_CK/TIM2_CH2 / SPI1_SCK	
22	PB4	NJTRST	NJTRST/SPI3_MISO /TIM3_CH1/SPI1/MISO	
23	PB5	PB5	I2C1_SMBA/CAN2_RX/OTG_HS_ULPI_D7 ETH_PPS_OUT/TIM3_CH2/SPI1_MOSI /SPI3_MOSI/DCMI_D10/I2S3_SD	
24	PB6	PB6	I2C1_SCL/TIM4_CH1/CAN2_TX /OTG_FS_INTN/DCMI_D5/USART1_TX	
25	PB7	PB7	I2C1_SDA/FSMC_NL/DCMI_VSYNC /USART1_RX/TIM4_CH2	
26	PB8	PB8	TIM4_CH3/SDIO_D4/TIM10_CH1/DCMI_D6 /OTG_FS_SCL/ETH_MII_TXD3/I2C1_SCL /CAN1_RX	
27	PB9	PB9	SPI2_NSS/I2S2_WS/TIM4_CH4/TIM11_CH1 /OTG_FS_SDA/SDIO_D5/DCMI_D7 /I2C1_SDA/CAN1_TX	
28	PE0	FSMC_NBL0	TIM4_ETR/FSMC_NBL0/DCMI_D2	
29	PE1	FSMC_NBL1	FSMC_NBL1/DCMI_D3	
30	PE2	PE2	TRACECLK/FSMC_A23/ETH_MII_TXD3	
31	PE3	FSMC_A19	TRACED0/FSMC_A19	
32	PE4	FSMC_A20	TRACED1/FSMC_A20/DCMI_D4	
33	PE5	FSMC_A21	TRACED2/FSMC_A21 /TIM9_CH1/DCMI_D6	
34	PE6	FSMC_A22	TRACED3/FSMC_A22 /TIM9_CH2/DCMI_D7	
35	VBAT	VBAT		
36	PC13	PC13		RTC_AF1
37	PC14	OSC32_IN		OSC32_IN
38	PC15	OSC32_OUT		OSC32_OUT
39	PF0	FSMC_A0	FSMC_A0/I2C2_SDA	

40	PF1	FSMC_A1	FSMC_A1/I2C2_SCL	
41	PF2	FSMC_A2	FSMC_A2/I2C2_SMBA	
42	PF3	FSMC_A3	FSMC_A3	ADC3_IN9
43	PF4	FSMC_A4	FSMC_A4	ADC3_IN14
44	PF5	FSMC_A5	FSMC_A5	ADC3_IN15
45	PF6	PF6	TIM10_CH1/FSMC_NIORD	ADC3_IN4
46	PF7	PF7	TIM11_CH1_FSMC_NREG	ADC3_IN5
47	PF8	PF8	TIM13_CH1/FSMC_NIOWR	ADC3_IN6
48	PF9	PF9	TIM14_CH1/FSMC_CD	ADC3_IN7
49	PF10	PF10	FSMC_INTR	ADC3_IN8
50	RESET	RESET		
51	PC0	PC0	OTG_HS_ULPI_STP	ADC123_IN10
52	PC1	PC1	ETH_MDC	ADC123_IN11
53	PC2	PC2	SPI2_MISO/OTG_HS_ULPI_DIR /ETH_MII_TXD2	ADC123_IN12
54	PC3	PC3	SPI2_MOSI/I2S2_SD/OTG_HS_ULPI_NXT /ETH_MII_TX_CK	ADC123_IN13
55	GND	GND		
56	VREF+	VREF+		
57	VDDA	VDDA		
58	PA0	PA0	USART2_CTS/UART4_TX/ETH_MII_CRS /TIM2_CH1_ETR/TIM5_CH1/TIM8_ETR/WKUP	ADC123_IN0
59	PA1	PA1	USART2_RTS/UART4_RX/ETH_MII_RX_CLK /ETH_RMII_REF_CLK/TIM5_CH2/TIM2_CH2	ADC123_IN1
60	PA2	PA2	USART2_TX/TIM5_CH3/TIM9_CH1/TIM2_CH3/ /ETH_MDIO_	ADC123_IN2

