IFC-OC04
Interface Free Controller
Output Card
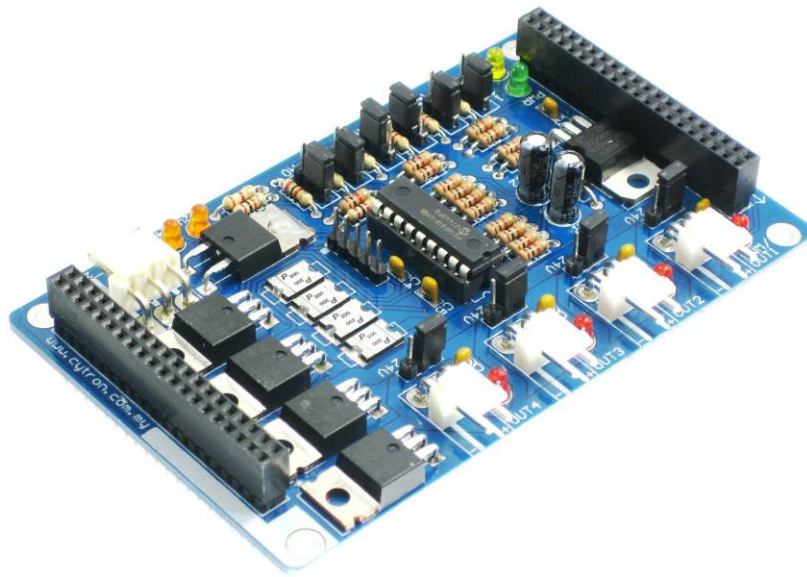
Card Library Functions

V1.1

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IFC-OC04 Card Technical Info

This document will explain the function prototype for OC04 when controlling it using MB00. The function prototype will be called in main program for MB00 in order to control/communicate with OC04. Table 1 shows the function for OC04.

Function Prototype	Remark	Parameter Description
void oc_out1(unsigned char **add**, unsigned char **data**)	oc_out1(**add_oc1,1**)	**add** = card address (add_oc1) **data** = output condition (1) **1** = activate output device **0** = deactivate output device
void oc_out2(unsigned char **add**, unsigned char **data**)	oc_out2(**add_oc1,0**)	**add** = card address (add_oc1) **data** = output condition (0) **1** = activate output device **0** = deactivate output device
void oc_out3(unsigned char **add**, unsigned char **data**)	oc_out3(**add_oc1,1**)	**add** = card address (add_oc1) **data** = output condition (1) 1 = activate output device 0 = deactivate output device
void oc_out4(unsigned char **add**, unsigned char **data**)	oc_out4(**add_oc1,0**)	**add** = card address (add_oc1) **data** = output condition (0) **1** = activate output device **0** = deactivate output device
void oc_pwm(unsigned char **add**, unsigned char **data**)	oc_pwm(**add_oc1,100**)	**add** = card address (add_oc1) **data** = pwm value (100), the greater the pwm value, the higher the output voltage, maximum pwm value = 255.
void oc_out(unsigned char **add**, unsigned char **data**)	oc_out(**add_oc1, 0b00001010**)	**add** = card address (add_oc1) **data** = all output value (0b00001010, output4 and output2 are activated together). (0000 DCBA) [A=output1, B=output2, C=output3, D=output4, active high]

Table 1   Function Prototype for Output Card

Note: User is reminded to add header file (iic.h and iic_oc.h) and object file (iic.o and iic_oc.o) for IFC-MB00 and IFC-OC04 each time open a new project for IFC. User also needs to include card h file at the beginning of the program. Please refer sample source code for the example to include card h file.

User can use these examples as guide in using function prototype for output card (OC04).

void oc_out1(unsigned char **add**, unsigned char **data**)
void oc_out2(unsigned char **add**, unsigned char **data**)
void oc_out3(unsigned char **add**, unsigned char **data**)
void oc_out4(unsigned char **add**, unsigned char **data**)

Unsigned char add is an address which we set on the Output Card by using mini jumper (A5-A0). Unsigned char data is defined for output condition where 1 is for activate output device and 0 for deactivate output device. These function prototype are used to control the output device that is connected to output ports on IFC-OC04. The Output Card has 4 output ports, OUT1, OUT2, OUT3 and OUT4, which are capable of driving relays, solenoid or small power motor with only two wires. oc_out1, oc_out2, oc_out3, oc_out4 are for OUT1, OUT2, OUT3, OUT4 respectively.

Example:

If user wants to **activate** an output device that is connected to OUT1 port, user can call the function prototype like this.

<div align="center">

oc_out1(add_oc1,**1**);

</div>

If user wants to **deactivate** an output device that is connected to OUT1 port, user can call the function prototype like this.

<div align="center">

oc_out1(add_oc1,**0**);

</div>

User can use the similar way to control other output devices which is connected to the other output port by calling relevant functions to OUT2 port, OUT3 port and OUT4 port.

void oc_pwm(unsigned char **add**, unsigned char **data**)

This function prototype is used when user connects OUT1 port with an output device that needs **PWM (Pulse-width modulation)** function. The frequency for PWM is 8.79KHz + - 5%. For example, users use PWM to increase and decrease speed of DC motor. So, user can connect a DC motor at the OUT1 and call this function as below:

<div align="center">

oc_pwm (add_oc1, pwm value);

</div>

add_oc1 is the address which is set on the output card and pwm value is a value at the range of 0-255. Different value of pwm will give different level of brightness to output status indicator LED and different value of output voltage to OUT1 port. The bigger the pwm value, the higher the output voltage. If the output voltage of OUT1 was selected as

12V, then given a pwm value = 255, will set the output voltage of OUT1 to maximum, 12V. If pwm value = 0, then the output voltage of OUT1 will be minimum, 0V.

```
void oc_out(unsigned char add, unsigned char data)
```

This function prototype is to control all the output port with one command. It can be use to activate/deactivate all the output devices together.

Example:
If user wants to activate all the output devices together, user can call this function prototype like this. oc_add1 is the address which set on the output card and all the outputs are given value '1' (0000DCBA=00001111).

oc_out(add_oc1, 0b00001111);

User also can call the function prototype below to deactivate all the output devices together. add_oc1 is the address which set on the output card and all the outputs are given value '0' (0000DCBA=00000000).

oc_out (add_oc1, 0b00000000);

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