

8051 I/O Module

Technical Manual

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WARRANTY:

BiPOM Electronics warrants 8051 I/O Module for a period of 1 year. If the board becomes defective during this period, BiPOM will at its option, replace or repair the board. This warranty is voided if the product is subjected to physical abuse or operated outside stated electrical limits. BiPOM Electronics will not be responsible for damage to any external devices connected to 8051 I/O Module. BiPOM Electronics disclaims all warranties express or implied warranties of merchantability and fitness for a particular purpose. In no event shall BiPOM Electronics be liable for any indirect, special, incidental or consequential damages in connection with or arising from the use of this product. BiPOM Electronics' liability is limited to the purchase price of this product.

1. Overview

8051 I/O Module is an optional part of MicroTRAK training kit system for use with MINI-MAX/51 series Single Board Computers (SBC).

MicroTRAK is the ultimate training kit and project development platform with microcontrollers. Whether developing a new project with or learning about microcontrollers, you will find MicroTRAK a highly versatile carrier board with support for microcontroller systems with 8051, 6811, 6808, PIC, Basic Stamp, Basic Tiger and others.

List of micro-controller boards and peripheral boards, software examples for MicroTRAK training kit are available from <http://www.bipom.com/>

Various host micro-controller boards with 8051 micro-controllers (MINI-MAX/51) can be installed on the MicroTRAK carrier board along with the 8051 I/O peripheral board. More details on supported BiPOM micro-controller boards are available from: <http://www.bipom.com/boards51.php>

8051 I/O Module allows access to all input/output (I/O) ports of the 8051 micro-controller on the MicroTRAK development platform. 8051 I/O Module has 32 switches to control the 8051 micro-controller inputs and 32 LEDs to indicate the port statuses as logic LOW or logic HIGH.

8051 I/O Module is powered from a 5 Volt regulated DC power source through the 36-pin input/output connector.

2. Specifications

8051 I/O Module has the following configuration:

- 36-pin pluggable module connector
- Two 32-pin expansion connectors (one male and one female)
- 32 DIP switches to control the 8051 micro-controller inputs
- 32 port indicator LED's with 74ALS05 hex inverters as drivers
- Requires regulated 5VDC supply at 250mA maximum current (when all LED's are on)
- Dimensions are 5.95 X 1.975 inches (15.1 X 5.0 centimeters).
- Mounting holes of 0.15 inches (3.8 millimeters) are on four corners.
- 0° - 70° C operating, -40° - +85° C storage temperature range.

3. Functional Blocks

Figure 1 shows the block diagram of the 8051 I/O Module:

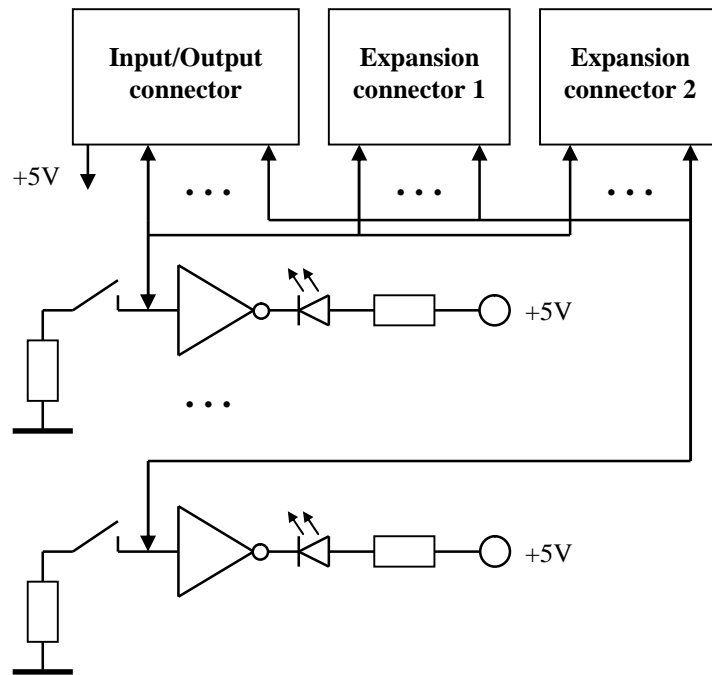


Figure 1

Pluggable Module connector

The 32 input/output (I/O) lines and 5 Volt power supply pins are available on the 36-pin connector X1 for interfacing through MicroTRAK to 8051 micro-controller host board.

Table 1 shows the pin assignments for the connector.

