

TORINO

PCB thickness: 1mm

CPU : INTEL YONAH-2M
Chip Set : INTEL 945GM & ICH7-M
Remarks : 2 Spindle

Model Name : TORINO
PBA Name : MAIN
PCB Code : BA41-00602A/3A
Dev. Step : MP
Revision : 1.0
T.R. Date : 2006.1.23

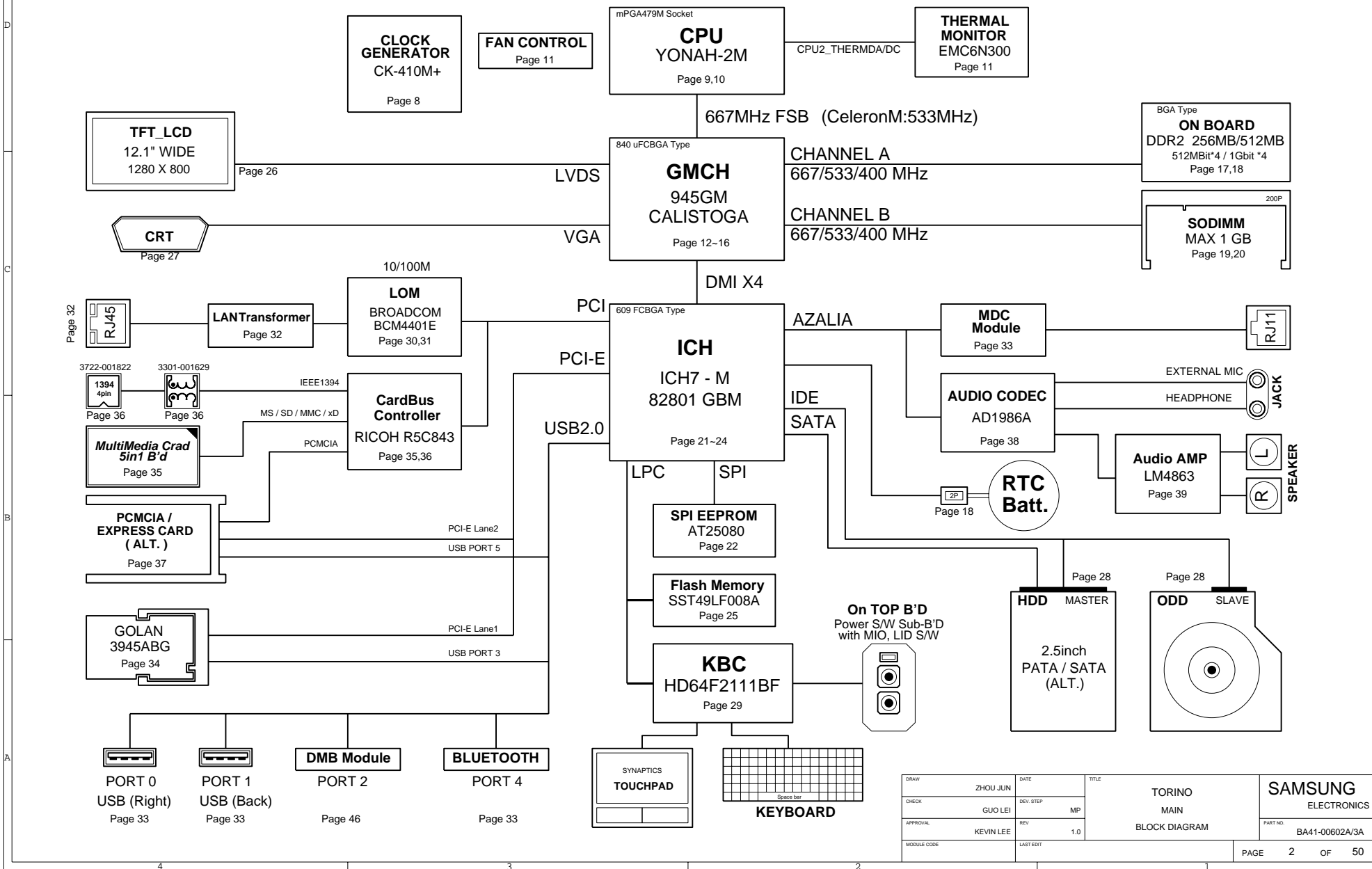
DRAW	CHECK	APPROVAL
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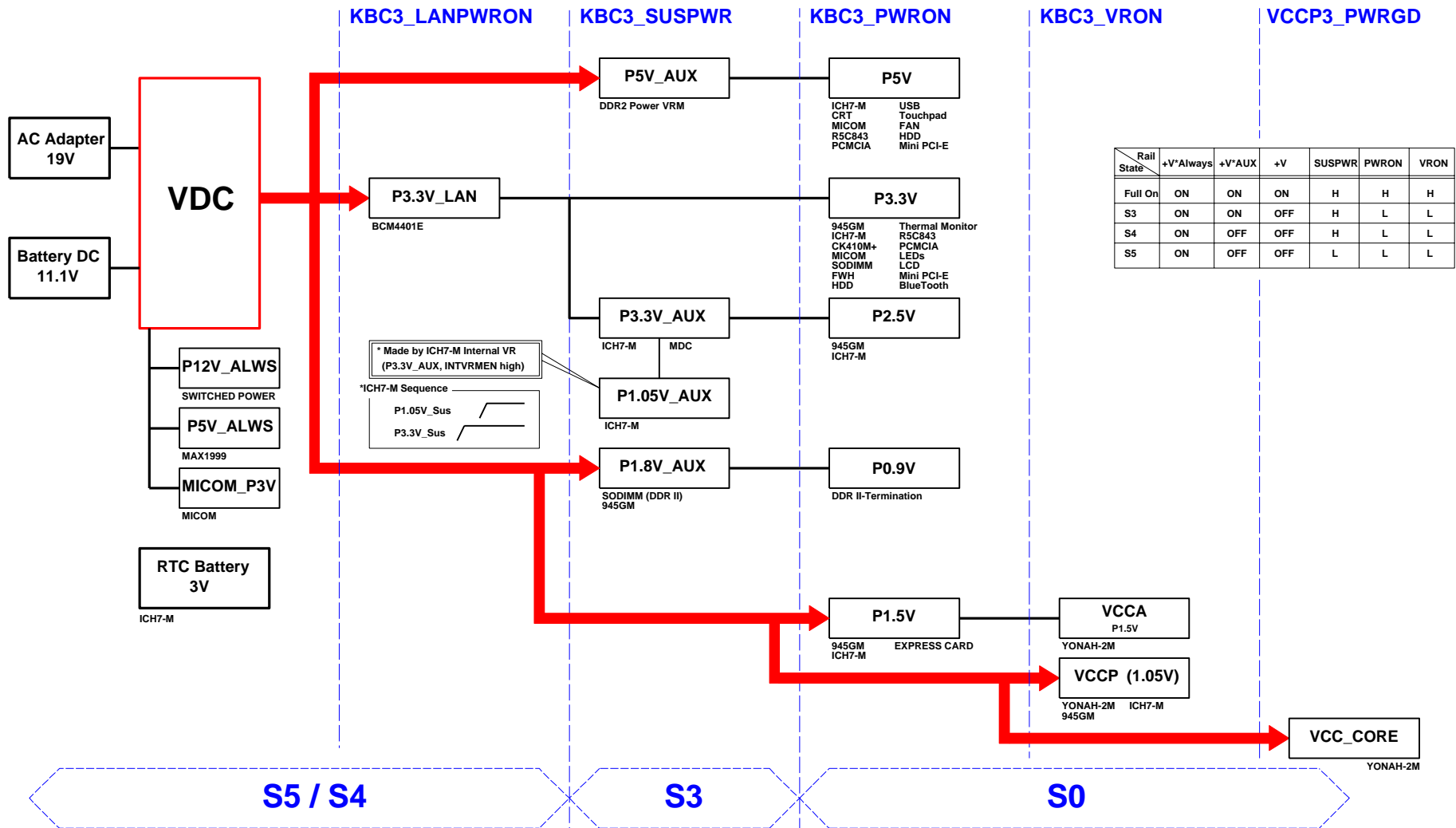
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APPROVAL	KEVIN LEE	REV	1.0		CONTENTS	PART NO.
MODULE CODE		LAST EDIT				BA41-00602A/3A
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OPERATION BLOCK DIAGRAM



DRAW	ZHOU JUN	DATE		TITLE	TORINO	SAMSUNG
CHECK	GUO LEI	DEV. STEP	MP	MAIN	BLOCK DIAGRAM	ELECTRONICS
APPROVAL	KEVIN LEE	REV	1.0			PART NO.
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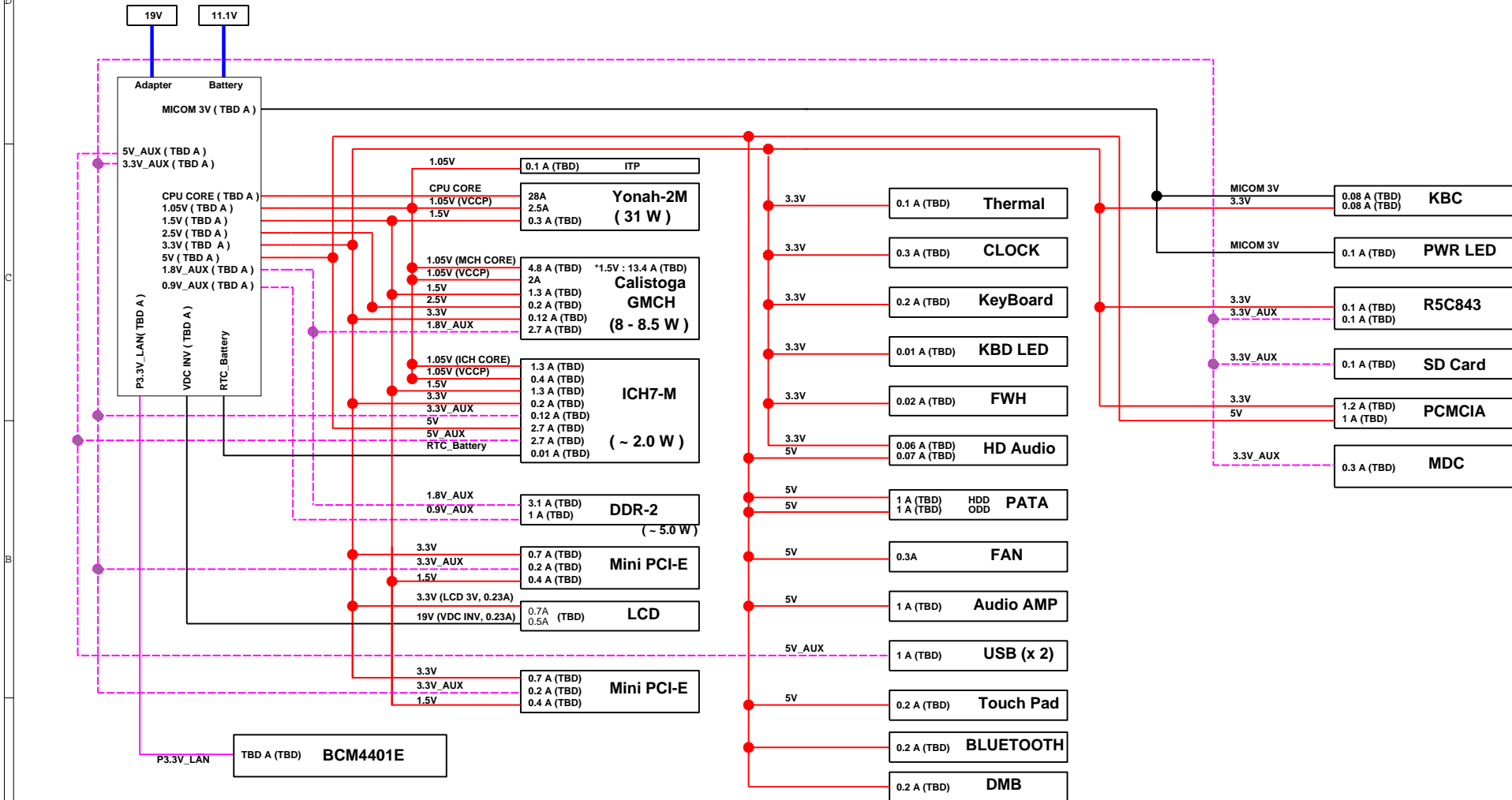
POWER DIAGRAM

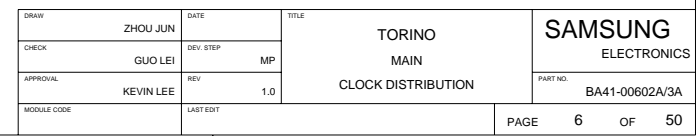


POWER RAILS ANALYSIS

Rev. 0.1

— S0 - S5
- - - S0 - S3
— OFF IN S3 - S5





BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

PCI Devices

Devices	IDSEL#	REQ/GNT#	Interrupts
Cardbus	AD25	0	E,F,G
LAN	AD21	1	G
USB	AD29(internal)	-	USB2.0 #0 : A USB2.0 #1 : D USB2.0 #2 : C
Hub to PCI	AD30(internal)	-	-
LPC bridge/IDE/AC97/SMBUS	AD31(internal)	-	B
Internal MAC	AD24(internal)	-	E
AC Link	-	-	B

Voltage Rails

VDC	Primary DC system power supply (7 to 21V)
VCC_CORE	Core voltage for Processor (1.308-1.068V)
VTT	DOTAN/ALVISO Processor System Bus(PSB) Termination (1.05V) GMCH & ICH7 Core Voltage
P1.8V_AUX	1.8V power rail for DDR2 (off in S4-S5)
P0.9V	0.9V switched power rail (off in S3-S5)
P1.5V	1.5V switched power rail (off in S3-S5)
P2.5V	2.5V switched power rail (off in S3-S5)
P3.3V	3.3V switched power rail (off in S3-S5)
P5V	5.0V switched power rail (off in S3-S5)
P3.3V_AUX	3.3V power rail (off in S4-S5)
P5V_AUX	5.0V power rail (off in S4-S5)
P3.3V_LAN	3.3V power rail (Always On)
PRTC_BAT	3.0V power rail (ALWAYS ON)
MICOM_P3V	3.3V always on power rail for MICOM
P5V_ALWS	5V power rail (Always On)
P12V_ALWS	12V power rail (Always On)

I²C / SMB Address

Devices	Address	Hex	Bus
ICH7	Master	-	SMBUS Master
SODIMM1	1010 001X	A2h	-
CK-410M+ (Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable
MICOM	Master	-	SMBUS Master
BATTERY	0001 011X	16h	-
EMC6N300(CPU Thermal Sensor)	0101 111X	5Eh	Thermal Sensor

USB PORT Assign

PORT NUMBER	ASSIGNED TO
0	SYSTEM PORT A
1	SYSTEM PORT B
2	DMB CARD
3	MINIPCI-E
4	BLUETOOTH
5	EXPRESS CARD
6	RESERVED
7	RESERVED

System Power States

CHP3_SLP51* S1, Powered-On-Suspend(POS) : In this state, all clocks(except the 32.768KHz clock) are stopped.
The system context is maintained in system DRAM. Power is maintained to PCI, the CPU, memory controller, memory, and all other critical subsystems.
Note that this state does not preclude power being removed from non-essential devices, such as disk drives. During this state, CPU can be selected for either Deep Sleep or Deeper Sleep.
In Deeper Sleep, CPU voltage reduced in this state to reduce the leakage power.
CHP3_SLP53* S3, Suspend-To-RAM(STR) : The system context is maintained in system DRAM, but power is shut off to non-critical circuits.
Memory is retained, and refreshes continue. All clocks stop except RTC clock.
CHP3_SLP45* S4, Suspend-To-Disk(STD) : The Context of the system is maintained on the disk. All power is then shut off to the system except for the logic required to resume.
Externally appears same as S5, but may have different wake events.
CHP3_SLP55* S5, Soft Off(SOFF) : System context is not maintained. All power is shut off except for the logic required to restart. A full boot is required when waking.

Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	ICH7-M	Real Time Clock
Crystal	10MHz	MICOM	HD64F2169/2160
Crystal	14.318MHz	CLOCK-Generator	CK-410M
Crystal	24.576MHz	Cardbus Controller	1394
Crystal	25MHz	LAN	Intel LAN

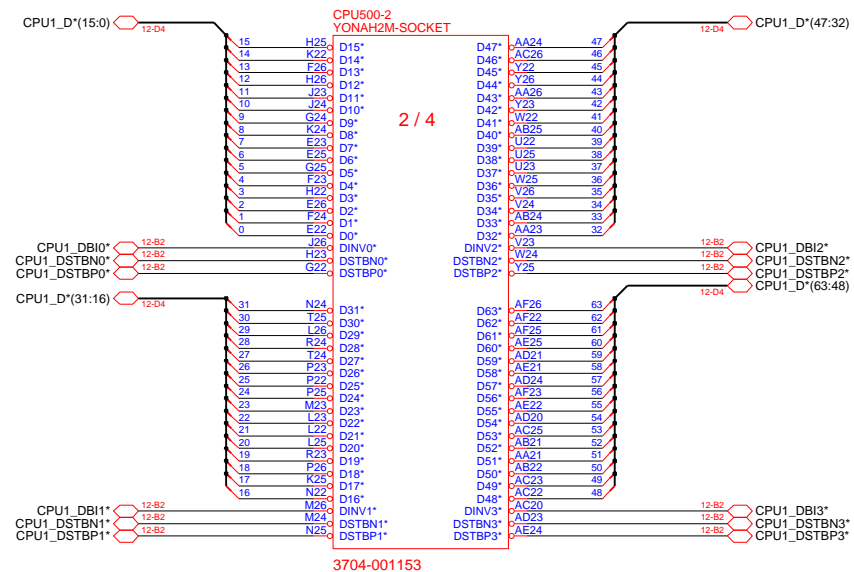
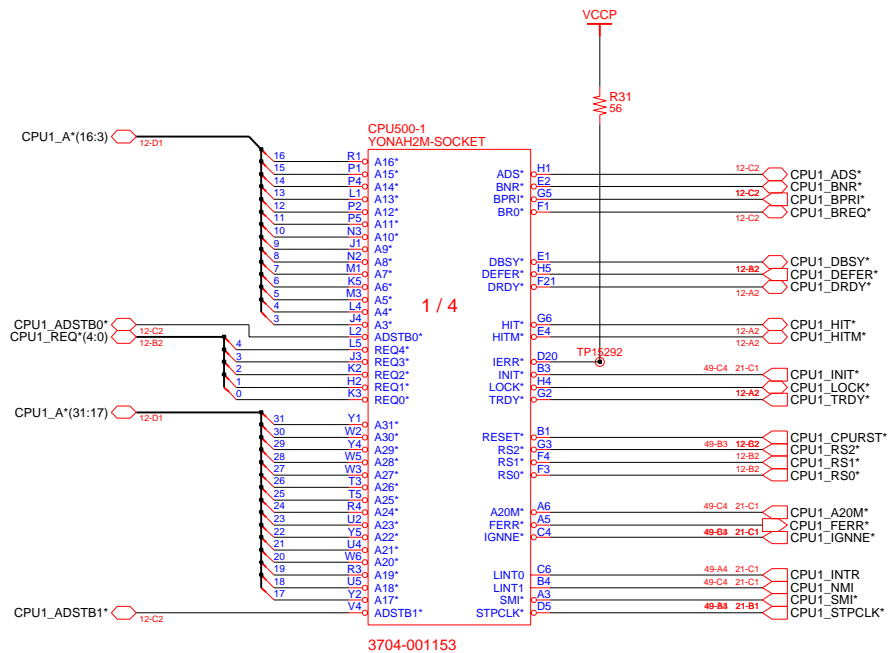
CPU Core Voltage Table IMVP-6

Active Mode		Active/Deeper Sleep Dual Mode Region	Deeper Sleep/Extended Deeper Sleep Dual Mode Region
VID(6:0)	Voltage	VID(6:0)	Voltage
0 0 0 0 0 0 0	1.5000 V	0 1 0 1 0 0 0	1.0000 V
0 0 0 0 0 0 1	1.4875 V	0 1 0 1 0 0 1	0.9875 V
0 0 0 0 0 1 0	1.4750 V	0 1 0 1 0 1 0	0.9750 V
0 0 0 0 0 1 1	1.4625 V	0 1 0 1 0 1 1	0.9625 V
0 0 0 0 1 0 0	1.4500 V	0 1 0 1 1 0 0	0.9500 V
0 0 0 0 1 0 1	1.4375 V	0 1 0 1 1 0 1	0.9375 V
0 0 0 0 1 1 0	1.4250 V	0 1 0 1 1 1 0	0.9250 V
0 0 0 0 1 1 1	1.4125 V	0 1 0 1 1 1 1	0.9125 V
0 0 0 1 0 0 0	1.4000 V	0 1 1 0 0 0 0	0.9000 V
0 0 0 1 0 0 1	1.3875 V	0 1 1 0 0 0 1	0.8875 V
0 0 0 1 0 1 0	1.3750 V	0 1 1 0 0 1 0	0.8750 V
0 0 0 1 0 1 1	1.3625 V	0 1 1 0 0 1 1	0.8625 V
0 0 0 1 1 0 0	1.3500 V	0 1 1 0 1 0 0	0.8500 V
0 0 0 1 1 0 1	1.3375 V	0 1 1 0 1 0 1	0.8375 V
0 0 0 1 1 1 0	1.3250 V	0 1 1 0 1 1 0	0.8250 V
0 0 0 1 1 1 1	1.3125 V	0 1 1 0 1 1 1	0.8125 V
0 0 1 0 0 0 0	1.3000 V	0 1 1 1 0 0 0	0.8000 V
0 0 1 0 0 0 1	1.2875 V	0 1 1 1 0 0 1	0.7875 V
0 0 1 0 0 1 0	1.2750 V	0 1 1 1 0 1 0	0.7750 V
0 0 1 0 0 1 1	1.2625 V	0 1 1 1 0 1 1	0.7625 V
0 0 1 0 1 0 0	1.2500 V	0 1 1 1 1 0 0	0.7500 V
0 0 1 0 1 0 1	1.2375 V	0 1 1 1 1 0 1	0.7375 V
0 0 1 0 1 1 0	1.2250 V	0 1 1 1 1 1 0	0.7250 V
0 0 1 0 1 1 1	1.2125 V	0 1 1 1 1 1 1	0.7125 V
0 0 1 1 0 0 0	1.2000 V	1 0 0 0 0 0 0	0.7000 V
0 0 1 1 0 0 1	1.1875 V	1 0 0 0 0 0 1	0.6875 V
0 0 1 1 0 1 0	1.1750 V	1 0 0 0 0 1 0	0.6750 V
0 0 1 1 0 1 1	1.1625 V	1 0 0 0 0 1 1	0.6625 V
0 0 1 1 1 0 0	1.1500 V	1 0 0 0 1 0 0	0.6500 V
0 0 1 1 1 0 1	1.1375 V	1 0 0 0 1 0 1	0.6375 V
0 0 1 1 1 1 0	1.1250 V	1 0 0 0 1 1 0	0.6250 V
0 0 1 1 1 1 1	1.1125 V	1 0 0 0 1 1 1	0.6125 V
0 1 0 0 0 0 0	1.1000 V	1 0 0 1 0 0 0	0.6000 V
0 1 0 0 0 0 1	1.0875 V	1 0 0 1 0 0 1	0.5875 V
0 1 0 0 0 1 0	1.0750 V	1 0 0 1 0 1 0	0.5750 V
0 1 0 0 0 1 1	1.0625 V	1 0 0 1 0 1 1	0.5625 V
0 1 0 0 1 0 0	1.0500 V	1 0 0 1 1 0 0	0.5500 V
0 1 0 0 1 0 1	1.0375 V	1 0 0 1 1 0 1	0.5375 V
0 1 0 0 1 1 0	1.0250 V	1 0 0 1 1 1 0	0.5250 V
0 1 0 0 1 1 1	1.0125 V	1 0 0 1 1 1 1	0.5125 V
		1 0 1 0 0 0 0	0.5000 V
Active		Deeper Slip	
DPRSLPVR	0	DPRSLPVR	1
DPRSTP*	1	DPRSTP*	0
PSI2*	0 or 1	PSI2*	0 or 1
		**11111111* : 0V power good asserted.	

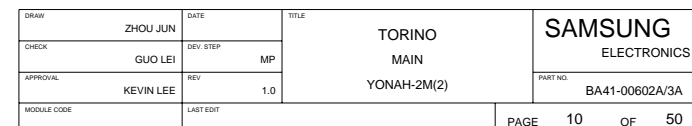
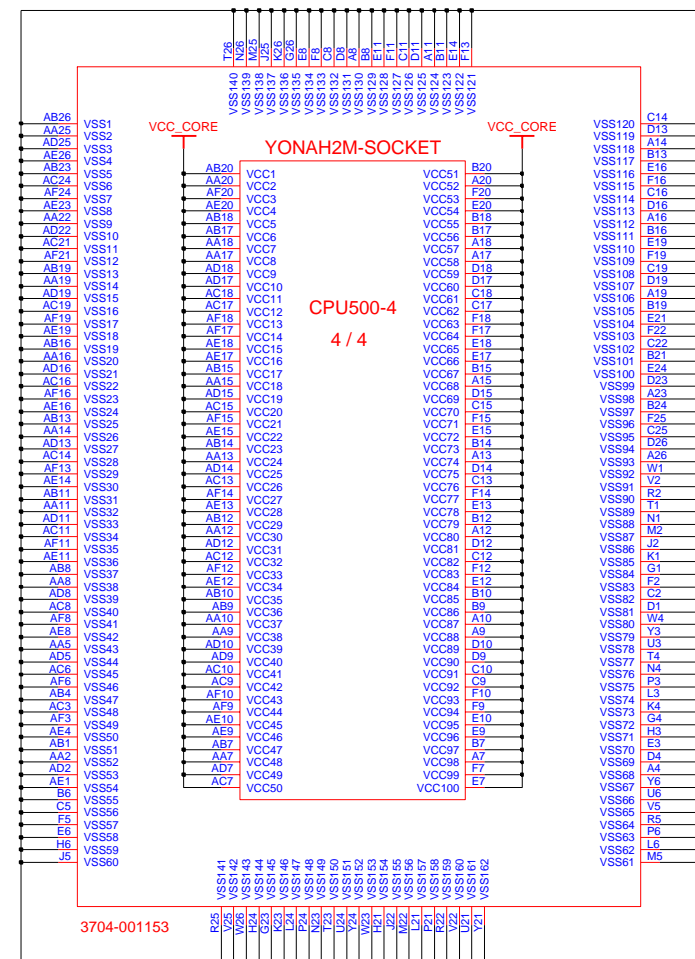
*Yonah Processor (2.33 GHz / 1.00 GHz)

[illegible]

CPU SOCKET : YONAH-2M

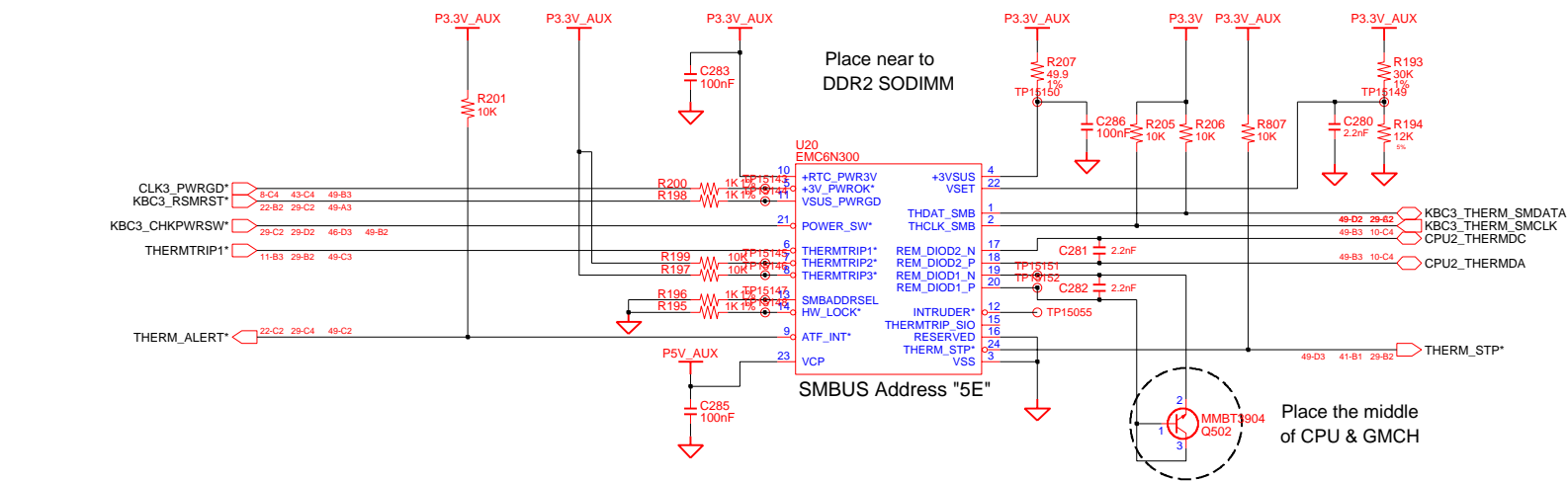


CPU SOCKET : YONAH-2M

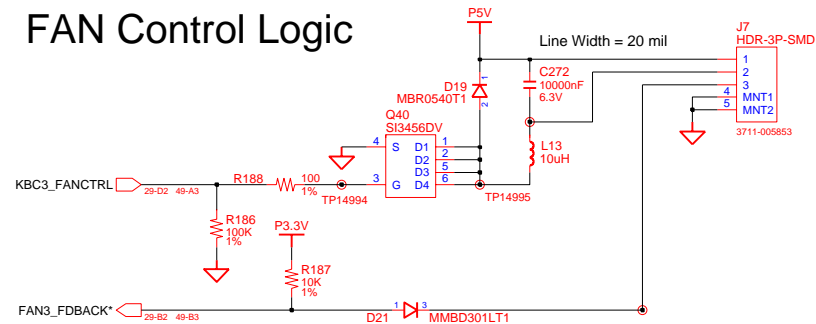
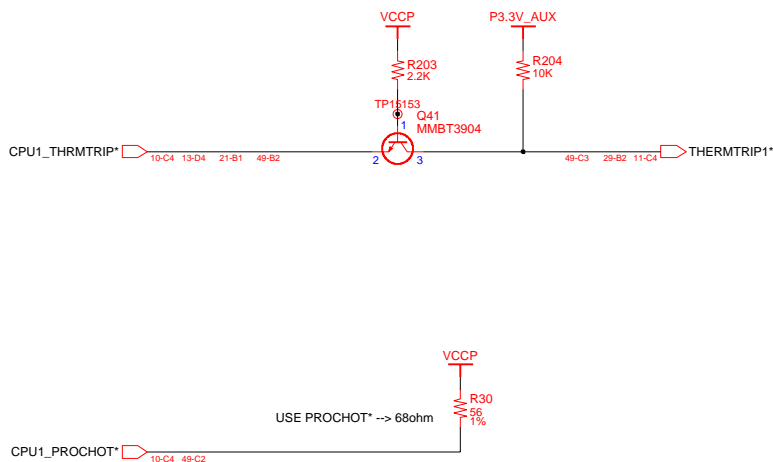


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Thermal Monitor



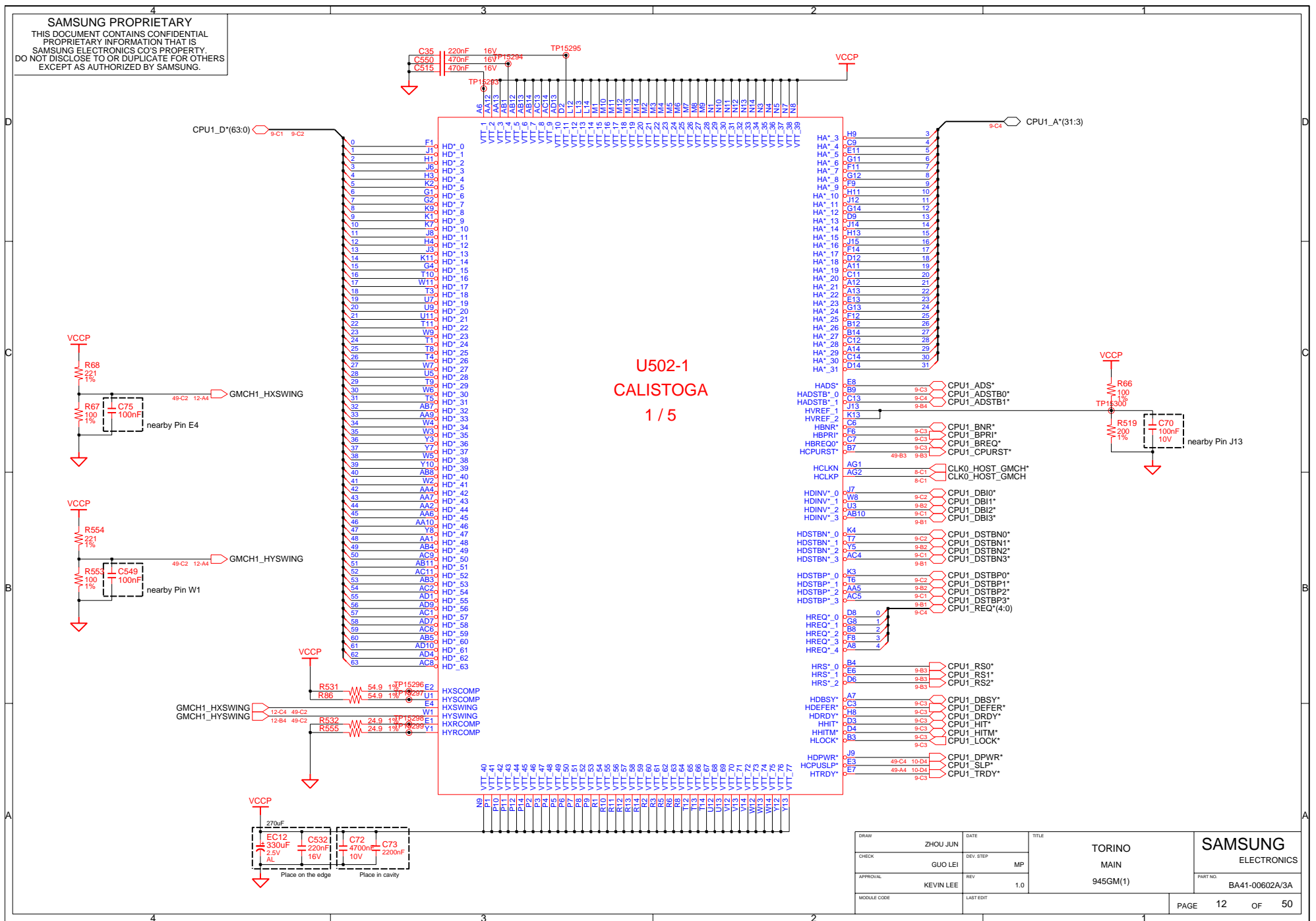
FAN Control Logic



Changed to Control Methode(EBL)