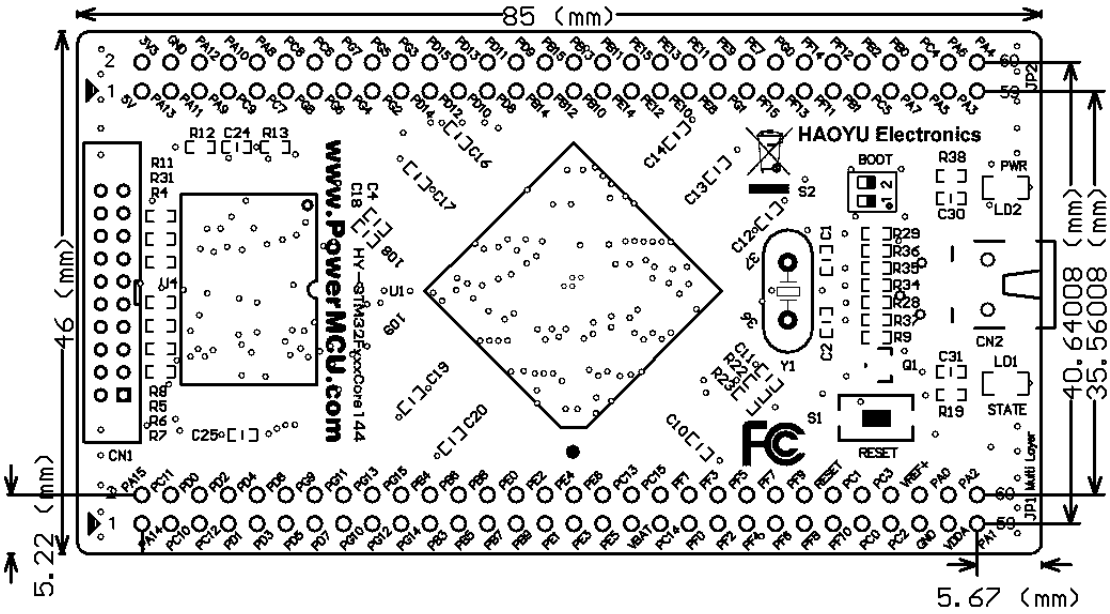
Extension Connector JP2

Pin	Pin name	Use function	Alternate function	Other function
1	5V	5V INPUT		
2	3V3	3V3 OUTPUT		
3	PA13	JTMS-SWDIO	JTMS-SWDIO	
4	GND	GND		
5	PA11	PA11	USART1_CTS/CAN1_RX/TIM1_CH4 /OTG_FS_DM	OTG_FS_DM
6	PA12	PA12	USART1_RTS/CAN1_TX/TIM1_ETR /OTG_FS_DP	OTG_FS_DP
7	PA9	PA9	USART1_TX/TIM1_CH2/I2C3_SMBA/DCMI_D0 /OTG_FS_VBUS	OTG_FS_VBUS
8	PA10	PA10	USART1_RX/TIM1_CH3/DCMI_D1 /OTG_FS_ID	OTG_FS_ID
9	PC9	PC9	I2S2_CKIN/I2S3_CKIN/MCO2/TIM8_CH4 /SDIO_D1/I2C2_SDA/DCMI_D3/TIM3_CH4	
10	PA8	PA8	MCO1/USART1_CK/TIM1_CH1/I2C2_SCL /OTG_FS_SOF	OTG_FS_SOF
11	PC7	PC7	DPI3_MCK/TIM8_CH2/SDIO_D7/USART6_TX /DCMI_D1/TIM3_CH2	
12	PC8	PC8	TIM8_CH3/SDIO_D0/TIM3_CH3/USART6_CK /DCMI_D2	
13	PG8	PG8	USART6_RTS/ETH_PPS_OUT	
14	PC6	PC6	SPI2_MCK/TIM8_CH1/SDIO_D6/USART6_TX /DCMI_D0/TIM3_CH1	
15	PG6	FSMC_INT2	FSMC_INT2	
16	PG7	PG7	FSMC_INT3/USART6_CK	
17	PG4	FSMC_A14	FSMC_A14	
18	PG5	FSMC_A15	FSMC_A15	
19	PG2	FSMC_A12	FSMC_A12	

