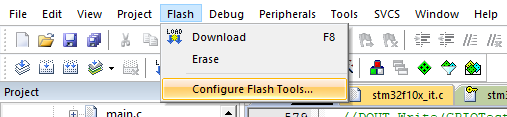
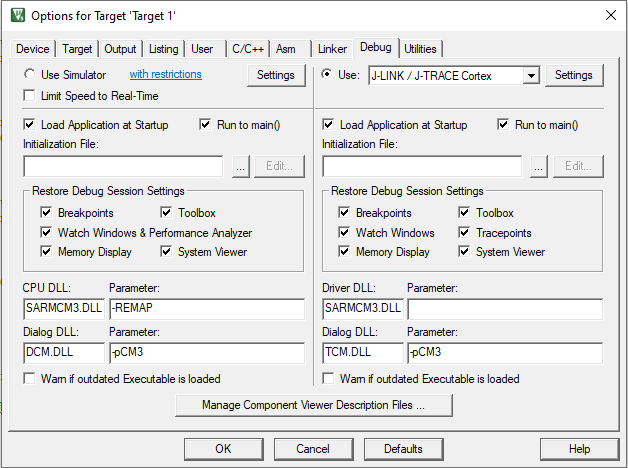
User manual for EMB8618I

# Basic setup (J-Link)

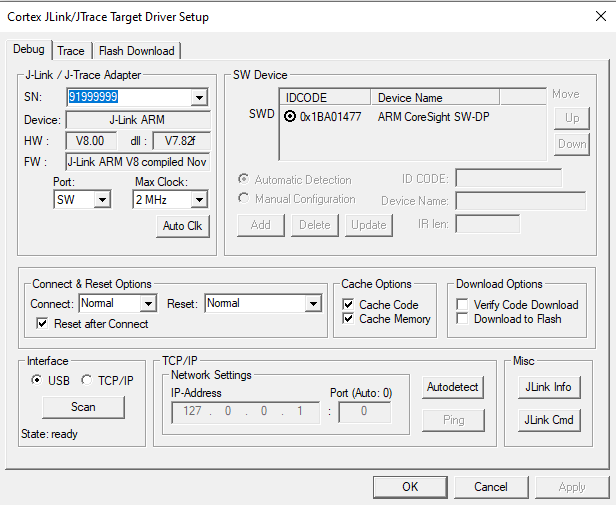
Step 1: To configure the debugger setting, click the **“Flash”** tag and **“Configure Flash Tools…”** to open the configuration menu.



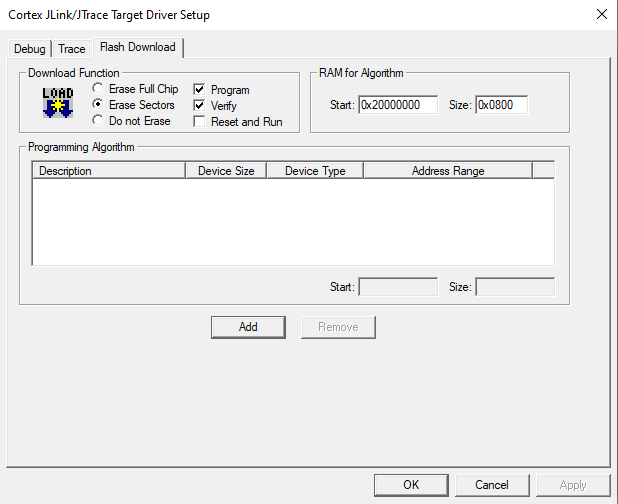
Step 2: Once the configuration menu appears, switch to the **“Debug”** tag and change the debugger to **“J-LINK/J-TRACE Cortex”.** After that, click the **“Settings”** button for configuring debugger settings.