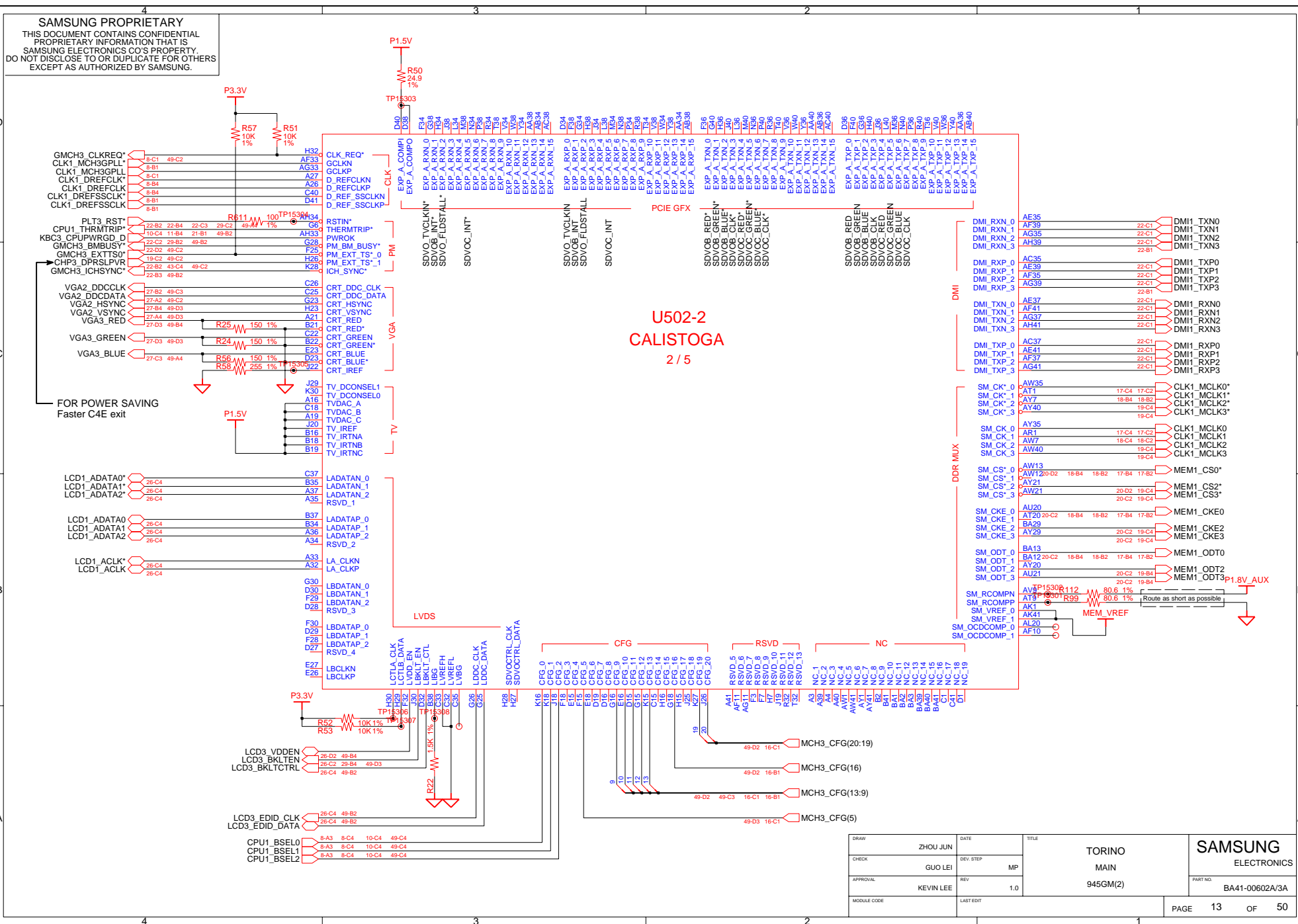
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APPROVAL	KEVIN LEE	REV	1.0		THERMAL MONITOR	BA41-00602A/3A
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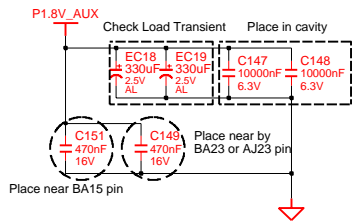
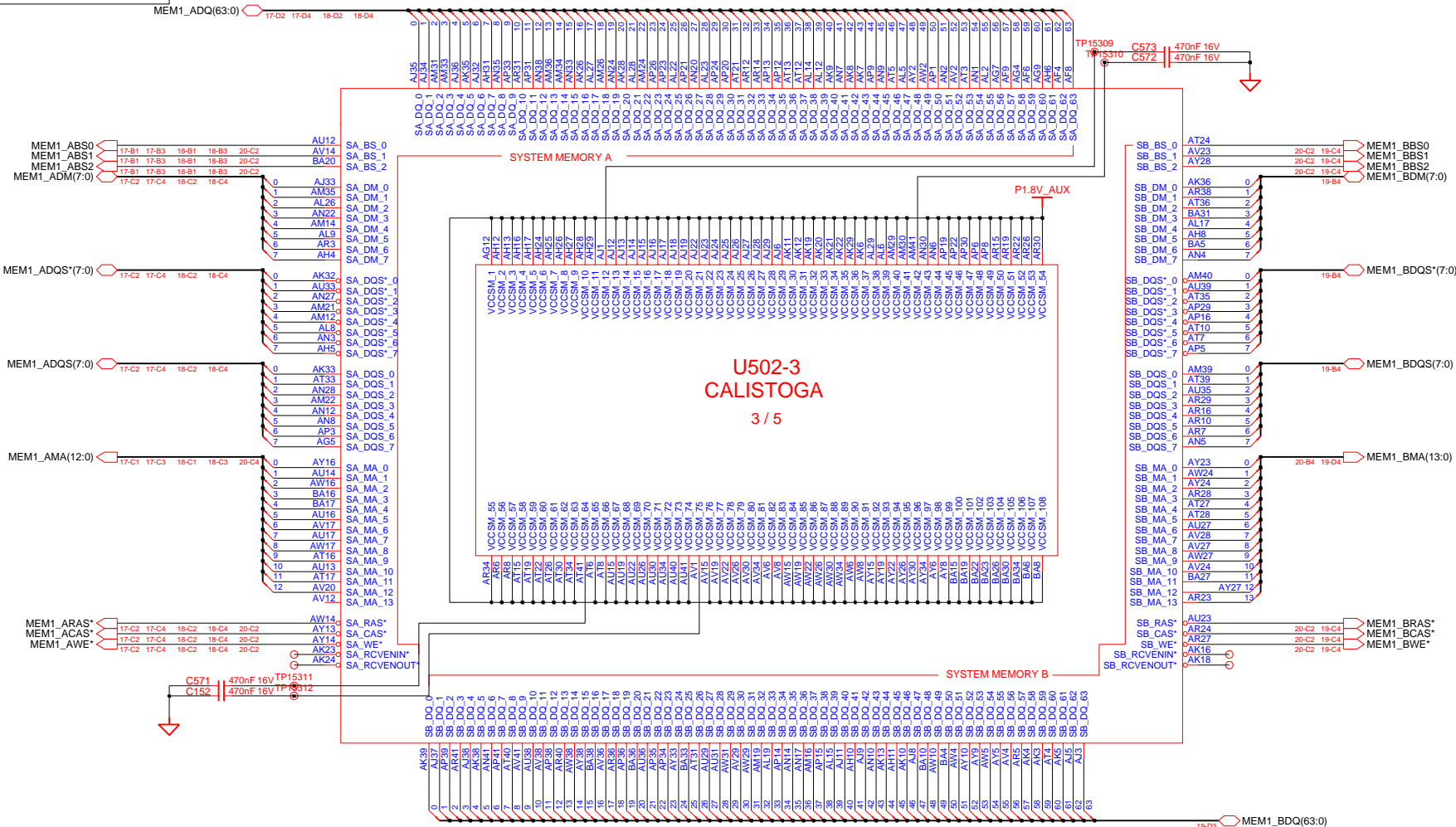
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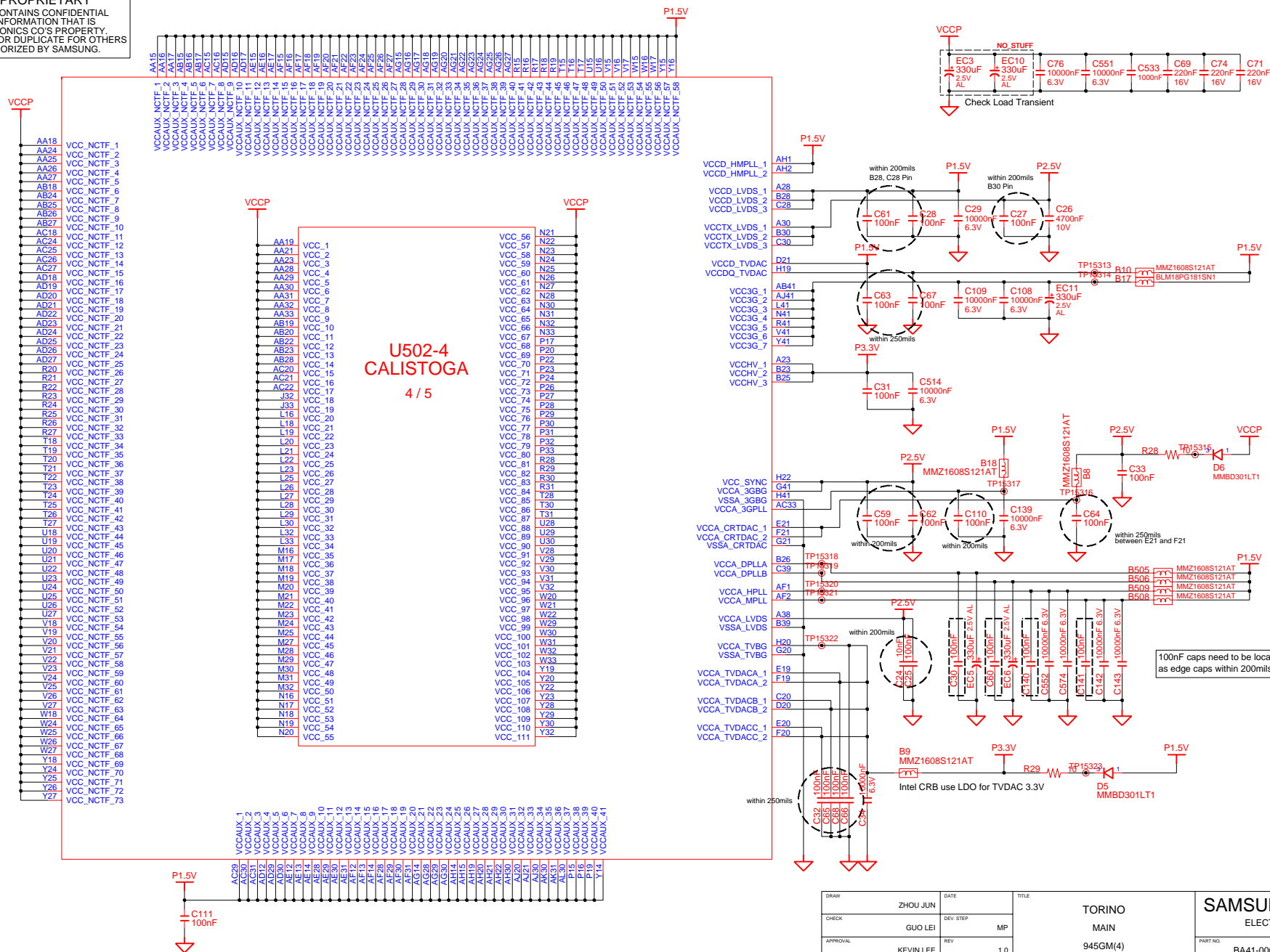
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Dual Channel	Ch. A (So-DIMM A)	Ch. B (So-DIMM B)
SM_CK(2:0)	SA_CK(2:0)	N/A
SM_CK(2:0)*	SA_CK(2:0)*	N/A
SM_CK(5:3)	N/A	SB_CK(2:0)
SM_CK(5:3)*	N/A	SB_CK(2:0)*
SM_CS(1:0)	SA_CS(1:0)	N/A
SM_CKE(1:0)	SA_CKE(1:0)	N/A
SM_ODT(1:0)	SA_ODT(1:0)	N/A
SM_CS(3:2)*	N/A	SB_CS(3:2)*
SM_SKE(3:2)	N/A	SB_CKE(3:2)
SM_ODT(3:2)	N/A	SB_ODT(3:2)

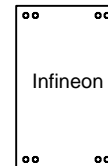
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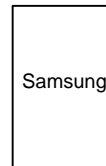


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with 8 dummy-ball
92-BALL Package

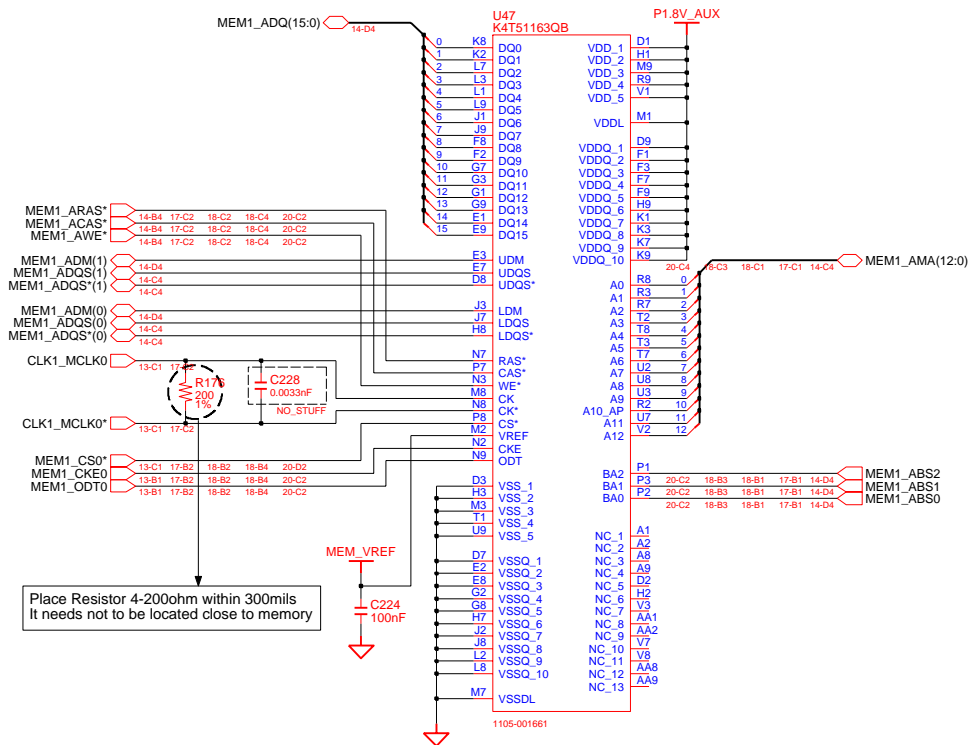


without dummy-ball
84-BALL Package

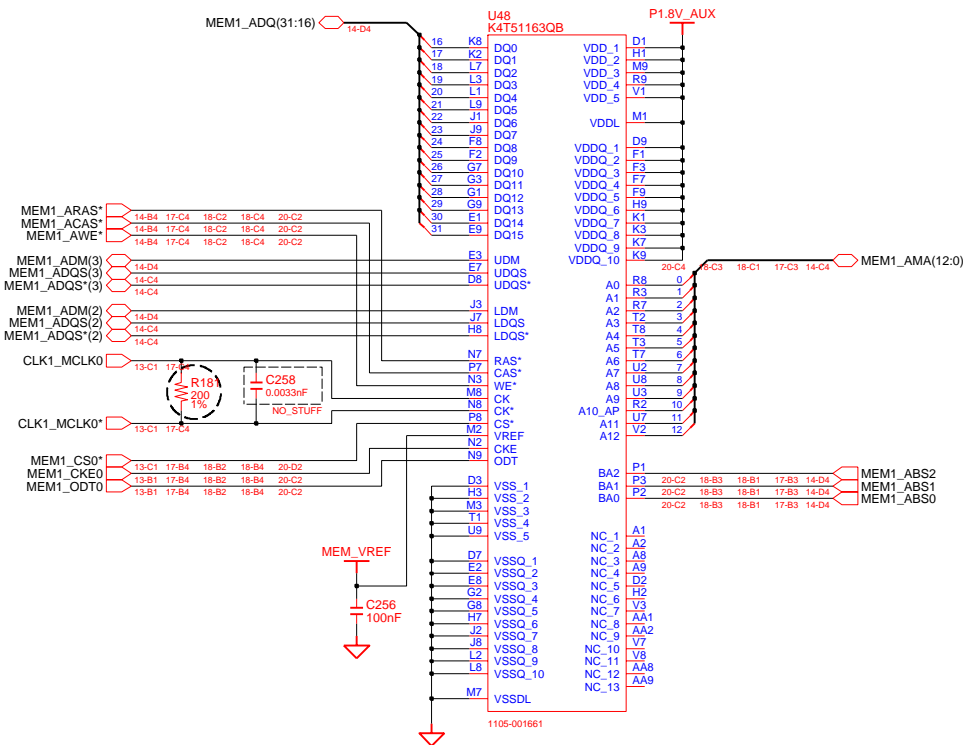
DDR2 ON BOARD MEMORY

- 1Gbit DDR2-667MHz x16 I/O
- SAMSUNG: K4T1G044QA-ZCE6
- 1Gbit DDR2-533MHz x16 I/O
- SAMSUNG: K4T1G044QA-ZCD5
- INFINEON: HYB18T1G160AF-3.7

D0

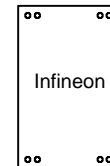


D1

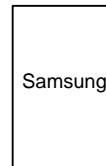


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with 8 dummy-ball
92-BALL Package

