



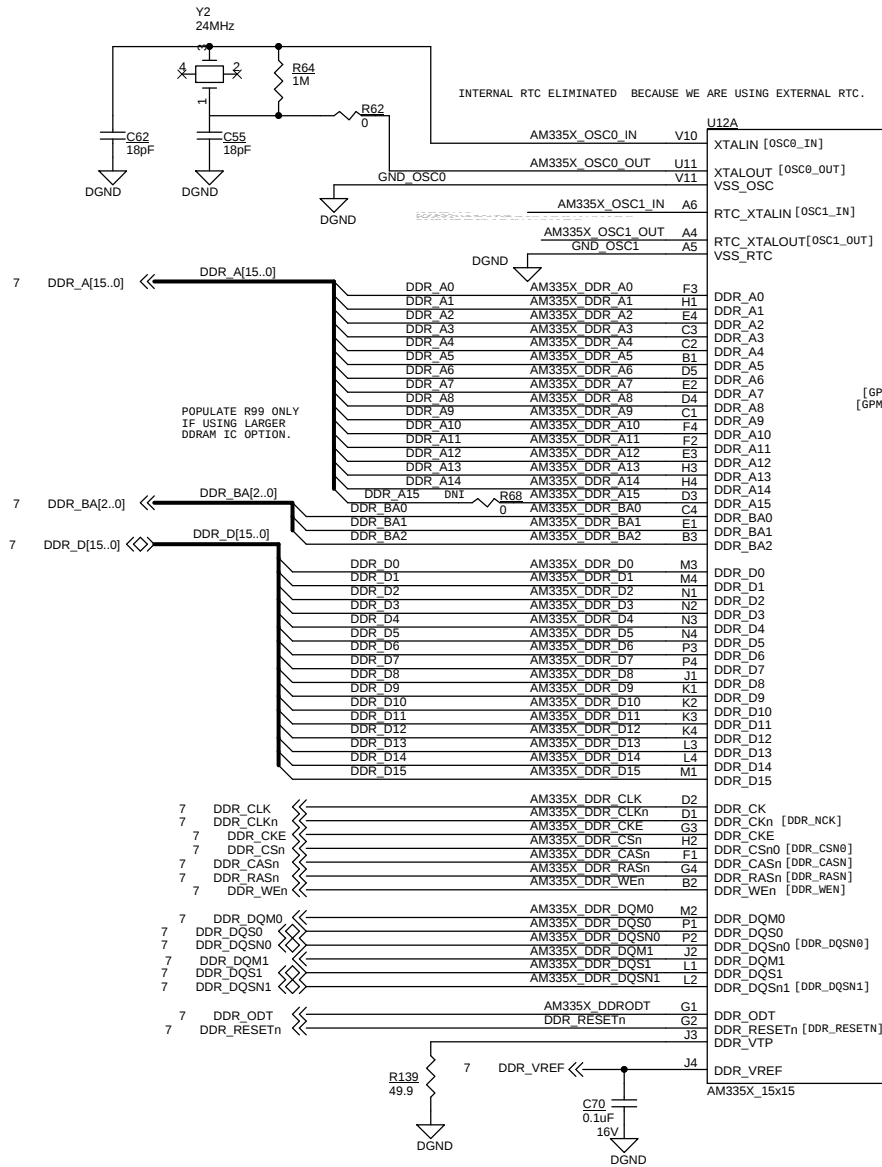
NORTH STAR TOUCHSCREEN UI

REVISIONS:
- REV A-- Initial Release
Ethernet added, NAND flash deleted.
Removed R44, disconnected U9-48, tying together nets V3_3D and VAUX2_3.3V and sourcing it from U3-4.

PAGE 01 - TITLE PAGE
PAGE 02 - AM335X 1 OF 3 - DDR/JTAG/LCD/GPIO/MMC
PAGE 03 - AM335X 2 OF 3 - SPI/UART/USB/LCD/GPIO/ETHERNET
PAGE 04 - AM335X 3 OF 3 - POWER
PAGE 05 - POWER REGULATION
PAGE 06 - JTAG/RESET/LEDS/RS-232/USB/CAN
PAGE 07 - DDR/NAND/MICROSD
PAGE 08 - LCD INTERFACE/BOOT CONFIG
PAGE 09 - VIDEO DECODER
PAGE 10 - ETHERNET

(REFERENCE ONLY) PCA: 1231423
BOM ITEMS:
☐ FIRMWARE Q30099-001
☐ PCB Q25083-001
☐ SCHEMATIC Q26035-001

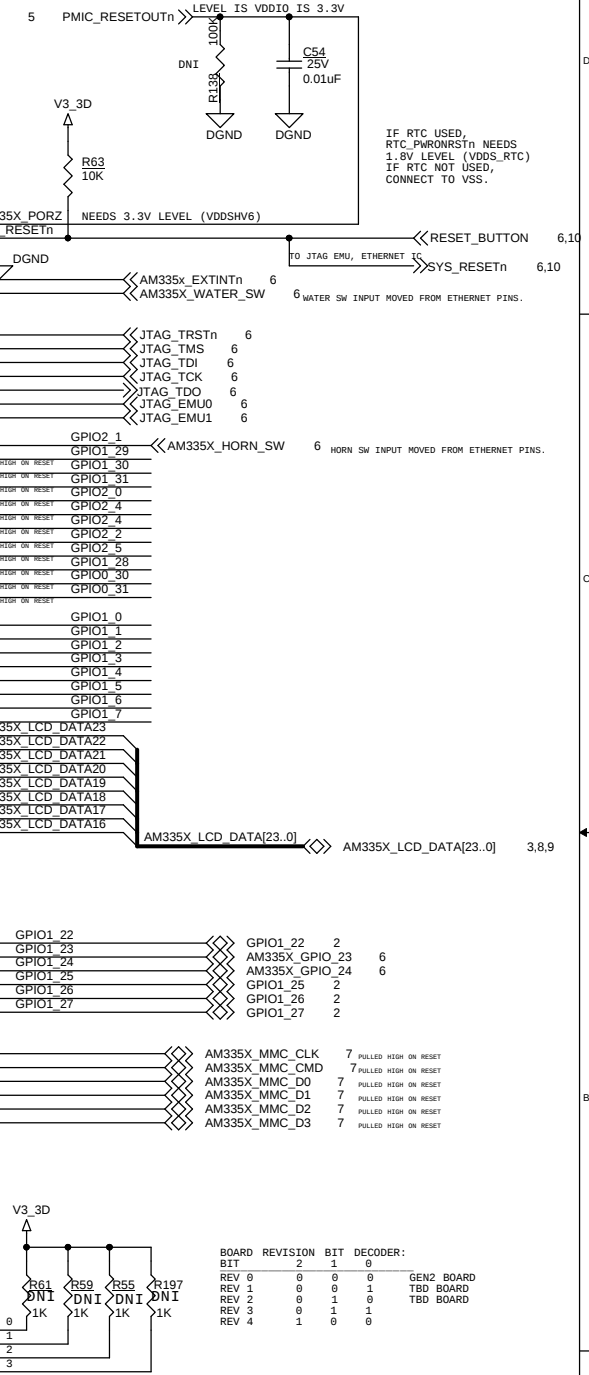
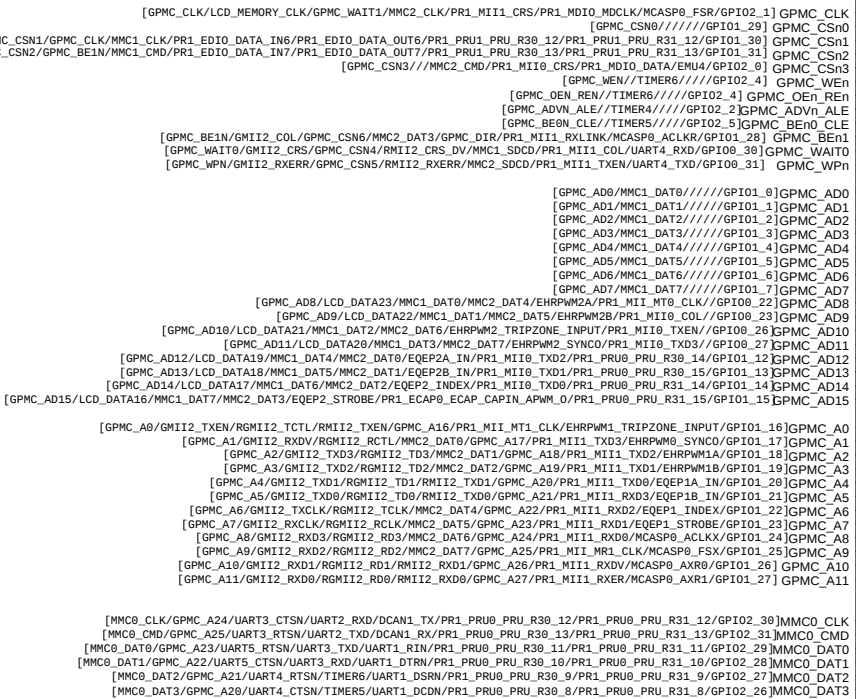
Title			
NORTHSTAR TOUCHSCREEN UI BOARD			
Size	Document Number	Rev	
C	Q26035-001	A	
Date:	Tuesday, January 03, 2017	Sheet	1 of 10



