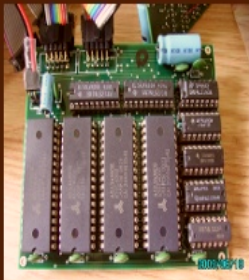


2 Meg Memory Expansion Board Assembly Instructions for Mi-Droid Project 2011 with Dr James O. Gouge

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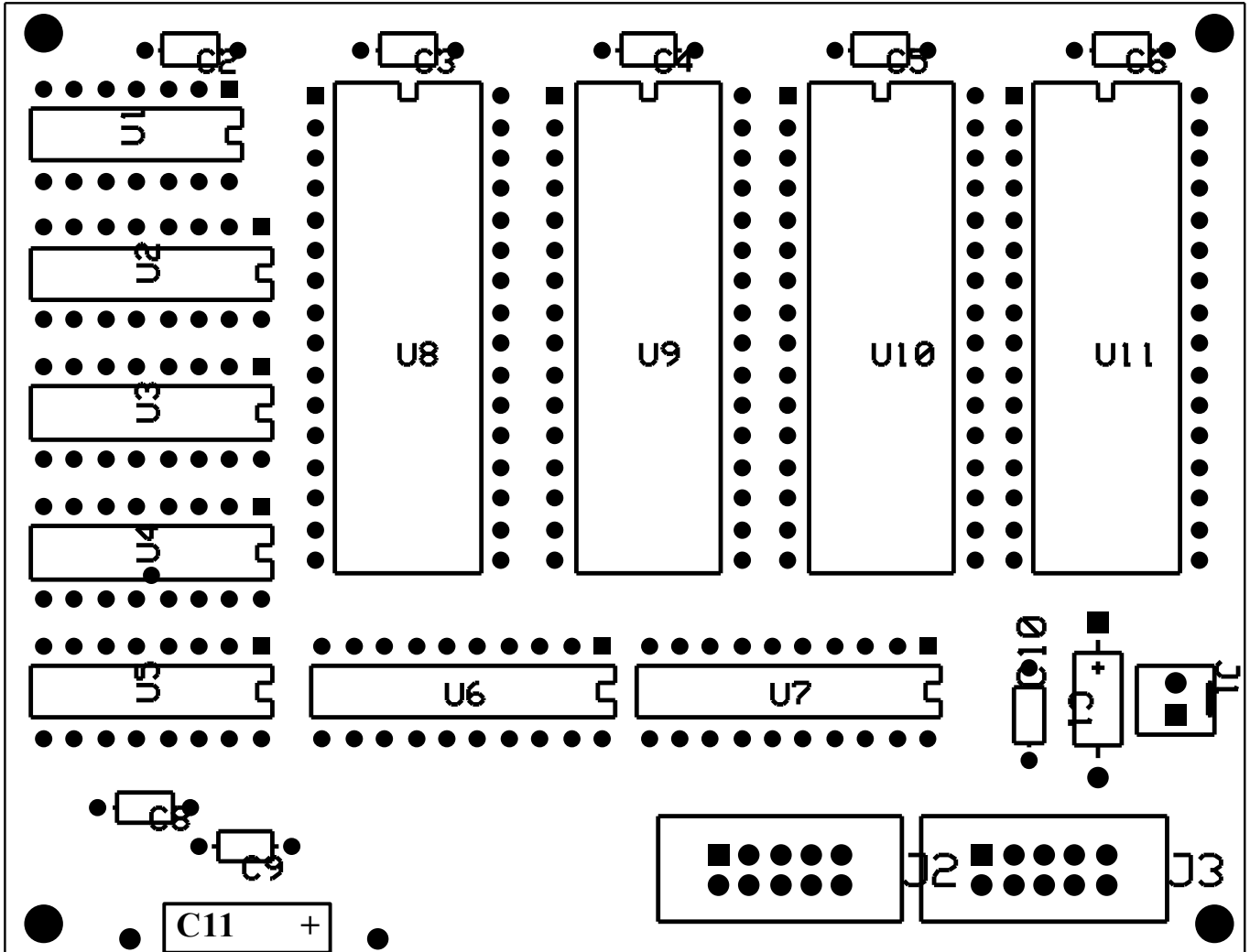
Components

In addition to the parts listed below you will also have parts in the kit for modifying the prop propeller board. These instructions are in another document.

