

# MicroTech

## MT IOBoard Hardware Reference

Version 1.10

[www.mcu.hk](http://www.mcu.hk)

**Warning:**

Incorrect power connection to any electronic and electrical equipment may seriously damage them or even cause a fire hazard or explosion. Users must take care to identify the correct pins and supply an acceptable voltage to operate them safely.

3<sup>rd</sup> May 2007

## Introduction

This brief technical guide describes the schematic and layout for the MT IOBoard. The IOBoard is a cut-down version of MT 8051 SBC (Single Board Computer) with MCU and EEPROMs removed. It includes the minimum components necessary to perform all the I/O operations by the MT DemoBoards or ARMBBoards, and thus keeping the cost and board size to a minimum. All the pins of the board have been brought out to standard 0.1" headers for interfacing other circuits. The board is also supplied with a bundle of connecting wires to connect to the I/O pins of the DemoBoards.

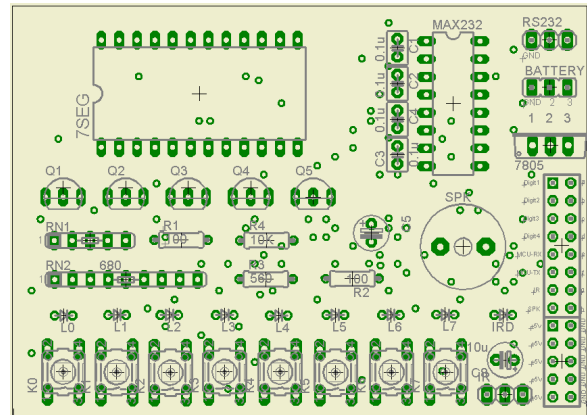
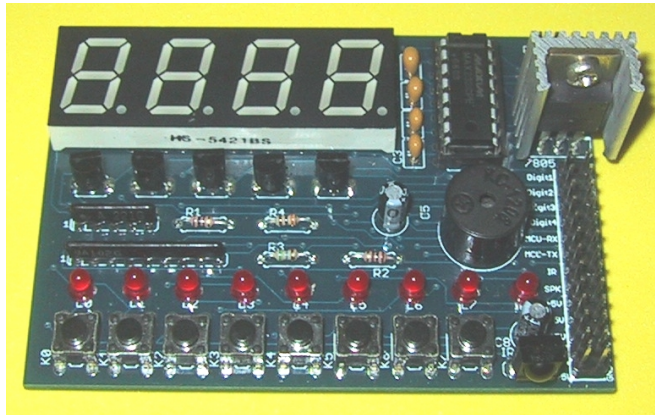
Since the IOBoard has a heatsink fitted to the 7805 regulator, therefore, it is recommended that the DemoBoards or ARMBBoards to draw the power supply from it.

Because the ARMBBoard (3.3V) and the IOBoard(5V) are working under different voltages, and the current output from the ARMBBoard may not be strong enough to power the inputs of the IOBoard. However, this can simply be remedied by using some I/O buffering ICs, such as 74LS573, to interface between the 2 boards.

With an IOBoard on hand, a MT chip and a breadboard, users can carry out MT chips experiments at ease.

Here is the summary of I/O experiments that the IOBoard can perform:

1. LED experiment
2. On/Off switch experiment
3. 7-Segment experiment
4. Speaker/Sound experiment
5. Infra-Red experiment
6. RS232 Communication experiment



## Pin Configuration

Pin	Connection	Data direction	Active polarity
a-h	7-Segments & LEDs	input	negative
Digit1-4	digit switches	input	positive
MCU-RX	connects to MCU RX pin	ouput	*
MCU-TX	connects to MCU TX pin	input	*
IR	IR detector output	output	*
SPK	speaker	input	*
5V	5V power supply	-	-
GND	common signal ground	-	-

**WARNING:**

The inputs to the 7-Segments control transistors are not protected from high current, therefore, DO NOT connect them directly to the 5V power supply or they can get damaged permanently, but they are perfectly OK for the output by the DemoBoard.

Please also refer to the “**MT Chips Hardware Reference**” for detailed interfacing information for connection with other components and circuits.

**Schematic**