Connector X1

Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin
P3.1	9	P2.0	18	P0.7	27	GND	36
P3.2	8	P2.1	17	P1.0	26	VDD	35
P3.3	7	P2.2	16	P1.1	25	P0.0	34
P3.4	6	P2.3	15	P1.2	24	P0.1	33
P3.5	5	P2.4	14	P1.3	23	P0.2	32
P3.6	4	P2.5	13	P1.4	22	P0.3	31
P3.7	3	P2.6	12	P1.5	21	P0.4	30
VDD	2	P2.7	11	P1.6	20	P0.5	29
GND	1	P3.0	10	P1.7	19	P0.6	28

Table 1

Expansion connectors

The 32 input/output (I/O) lines are available on the 32-pin expansion connector X2 (male type) and X3 (female type) for interfacing to external circuits, prototyping boards, breadboards.

Table 2 shows the pin assignments for the connector.

Connectors X2, X3

Signal	Pin		Signal	Pin		Signal	Pin		Signal	Pin
P3.0	8		P2.0	16		P1.0	24		P0.0	32
P3.1	7		P2.1	15		P1.1	23		P0.1	31
P3.2	6		P2.2	14		P1.2	22		P0.2	30
P3.3	5		P2.3	13		P1.3	21		P0.3	29
P3.4	4		P2.4	12		P1.4	20		P0.4	28
P3.5	3		P2.5	11		P1.5	19		P0.5	27
P3.6	2		P2.6	10		P1.6	18		P0.6	26
P3.7	1		P2.7	9		P1.7	17		P0.7	25

Table 2

Power Supply

External power supply should be able to provide regulated 5 Volts DC at 250mA.

WARNING:

Correct polarity should be observed when applying external DC supply to the connector.

4. Application Notes

Various host micro-controller boards with 8051 micro-controllers can be used with the 8051 I/O Module. More details on supported BiPOM micro-controller boards are available from the link below:

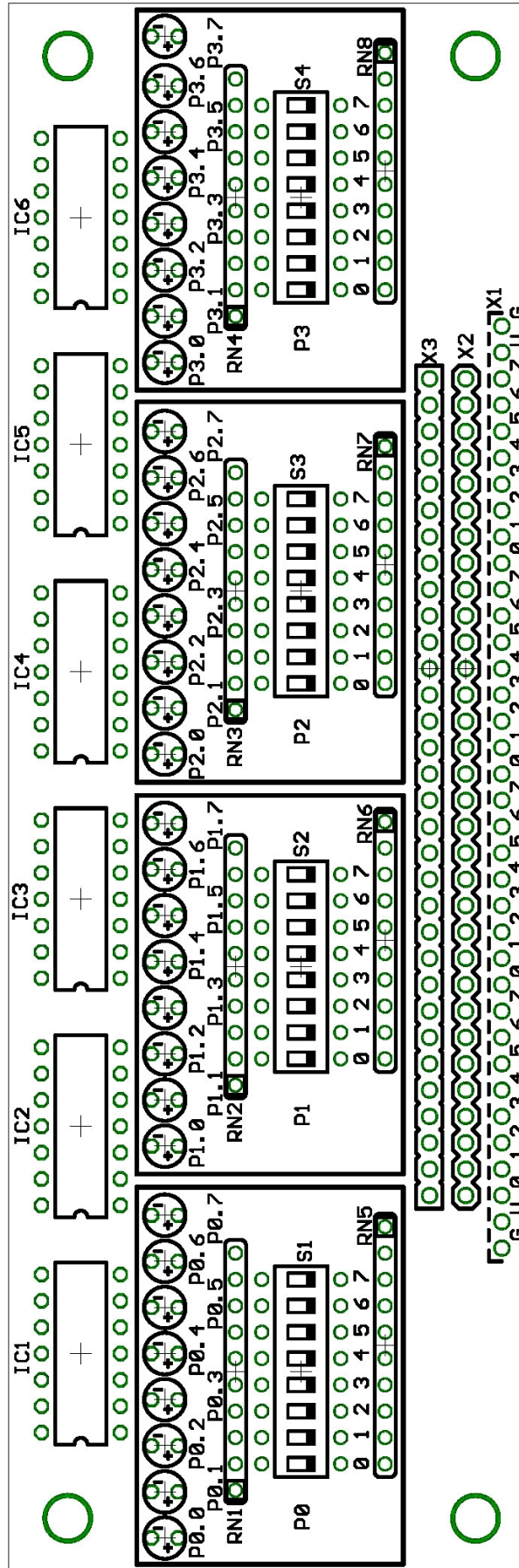
<http://www.bipom.com/boards.php>

8051/52, BASCOM51 and SDCC (Small Device C Compiler) development systems provide examples for MicroTRAK training kit using 8051 I/O Module.

