

Interfacing Devices to the Microcontroller

Two Methods

1. Special IO instructions provided by the microcontroller.
2. Map all peripherals to a region of memory and control them by responding to reads and writes from that region of memory.

This memory mapped region idea is what we'll focus on today.

LCD Panel	GND	Vcc	Vr	RS	RW	E	D0	D1	D2	D3	D4	D5	D6	D7
Robot Board	GND	+5V	GND	A9	A8	TOC4	D0	D1	D2	D3	D4	D5	D6	D7

74138 Multiplexer

During the addressing phase, the output is always high. When the system clock goes high, since it is connected to G1, the result then depends on what is on the other bits.

This is used to select address ranges.

Suppose we do a store to location \$6000.

A15:A12 have the values 0110 and are connected to the multiplexer.

Thus, any write to an address with an upper nibble of 6 causes the output of the 74138 to fall.