

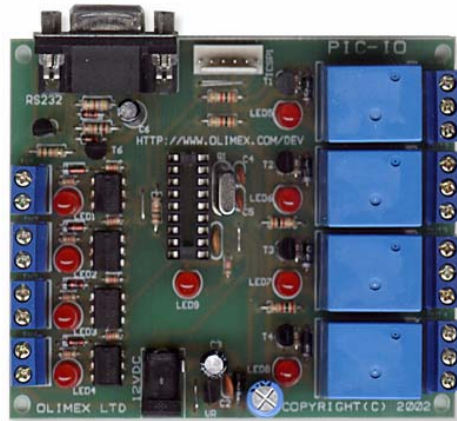
# PIC-IO Firmware Manual

## Specifications

- RS232 port, 8N1 programmable baud rate
- ICSP/ICD port
- 4x relays 220VAC/10A, 24VDC/15A
- 4x optocoupled isolated inputs TTL 5V
- AT command interface
- M2M interface 1byte protocol
- Programmable power up state
- Voltage 12VDC 500mA

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PIC-IO Firmware is an application developed by Goldtronica that allows galvanic and opto-isolated I/O interface from a RS232 port.

PIC-IO board is a development platform from Olimex for PIC microcontrollers that comes with a free socket where PIC-IO Firmware chip is plugged.

Typical usages include control of power loads, digital sensor input for automation, industrial machinery, computers.

## Configuration

Connect the module to computer with a serial cable and configure your terminal program to the desired baud rate. Type AT [ENTER] and you should receive an OK in the terminal, type ATH [ENTER] for a list of available commands. All user defined commands are saved in a non volatile EEPROM and are remembered at power up.

Two different protocols are available, ASCII and 1Byte. ASCII gives an AT command interpreter prompt for human control and a 1Byte protocol for M2M communication.

In ASCII mode, configuration and control is done with AT commands. (Ex. ATO=F sets all relays ON). Any changes in the inputs are automatically reported to the terminal like the output of ATS.

1Byte protocol sets relays on/off based on each received byte value. One byte with the state of inputs is sent every time there is a state change in the input opto-isolated pins.

Data Byte is the binary representation with MSB at left of activated ports encoded to hexadecimal. (Ex: 0=0000 [all off]; 1=0001 [only 1 is active]; 2=0010 [only 2 is active]; 3 = 0011 [1 and 2 are active]; 4=0100 ... F=1111 [all active])

### Default configuration

- Baud rate : 9600 8N1
- Mode : 0 (ASCII)
- Relay Output: F (all on)

## Available commands

```
at&s=[0-6] Set speed: 0=1200 1=2400 2=9600 3=19.2k 4=38.4k 5=57.6k 6=115.2k
at&m=[0-1] Set mode: 0=ASCII,1=M2M
at&o=[0-F] Default powerup Output: 0-F BCD matrix
ato=[0-F] Set Output: 0-F BCD matrix
ats      Inquire Status
atv      Inquire Version
ath      This Help
```