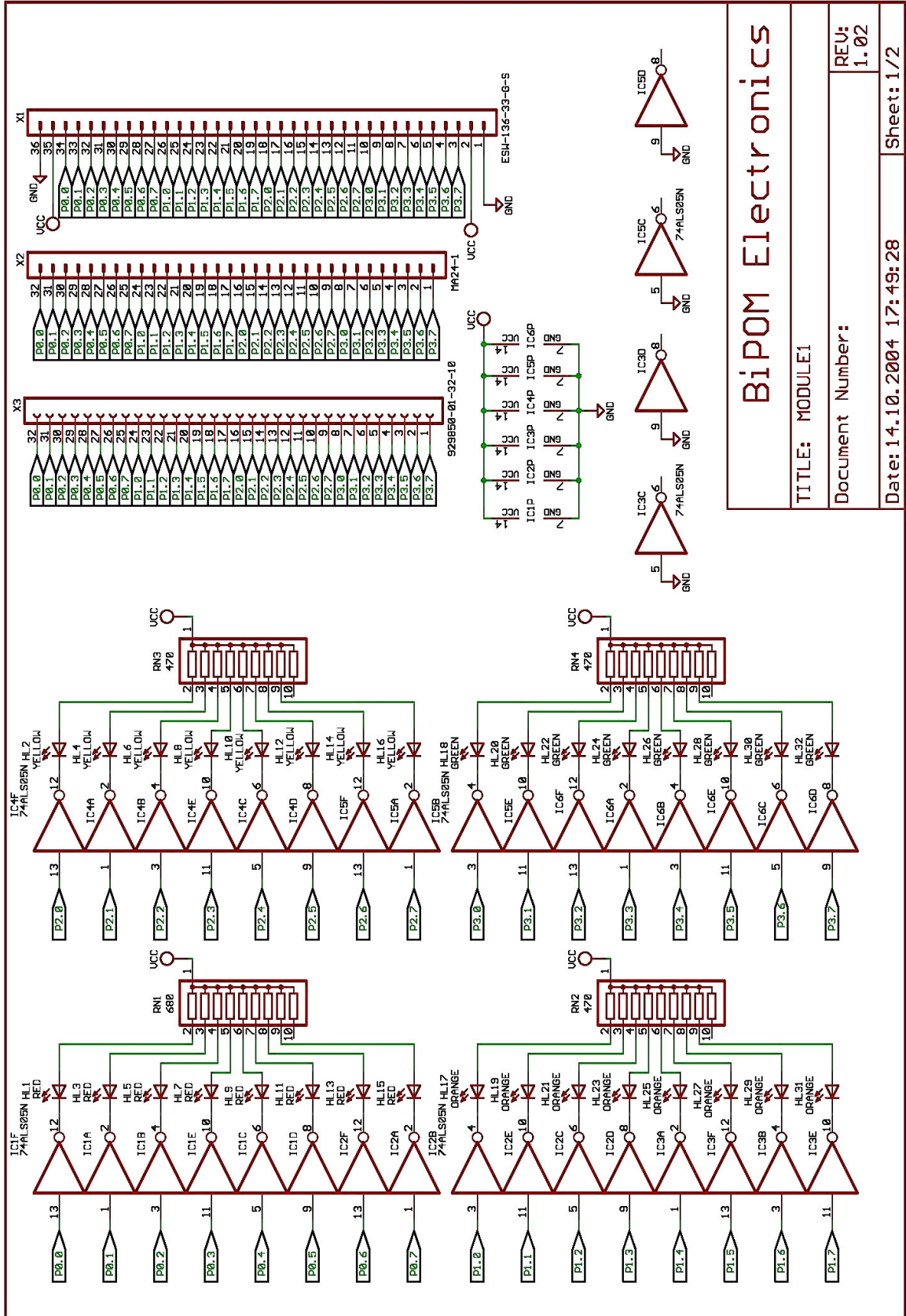
Please download any of these development systems from:

<http://www.bipom.com/software.php>

5. Board Layout

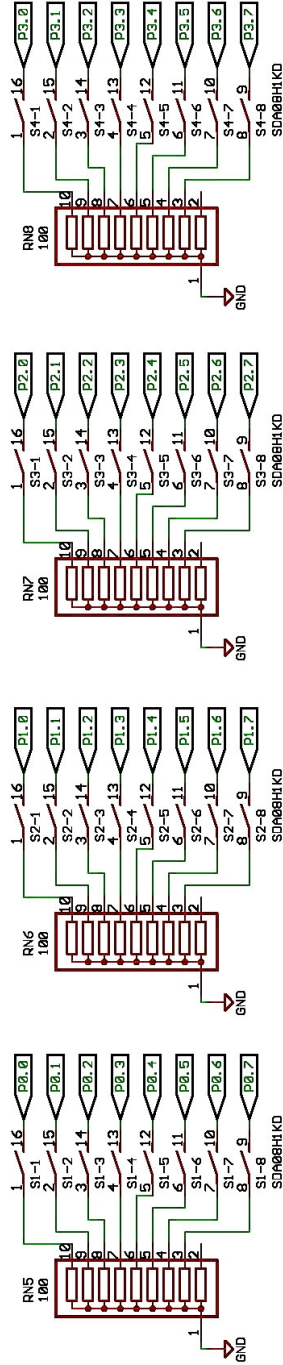


6. Schematics



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