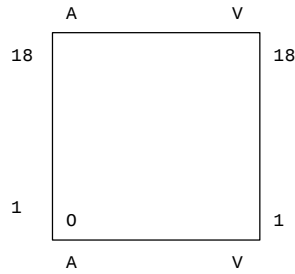
CHANGE PROCESSOR TO AM3352BZCZ100 AT LEAST FOR PROTOS.

AM335x

15mm x 15mm Package

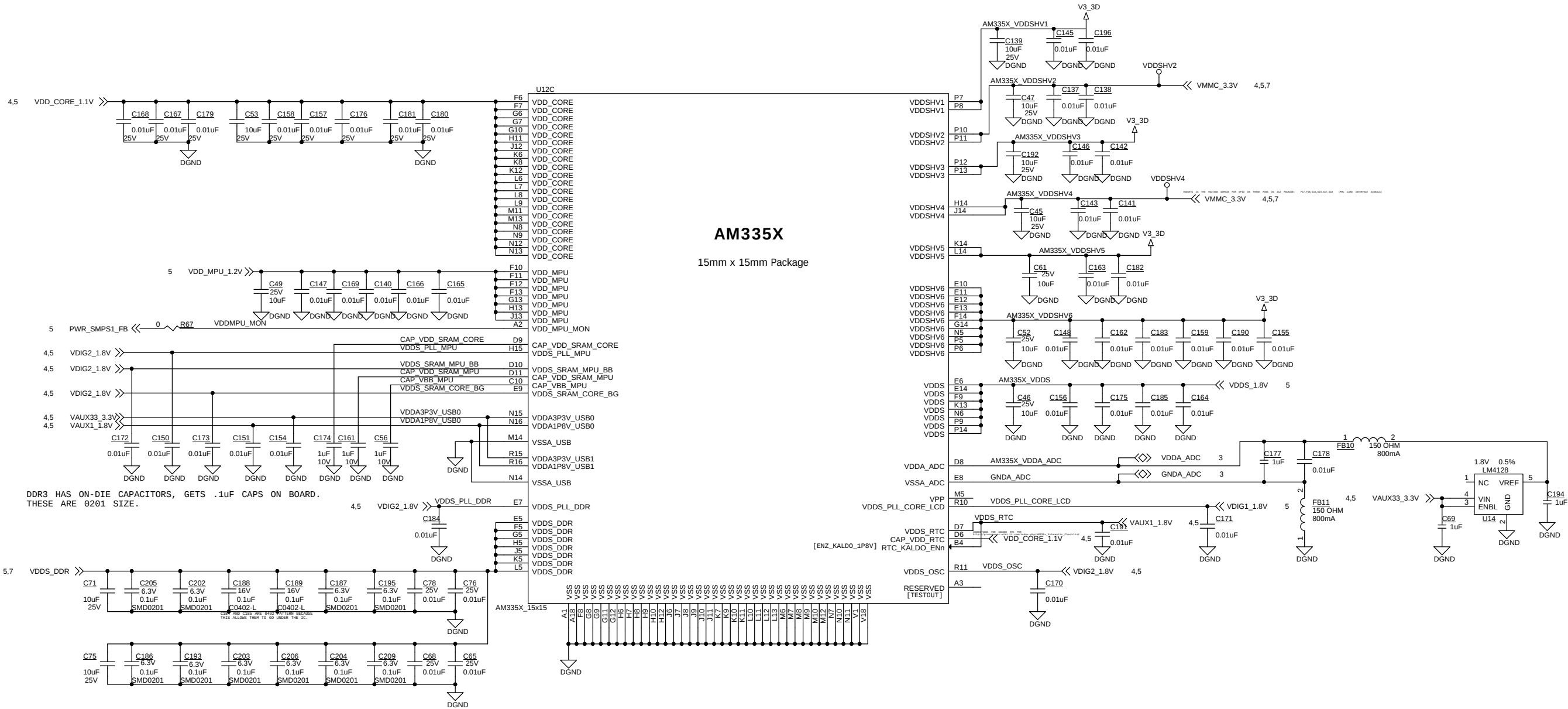


BOARD REVISION BIT DECODER:			
REV	0	1	0
REV 0	0	0	0
REV 1	0	0	1
REV 2	0	1	0
REV 3	0	1	1
REV 4	1	0	0



AM335X

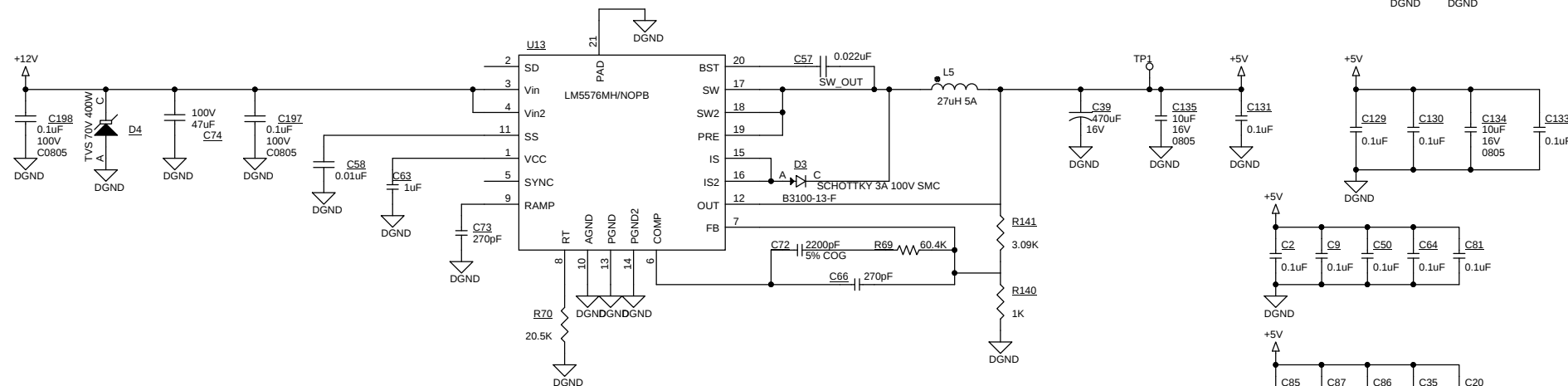
15mm x 15mm Package



Title			
NORTHSTAR TOUCHSCREEN UI BOARD			
Size	Document	Number	Rev
C		Q26035-001	A
Date: Tuesday, January 03, 2017			
Sheet 4 of 10			