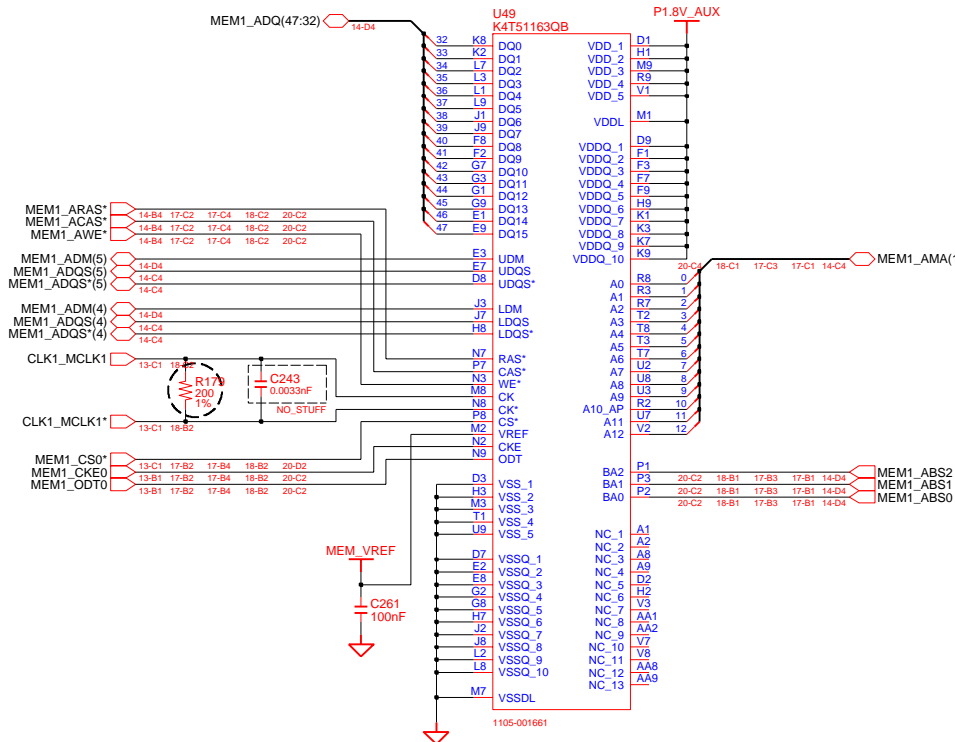


without dummy-ball
84-BALL Package

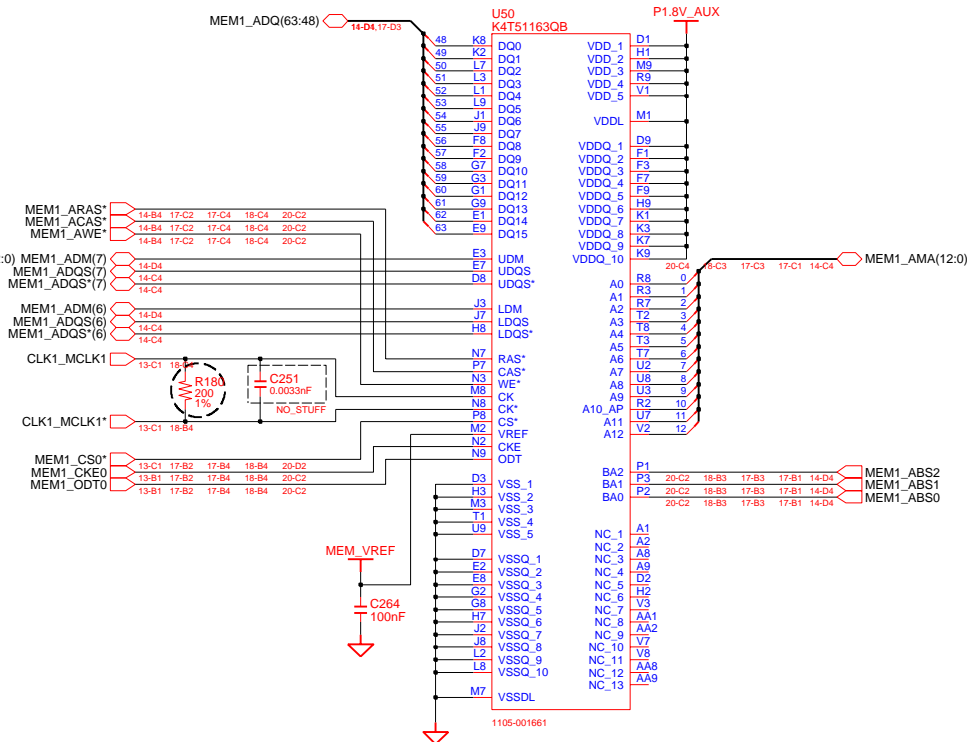
DDR2 ON BOARD MEMORY

- 1Gbit DDR2-667MHz x16 I/O
- SAMSUNG: K4T1G044QA-ZCE6
- 1Gbit DDR2-533MHz x16 I/O
- SAMSUNG: K4T1G044QA-ZCD5
- INFINEON: HYB18T1G160AF-3.7

D2

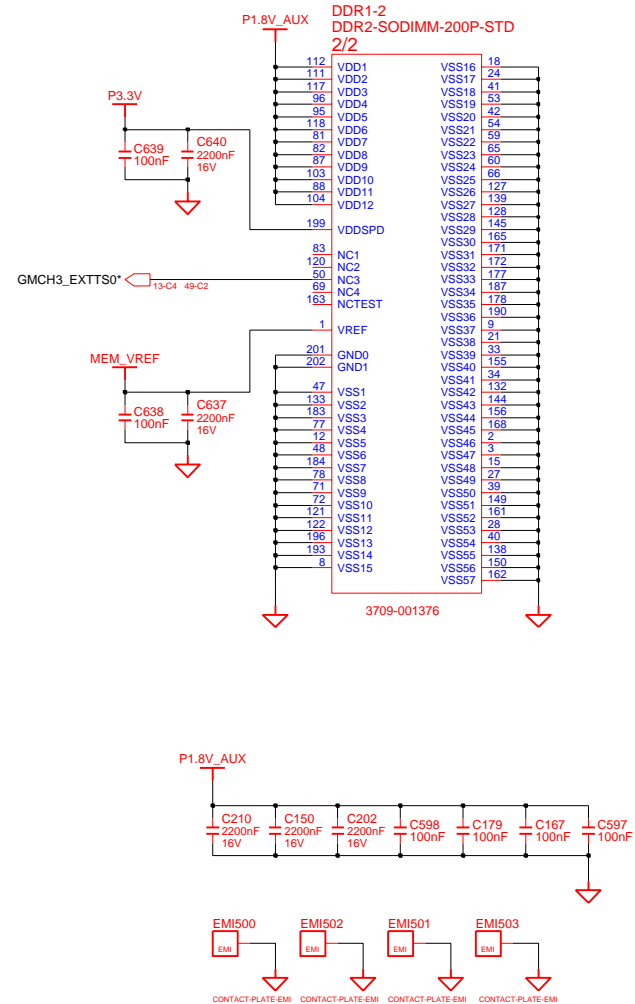
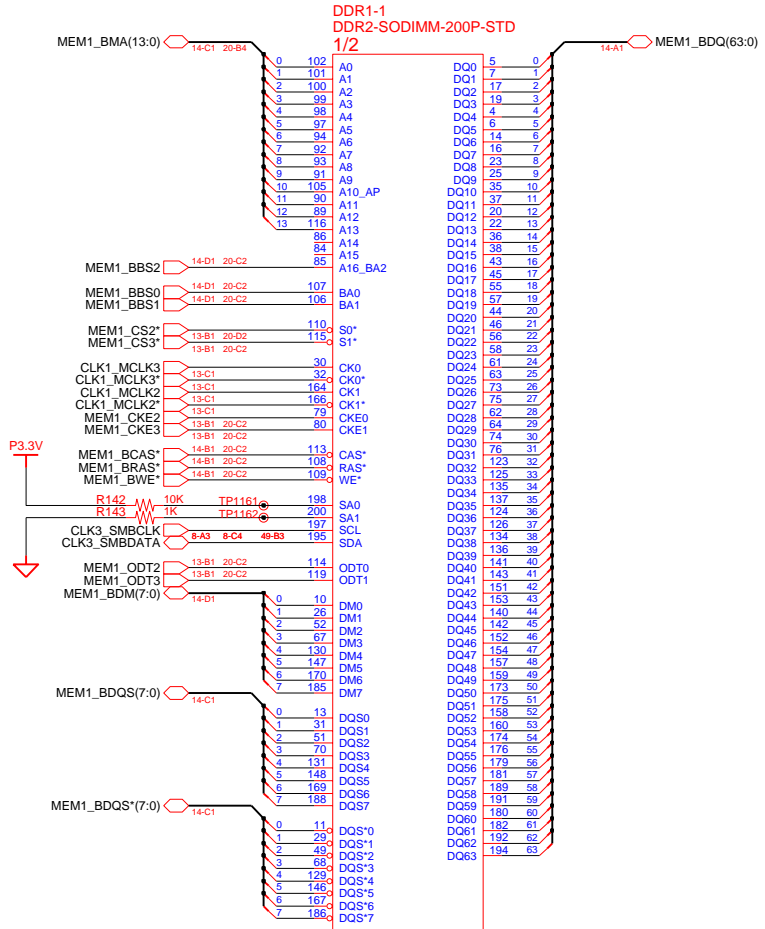


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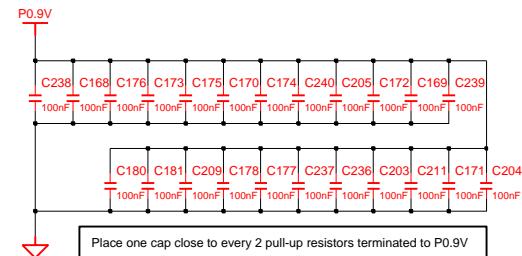
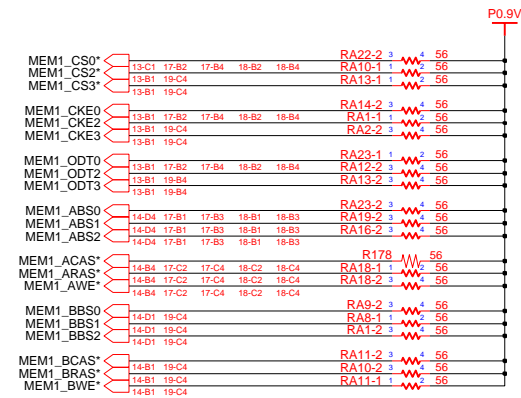
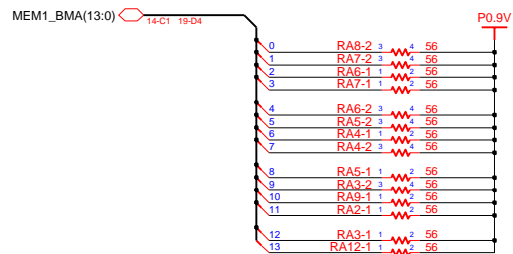
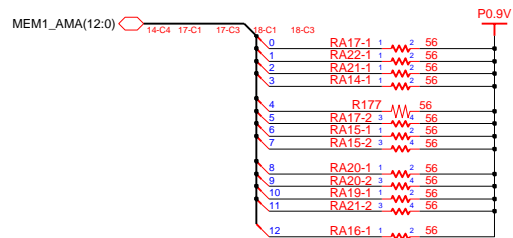
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APPROVAL	KEVIN LEE	REV	1.0	ON B'D MEMORY(2)		
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APPROVAL	KEVIN LEE	REV	1.0	DDR2 SODIMM SOCKET	PART NO. BA41-00602A/3A	
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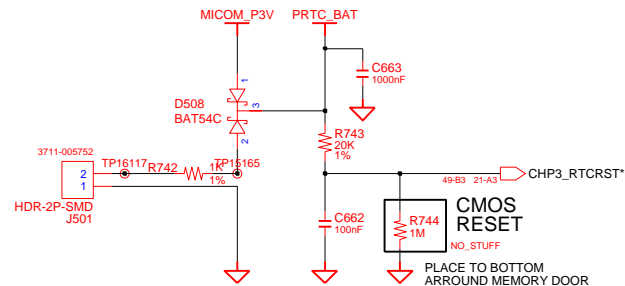


DRAW	ZHOU JUN	DATE		TITLE	TORINO MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	MP			
APPROVAL	KEVIN LEE	REV	1.0	DDR2 TERMINATION		PART NO. BA41-00602A/3A
MODULE CODE		LAST EDIT				PAGE 20 OF 50

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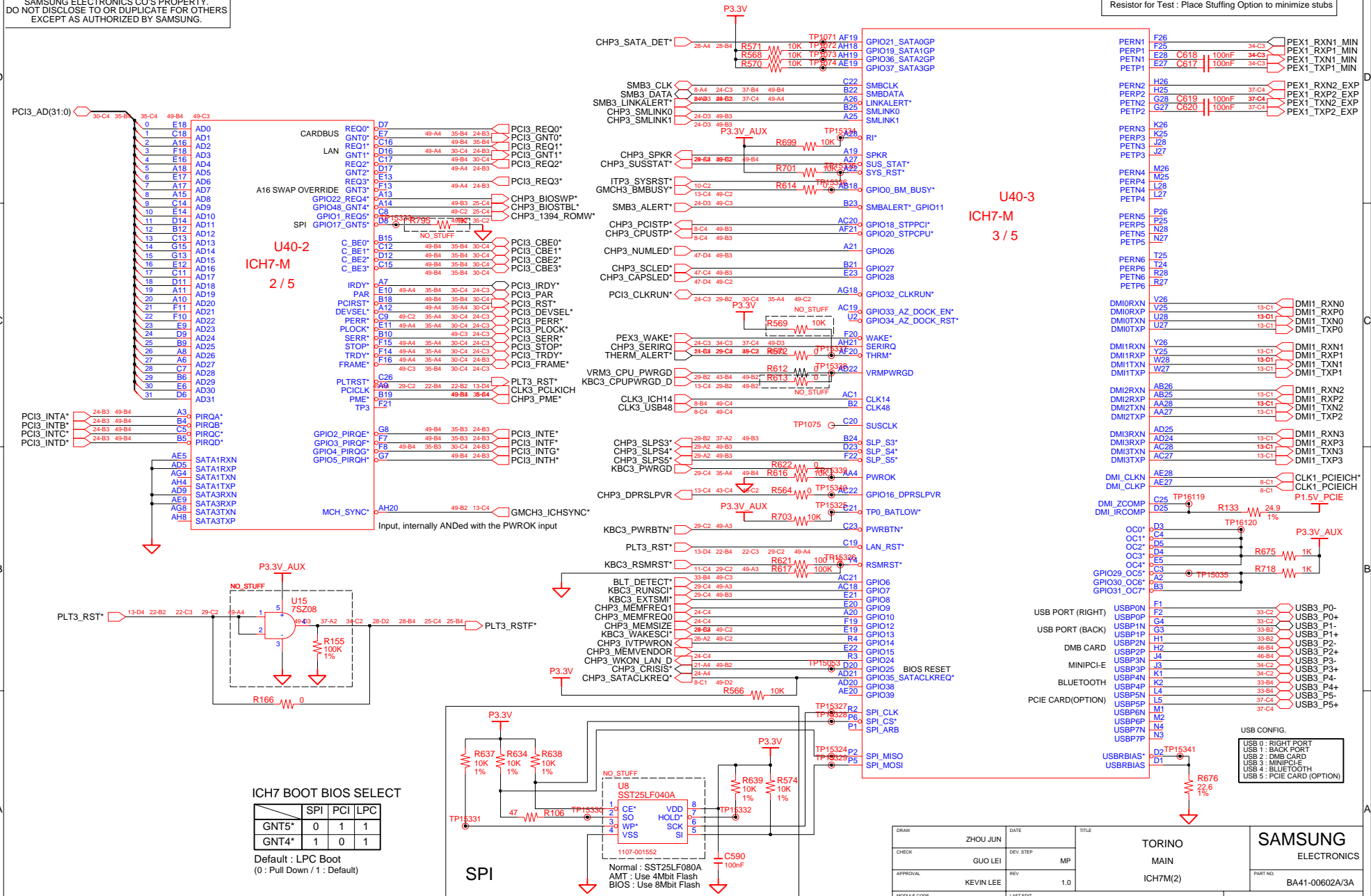
**Note

Internal VR Strap	
Enable	Pull up (VccSus1_05 : NC)
Disable	Pull down



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AC caps : PCIE need to be within 250mils of the driver
Resistor for Test : Place Stufing Option to minimize stufs



[illegible]

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U40-4
ICH7-M
4 / 5

Pin List:

- AD17: V5REF_1
- G10: V5REF_2
- F6: V5REF_SUS
- AA22: VCC1_5_B_1
- AA23: VCC1_5_B_2
- AB22: VCC1_5_B_3
- AB23: VCC1_5_B_4
- AC23: VCC1_5_B_5
- AC24: VCC1_5_B_6
- AC25: VCC1_5_B_7
- AC26: VCC1_5_B_8
- AD26: VCC1_5_B_9
- AD27: VCC1_5_B_10
- AD28: VCC1_5_B_11
- D26: VCC1_5_B_12
- D27: VCC1_5_B_13
- D28: VCC1_5_B_14
- E24: VCC1_5_B_15
- E25: VCC1_5_B_16
- E26: VCC1_5_B_17
- F23: VCC1_5_B_18
- F24: VCC1_5_B_19
- G22: VCC1_5_B_20
- G23: VCC1_5_B_21
- H22: VCC1_5_B_22
- H23: VCC1_5_B_23
- J22: VCC1_5_B_24
- J23: VCC1_5_B_25
- K22: VCC1_5_B_26
- K23: VCC1_5_B_27
- L22: VCC1_5_B_28
- L23: VCC1_5_B_29
- M22: VCC1_5_B_30
- M23: VCC1_5_B_31
- N22: VCC1_5_B_32
- N23: VCC1_5_B_33
- P22: VCC1_5_B_34
- P23: VCC1_5_B_35
- R23: VCC1_5_B_36
- R24: VCC1_5_B_37
- R25: VCC1_5_B_38
- R26: VCC1_5_B_39
- T22: VCC1_5_B_40
- T23: VCC1_5_B_41
- T24: VCC1_5_B_42
- T25: VCC1_5_B_43
- T26: VCC1_5_B_44
- T27: VCC1_5_B_45
- U22: VCC1_5_B_46
- U23: VCC1_5_B_47
- V22: VCC1_5_B_48
- V23: VCC1_5_B_49
- W22: VCC1_5_B_50
- W23: VCC1_5_B_51
- Y22: VCC1_5_B_52
- Y23: VCC1_5_B_53
- A5: VCC3_3_1
- AG28: VCCDMIPLL
- A1: VCC1_5_A_1
- AB10: VCC1_5_A_2
- AB17: VCC1_5_A_3
- AB7: VCC1_5_A_4
- AB8: VCC1_5_A_5
- AB9: VCC1_5_A_6
- AC10: VCC1_5_A_7
- AC17: VCC1_5_A_8
- AC6: VCC1_5_A_9
- AD2: VCCSATAPLL
- AA7: VCC3_3_2
- AC7: VCC1_5_A_10
- AC8: VCC1_5_A_11
- AD10: VCC1_5_A_12
- AD6: VCC1_5_A_13
- AE10: VCC1_5_A_14
- AE6: VCC1_5_A_15
- AF10: VCC1_5_A_16
- AF5: VCC1_5_A_17
- AF6: VCC1_5_A_18
- P7: VCCSUS3_3_19
- C1: VCCUSBPLL
- AA2: VCCSUS1_05_VCCLAN1_05_1
- Y7: VCCSUS1_05_VCCLAN1_05_2
- VCC1_05_1: L11
- VCC1_05_2: L12
- VCC1_05_3: L14
- VCC1_05_4: L16
- VCC1_05_5: L17
- VCC1_05_6: L18
- VCC1_05_7: M18
- VCC1_05_8: P11
- VCC1_05_9: P18
- VCC1_05_10: T18
- VCC1_05_11: U11
- VCC1_05_12: U18
- VCC1_05_13: V11
- VCC1_05_14: V12
- VCC1_05_15: V14
- VCC1_05_16: V16
- VCC1_05_17: V17
- VCC1_05_18: V18
- VCCSUS3_3_VCCLAN3_3_1: V1
- VCCSUS3_3_VCCLAN3_3_2: V5
- VCCSUS3_3_VCCLAN3_3_3: W2
- VCCSUS3_3_VCCLAN3_3_4: W7
- VCCSUS3_3_VCCSUSHDA: V1
- VCC3_3_VCCCHDA: V1
- V_CPU_IO_1: AE23
- V_CPU_IO_2: AE26
- V_CPU_IO_3: AH26
- VCC3_3_3: AB12
- VCC3_3_4: AB20
- VCC3_3_5: AC16
- VCC3_3_6: AD13
- VCC3_3_7: AD18
- VCC3_3_8: AG12
- VCC3_3_9: AG19
- VCC3_3_10: AH11
- VCC3_3_11: B13
- VCC3_3_12: B16
- VCC3_3_13: B27
- VCC3_3_14: B7
- VCC3_3_15: C10
- VCC3_3_16: C15
- VCC3_3_17: D15
- VCC3_3_18: F9
- VCC3_3_19: G11
- VCC3_3_20: G12
- VCC3_3_21: G16
- VCCRT0: W5
- VCCSUS3_3_1: A24
- VCCSUS3_3_2: C24
- VCCSUS3_3_3: D19
- VCCSUS3_3_4: D22
- VCCSUS3_3_5: E3
- VCCSUS3_3_6: G19
- VCCSUS3_3_7: K3
- VCCSUS3_3_8: K4
- VCCSUS3_3_9: K5
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- VCCSUS3_3_11: L10
- VCCSUS3_3_12: L2
- VCCSUS3_3_13: L3
- VCCSUS3_3_14: L6
- VCCSUS3_3_15: L7
- VCCSUS3_3_16: M6
- VCCSUS3_3_17: M7
- VCCSUS3_3_18: N7
- VCC1_5_A_19: AF9
- VCC1_5_A_20: AG5
- VCC1_5_A_21: AG9
- VCC1_5_A_22: AH5
- VCC1_5_A_23: AH9
- VCC1_5_A_24: F17
- VCC1_5_A_25: G17
- VCCSUS1_05_1: C28
- VCCSUS1_05_2: G20
- VCCSUS1_05_3: K7
- VCC1_5_A_26: H6
- VCC1_5_A_27: H7
- VCC1_5_A_28: J6
- VCC1_5_A_29: J7
- VCC1_5_A_30: J7

