

Video Memory  
512x384 + border  
640x480 @60Hz

#### Canned Bytes

Sheet: /Line Counters/  
File: LineCounters.sch

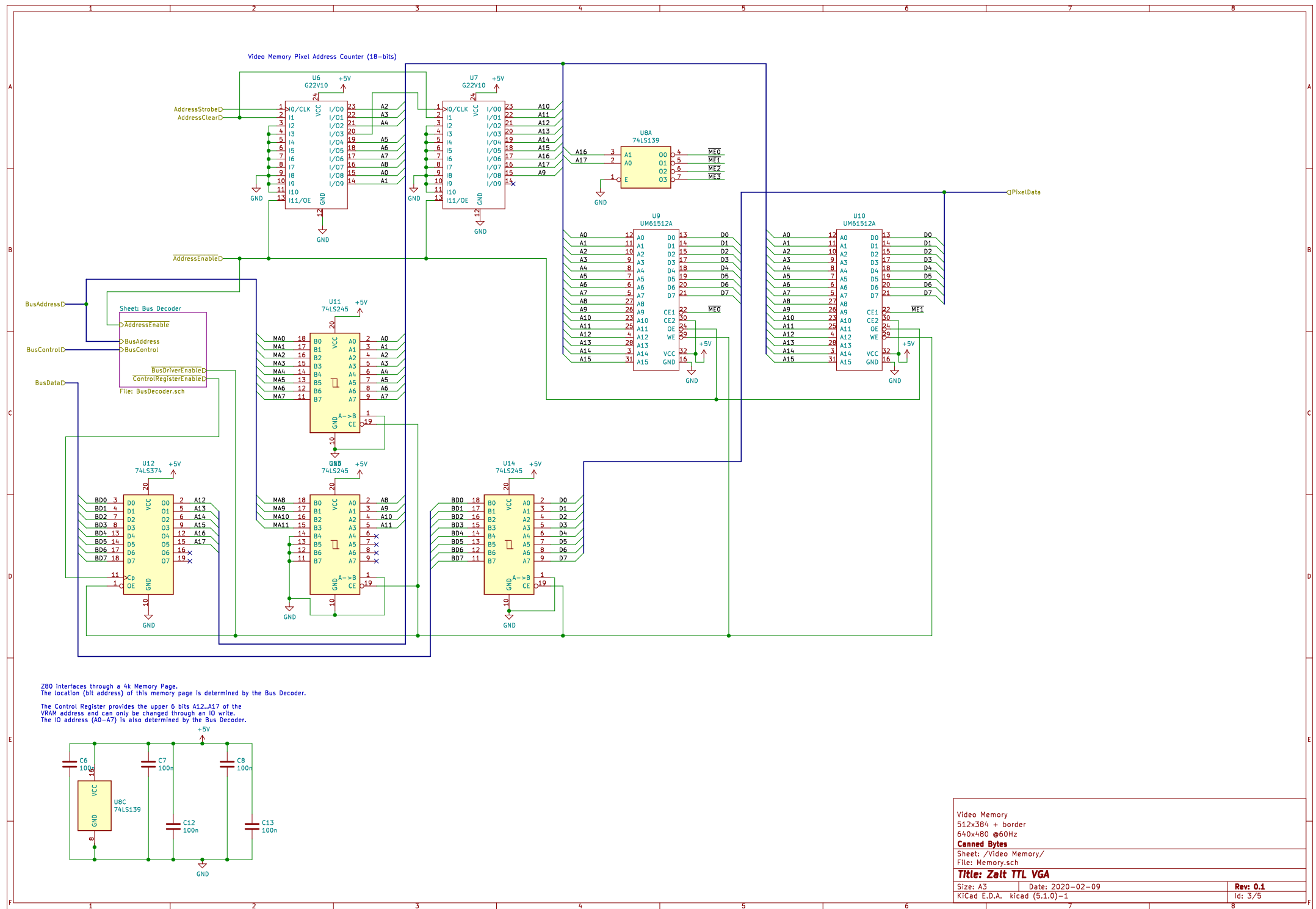
#### Title: Zalt TTL VGA

Size: A4 Date: 2020-02-09

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Rev: 0.1

Id: 2/5

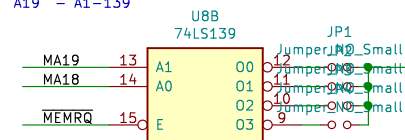


Video Memory		
512x384 + border		
640x480 @60Hz		
<b>Canned Bytes</b>		
Sheet: /Video Memory/		
File: Memory.sch		
<b>Title: Zalt TTL VGA</b>		
Size: A3	Date: 2020-02-09	Rev: 0.1
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AddressEnable = 1  
MEMRQ = 0  
WR = 0

VRAM Memory Address Window is in the upper region of the 1MB address space.  
The last two address bits make up a selection option using the 74x139.  
3F000-3FFFF  
7F000-7FFFF  
BF000-BFFFF  
FF000-FFFFF

A12 = 1  
A13 = 1  
A14 = 1  
A15 = 1  
A16 = 1  
A17 = 1  
A18 - A0-139  
A19 - A1-139



IOREQ = 0  
WR = 0  
The IO address for the Control Register is hardwired.  
E0-E3