<i>Item Identifier</i>	<i>Description</i>
<i>C1</i>	100 uf electrolytic capacitor
<i>C2</i>	.10 uf capacitor
<i>C3</i>	.10 uf capacitor
<i>C4</i>	.10 uf capacitor
<i>C5</i>	.10 uf capacitor
<i>C6</i>	.10 uf capacitor
<i>C7</i>	.10 uf capacitor
<i>C8</i>	.10 uf capacitor
<i>C9</i>	.10 uf capacitor
<i>C10</i>	.10 uf capacitor
<i>C11</i>	100 uf electrolytic capacitor
<i>J1</i>	2 Pin male right angle header for power connection
<i>J2</i>	10 pin dual row male right andle header
<i>J3</i>	10 pin dual row male right andle header

<i>Item Identifier</i>	
<i>U1</i>	74LS02
<i>U2</i>	74LS139
<i>U3</i>	74LS138
<i>U4</i>	74LS193
<i>U5</i>	74LS193
<i>U6</i>	74LS273
<i>U7</i>	74LS273
<i>U8</i>	AS6C4008
<i>U9</i>	AS6C4008
<i>U10</i>	AS6C4008
<i>U11</i>	AS6C4008

Illustration 1: 2 Mg Memory Expansion PCB Layout



Schematics

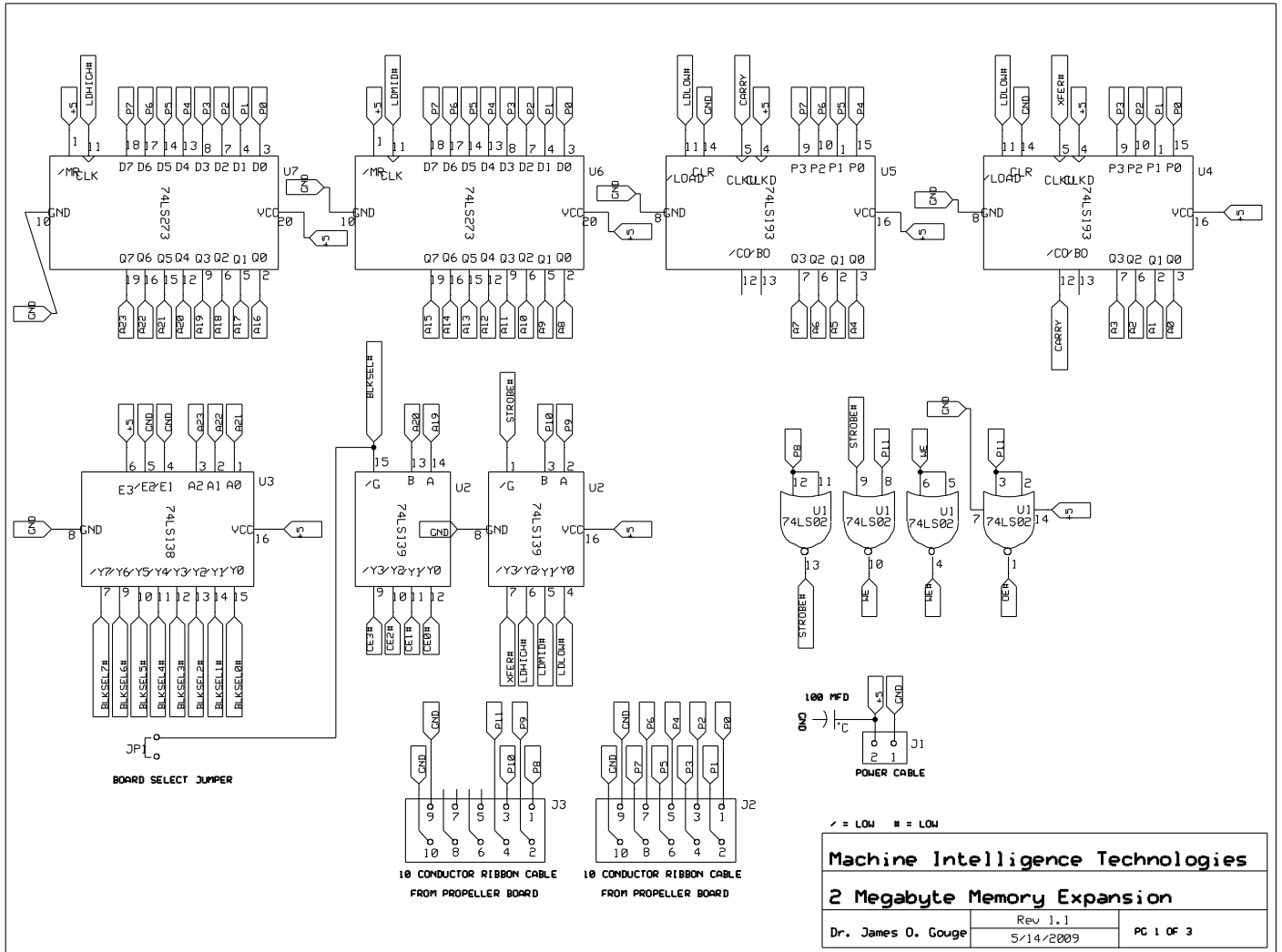


Illustration 2: 2Mg Memory Expansion Schematic 1 of 2

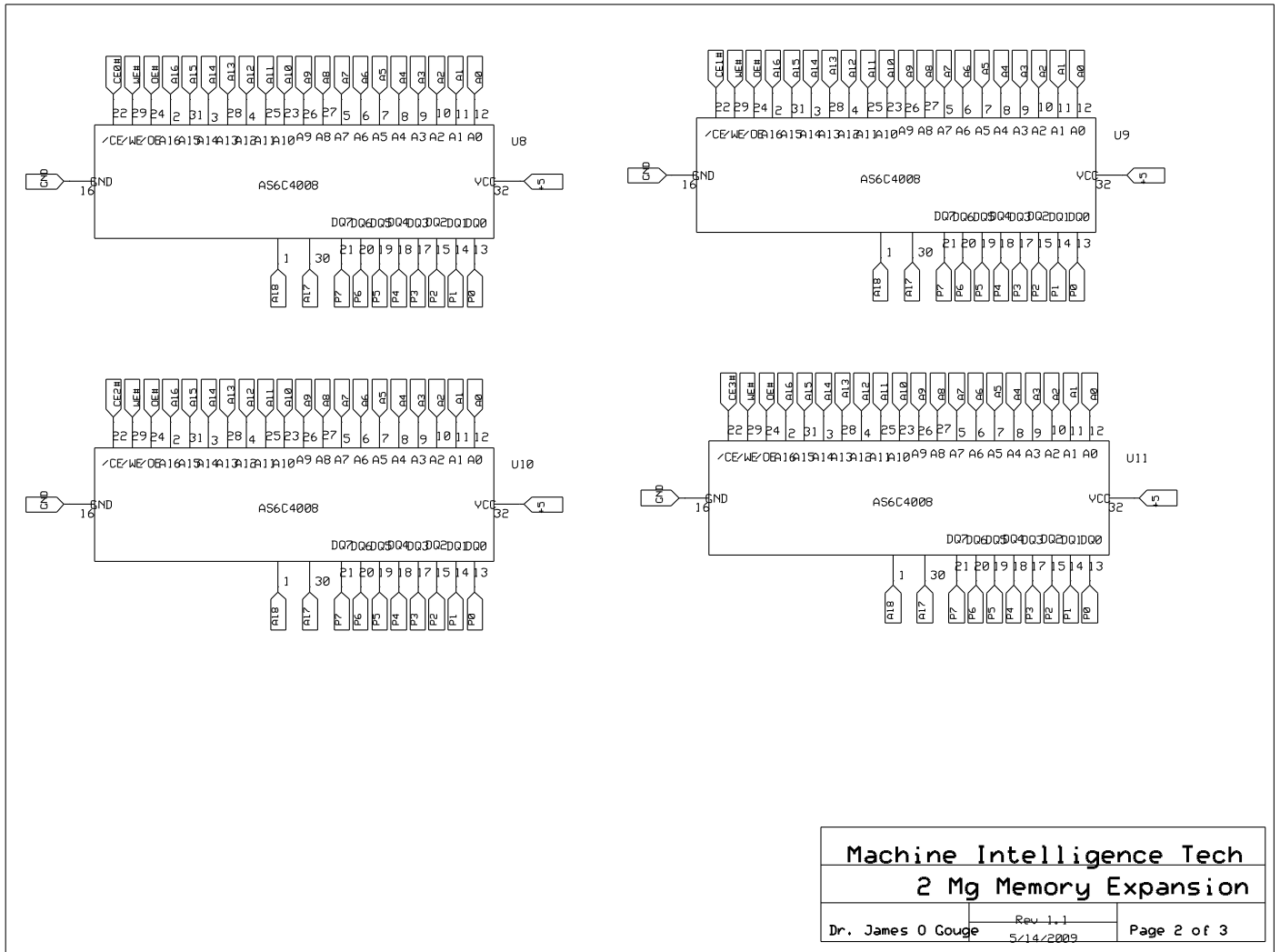