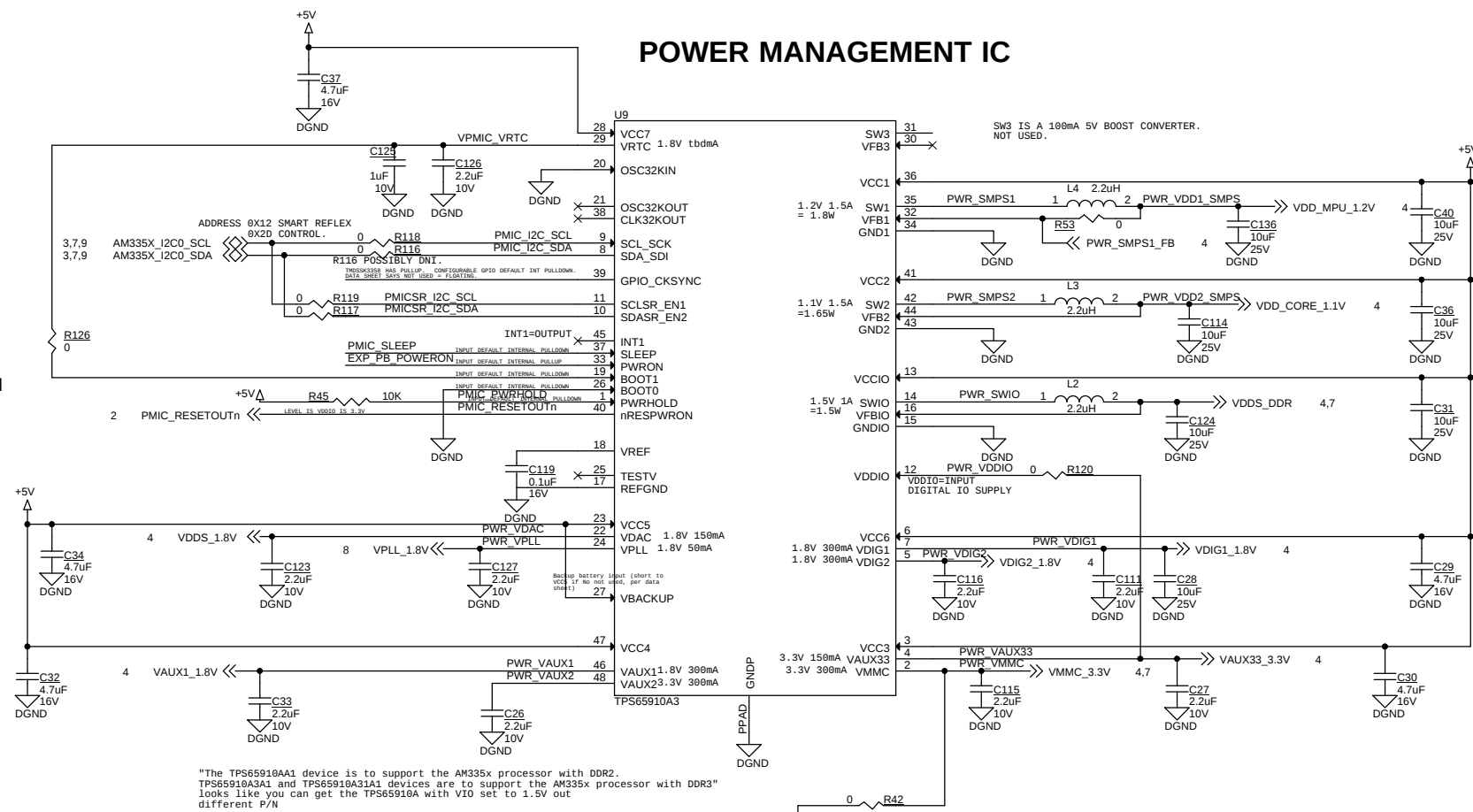
POWER SUPPLY +5V, 75VIN, 3A

POWER INPUT
+12V NOMINAL, 67V MAX.

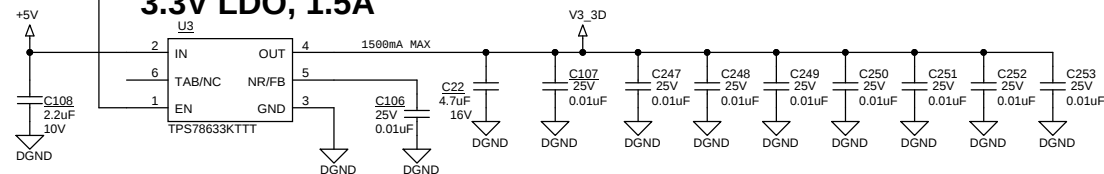


HDS SAYS WE WILL USE RESET CKT AND A GPIO PIN AS A WATCHDOG TIMER.

