

Terminology and Notations

- ▶ Issues: Condition Indicator Signal
 - ▶ Condition is:
 - ▶ "Active" or "Inactive".
 - ▶ Active condition can be represented by Logic '1'.
 - ▶ -> Active-High: **COND**
 - ▶ Active condition can be represented by Logic '0'
 - ▶ -> Active-Low: **COND-bar** (most common!)
- ▶ "Assert" a condition:
 - ▶ -> Set Condition Signal to Active.

The Project MC68008

- ▶ Member of the 680XX family.
 - ▶ 68000, 68010, 68020, 68040... PowerPC.
- ▶ MC68008
 - ▶ 8-bit Data Bus.
 - ▶ 20-bit Address Bus.
 - ▶ 48-pin Package
- ▶ 68K Assembly Language (same as last year)

MC68008 Signals (part one)

- ▶ **V_{CC}** Supply Voltage
- ▶ **GND** Ground
- ▶ **CLK** Clock (input)
- ▶ **FC0...FC2** Function Codes 0,1,2 (fully driven outputs)
- ▶ Peripheral Control (M6800 peripheral devices)
 - ▶ **E** Enable (fully driven output)
 - ▶ **VPA-BAR** Valid Peripheral Address (input)

MC68008 Signals (part two)

- ▶ System Control
 - ▶ **BERR-BAR** Bus Error (input)
 - ▶ **RESET-BAR** RESET (bidirectional, partially driven)
 - ▶ **HALT-BAR** HALT (bidirectional, partially driven)
- ▶ **A19...A0** Address Bus (unidirectional, tri-state)
- ▶ **D7...D0** Data Bus (bidirectional, tri-state)

2BA4 MC68008 Signals (part three)

Asynchronous Bus Control

- ▶ **AS-BAR** Address **S**trobe (unidirectional, tri-state)
- ▶ **R/W-BAR** Read/**W**rite (unidirectional, tri-state)
- ▶ **DS-BAR** Data **S**trobe (unidirectional, tri-state)
- ▶ **DTACK-BAR** Data **T**ransfer **A**cknowledge (input)

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2BA4 MC68008 Signals (part four)

Bus Arbitration Control (determines bus master device)

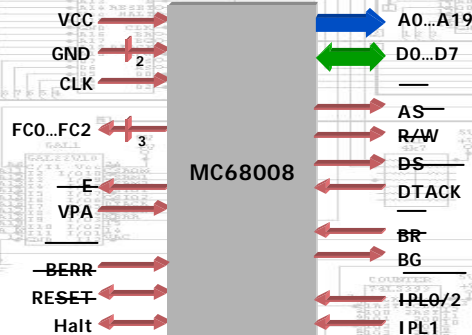
- ▶ **BR-BAR** Bus **R**esult (input)
- ▶ **BG-BAR** Bus **G**rant (fully driven output)

Interrupt Control

- ▶ **IPL2/0-BAR** Interrupt **P**riority **L**evels **2/0** (input)
- ▶ **IPL1-BAR** Interrupt **P**riority **L**evels **1** (input)

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2BA4 The MC68008



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2BA4 Power Supply Requirements

Need:

- ▶ Steady supply voltage.
- ▶ Power (V_{CC}).
- ▶ Ground (GND).

Problems:

- ▶ Supply variation (Power cuts at lunch time)
- ▶ Load variation (Varies with load)
- ▶ Noise and temperature (Electrical noise)

Solution:

- ▶ Power regulator (M68008 Power Supply)

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