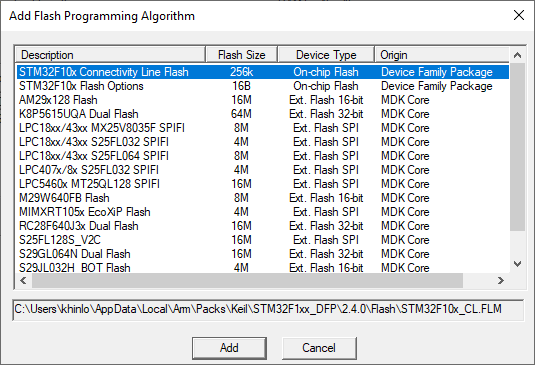
Step 3: For the Cortex JLink/JTrace Target Driver Setup, switch to the **“Flash Download”** tag.



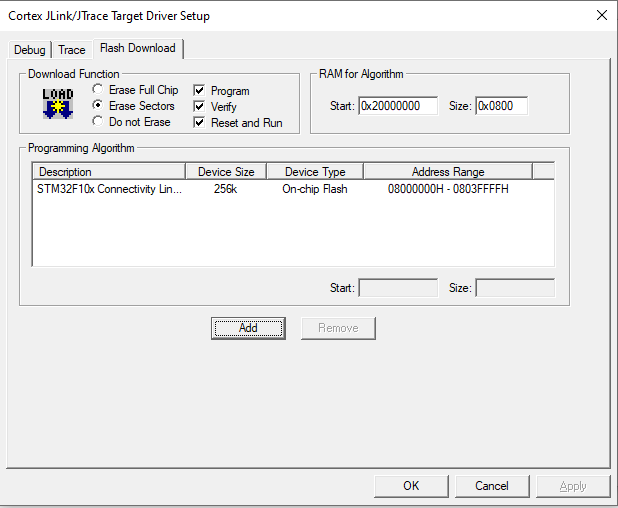
Step 4: Clicking the **“Add”** button for adding the programming Algorithm.



Step 5: Once opened the Flash Programming Algorithm menu, you should add the “STM32F10x Connectivity Line Flash”.

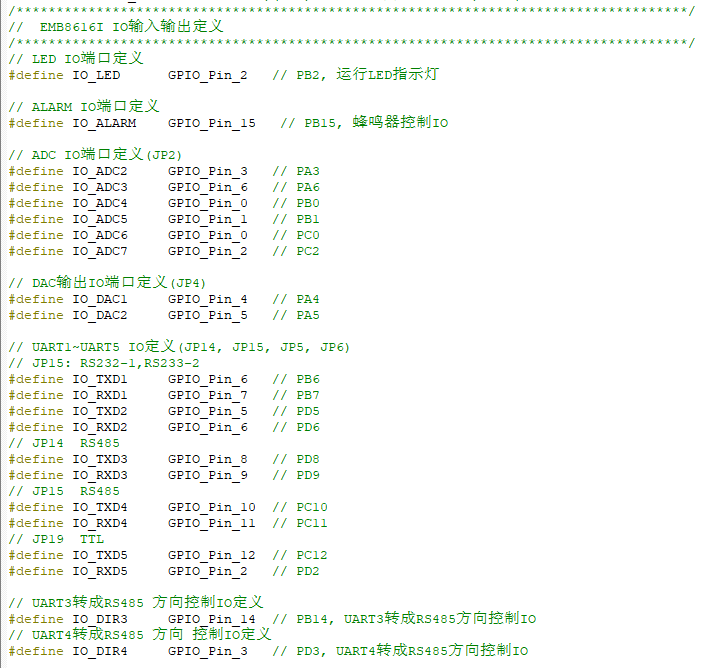


Step 6: Remember to check the **“Reset and Run”** and click OK for confirming the changes.