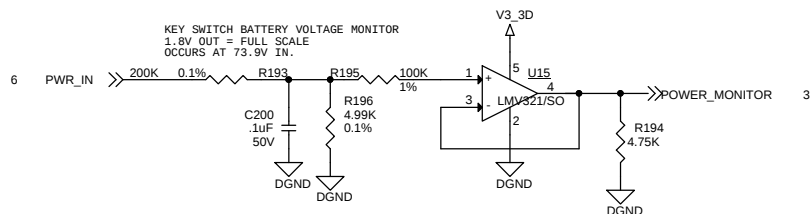
POWER MANAGEMENT IC



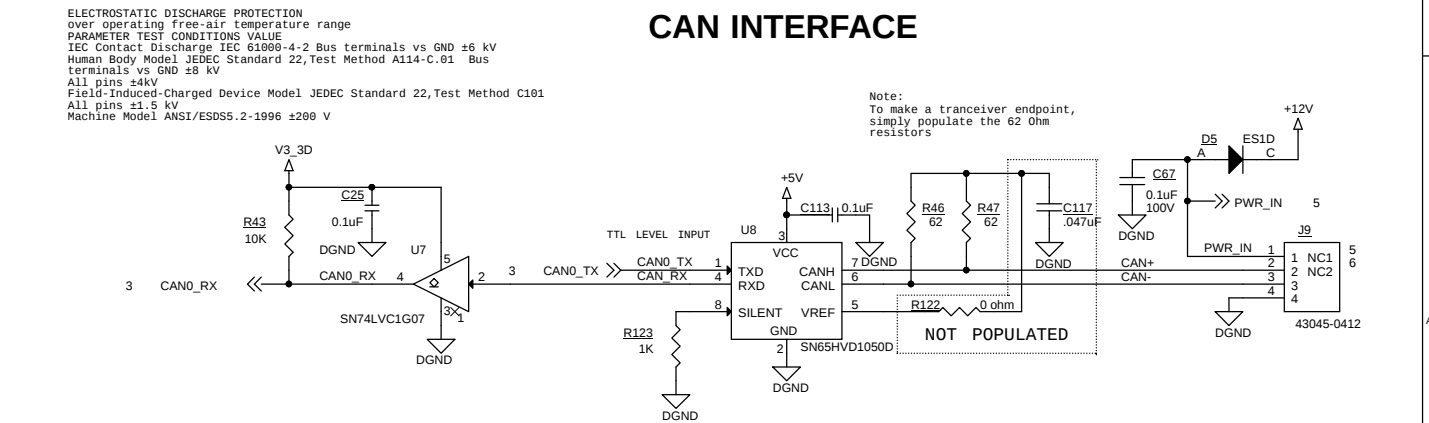
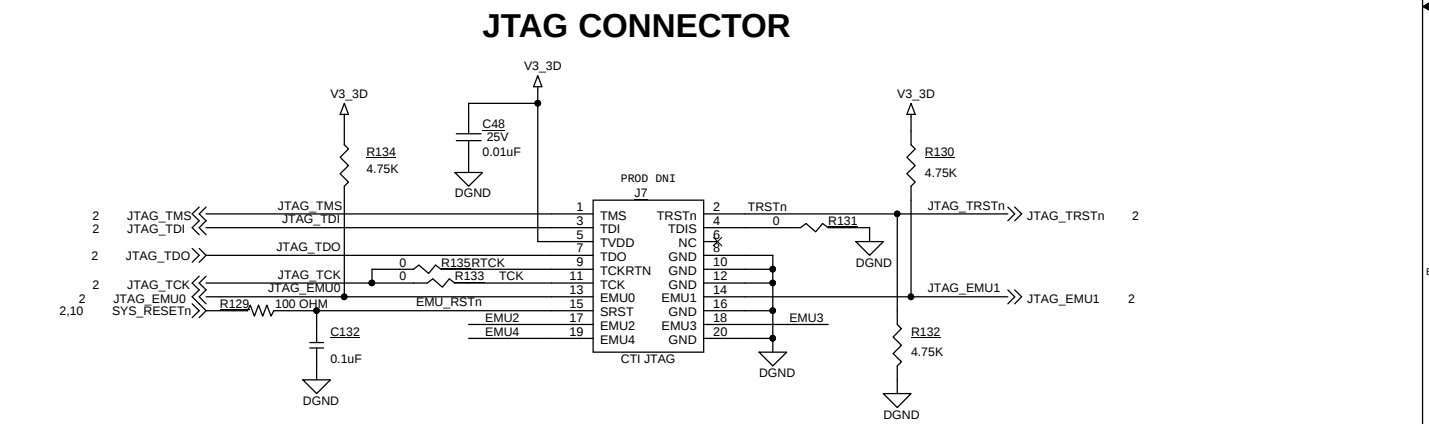
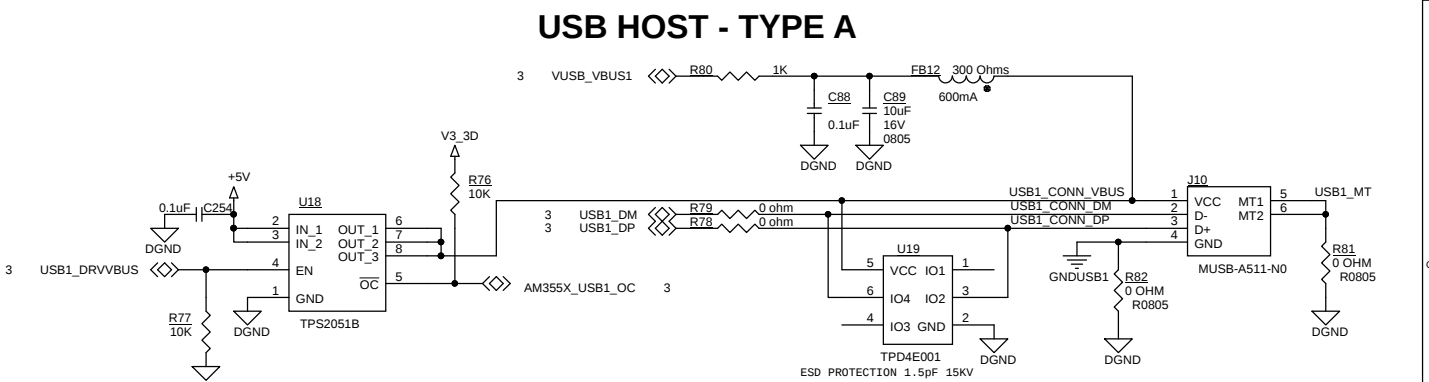
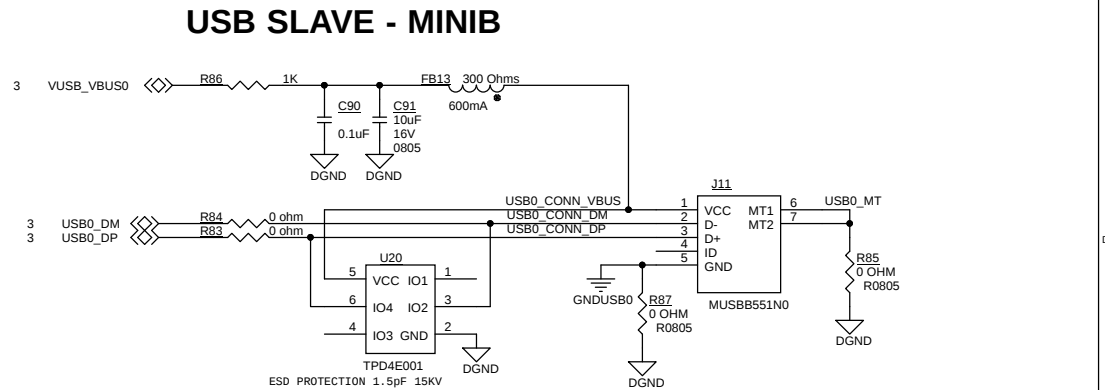
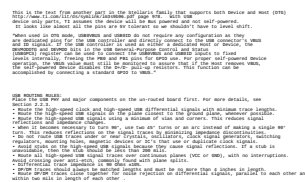
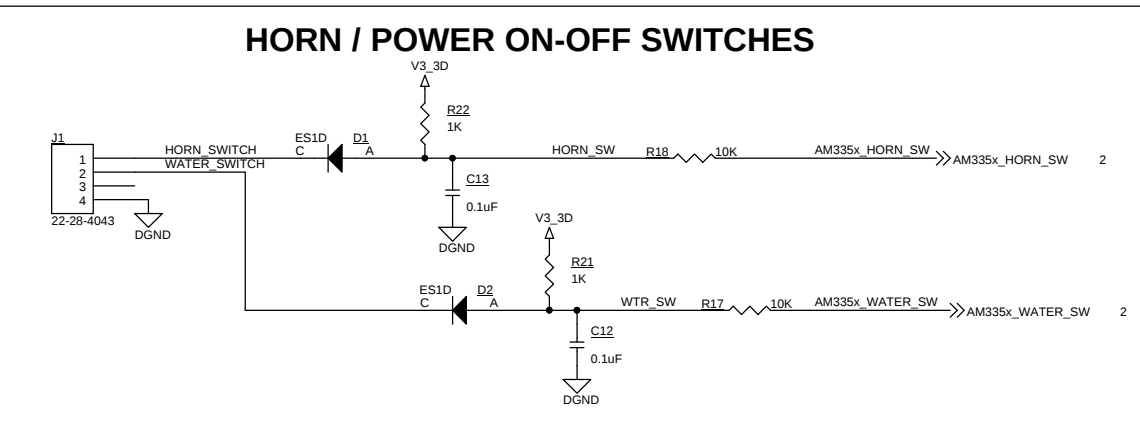
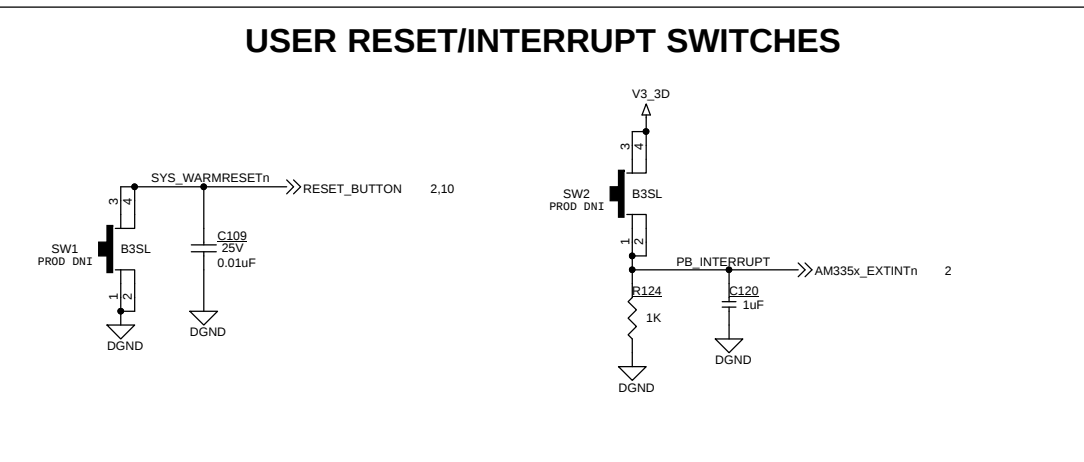
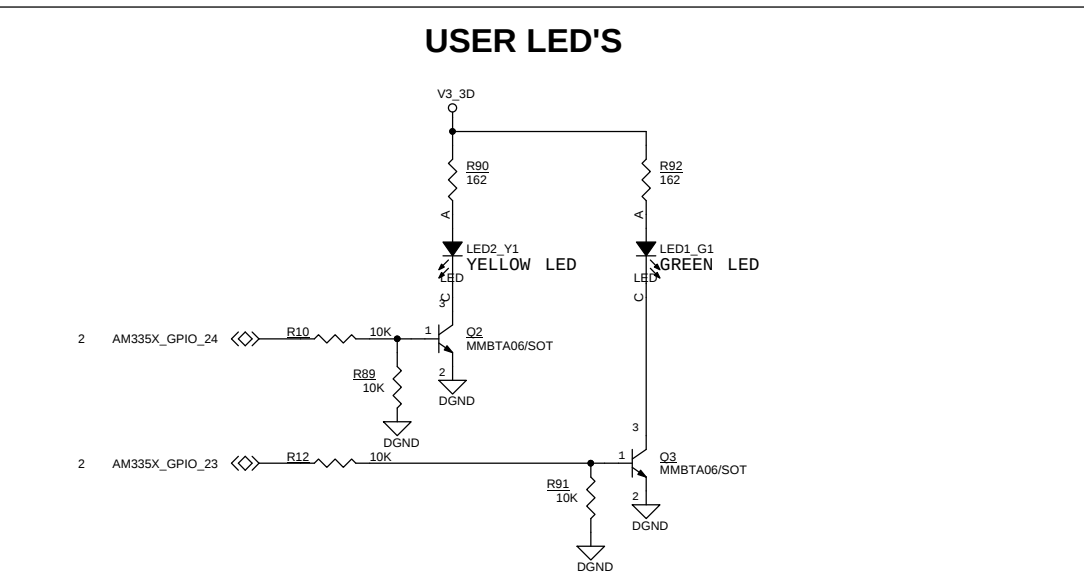
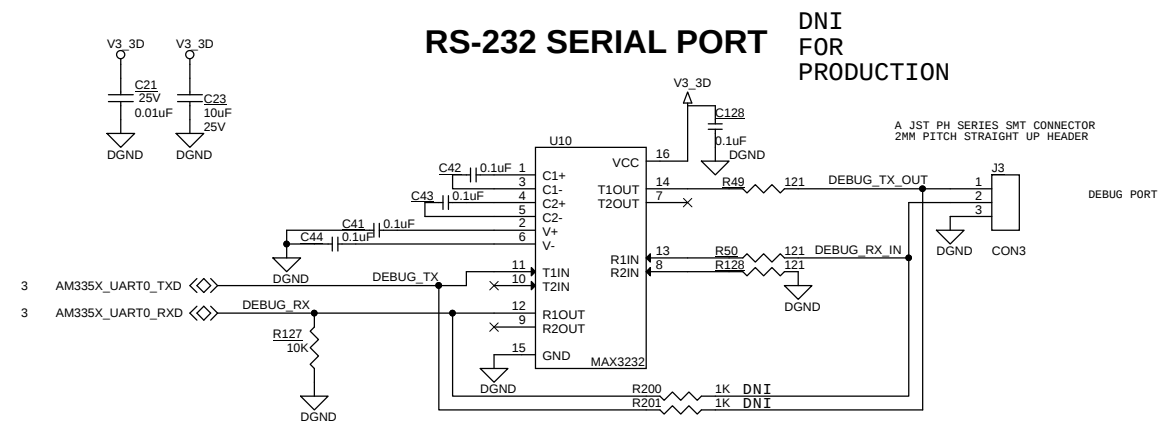
3.3V LDO, 1.5A



