```
#ifndef __INTERFACE_H_
#define __INTERFACE_H_

#include "stm32f10x.h"

//user LED
#define LED_PIN         GPIO_Pin_13
#define LED_GPIO        GPIOC
#define LED_SET         GPIO_SetBits(LED_GPIO , LED_PIN)
#define LED_RESE        GPIO_ResetBits(LED_GPIO , LED_PIN)

//电机驱动 IO 定义
/*
LEFT_F_PIN      PB10    左后退 IO
LEFT_B_PIN      PB11    左前进 IO

RIGHT_F_PIN     PB12    右前进 IO
RIGHT_B_PIN     PB13    右后退 IO

LEFT_EN_PIN     H-3.3v  左驱动使能 H 有效
RIGHT_EN_PIN    H-3.3v  右驱动使能 H 有效
 */
#define LEFT_F_PIN      GPIO_Pin_11
#define LEFT_F_GPIO     GPIOB
#define LEFT_F_SET      GPIO_SetBits(LEFT_F_GPIO , LEFT_F_PIN)
#define LEFT_F_RESET    GPIO_ResetBits(LEFT_F_GPIO , LEFT_F_PIN)

#define LEFT_B_PIN      GPIO_Pin_10
#define LEFT_B_GPIO     GPIOB
#define LEFT_B_SET      GPIO_SetBits(LEFT_B_GPIO , LEFT_B_PIN)
#define LEFT_B_RESET    GPIO_ResetBits(LEFT_B_GPIO , LEFT_B_PIN)

#define RIGHT_F_PIN     GPIO_Pin_12
#define RIGHT_F_GPIO    GPIOB
#define RIGHT_F_SET     GPIO_SetBits(RIGHT_F_GPIO , RIGHT_F_PIN)
#define RIGHT_F_RESET   GPIO_ResetBits(RIGHT_F_GPIO , RIGHT_F_PIN)

#define RIGHT_B_PIN     GPIO_Pin_13
#define RIGHT_B_GPIO    GPIOB
#define RIGHT_B_SET     GPIO_SetBits(RIGHT_B_GPIO , RIGHT_B_PIN)
#define RIGHT_B_RESET   GPIO_ResetBits(RIGHT_B_GPIO , RIGHT_B_PIN)

//循迹光电对管
/*
```

```
左 2 循迹     SEARCH_L2_PIN    PB5
左 1 循迹     SEARCH_L1_PIN    PB6
中循迹   SEARCH_M_PIN     PB7
右 1 循迹     SEARCH_R1_PIN    PB8
右 2 循迹     SEARCH_R2_PIN    PB9
 */
#define SEARCH_L2_PIN         GPIO_Pin_5
#define SEARCH_L2_GPIO        GPIOB
#define SEARCH_L2_IO          GPIO_ReadInputDataBit(SEARCH_L2_GPIO, SEARCH_L2_PIN)

#define SEARCH_L1_PIN         GPIO_Pin_6
#define SEARCH_L1_GPIO        GPIOB
#define SEARCH_L1_IO          GPIO_ReadInputDataBit(SEARCH_L1_GPIO, SEARCH_L1_PIN)

#define SEARCH_M_PIN          GPIO_Pin_7
#define SEARCH_M_GPIO         GPIOB
#define SEARCH_M_IO           GPIO_ReadInputDataBit(SEARCH_M_GPIO, SEARCH_M_PIN)

#define SEARCH_R1_PIN         GPIO_Pin_8
#define SEARCH_R1_GPIO        GPIOB
#define SEARCH_R1_IO          GPIO_ReadInputDataBit(SEARCH_R1_GPIO, SEARCH_R1_PIN)

#define SEARCH_R2_PIN         GPIO_Pin_9
#define SEARCH_R2_GPIO        GPIOB
#define SEARCH_R2_IO          GPIO_ReadInputDataBit(SEARCH_R2_GPIO, SEARCH_R2_PIN)

#define BLACK_AREA 1          //无信号返回
#define WHITE_AREA 0          //有信号返回

//左前
#define LEFT_GO    LEFT_F_SET;   LEFT_B_RESET//前进
#define LEFT_BACK  LEFT_F_RESET; LEFT_B_SET//后退
#define LEFT_STOP  LEFT_F_RESET; LEFT_B_RESET//停止

//右前
#define RIGHT_GO     RIGHT_F_SET;  RIGHT_B_RESET
#define RIGHT_BACK   RIGHT_F_RESET;RIGHT_B_SET
#define RIGHT_STOP   RIGHT_F_RESET;RIGHT_B_RESET

#define MAX_SPEED_DUTY 15 //默认占空比 按 1ms 最小分辨率 周期 50ms 计算
#define MID_SPEED_DUTY 10 //默认占空比 按 1ms 最小分辨率 周期 50ms 计算
#define MIN_SPEED_DUTY 0  //默认占空比 按 1ms 最小分辨率 周期 50ms 计算

//指令定义
```

```
#define COMM_STOP  'I'//停止
#define COMM_UP    'A'//前进
#define COMM_UPL   'X'//偏左前进
#define COMM_UPR   'Y'//偏右前进

extern uint8_t tick_5ms;//5ms 计数器，作为主函数的基本周期
extern uint8_t tick_1ms;//1ms 计数器，作为电机的基本计数器
extern uint16_t speed_count;//占空比计数器 50ms 一周期

#endif
```