

NOTES:

Initial Design 1/23/2020

Preliminary Design Review 1/24/2020

1. AI85 references scrubbed from design, replaced with MAX78000
2. SIMO and power decoupling modified per Tom Maguire's guidance
3. Confirmed GPIO secondary functions may be assigned on a pin by pin basis
4. Confirmed GPIO is set to input tri-state post reset, VDDIO as source voltage
5. Confirmed Port 3 is a three volt VDDIOH interface only
6. Reset and Port 3.01 to be pulled to 3V, must be allowed to float freely to 3V regardless of power status of any connected peripherals
7. Added debounced PB to WAKEUP port 3.01
8. Touch screen confirmed as required
9. LCD screen does not have to match that of demo kit, would be nice if it did
10. Gokhan to provide connections to integrate power monitor module: one channel to measure DUT drain and one on CNN core
11. Add jumper blocks to all non connectorized peripherals to allow probing, experimentation and substitution of other parts
12. Provisions for canned 3.072 MHz OSC and ext OSC input to feed I2S ext clock

Post initial review 1/31/2020

1. Decision made to investigate alternative power measurement scheme
2. Designed solution around MAX34417 power accumulator
3. MAX32625 selected for display drive and USB data out

Final review 2/10/2020

1. Divorced global reset from RISC V JTAG with jumper
2. Divorced global reset from 625 power metering processor
3. Deleted program button from 625
4. Deleted two navigation buttons from 625
5. Swapped VREGI C6 and C9 on schematic symbol

Design updates 2/19/2020

1. Added BOOST LDO to meet demands of CNN core peak loads
2. Added FET switch to BOOST LDO voltage divider to eliminate voltage divider drain when LDO not required
3. Four ADC channels revert to GPIO in order to control BOOST LDO
4. Spare GPIO P24 routed to same header used for P30, P31

Design updates 2/25/2020

1. Removed differential filter option from ADC inputs
2. Replaced DUT symbol with version matching datasheet VREGI nomenclature
3. Updated VREGI jumper labels to reflect DUT schematic symbol

Revision B 4/28/2020

1. Removed unwanted DNI tags from cut n paste ME11 elements
2. Redesigned reset circuit to compensate for SWD and RSTN on different default voltage domains

Revision B continued 5/08/2020

1. User notes added to CNN boost circuit block
2. Added USB-QSPI interface to drive photo images directly into onboard flash
3. Camera must be unplugged for direct photo load

Revision B continued 5/19/2020

1. I2S OSC changed to 12.288 MHz
2. Be aware that DUT sch symbol shall change to match chip datasheet as soon as that info is provided to me

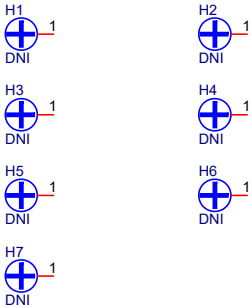
Revision B continued 5/21/2020

1. Replace CNN booster LDO with buck regulator
2. Accumulator filter changes pending

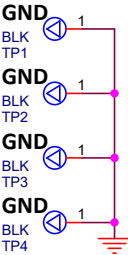
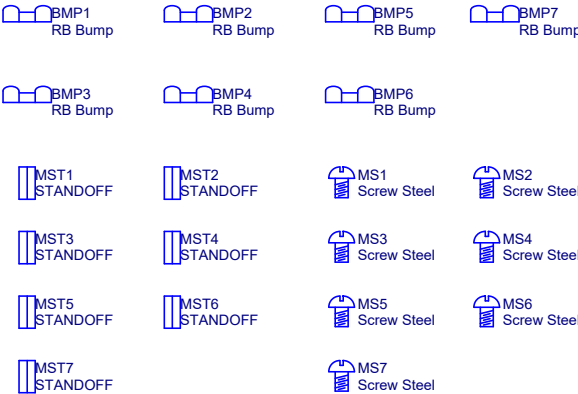
Revision B continued 5/22/2020

1. Updated block diagram
2. Updated power monitor filter topology
3. Added jumper to break 3v3 input to DUT for current measurement
4. CNN power boost voltage set to 1v2 volts (reverts to 1v1 for later silicon)

STANDOFF HOLES



STANDOFF HARDWARE



PCB1  
PCB-00170-B-0

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