POWER MONITOR DNI IN PRODUCTION

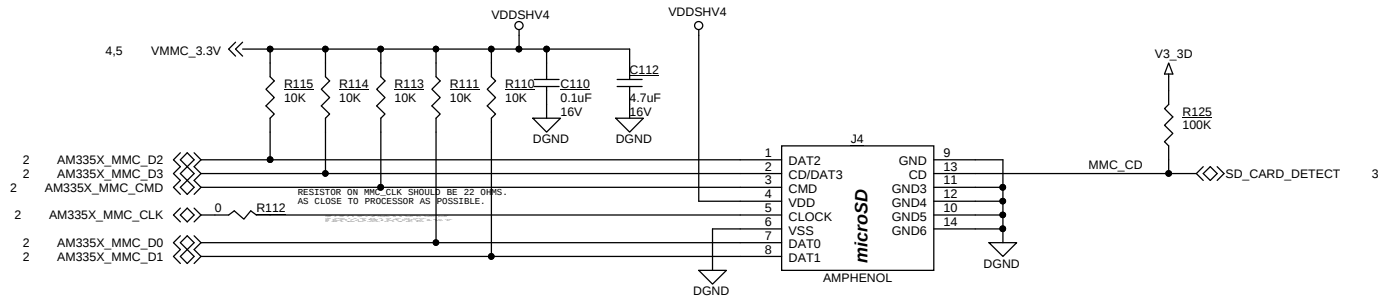


Title				
NORTHSTAR TOUCHSCREEN UI BOARD				
Size C	Document Number Q26035-001			Rev A
Date:	Tuesday, January 03, 2017	Sheet	5	of 10



Title NORTHSTAR TOUCHSCREEN UI BOARD			
Size C	Document Number Q26035-001	Rev A	
Date:	Tuesday, January 03, 2017	Sheet	6 of 10

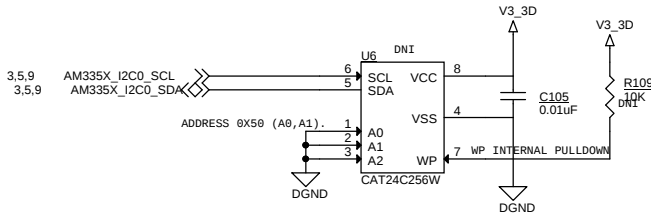
MICRO SD CONNECTOR



A PLACE TO STORE THE MAC ADDRESS FOR ETHERNET.