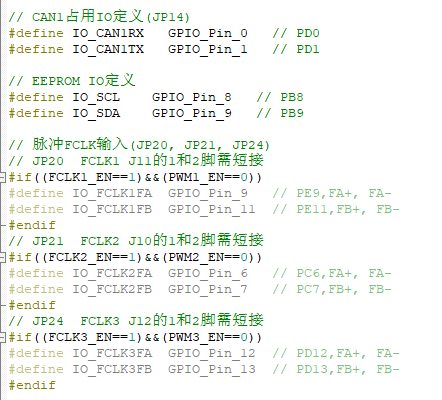


# Pin configuration:

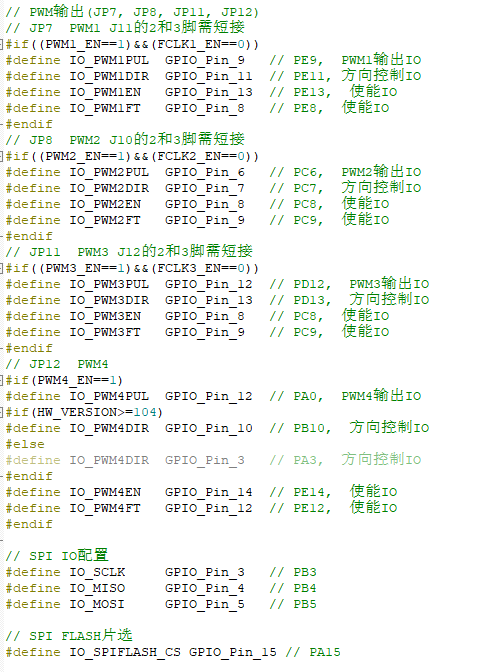
LED, ALARM, ADC, DAC, UART:

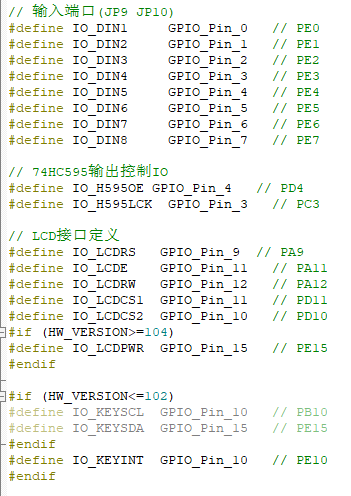


CAN, EEPROM, Pulse FCLK input



PWM output





// EMB8616I IOÊäÈëÊä³ö¶¨Òå

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

// LED IO¶Ë¿Ú¶¨Òå

#define IO\_LED GPIO\_Pin\_2 // PB2, ÔËÐÐLEDÖ¸Ê¾µÆ

// ALARM IO¶Ë¿Ú¶¨Òå

#define IO\_ALARM GPIO\_Pin\_15 // PB15, ·äÃùÆ÷¿ØÖÆIO

// ADC IO¶Ë¿Ú¶¨Òå(JP2)

#define IO\_ADC2 GPIO\_Pin\_3 // PA3

#define IO\_ADC3 GPIO\_Pin\_6 // PA6

#define IO\_ADC4 GPIO\_Pin\_0 // PB0

#define IO\_ADC5 GPIO\_Pin\_1 // PB1

#define IO\_ADC6 GPIO\_Pin\_0 // PC0

#define IO\_ADC7 GPIO\_Pin\_2 // PC2

// DACÊä³öIO¶Ë¿Ú¶¨Òå(JP4)

#define IO\_DAC1 GPIO\_Pin\_4 // PA4

#define IO\_DAC2 GPIO\_Pin\_5 // PA5

// UART1~UART5 IO¶¨Òå(JP14, JP15, JP5, JP6)

// JP15: RS232-1,RS233-2

#define IO\_TXD1 GPIO\_Pin\_6 // PB6

#define IO\_RXD1 GPIO\_Pin\_7 // PB7

#define IO\_TXD2 GPIO\_Pin\_5 // PD5

#define IO\_RXD2 GPIO\_Pin\_6 // PD6

// JP14 RS485

#define IO\_TXD3 GPIO\_Pin\_8 // PD8

#define IO\_RXD3 GPIO\_Pin\_9 // PD9

// JP15 RS485

#define IO\_TXD4 GPIO\_Pin\_10 // PC10

#define IO\_RXD4 GPIO\_Pin\_11 // PC11

// JP19 TTL

#define IO\_TXD5 GPIO\_Pin\_12 // PC12

#define IO\_RXD5 GPIO\_Pin\_2 // PD2

// UART3×ª³ÉRS485 ·½Ïò¿ØÖÆIO¶¨Òå

#define IO\_DIR3 GPIO\_Pin\_14 // PB14, UART3×ª³ÉRS485·½Ïò¿ØÖÆIO

// UART4×ª³ÉRS485 ·½Ïò ¿ØÖÆIO¶¨Òå

#define IO\_DIR4 GPIO\_Pin\_3 // PD3, UART4×ª³ÉRS485·½Ïò¿ØÖÆIO

// CAN1Õ¼ÓÃIO¶¨Òå(JP14)

