CFT

16-bit Mini-Computer

Video Display Unit (VDU) Board

This is a work in progress.
Sheets being worked on are indicated by the 'TODO' frame

Sheet status is indicated here IN RED.

D: Draft
U: Untested
T: Initial Testing

OD This input signal is open drain.
TTL This input signal may be at TTL logic levels.
Z This input may be at High Impedance.
Z This input (local to this board) may be at High Impedance.

Notes

VCC is +5V unless otherwise indicated.
All decoupling capacitors are ceramic, 100nF.
All ICs are through-hole DIP packages.
All pull-ups and pull-downs are 4.7 kOhm.

TODO:

* Check Signals
* Check Decoupling Capacitors
* Clean Up Layout
* Write & Verify Verilog Model
* Check Packages & IC Families
* Bill of Materials
* DRC

Circuits in need of improvement are marked like this.

Obsolete sections or circuits are marked like this.

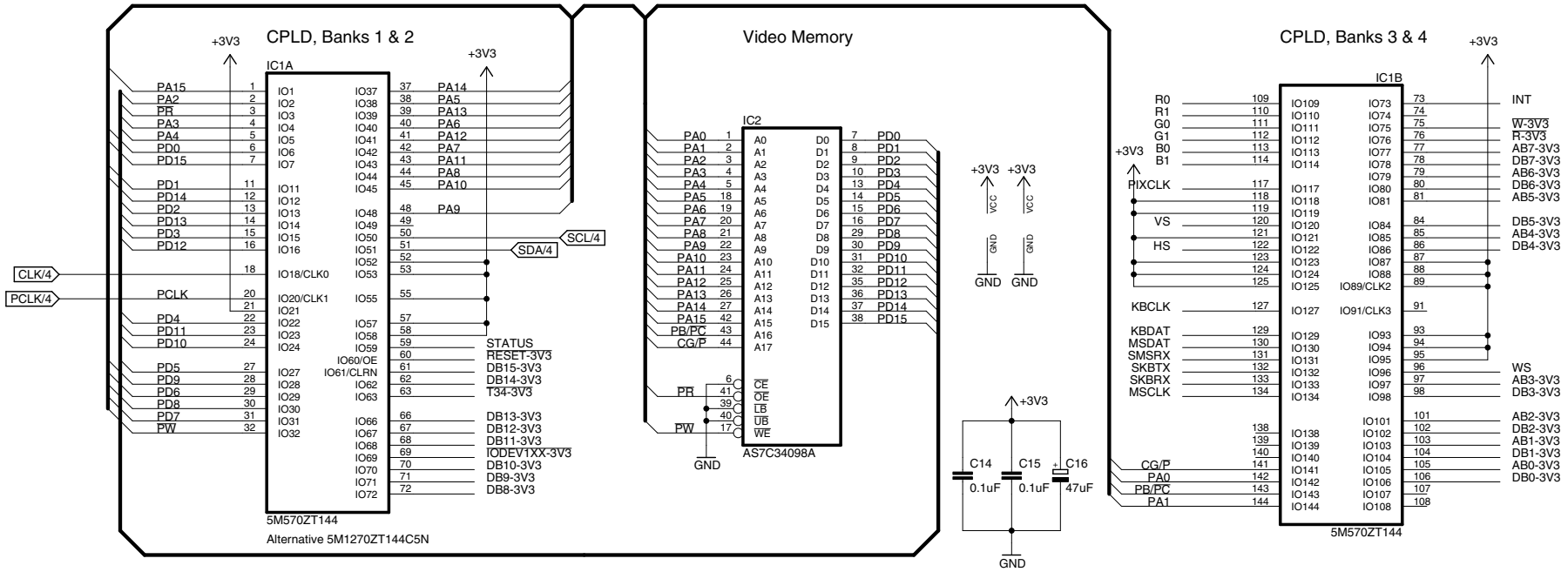
Circuits known to be incorrect are marked like this.