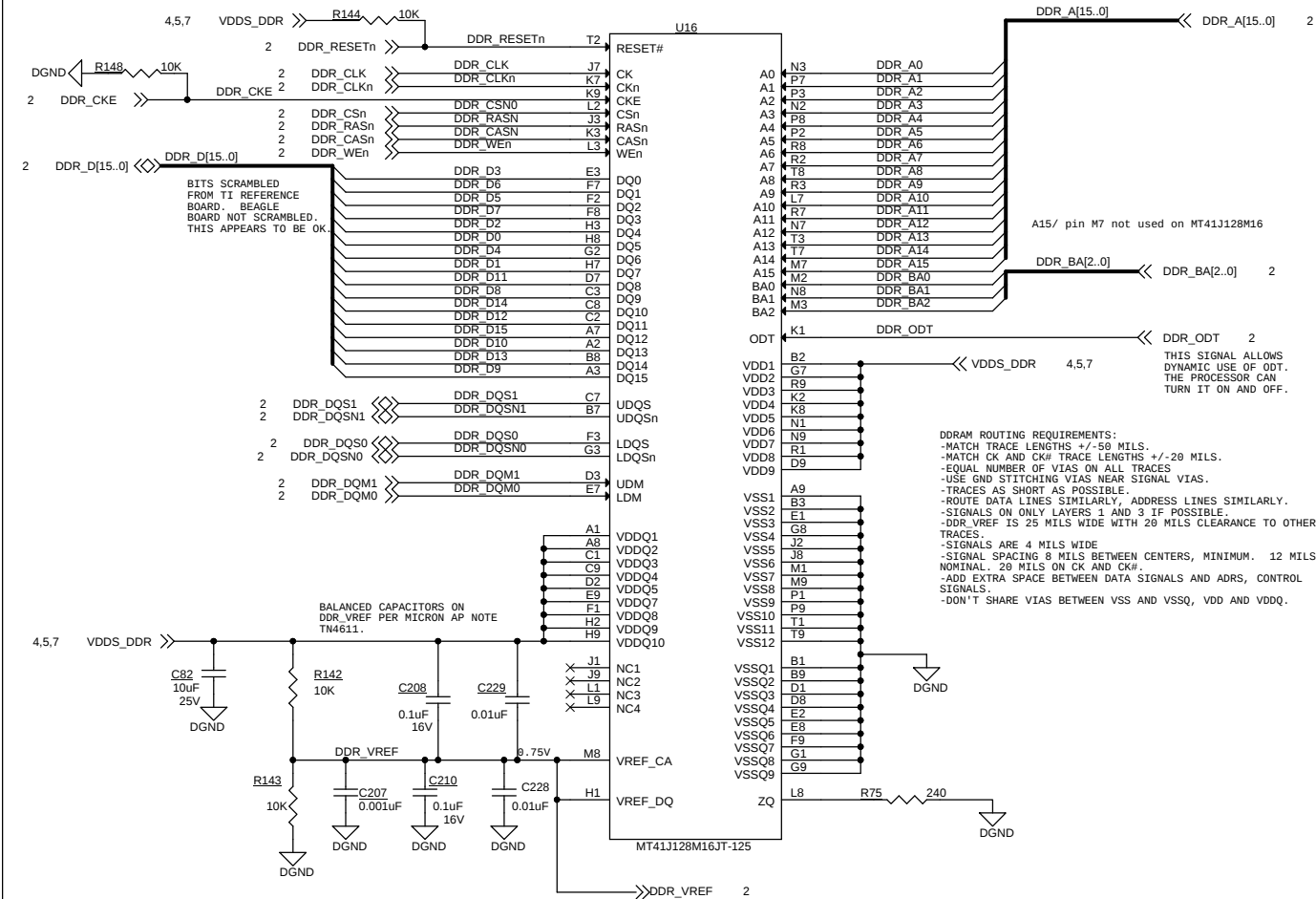
Tim thinks we need to get a reserved block of mac addresses and make each unique.

ID MEMORY 256Kb



1,000,000 WRITE RATING.
The first 4 bits of the Slave address are set to 1010, for normal Read/Write operations (Figure 3).
The next 3 bits, A2, A1 and A0, select one of 8 possible Slave devices. The last bit, R/W, specifies whether a Read (1) or Write (0) operation is to be performed.

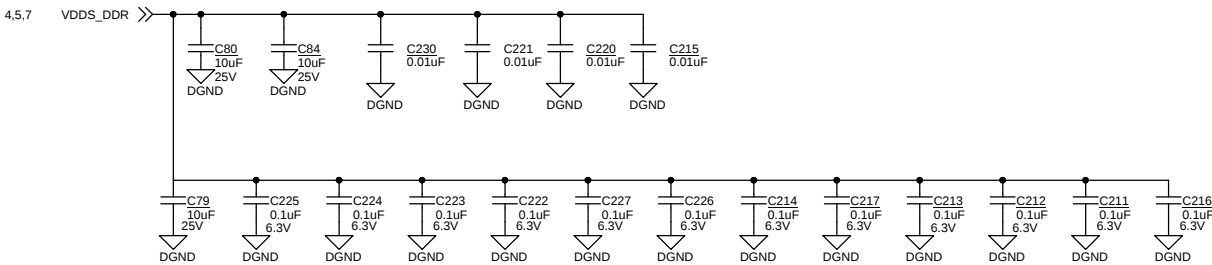
DDR3 SDRAM



MIGRATION PATH
IS FROM MT41J128M16JT-125 2Gb \$3.12
TO MT41K256M16HA-125:E 4 Gb \$7.08
HA AND JT PACKAGES ARE COMPATIBLE.

DROP-IN SUBSTITUTES:
MICRON MT41J128M16JT-125:K
MICRON MT41K128M16JT-125AAT:K
MICRON MT41K128M16JT-125AIT:K
MICRON MT41K128M16JT-125XIT:K
MICRON MT41K128M16JT-107:K
MICRON MT41K128M16JT-107G:K
ISSI IS43TR16128B-125KBL
WINBOND

DDR3 DECAPS



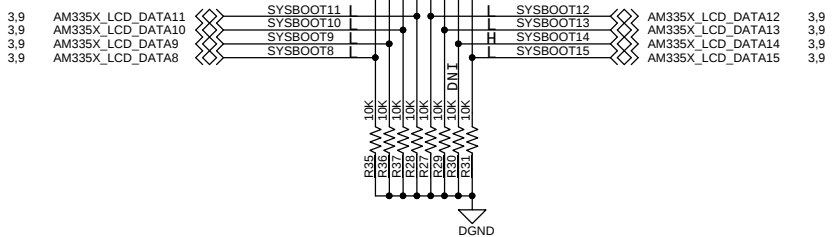
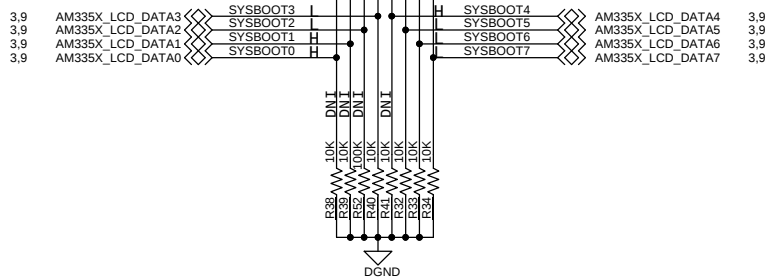
DDR3 MEMORY DESIGN TAKEN FROM BEAGLE BONE BLACK BOARD.