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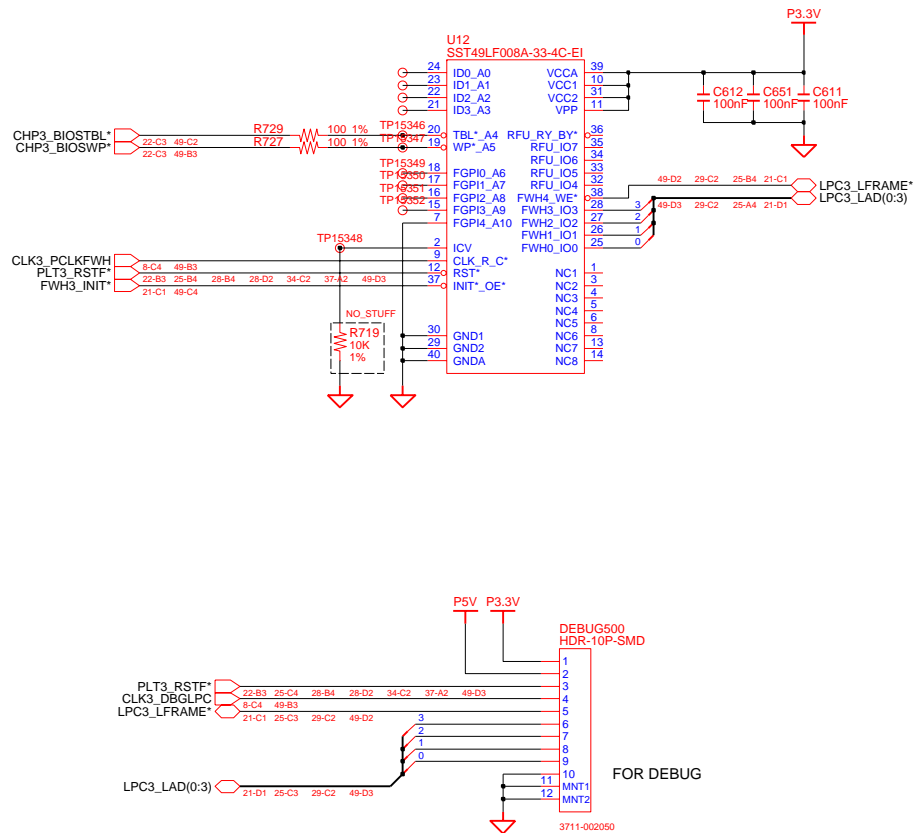
DRAW	DATE	TITLE
ZHOU JUN		TORINO
CHECK	DEV. STEP	MAIN
GUO LEI	MP	ICH7M(3)
APPROVAL	REV	1.0
KEVIN LEE		
MODULE CODE	LAST EDIT	

Table:

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SAMSUNG
ELECTRONICS
PART NO: BA41-00602A/3A

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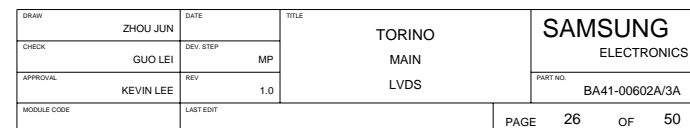
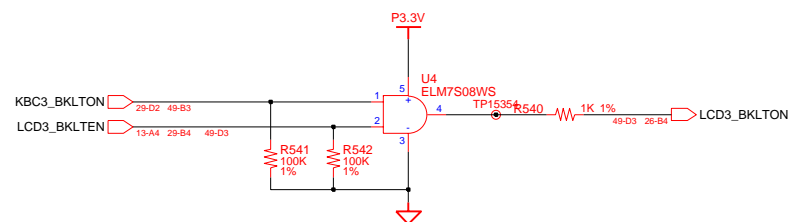


- 02 VERIFY REAL MODE
- 03 DISABLE NMI
- 04 GET CPU TYPE
- 06 INIT. SYSTEM H/W
- 08 INIT. CHIPSET REG.
- 09 SET IN POST FLAG
- 0A INIT CPU.REG
- 0B CPU CACHE ON
- 0C INIT.CACHE TO POST
- 0E INIT. I/O VALUE
- 0F ENABLE THE L-BUS IDE
- 10 INIT. POWER MANAGER
- 11 LOAD ALTERNATE REG.
- 13 PCI BUS MASTER RESET
WITH INITIAL POST VALUE
- 14 INIT. KEYBOARD CONTROLLER
- 16 CHECK CHECKSUM
- 18 8254 TIMER INIT.
- 1A 8237 DMA CONTROLLER INIT.
- 1C RESET INTERRUPT CONTROLLER
- 20 TEST DRAM REFRESH
- 22 TEST 8742 KEYBOARD CONTROLLER
- 24 SET ES SEGMENT REG. TO 4GB
- 26 ENABLE A20
- 28 AUTO SIZING DRAM
- 32 COMPUTE THE CPU SPEED
- 34 TESET CMOS RAM
- 38 SHADOW SYSTEM BIOS ROM
- 3A AUTO SIZING CACHE
- 3C CONFIGURE ADVANCED CHIPSET REG.
- 3D LOAD ALTER REG. WITH CMOS VALUE
- 42 INIT. INTERRUPT VECTOR
- 44 INIT. BIOS INTERRUPT
- 46 CHECK ROM COPYRIGHT NOTICE
- 47 INIT. I20 SUPPORT IF INSTALLED
- 48 CHECK VIDEO CONFIGURE AGAINST CMOS
- 49 INIT. PCI BUS AND DEVICE
- 4A INIT. ALL VIDEO BIOS ROM
- 4C SHADOW VIDEO BIOS ROM
- 50 DISPLAY CPU TYPE AND SPEED
- 52 TEST KEYBOARD
- 54 SET KEYCLICK IF ENABLED
- 56 ENABLE KEYBOARD
- 58 TEST FOR UNEXPECTED INTERRUPTS
- 5A DISPLAY " PRESS SETUP"
- 5C TEST RAM BETWEEN 512K AND 640K
- 60 TEST EXTENDED MEMORY
- 62 TEST EXTENDED MEMORY ADDRESS LINE
- 64 JUMP TO USER PATCH 1

- 66 CONFIGURE ADVANCE CACHE REG.
- 6A DISPLAY EXTERNAL CACHE SIZE
- 6C DISPLAY SHADOW MESSAGE
- 6E DISPLAY NON-DISPOSABLE SEGMENT
- 70 DISPLAY ERROR MESSAGE
- 72 CHECK FOR CONFIGURATION ERROR
- 74 TEST REAL-TIME CLOCK
- 76 CHECK FOR KEYBOARD EERROR
- 7C SETUP HARDWARE INTERRUPT VECTOR
- 7E TEST COPROCESSER IF PRESENT
- 80 DISABLE ON-BOARD I/O PORT
- 82 DETECT AND INSTALL EXT.RS232C
- 84 DETECT AND INSTALL EXT.PARALLEL
- 86 RE-INIT. ON-BOARD I/O PORT
- 88 INIT. BIOS DATA ROM
- 8A INIT.EXTENDED BIOS DATA AREA
- 8C INIT. FDD CONTROLLER
- 9A SHADOW OPTION ROMS
- 9C SETUP POWER MANAGEMENT
- 9E ENABLE H/W INTERRUPT
- A0 SET TIME OF DAY
- A4 INIT. TYPEMATIC RATE
- A8 ERASE F2 PROMPT
- AA SCAN FOR F2 KEY STROKE
- AC ENTER SETUP
- AE CLEAR IN POST FLAG
- B0 CHECK FOR ERRORS
- B2 POST DONE-PREPARE TO BOOT O/S
- B4 ONE BEEP
- B6 CHECK PASSWORD (OPTION)
- B7 ACPI INIT
- BA DMI INIT
- BE CLEAR SCREEN
- C0 TRY BOOT WITH INT19
- D0 INTERRUPT HANDLER ERROR
- D2 UNKNOWN INTERRUPT ERROR
- D4 PENDING INTERRUPT ERROR
- D6 SHUTDOWN 5
- D8 SHUTDOWN ERROR
- DA EXTENDED BLOCK MOVE
- DC SHUTDOWN 10
- 89 ENABLE NMI
- 90 INIT. HDD CONTROLLER
- 91 INIT. LOCAL BUS HDD CONTROLLER
- 92 JUMP TO USER PATCH 2
- 94 DISABLE A20 ADDRESS LINE
- 96 CLEAR HUGE ES SEGMENT REG.
- 98 SEARCH FOR OPTION ROMS

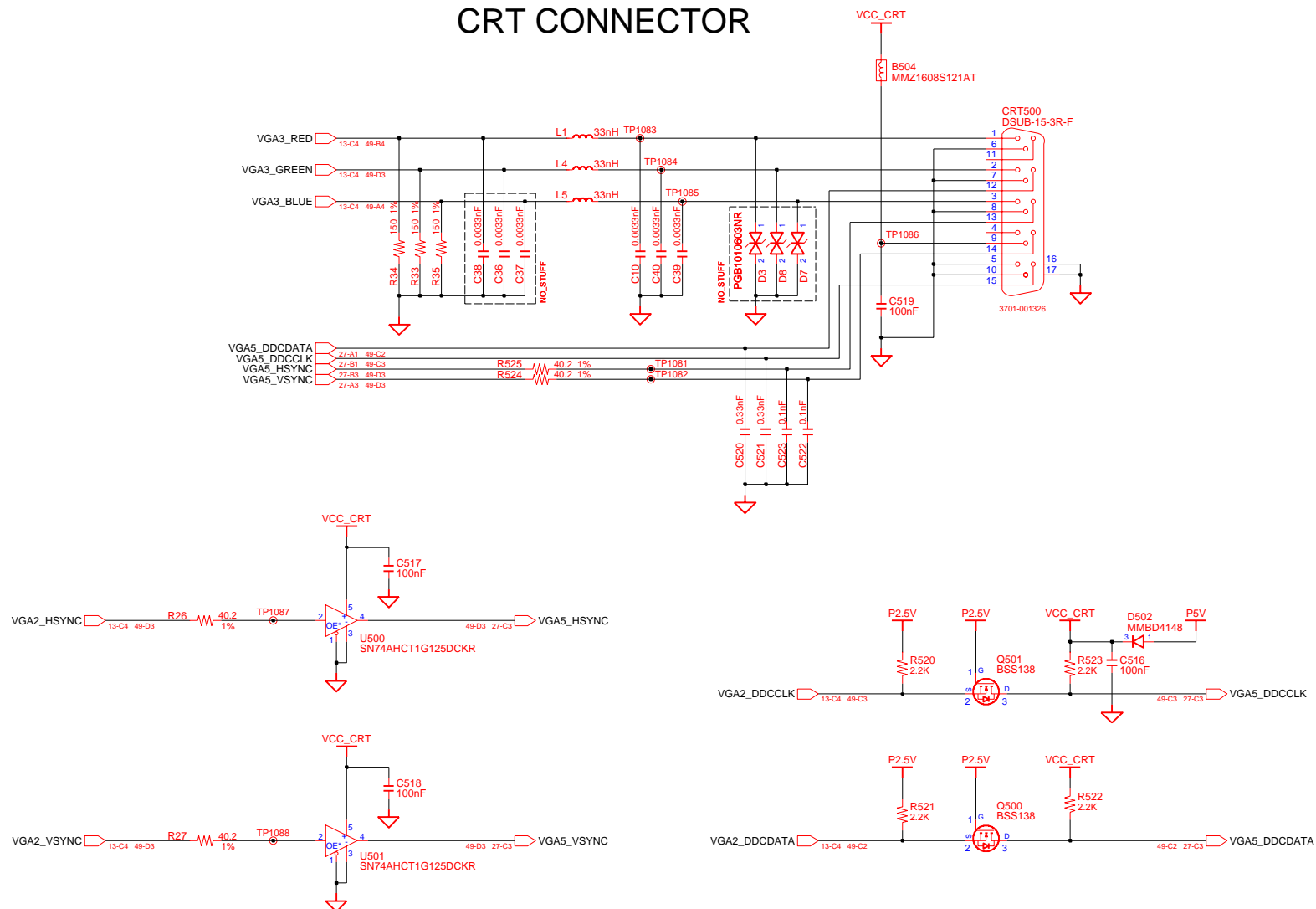
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CHECK	GUO LEI	DEV. STEP	MP		
APPROVAL	KEVIN LEE	REV	1.0		PART NO.
MODULE CODE		LAST EDIT		PAGE	25 OF 50

WXGA LCD CONNECTOR



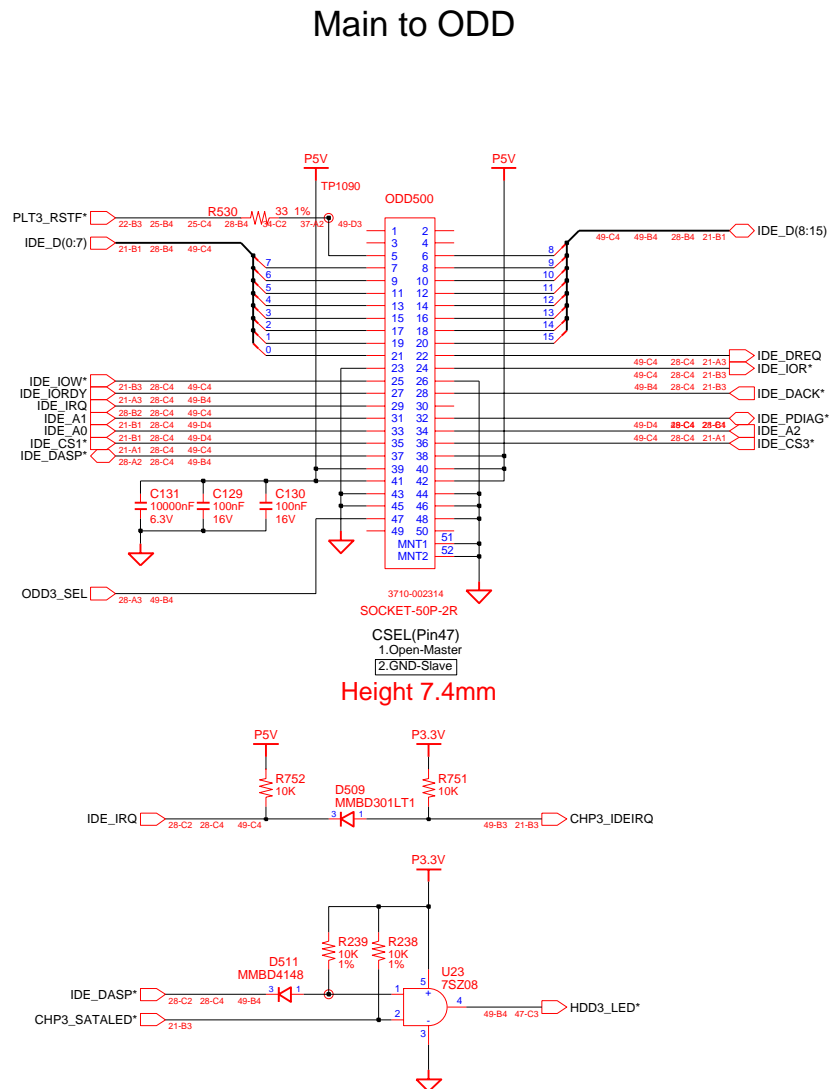
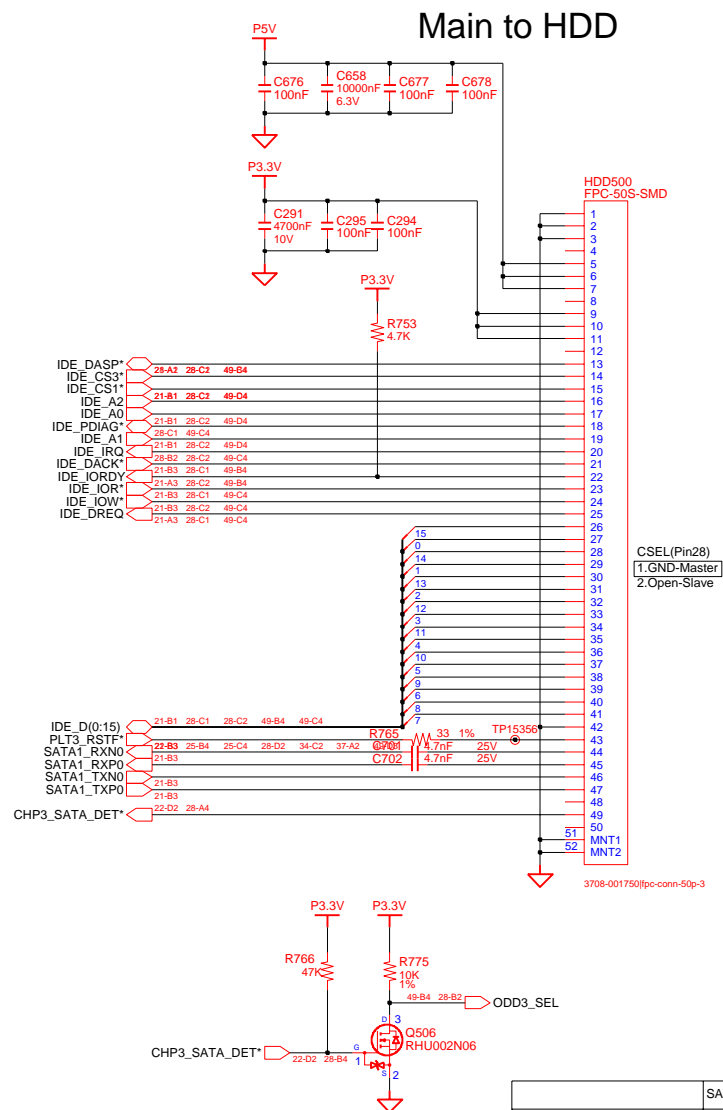
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CRT CONNECTOR