#define IO\_CAN1RX GPIO\_Pin\_0 // PD0

#define IO\_CAN1TX GPIO\_Pin\_1 // PD1

// EEPROM IO¶¨Òå

#define IO\_SCL GPIO\_Pin\_8 // PB8

#define IO\_SDA GPIO\_Pin\_9 // PB9

// Âö³åFCLKÊäÈë(JP20, JP21, JP24)

// JP20 FCLK1 J11µÄ1ºÍ2½ÅÐè¶Ì½Ó

#if((FCLK1\_EN==1)&&(PWM1\_EN==0))

#define IO\_FCLK1FA GPIO\_Pin\_9 // PE9,FA+, FA-

#define IO\_FCLK1FB GPIO\_Pin\_11 // PE11,FB+, FB-

#endif

// JP21 FCLK2 J10µÄ1ºÍ2½ÅÐè¶Ì½Ó

#if((FCLK2\_EN==1)&&(PWM2\_EN==0))

#define IO\_FCLK2FA GPIO\_Pin\_6 // PC6,FA+, FA-

#define IO\_FCLK2FB GPIO\_Pin\_7 // PC7,FB+, FB-

#endif

// JP24 FCLK3 J12µÄ1ºÍ2½ÅÐè¶Ì½Ó

#if((FCLK3\_EN==1)&&(PWM3\_EN==0))

#define IO\_FCLK3FA GPIO\_Pin\_12 // PD12,FA+, FA-

#define IO\_FCLK3FB GPIO\_Pin\_13 // PD13,FB+, FB-

#endif

// PWMÊä³ö(JP7, JP8, JP11, JP12)

// JP7 PWM1 J11µÄ2ºÍ3½ÅÐè¶Ì½Ó

#if((PWM1\_EN==1)&&(FCLK1\_EN==0))

#define IO\_PWM1PUL GPIO\_Pin\_9 // PE9, PWM1Êä³öIO

#define IO\_PWM1DIR GPIO\_Pin\_11 // PE11, ·½Ïò¿ØÖÆIO

#define IO\_PWM1EN GPIO\_Pin\_13 // PE13, Ê¹ÄÜIO

#define IO\_PWM1FT GPIO\_Pin\_8 // PE8, Ê¹ÄÜIO

#endif

// JP8 PWM2 J10µÄ2ºÍ3½ÅÐè¶Ì½Ó

#if((PWM2\_EN==1)&&(FCLK2\_EN==0))

#define IO\_PWM2PUL GPIO\_Pin\_6 // PC6, PWM2Êä³öIO

#define IO\_PWM2DIR GPIO\_Pin\_7 // PC7, ·½Ïò¿ØÖÆIO

#define IO\_PWM2EN GPIO\_Pin\_8 // PC8, Ê¹ÄÜIO

#define IO\_PWM2FT GPIO\_Pin\_9 // PC9, Ê¹ÄÜIO

#endif

// JP11 PWM3 J12µÄ2ºÍ3½ÅÐè¶Ì½Ó

#if((PWM3\_EN==1)&&(FCLK3\_EN==0))

#define IO\_PWM3PUL GPIO\_Pin\_12 // PD12, PWM3Êä³öIO

#define IO\_PWM3DIR GPIO\_Pin\_13 // PD13, ·½Ïò¿ØÖÆIO

#define IO\_PWM3EN GPIO\_Pin\_8 // PC8, Ê¹ÄÜIO

#define IO\_PWM3FT GPIO\_Pin\_9 // PC9, Ê¹ÄÜIO

#endif

// JP12 PWM4

#if(PWM4\_EN==1)