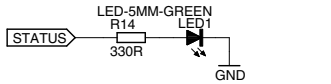
D

Title: video-max5	
Revision: Rev F	
Last Change: 29 Jan 2014 10:50:32	
Drawn by: AlexiosC	1/5
Simulation filename: video.v	
More Info:	

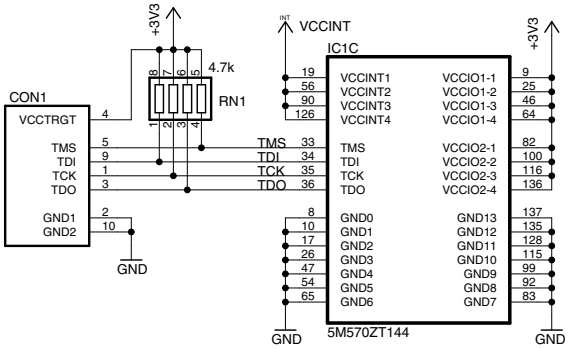
CFT Mini-Computer VDU Card

Video Logic

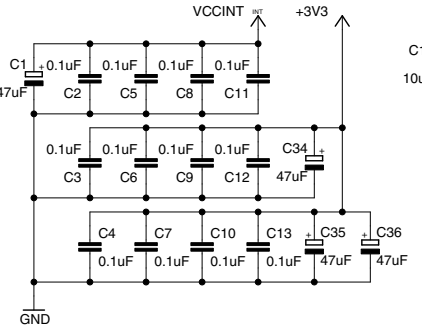




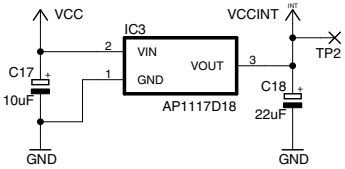
CPLD Power & JTAG



CPLD Depoupling



CPLD Power Supply



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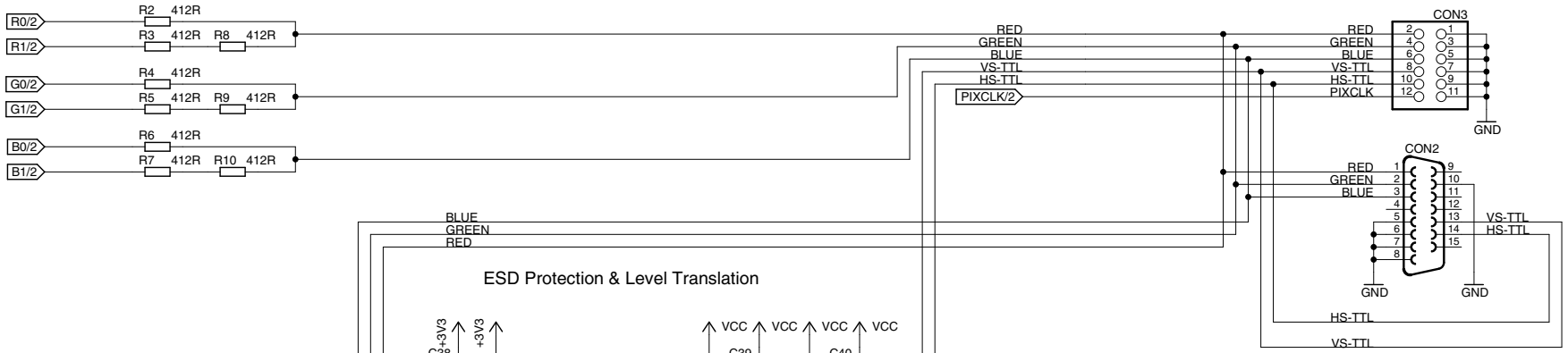
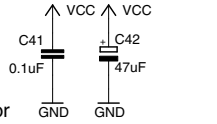
Video Out

Resistor DAC

Use 1% tolerance
Use 412R resistors (e.g. Farnell 2138893), or 820R + 430R resistors.
If 820R resistors are used, the second in-series resistor above should be 0R or manually bridged.

