

```

1  // GPIO Library
2  // Jason Losh
3
4  //-----
5  // Hardware Target
6  //-----
7
8  // Target Platform: EK-TM4C123GXL
9  // Target uC:      TM4C123GH6PM
10 // System Clock:   -
11
12 // Hardware configuration:
13 // GPIO APB ports A-F
14
15 //-----
16 // Device includes, defines, and assembler directives
17 //-----
18
19 #ifndef GPIO_H_
20 #define GPIO_H_
21
22 #include <stdint.h>
23 #include <stdbool.h>
24
25 // Enum values set to bitband address of bit 0 of the GPIO_PORTx_DATA_R register
26 typedef enum _PORT
27 {
28     PORTA = 0x42000000 + (0x400043FC-0x40000000)*32,
29     PORTB = 0x42000000 + (0x400053FC-0x40000000)*32,
30     PORTC = 0x42000000 + (0x400063FC-0x40000000)*32,
31     PORTD = 0x42000000 + (0x400073FC-0x40000000)*32,
32     PORTE = 0x42000000 + (0x400243FC-0x40000000)*32,
33     PORTF = 0x42000000 + (0x400253FC-0x40000000)*32
34 } PORT;
35
36 //-----
37 // Subroutines
38 //-----
39
40 void enablePort(PORT port);
41 void disablePort(PORT port);
42
43 void selectPinPushPullOutput(PORT port, uint8_t pin);
44 void selectPinOpenDrainOutput(PORT port, uint8_t pin);
45 void selectPinDigitalInput(PORT port, uint8_t pin);
46 void selectPinAnalogInput(PORT port, uint8_t pin);
47 void setPinCommitControl(PORT port, uint8_t pin);
48
49 void enablePinPullup(PORT port, uint8_t pin);
50 void disablePinPullup(PORT port, uint8_t pin);
51 void enablePinPulldown(PORT port, uint8_t pin);
52 void disablePinPulldown(PORT port, uint8_t pin);
53
54 void setPinAuxFunction(PORT port, uint8_t pin, uint32_t fn);
55
56 void selectPinInterruptRisingEdge(PORT port, uint8_t pin);
57 void selectPinInterruptFallingEdge(PORT port, uint8_t pin);
58 void selectPinInterruptBothEdges(PORT port, uint8_t pin);
59 void selectPinInterruptHighLevel(PORT port, uint8_t pin);
60 void selectPinInterruptLowLevel(PORT port, uint8_t pin);
61 void enablePinInterrupt(PORT port, uint8_t pin);
62 void disablePinInterrupt(PORT port, uint8_t pin);
63
64 void setPinValue(PORT port, uint8_t pin, bool value);
65 bool getPinValue(PORT port, uint8_t pin);
66 void setPortValue(PORT port, uint8_t value);
67 uint8_t getPortValue(PORT port);
68
69 #endif

```