DRAW	ZHOU JUN	DATE		TITLE	TORINO		SAMSUNG	
CHECK	GUO LEI	DEV. STEP	MP		MAIN		ELECTRONICS	
APPROVAL	KEVIN LEE	REV	1.0		CRT		PART NO.	BA41-00602A/3A
MODULE CODE		LAST EDIT					PAGE	27 OF 50

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	SATA_DET*	ODD (IDE)	2nd HDD (IDE)
If SATA Detected	0	CSEL(#47) : Open (Master)	CSEL(#28) : GND (Master)
If SATA not Detected	1	CSEL(#47) : GND (Slave)	CSEL(#28) : Open (Slave)

DRAW	ZHOU JUN	DATE		TITLE	TORINO MAIN IDE	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	MP			PART NO. BA41-00602A/3A
APPROVAL	KEVIN LEE	REV	1.0			PAGE 28 OF 50
MODULE CODE		LAST EDIT				

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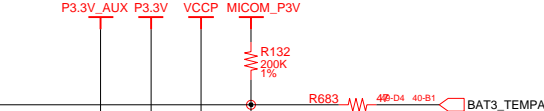
MICOM RESET

MICOM IC
IC: BA09-00009A
U13
H8S/2111B

MICOM SERIAL UPDATE

SOCKET
3704-001155

TEST POINTS
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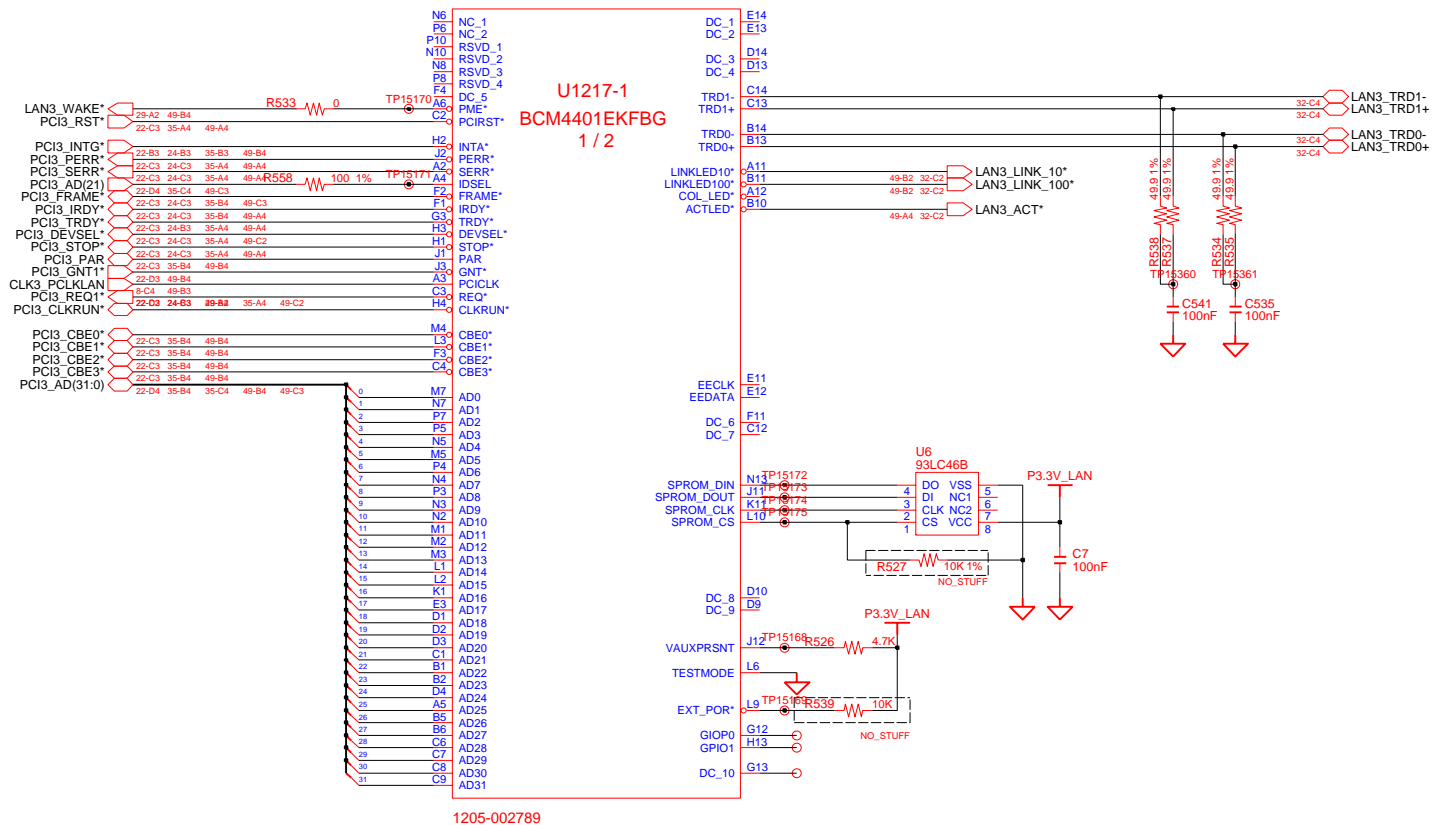


FOR MICOM SERIAL UPDATE

DRAW	ZHOU JUN	DATE	TORINO MAIN MICOM		<div>SAMSUNG</div> <div>ELECTRONICS</div>		
CHECK	GUO LEI	DEV. STEP					MP
APPROVAL	KEVIN LEE	REV					1.0
MODULE CODE		LAST EDIT			PAGE	29 OF 50	

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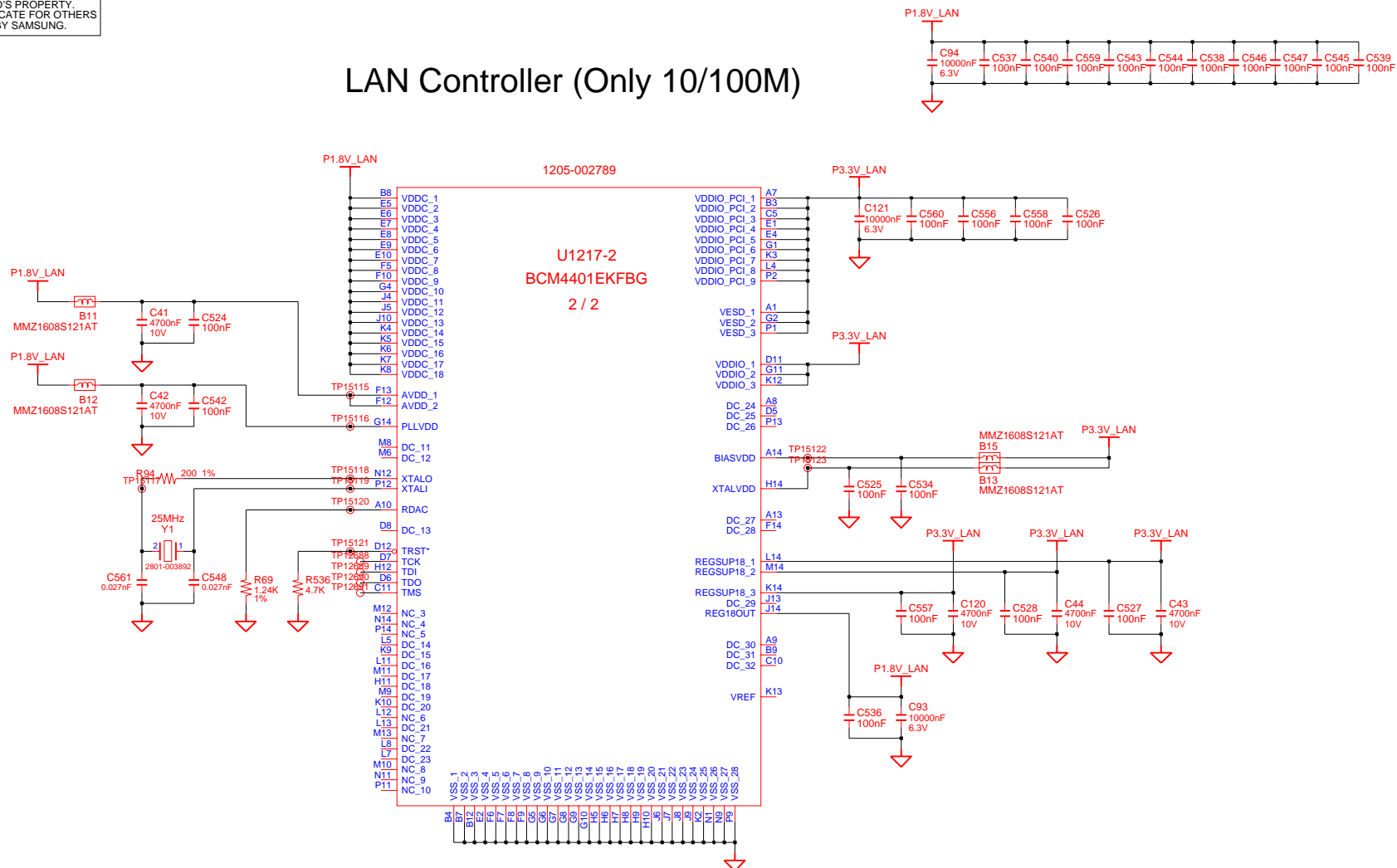
LAN Controller (Only 10/100M)



DRAW	ZHOU JUN	DATE		TITLE	TORINO	SAMSUNG
CHECK	GUO LEI	DEV. STEP	MP	MAIN	MAIN	ELECTRONICS
APPROVAL	KEVIN LEE	REV	1.0	LOM(1)		PART NO.
MODULE CODE		LAST EDIT				BA41-00602A/3A
						PAGE 30 OF 50

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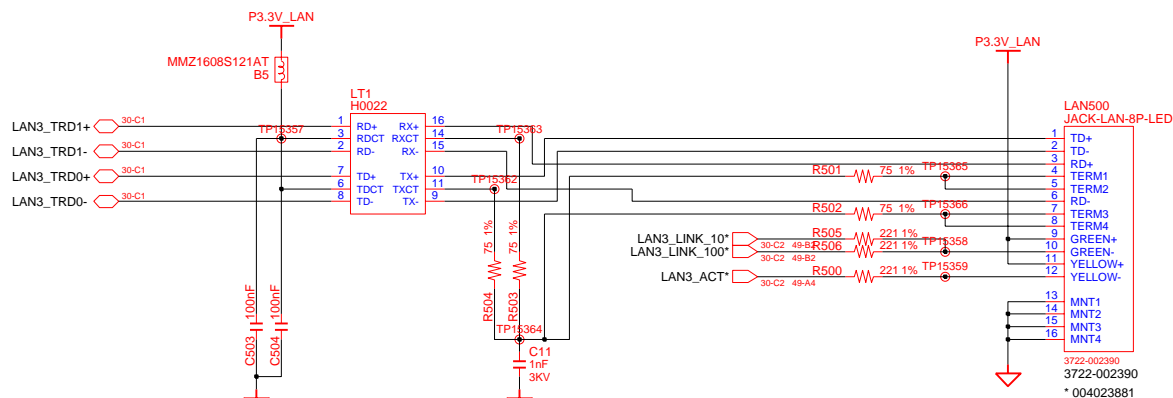
LAN Controller (Only 10/100M)



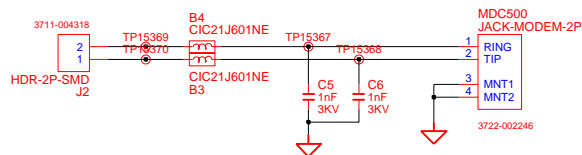
DRAW	ZHOU JUN	DATE		TORINO MAIN LOM(2)	SAMSUNG ELECTRONICS PART NO. BA41-00602A/3A	
CHECK	GUO LEI	DEV. STEP	MP			
APPROVAL	KEVIN LEE	REV	1.0			
MODULE CODE	LAST EDIT				PAGE 31	OF 50

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LAN Connector



MODEM Connector



DRAW	ZHOU JUN	DATE		TITLE	TORINO MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	MP			
APPROVAL	KEVIN LEE	REV	1.0	LAN & MODEM JACK		PART NO. BA41-00602A/3A
MODULE CODE		LAST EDIT				PAGE 32 OF 50

MDC connector



BLUETOOTH
WIRELESS LAN

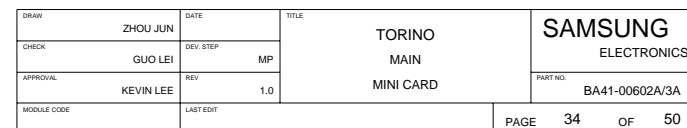
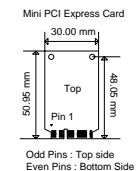
WIRELESS LAN

WIRELESS LAN

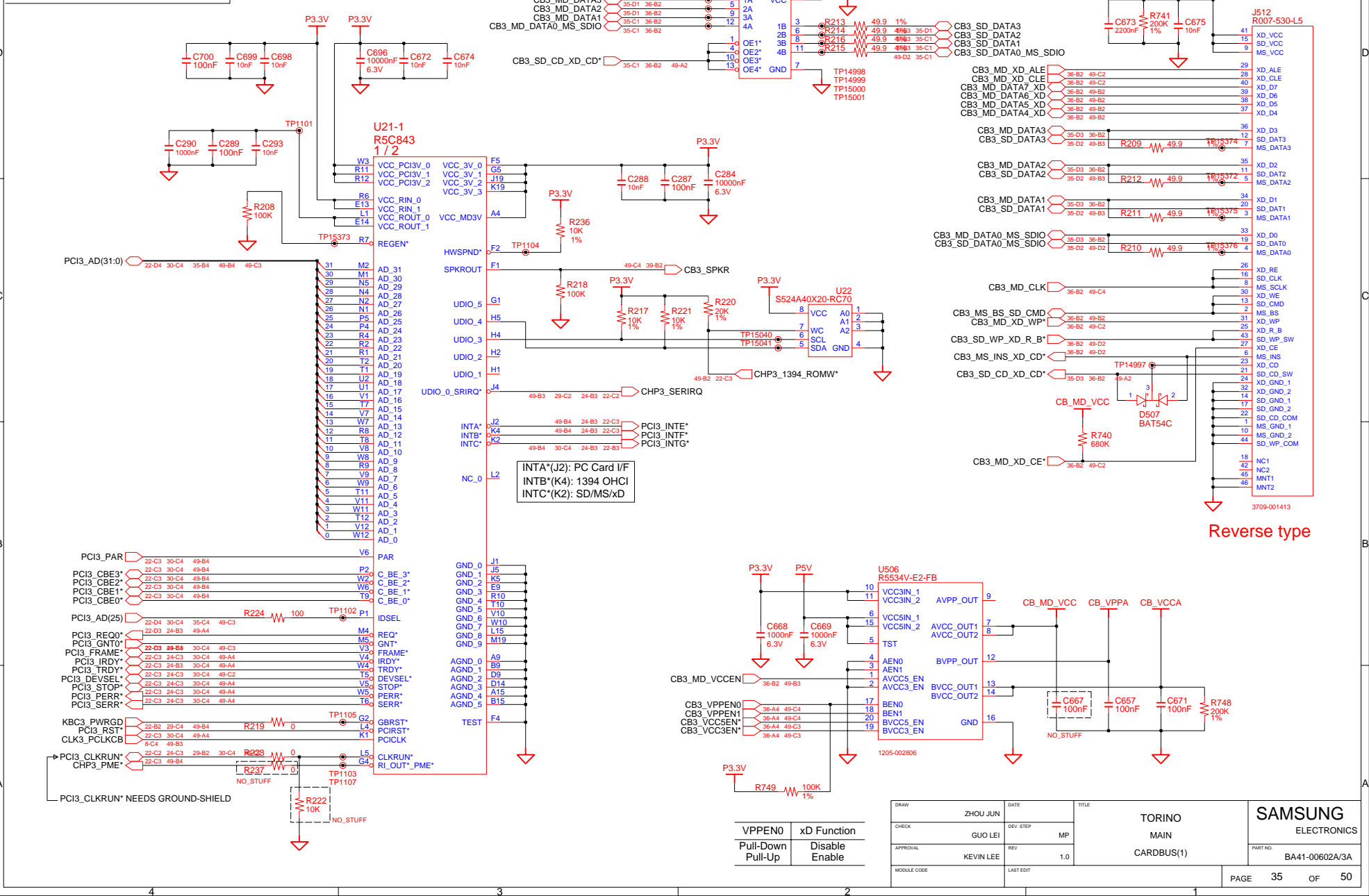
LED

LED

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[illegible]