Illustration 3: 2 Mg Memory Expansion Schematic 2 of 2

General Instructions

Polarity:

All components except capacitors C2-C10 have polarity and must be placed in the proper orientation.

- U1 – U11 have a notch at one end that must correspond to the notch printed on the PCB (printed circuit board) and the sockets they plug into.
 - To install U1-U11 first place the sockets with the notches matching the PCB on the board and solder securely
 - Next, with the notches lined up, firmly push the IC's into the socket being **very careful** not to bend the metal tines as you do so.
- C1 and C11

- *The diagram indicates which side is positive. Even so, I would double check it with a meter before soldering.*
 - *You can buzz from pin 7 of 74LS02 to what should be the negative post of the capacitor. If it buzzes that's ground if not check the other post.*
- *J1-J3*
 - *Follow the **2Mg Memory Expansion Layout***
 - *The square hole indicates pin 1*
 - *Just make sure the pins are pointing away from the board so that you can plug the female jumper into it.*
- *Setting the Jumper to assign the memory board as board 0,1,2,3, etc. You must assign the first board in the daisy chain as 0 then assign the others sequentially.*
 - *You will need to solder a wire from U2, 74LS139 Pin 15 (BLKSEL#) to the corresponding pin according to the table below.*

<i>Board #</i>	<i>Pin Assignment on U3 74LS138</i>
<i>0</i>	<i>Pin 15 (BLKSEL 0#)</i>
<i>1</i>	<i>Pin 14 (BLKSEL 1#)</i>
<i>2</i>	<i>Pin 13 (BLKSEL 2#)</i>
<i>3</i>	<i>Pin 12 (BLKSEL 3#)</i>
<i>4</i>	<i>Pin 11 (BLKSEL 4#)</i>
<i>5</i>	<i>Pin 10 (BLKSEL 5#)</i>
<i>6</i>	<i>Pin 09 (BLKSEL 6#)</i>
<i>7</i>	<i>Pin 07 (BLKSEL 7#)</i>

If you need any further assistance please go to our facebook page and enter your question in the discussion area so that others with the same question will be able to access the answer as well.