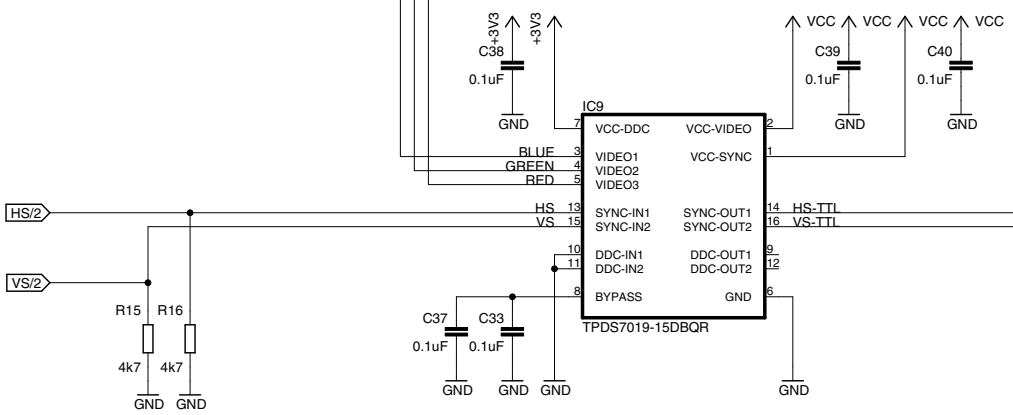


Connectors



Video extender connector

ESD Protection & Level Translation



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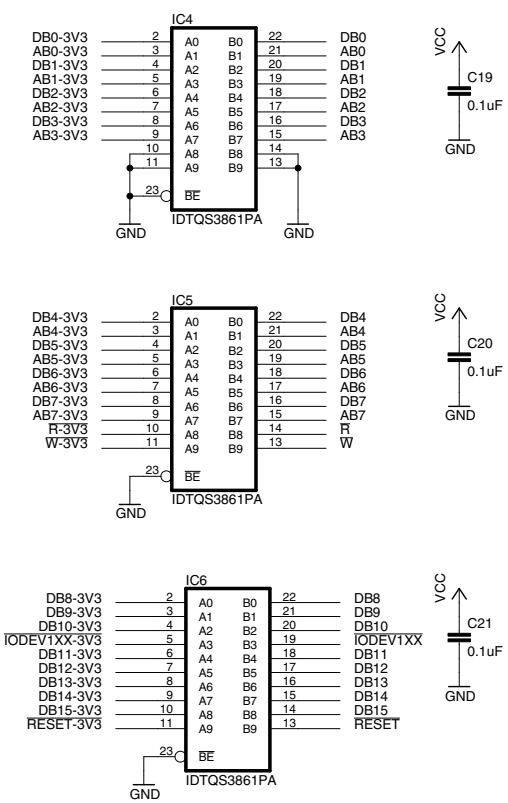
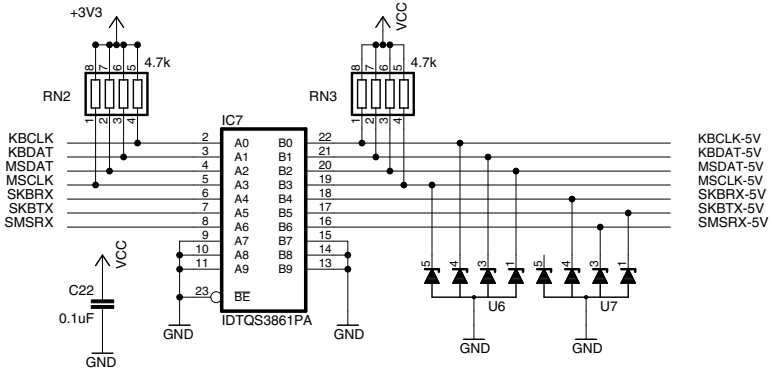
Connections and Miscellany

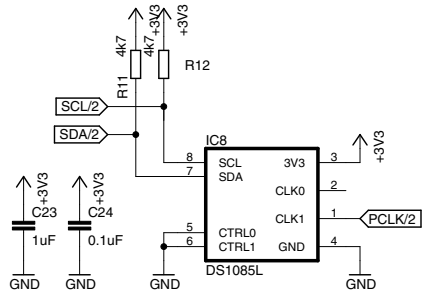
CFT Bus Level Translation



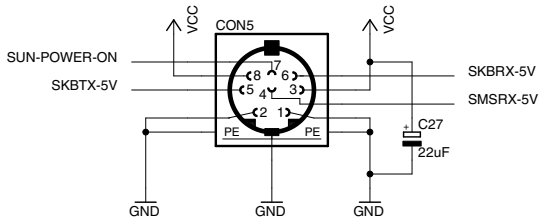
Keyboard Level Translation and Input



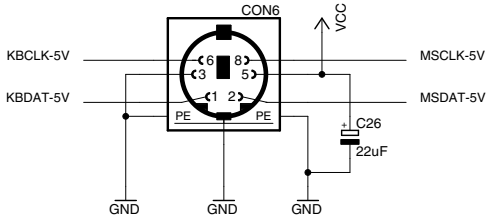
Programmable Clock Generator (optional)