20	PG3	FSMC_A13	FSMC_A13	
21	PD14	FSMC_D0	FSMC_D0/TIM4_CH3	
22	PD15	FSMC_D1	FSMC_D1/TIM4_CH4	
23	PD12	FSMC_A17	FSMC_A17/TIM4_CH1/USART3_RTS	
24	PD13	FSMC_A18	FSMC_A18/TIM4_CH2	
25	PD10	FSMC_D15	FSMC_D15/USART3_CK	
26	PD11	FSMC_A16	FSMC_A16/USART3_CTS	
27	PD8	FSMC_D13	FSMC_D13/USART3_TX	
28	PD9	FSMC_D14	FSMC_D14/USART3_RX	
29	PB14	PB14	SPI2_MISO/TIM1_CH2N/TIM12_CH1/TIM8_CH2N /USART3_RTS/OTG_HS_DM	OTG_HS_DM
30	PB15	PB15	SPI2_MOSI_I2S2_SD/TIM1_CH3N/TIM8_CH3N /TIM12_CH12/OTG_HS_DP	OTG_HS_DP
31	PB12	PB12	SPI2_NSS/I2S2_WS/I2C2_SMBA/USART3_CK /TIM1_BKIN/CAN2_RX/OTG_HS_ULPI_D5 ETH_RMII_TXD0/ETH_MII_TXD0/OTG_HS_ID	OTG_HS_ID
32	PB13	PB13	SPI2_SCJ/I2S2_CK/USART3_CTS/TIM1_CH1N /CAN2_TX/OTG_HS_ULPI_D6/ETH_RMII_TXD1 ETH_MII_TXD1/OTG_HS_VBUS	OTG_HS_VBUS
33	PB10	PB10	SPI2_SCK/I2S2_CK/I2C2_SCL/USART3_TX TIM2_CH3/OTG_HS_ULPI_D3/ETH_MII_RX_ER /OTG_HS_SCL	OTG_HS_SCL
34	PB11	PB11	I2C2_SDA/USART3_RX/TIM2_CH4 /OTG_HS_ULPI_D4/ETH_RMII_TX_EN /ETH_MII_TX_EN/OTG_HS_SDA	OTG_HS_SDA
35	PE14	FSMC_D11	FSMC_D11/TIM1_CH4	
36	PE15	FSMC_D12	FSMC_D12/TIM1_BKIN	
37	PE12	FSMC_D9	FSMC_D9/TIM1_CH3N	
38	PE13	FSMC_D10	FSMC_D10/TIM1_CH3	
39	PE10	FSMC_D7	FSMC_D7/TIM1_CH2N	

40	PE11	FSMC_D8	FSMC_D8/TIM1_CH2	
41	PE8	FSMC_D5	FSMC_D5/TIM1_CH1N	
42	PE9	FSMC_D6	FSMC_D6/TIM1_CH1	
43	PG1	FSMC_A11	FSMC_A11	
44	PE7	FSMC_D4	FSMC_D4/TIM1_ETR	
45	PF15	FSMC_A9	FSMC_A9	
46	PG0	FSMC_A10	FSMC_A10	
47	PF13	FSMC_A7	FSMC_A7	
48	PF14	FSMC_A8	FSMC_A8	
49	PF11	PF11	DCMI_D12	
50	PF12	FSMC_A6	FSMC_A6	
51	PB1	PB1	TIM3_CH4/TIM8_CH3N/OTG_HS_ULPI_D2 /ETH_MII_RXD3/OTG_HS_INTN/TIM1_CH3N	ADC12_IN9
52	PB2	PB2-BOOT1		
53	PC5	PC5	ETH_RMII_RX_D1/ETH_MII_RX_D1	ADC12_IN15
54	PB0	PB0	TIM3_CH3/TIM8_CH2N/OTG_HS_UPLI_D1 /ETH_MII_RXD2/TIM1_CH2N	ADC12_IN8
55	PA7	PA7	SPI1_MOSI/TIM8_CH1N/TIM14_CH1/TIM3_CH2 /ETH_MII_RX_DV/TIM1_CH1N/RMII_CRS_DV	ADC12_IN7
56	PC4	PC4	ETH_RMII_RX_D0/ETH_MII_RX_D0	ADC12_IN14
57	PA5	PA5	SPI1_SCK/OTG_HS_ULPI_CK/TIM2_CH1_ETR /TIM8_CH1N	ADC12_IN5 /DAC2_OUT
58	PA6	PA6	SPI1_MISO/TIM8_BKIN/TIM13_CH1/TIM3_CH1 /TIM1_BKIN/DCMI_PIXCLK	ADC12_IN6
59	PA3	PA3	USART2_RX/TIM5_CH4/TIM9_CH2/TIM2_CH4 /OTG_HS_ULPI_D0/ETH_MII_COL	ADC123_IN3
60	PA4	PA4	SPI1_NSS/SPI3_NSS/USART2_CK/I2S3_WS /DCMI_HSYNC/OTG_HS_SOF	ADC12_IN4 /DAC1_OUT

Mechanical Size



Order Code

HY-STM32F2xxCore144

How to order?
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Revision History

V1.0 Initial - Create by 2011-06-20