#define IO\_PWM4PUL GPIO\_Pin\_12 // PA0, PWM4Êä³öIO

#if(HW\_VERSION>=104)

#define IO\_PWM4DIR GPIO\_Pin\_10 // PB10, ·½Ïò¿ØÖÆIO

#else

#define IO\_PWM4DIR GPIO\_Pin\_3 // PA3, ·½Ïò¿ØÖÆIO

#endif

#define IO\_PWM4EN GPIO\_Pin\_14 // PE14, Ê¹ÄÜIO

#define IO\_PWM4FT GPIO\_Pin\_12 // PE12, Ê¹ÄÜIO

#endif

// SPI IOÅäÖÃ

#define IO\_SCLK GPIO\_Pin\_3 // PB3

#define IO\_MISO GPIO\_Pin\_4 // PB4

#define IO\_MOSI GPIO\_Pin\_5 // PB5

// SPI FLASHÆ¬Ñ¡

#define IO\_SPIFLASH\_CS GPIO\_Pin\_15 // PA15

// ÊäÈë¶Ë¿Ú(JP9 JP10)

#define IO\_DIN1 GPIO\_Pin\_0 // PE0

#define IO\_DIN2 GPIO\_Pin\_1 // PE1

#define IO\_DIN3 GPIO\_Pin\_2 // PE2

#define IO\_DIN4 GPIO\_Pin\_3 // PE3

#define IO\_DIN5 GPIO\_Pin\_4 // PE4

#define IO\_DIN6 GPIO\_Pin\_5 // PE5

#define IO\_DIN7 GPIO\_Pin\_6 // PE6

#define IO\_DIN8 GPIO\_Pin\_7 // PE7

// 74HC595Êä³ö¿ØÖÆIO

#define IO\_H595OE GPIO\_Pin\_4 // PD4

#define IO\_H595LCK GPIO\_Pin\_3 // PC3

// LCD½Ó¿Ú¶¨Òå

#define IO\_LCDRS GPIO\_Pin\_9 // PA9

#define IO\_LCDE GPIO\_Pin\_11 // PA11

#define IO\_LCDRW GPIO\_Pin\_12 // PA12

#define IO\_LCDCS1 GPIO\_Pin\_11 // PD11

#define IO\_LCDCS2 GPIO\_Pin\_10 // PD10

#if (HW\_VERSION>=104)

#define IO\_LCDPWR GPIO\_Pin\_15 // PE15

#endif

#if (HW\_VERSION<=102)

#define IO\_KEYSCL GPIO\_Pin\_10 // PB10

#define IO\_KEYSDA GPIO\_Pin\_15 // PE15

#endif

#define IO\_KEYINT GPIO\_Pin\_10 // PE10

#endif

# Development Kit requirement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Component | Pin | Number of Pin | Min. requirement | EMB8618I |
| Stepper Motor \* 3 | 5V | 3 | 3 | 3 |
|  | Pulse + | 3 | 3 | 3 |
|  | Pulse - | 3 | 3 |  |
|  | ENA + | 3 | 3 | 3 |
|  | ENA - | 3 | 3 |  |
|  | DIR + | 3 | 3 | 3 |
|  | DIR - | 3 | 3 |  |
|  | GND | 3 | 3 | 3 |
|  |  |  |  |  |
| Encoder | 5V | 3 | 3 | 1 |
|  | A+ | 3 | 3 | 1 |
|  | A- | 3 | 3 | 1 |
|  | B+ | 3 | 3 | 1 |
|  | B- | 3 | 3 | 1 |
|  | GND | 3 | 3 | 1 |
|  |  |  |  |  |
| Sensor \* 3 \* 3 | DI | 9 | 9 | 6 (Front and Back) |
|  |  |  |  |  |
| Switch \* 2 | DI | 2 | 2 | 8 - 2 |
|  | GND | 2 | 2 | 8 - 2 |

# GPIO

# DC Motor Setup

# Stepper Motor Setup