Title			
NORTHSTAR TOUCHSCREEN UI BOARD			
Size	Document Number	Rev	
Custom	Q26035-001	A	
Date:	Tuesday, January 03, 2017	Sheet	7 of 10

BOOT CONFIGURATION

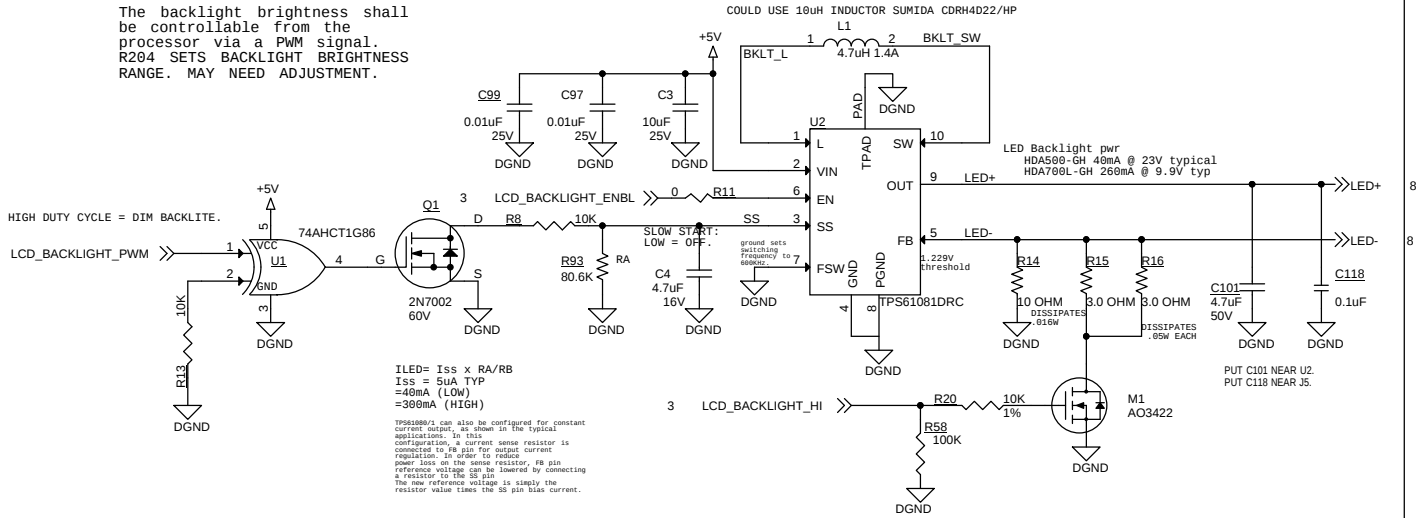
The boot sequence is:
1 USB, 2 NAND, 3 SPI, 4 MMC0 (micro SD)
[NOTE: SPI and NAND are not used]

SYSBOOT2 HIGH,
=BOOT FROM USB



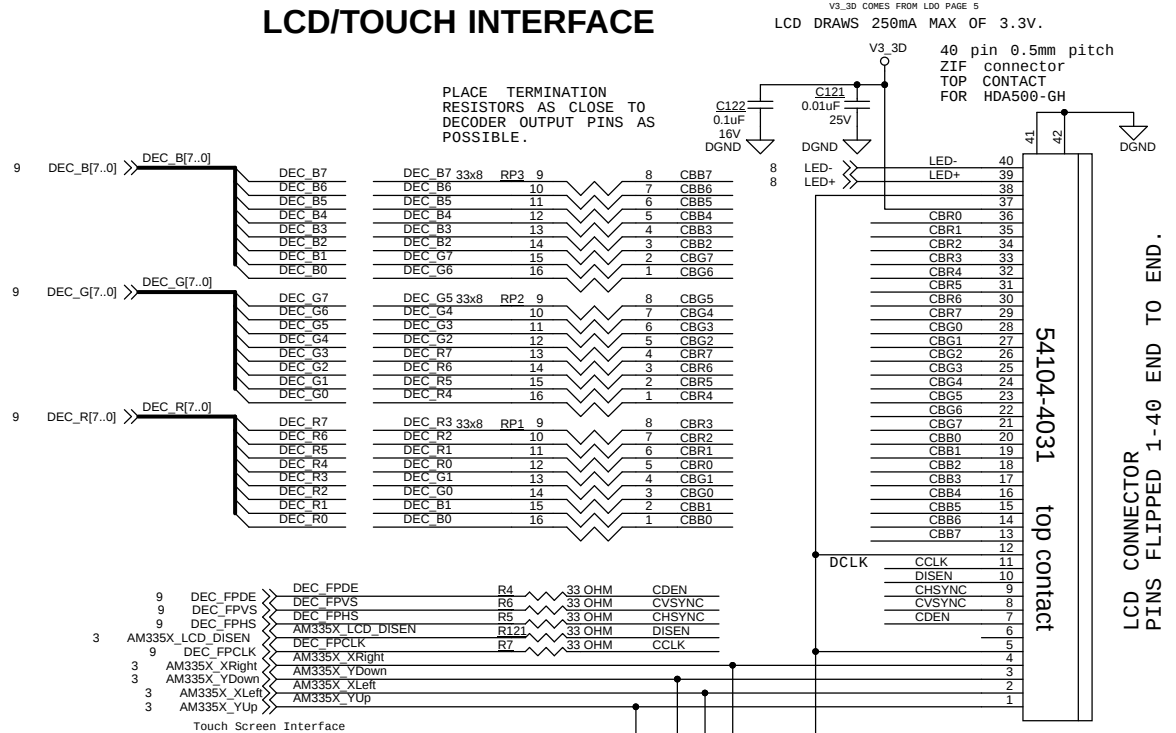
BACKLIGHT DRIVER

The backlight brightness shall be controllable from the processor via a PWM signal. R204 SETS BACKLIGHT BRIGHTNESS RANGE. MAY NEED ADJUSTMENT.



LCD/TOUCH INTERFACE

PLACE TERMINATION RESISTORS AS CLOSE TO DECODER OUTPUT PINS AS POSSIBLE.