Sun Keyboard/Mouse Port

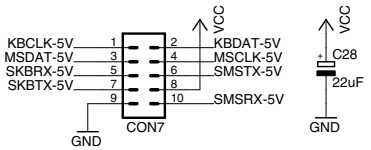


PS/2 Keyboard/Mouse Port

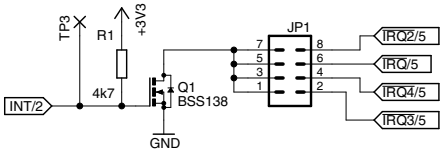


Rear Panel

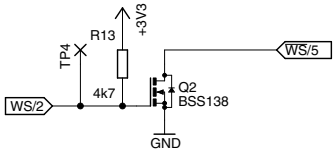
Sun & PS/2 Keyboard/Mouse Connector



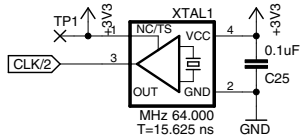
Interrupt Selection (Open Drain)



Wait State Generation (Open Drain)



64 MHz Pixel Clock



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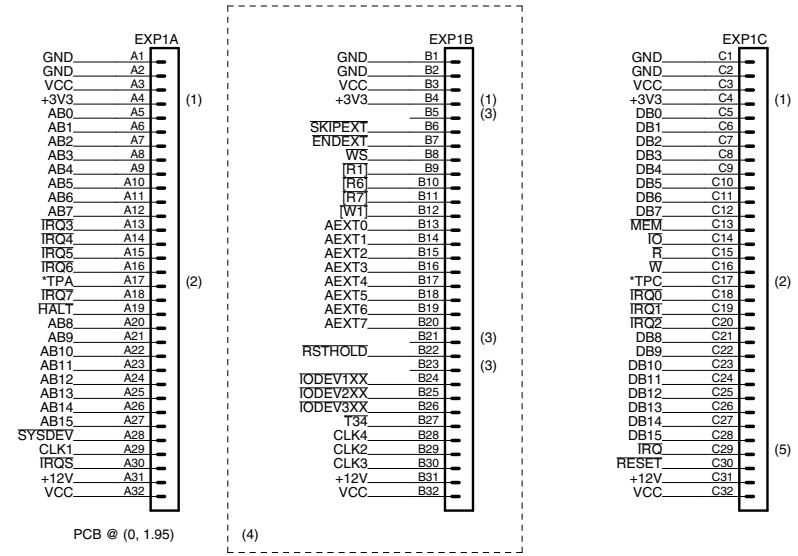
Bus Connectors

Expansion Bus (computer bus)



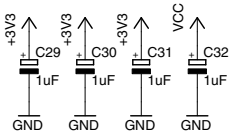
(1) This pin is connected to a bus bar for power distribution, but the CFT does not (yet) require it. It's likely to be connected to another voltage level like +3.3V for easier interfacing. Reserved for now.

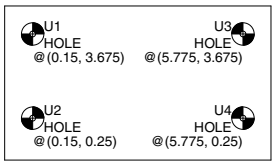
(2) Pins *TPA and *TPC are not bussed. They are locally connected to each card's corresponding test pins (A17 & C17) to serve as test points.

(3) Reserved for future expansion

(4) Cheaper, 64-pin A+C row DIN41662 Type C plugs may be used for most expansion cards.

(5) IRQ is provided for systems which lack an interrupt controller (IRQ0-7)





[PCB Logo]

[QR Code http://www.bedroomlan.org/cft (shortened)]

open hardware

open hardware

U

Title: video-max5	
Revision: Rev K	
Last Change: 29 Jan 2014 10:50:32	
Drawn by: Alexios	5/5
Simulation filename: N/A	
More Info: http://www.bedroomlan.org/cft	