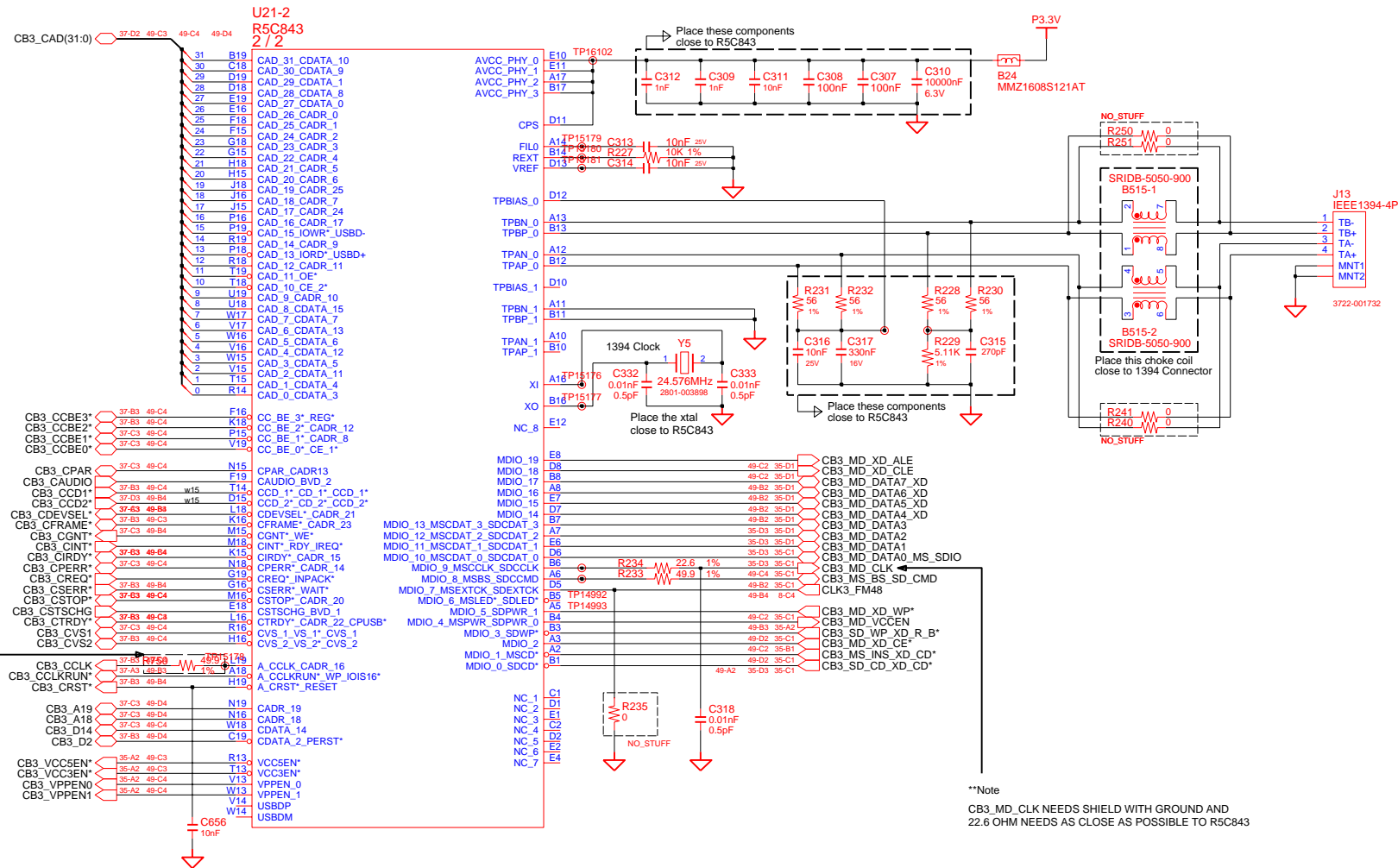
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Reverse type

DRAW	ZHOU JUN	DATE		TITLE	TORINO	SAMSUNG
CHECK	GUO LEI	DEV. STEP	MP	MAIN	CARDBUS(1)	ELECTRONICS
APPROVAL	KEVIN LEE	REV	1.0			PART NO.
MODULE CODE		LAST EDIT				BA41-00602A/3A
						PAGE 35 OF 50

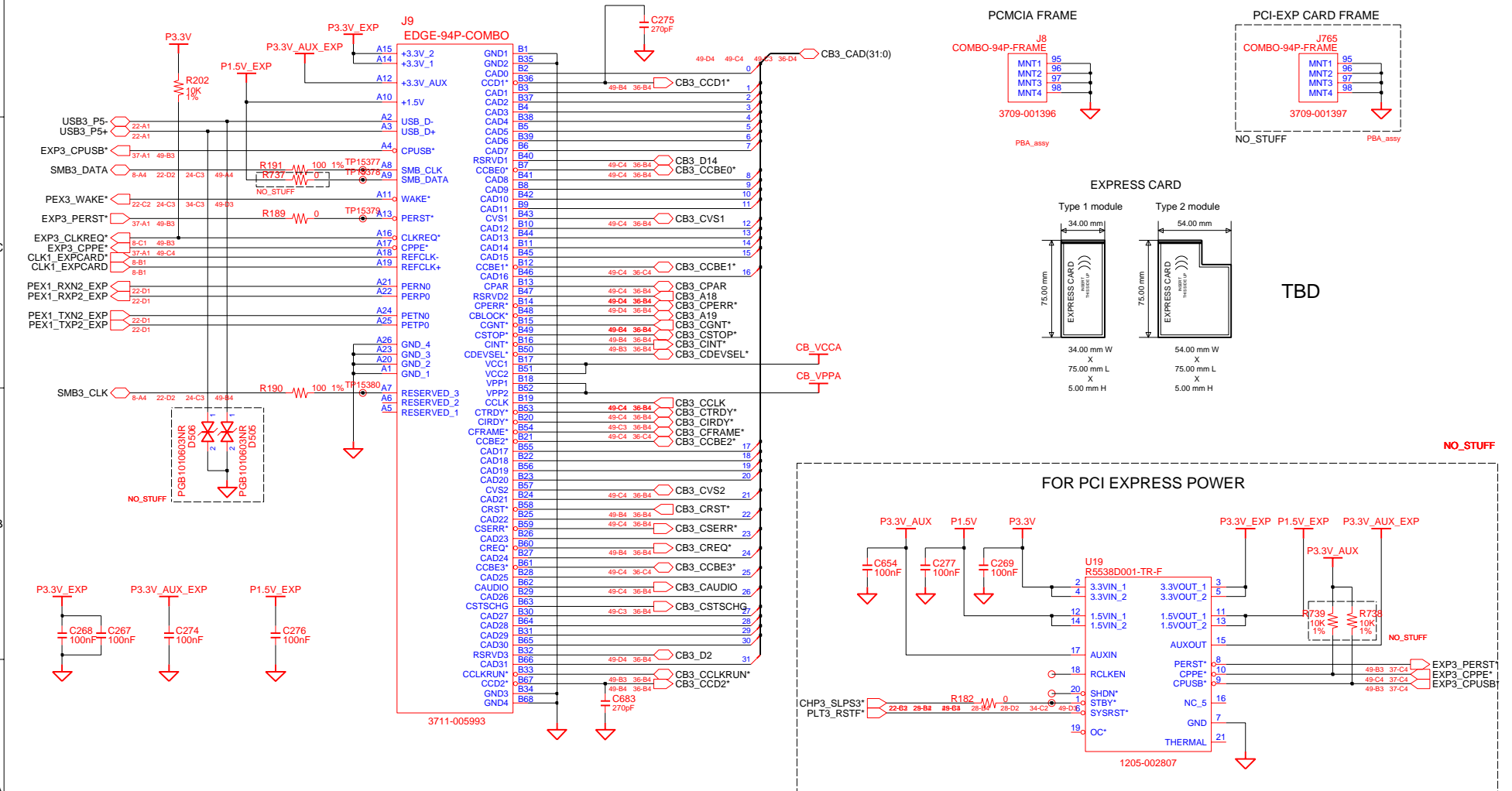
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CB3_CLK NEEDS SHIELD WITH GROUND AND 49.9 OHM NEEDS AS CLOSE AS POSSIBLE TO R5C843

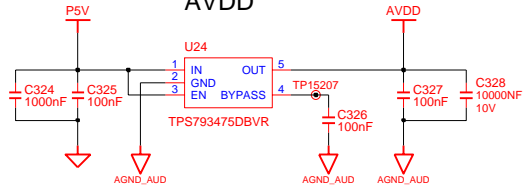
DRAW	ZHOU JUN	DATE		TITLE	TORINO	SAMSUNG
CHECK	GUO LEI	DEV. STEP	MP	MAIN	CARDBUS(2)	ELECTRONICS
APPROVAL	KEVIN LEE	REV	1.0			PART NO.
MODULE CODE		LAST EDIT				BA41-00602A/3A
PAGE 36 OF 50						

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4

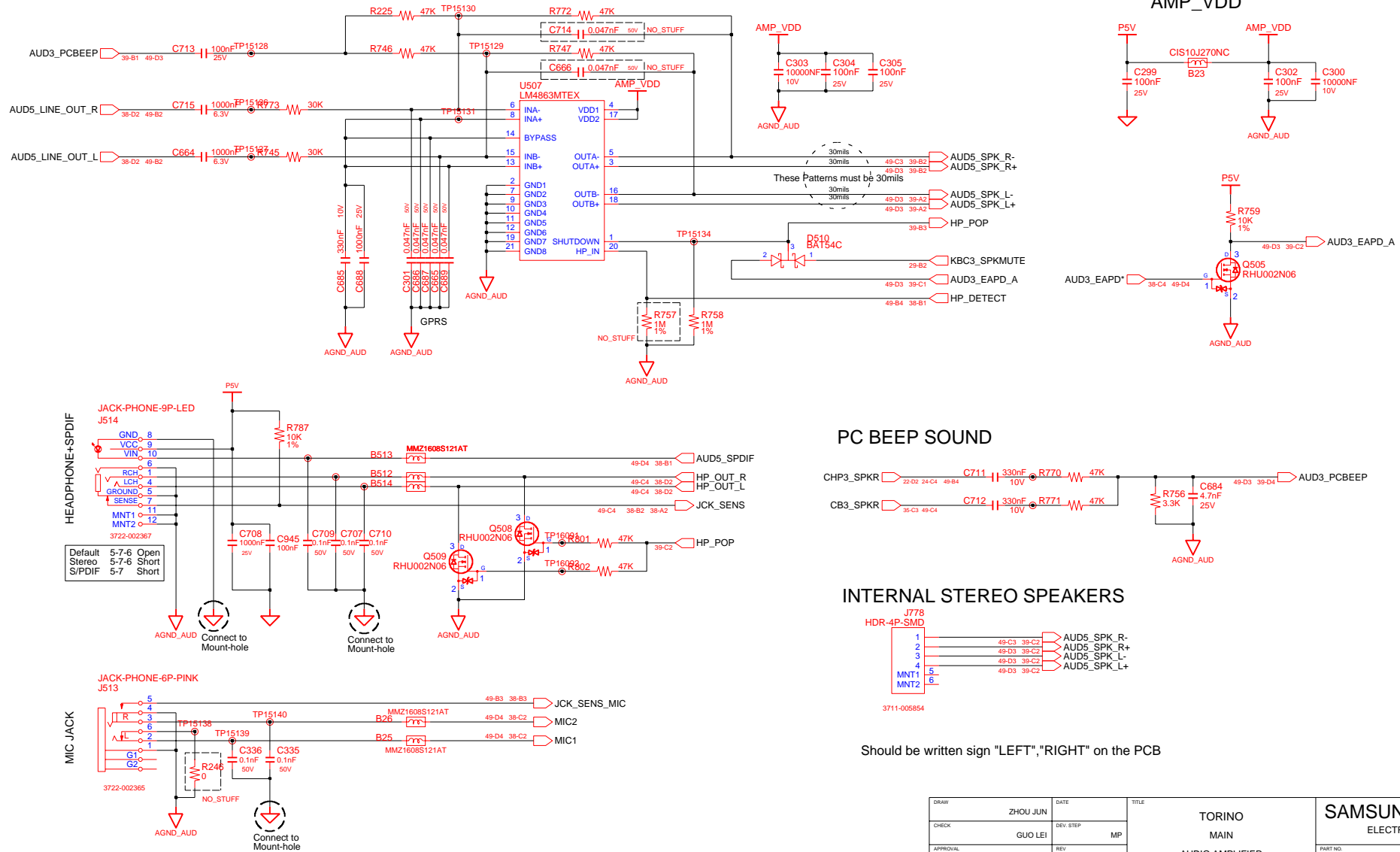
2



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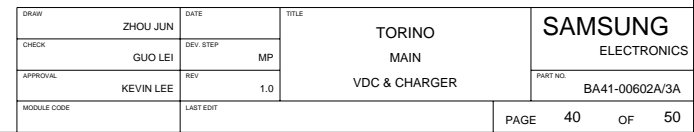
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AUDIO AMP



DRAW	ZHOU JUN	DATE		TITLE	TORINO MAIN AUDIO AMPLIFIER	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	MP			PART NO. BA41-00602A/3A
APPROVAL	KEVIN LEE	REV	1.0			
MODULE CODE		LAST EDIT				PAGE 39 OF 50