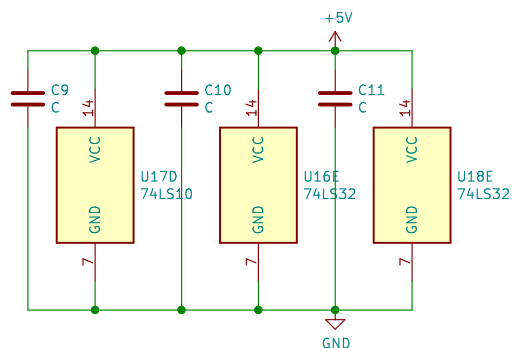
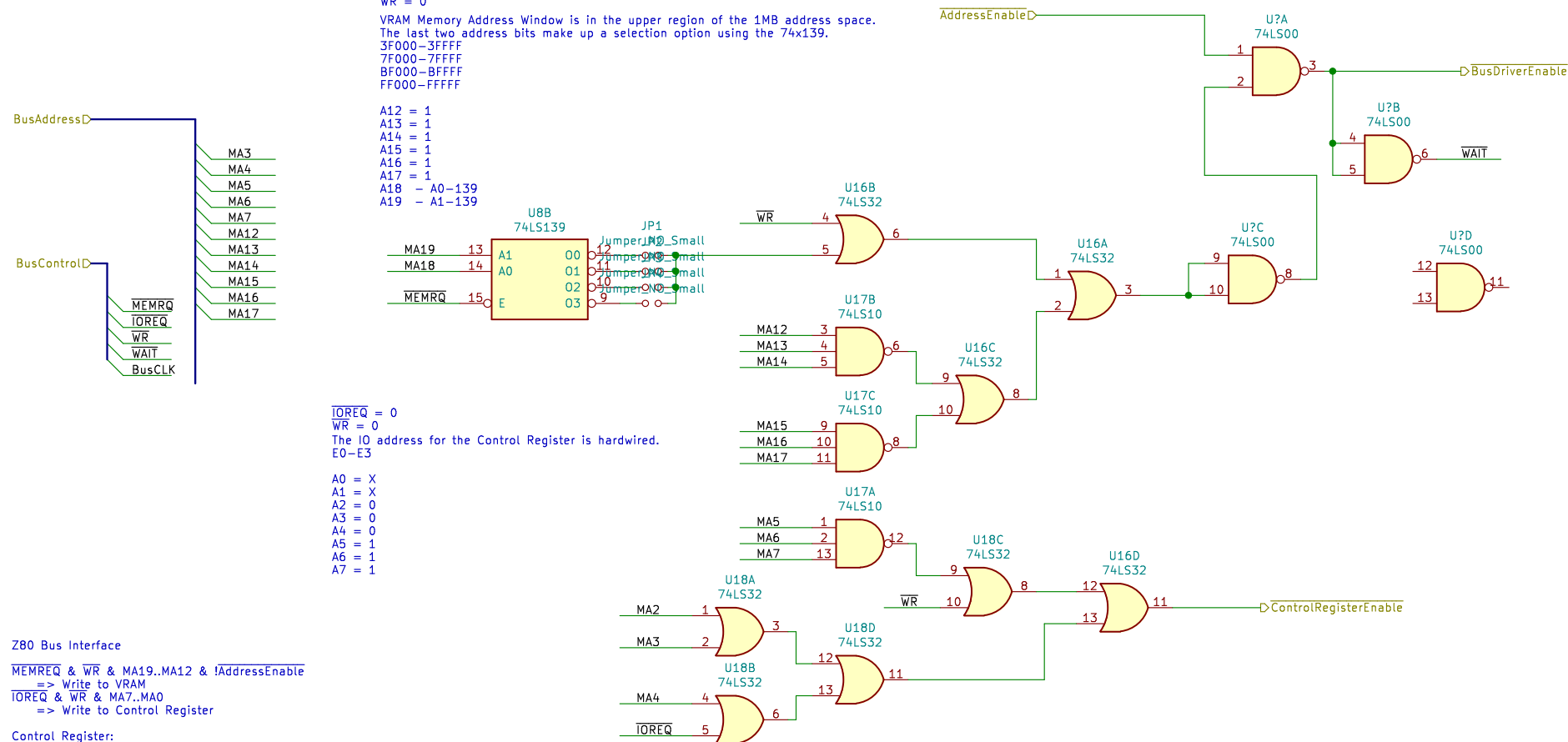
A0 = X  
A1 = X  
A2 = 0  
A3 = 0  
A4 = 0  
A5 = 1  
A6 = 1  
A7 = 1

#### Z80 Bus Interface

MEMRQ & WR & MA19..MA12 & !AddressEnable  
=> Write to VRAM  
IOREQ & WR & MA7..MA0  
=> Write to Control Register

Control Register:  
A17..A12 (6 bits)  
Options (2 bits)

TODO: Temporary solution is to stall the CPU when it wants to write to VRAM while the GA is using it...



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#### Canned Bytes

Sheet: /Video Memory/Bus Decoder/  
File: BusDecoder.sch

#### Title: Zalt TTL VGA

Size: A4  
Date: 2020-02-09  
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Rev: 0.1  
Id: 4/5

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