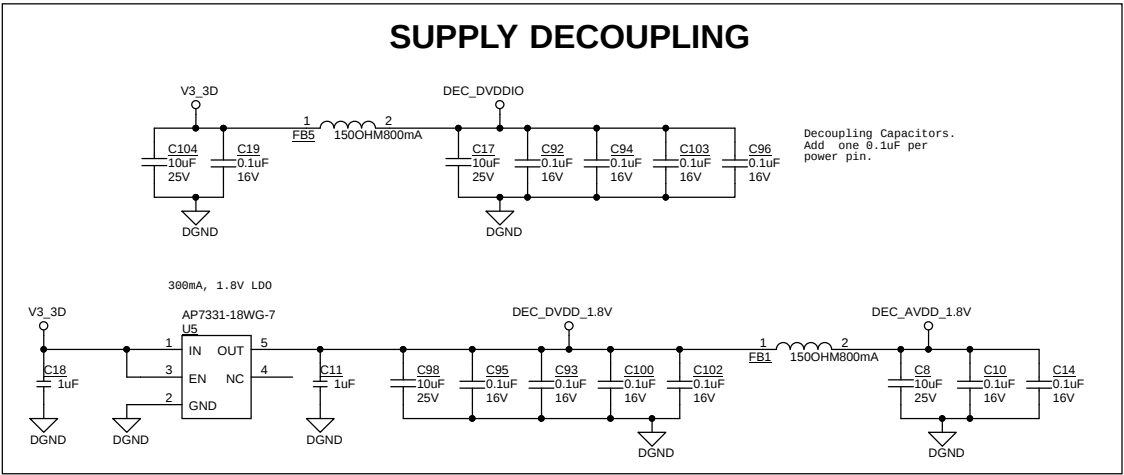
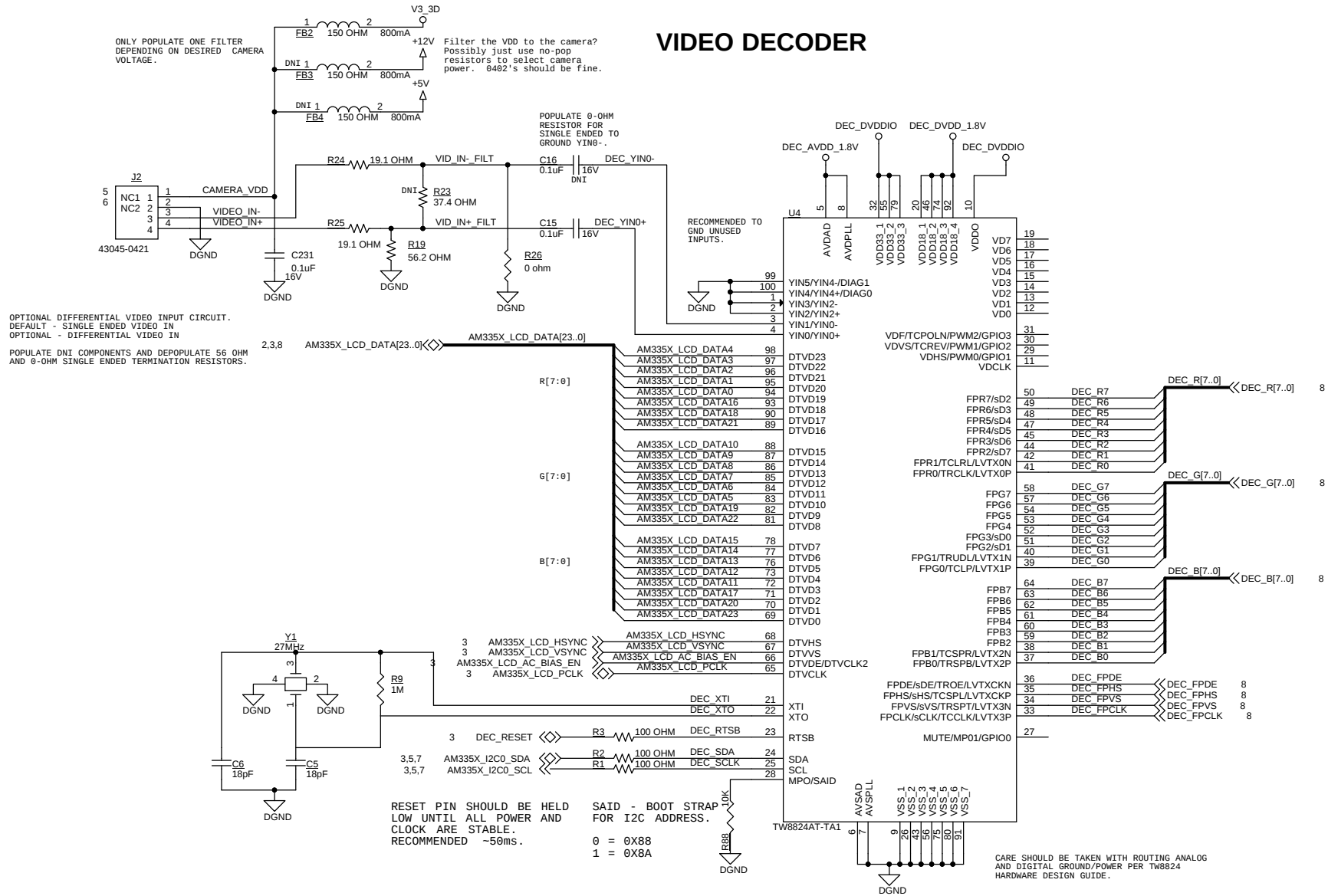


4 connector BOTTOM

TOUCHPANEL INTERFACE CONNECTOR DNI

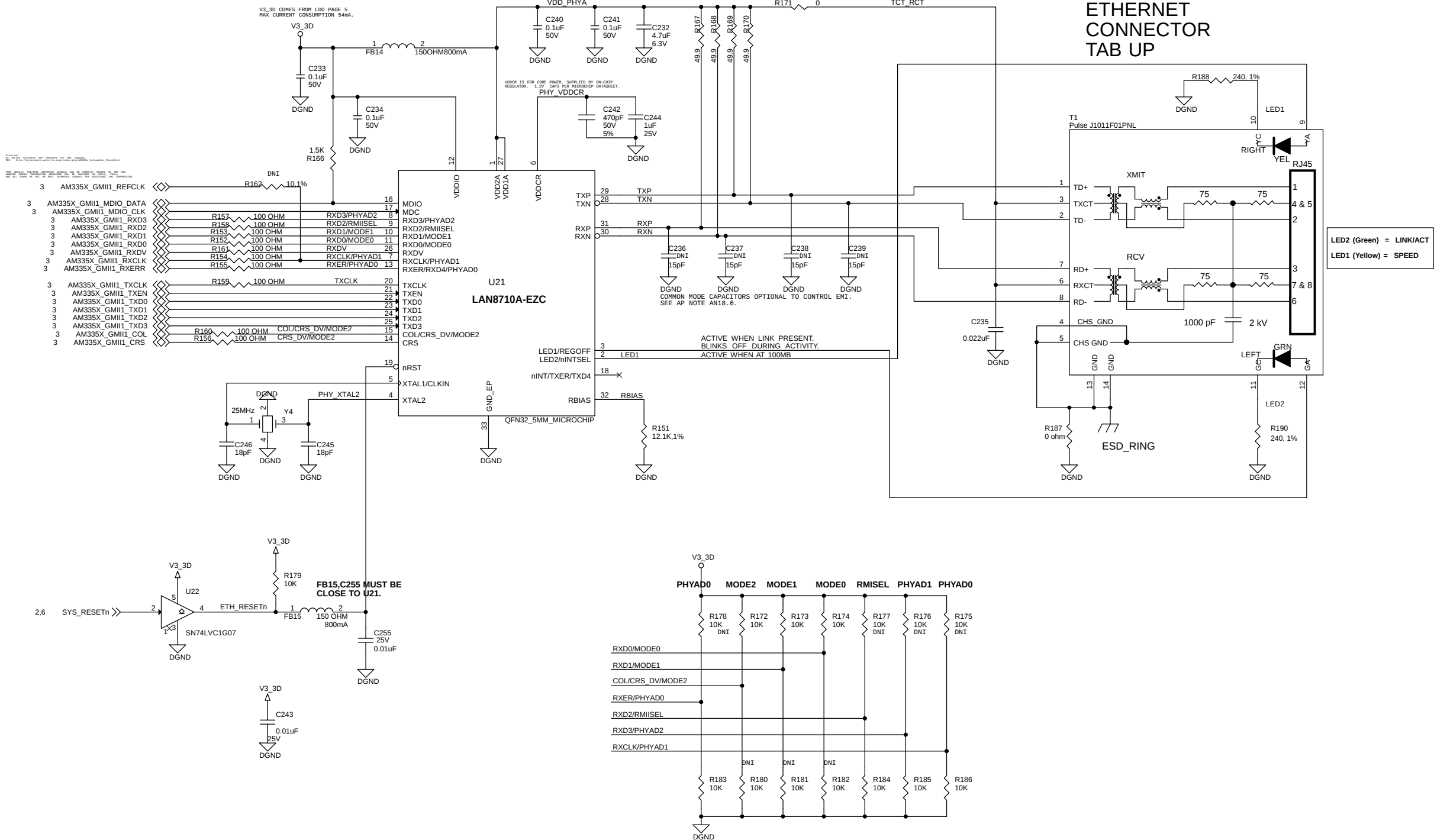
DISPLAY/ TOUCHPANEL INTERFACE

Title			NORTHSTAR TOUCHSCREEN UI BOARD	
Size	Document	Number	Q26035-001	
C			Rev A	
Date:	Tuesday, January 03, 2017	Sheet	8	of 10



LAYOUT NOTE:
ETHERNET CONNECTOR
FOOTPRINT IS CHANGED.

ETHERNET
CONNECTOR
TAB UP



Title		
NORTHSTAR TOUCHSCREEN UI BOARD		
Size	Document Number	Rev
C	Q26035-001	A
Date:	Tuesday, January 03, 2017	Sheet 10 of 10