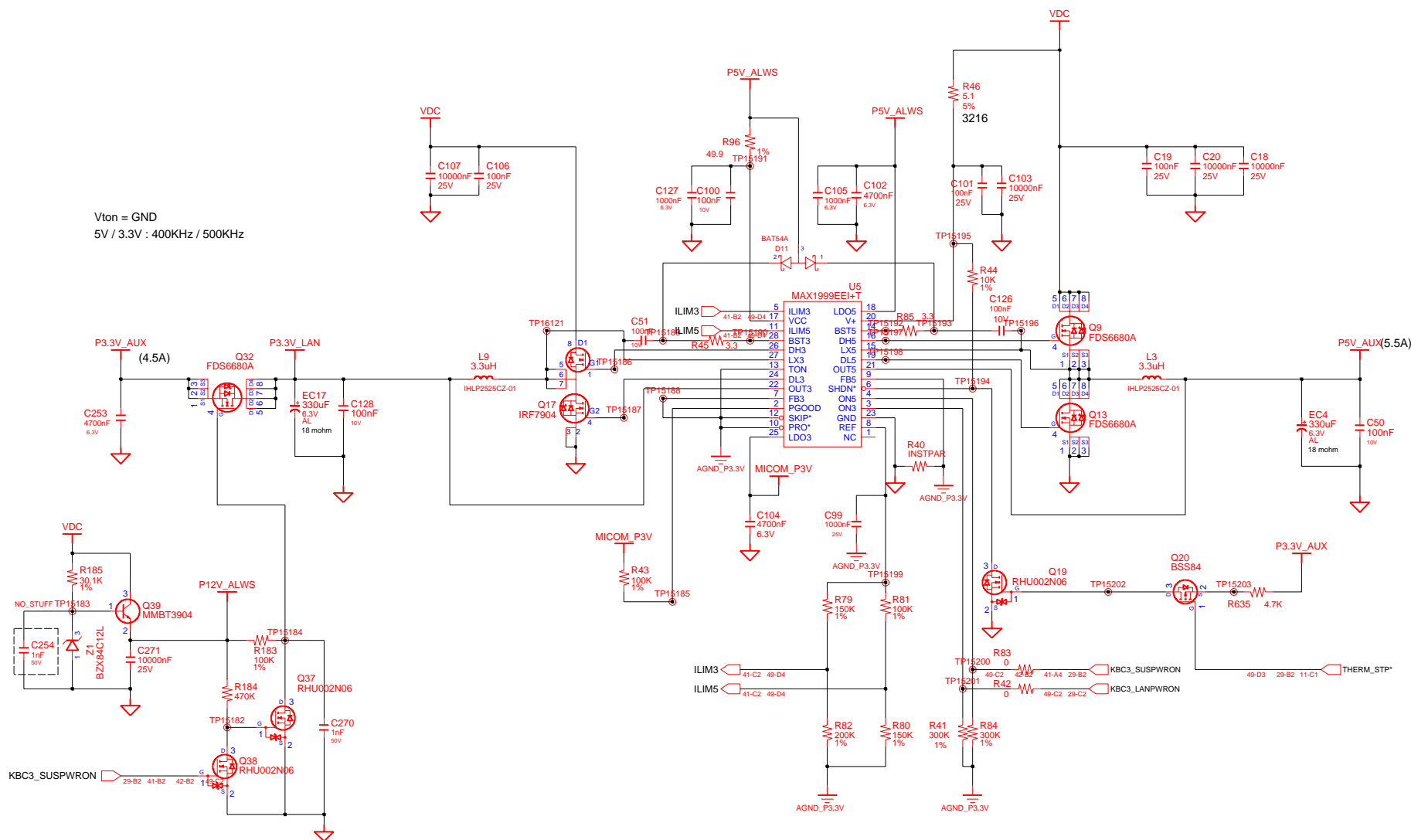
CHARGER & POWER MANAGEMENT



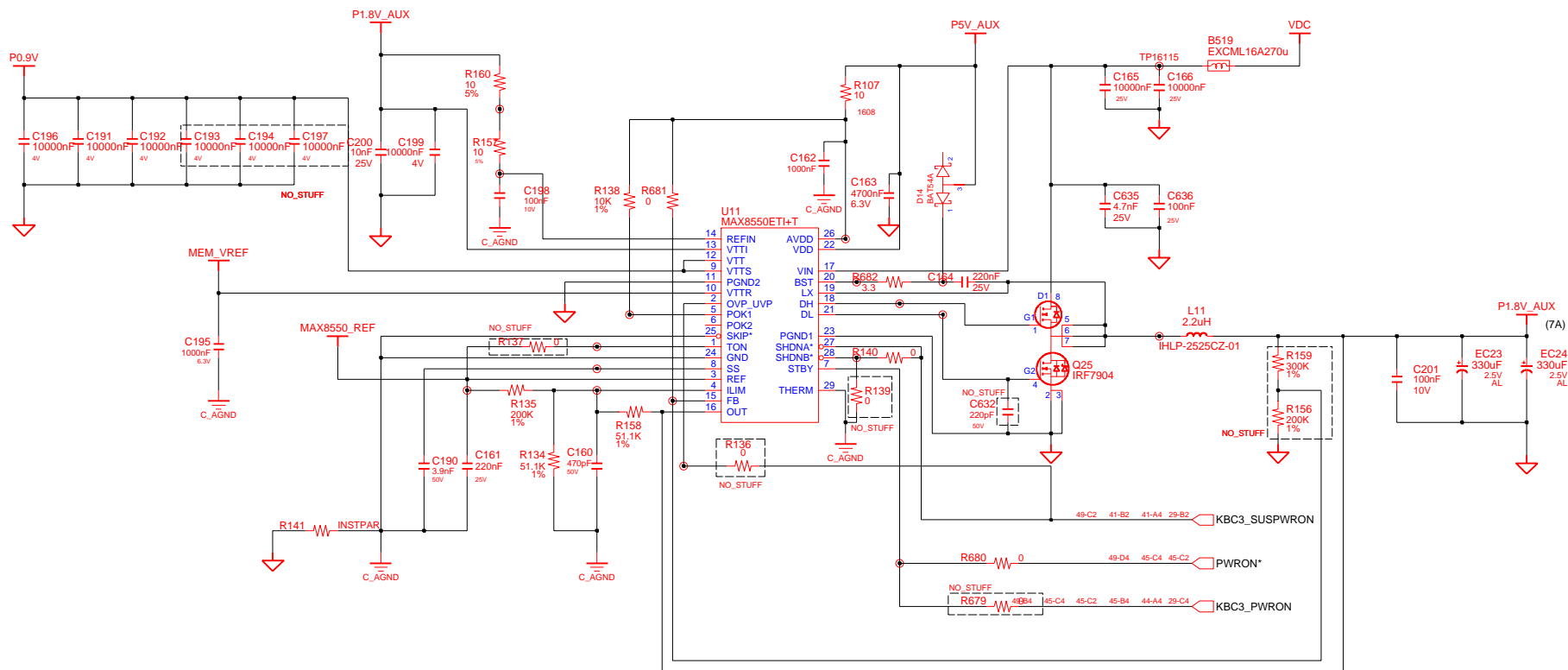
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P5V_AUX & P3.3V_LAN(AUX)

V_{ton} = GND
5V / 3.3V : 400KHz / 500KHz

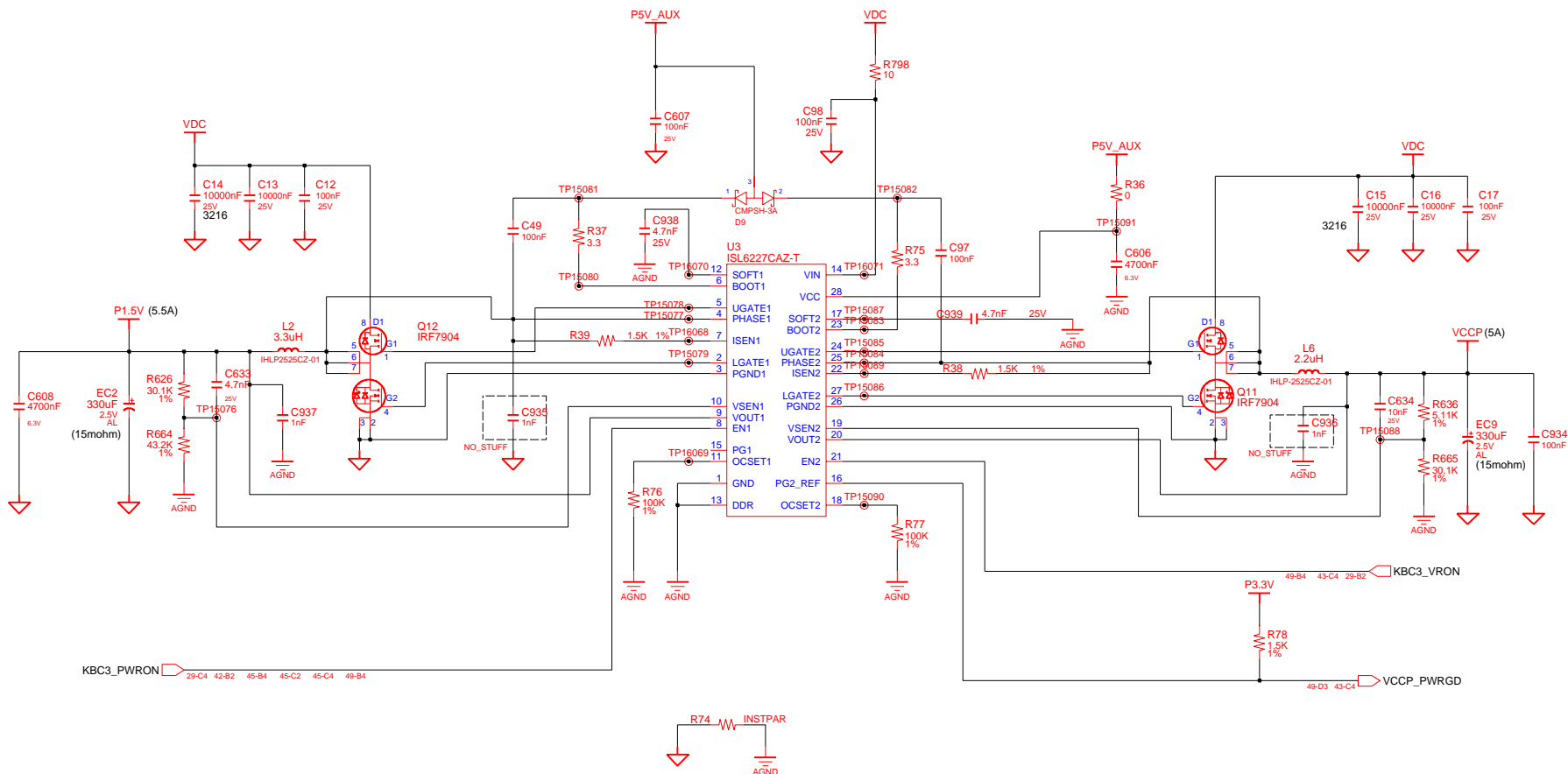


DDR2 POWER



DRAW	ZHOU JUN	DATE		TITLE	TORINO MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	MP			
APPROVAL	KEVIN LEE	REV	1.0		DDR2 POWER	PART NO. BA41-00602A/3A
MODULE CODE		LAST EDIT				PAGE 42 OF 50

P1.5V & VCCP



DRAW	ZHOU JUN	DATE		TITLE	TORINO	SAMSUNG
CHECK	GUO LEI	DEV. STEP	MP	MAIN	ELECTRONICS	
APPROVAL	KEVIN LEE	REV	1.0	P1.5V_AUX & VCCP	PART NO.	BA41-00602A/3A
MODULE CODE		LAST EDIT			PAGE	44 OF 50

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Switched Power On (P5V)

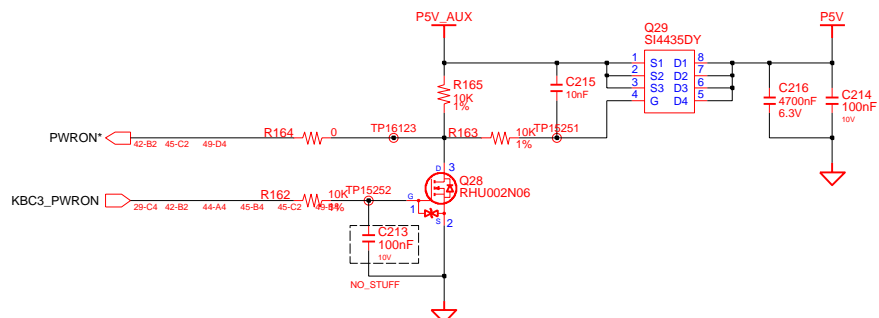
Switched Power On (P3.3V)

Switched Power On (P2.5V)

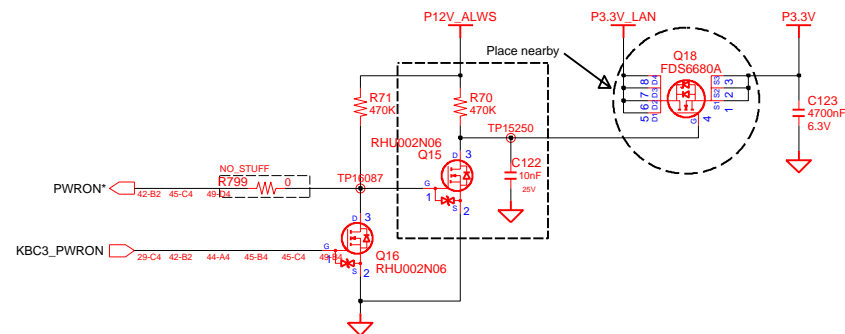
DRAW	ZHOU JUN	DATE	TITLE
CHECK <td>GUO LEI<td>DEV. STEP<td>MP</td></td></td>	GUO LEI <td>DEV. STEP<td>MP</td></td>	DEV. STEP <td>MP</td>	MP
APPROVAL <td>KEVIN LEE<td>REV<td>1.0</td></td></td>	KEVIN LEE <td>REV<td>1.0</td></td>	REV <td>1.0</td>	1.0
MODULE CODE <td colspan="3">LAST EDIT</td>	LAST EDIT		

PART NO.	BA41-00602A/3A
PAGE 45 OF 50	

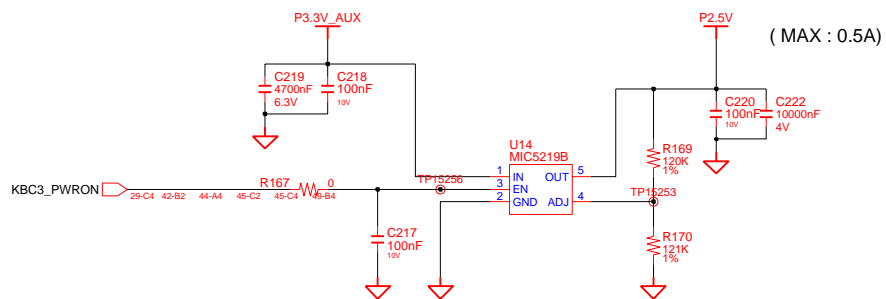
Switched Power On (P5V)



Switched Power On (P3.3V)



Switched Power On (P2.5V)

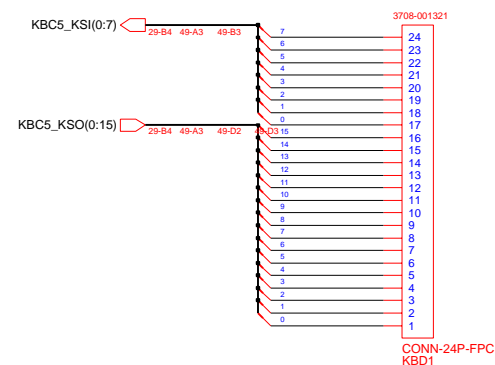


DRAW	ZHOU JUN	DATE		TORINO MAIN SWITCHED POWER	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	MP		
APPROVAL	KEVIN LEE	REV	1.0		BA41-00602A/3A
MODULE CODE		LAST EDIT			PAGE 45 OF 50

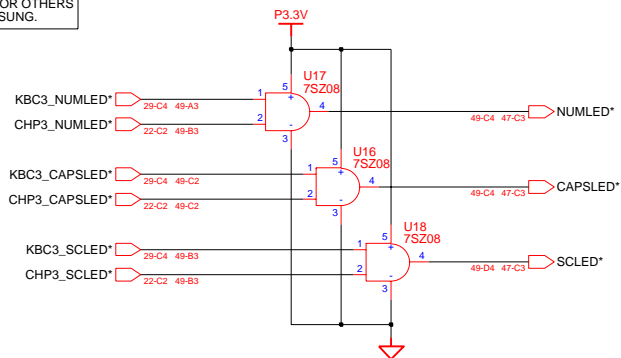
Power Switch Connector



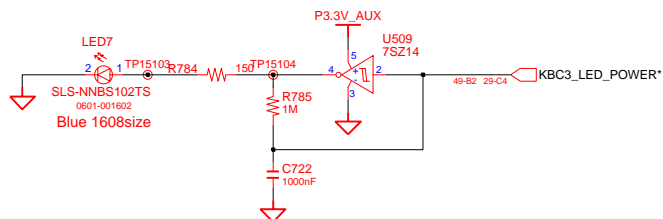
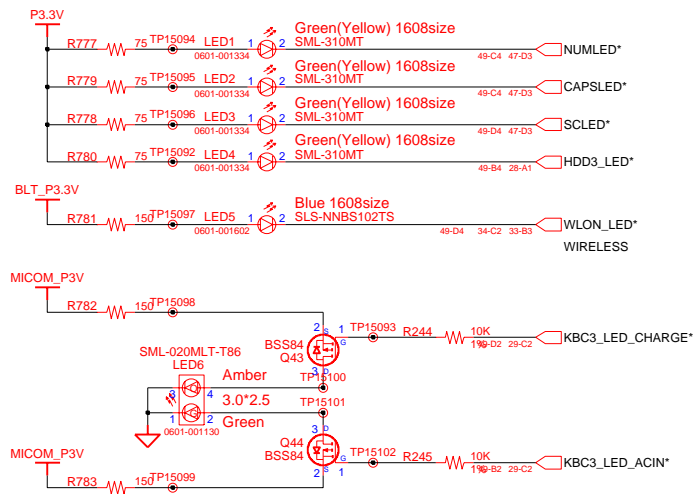
OPTION: DMB INTERFACE



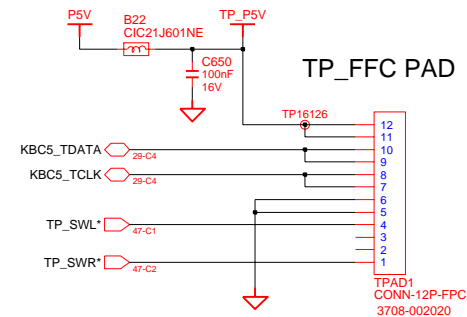
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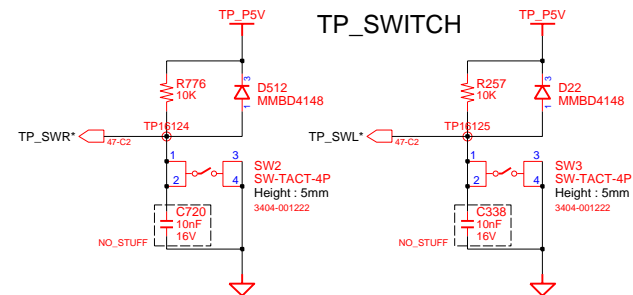
LEDS



TOUCH PAD



TP_SWITCH



* 1608 Size LEDs

0601-001334	Green	C Grade
0601-001602	Blue	C Grade
0601-001784	Yellow	B Grade

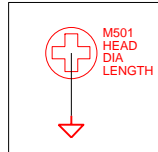
* 3216 Size LEDs

0601-000189	Green	3.2*1.6*1.1
0601-001737	Blue	3.0*1.5*1.4
0601-001130	Amber,Green	3.0*2.5

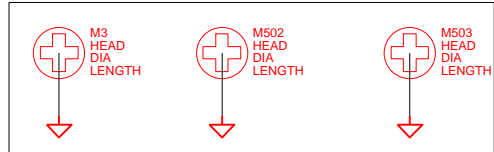
DRAW	ZHOU JUN	DATE		TITLE		TORINO MAIN SUB B'D & LED	SAMSUNG ELECTRONICS PART NO. BA41-00602A/3A
CHECK	GUO LEI	DEV. STEP	MP				
APPROVAL	KEVIN LEE	REV	1.0				
MODULE CODE		LAST EDIT					
PAGE 47 OF 50							

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BLT-NUT



DMB-NUT



MT523
RMNT-25-50-1P



MT2
RMNT-2-5-5.0-1P



MT15
RMNT-2-5-7.0-1P



MT16
RMNT-2-5-7.0-1P



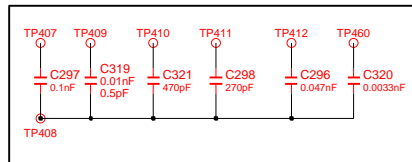
MT18
RMNT-2-5-7.0-1P



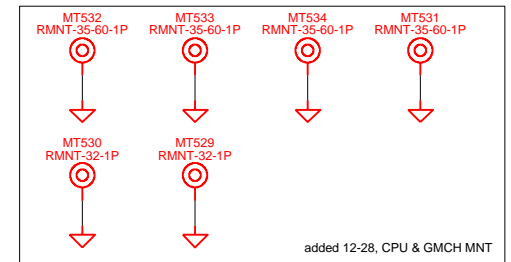
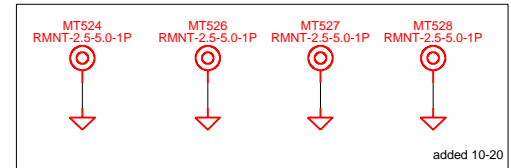
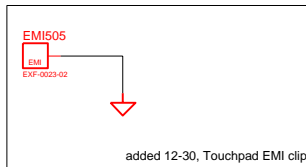
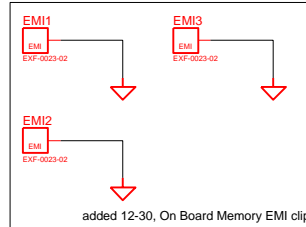
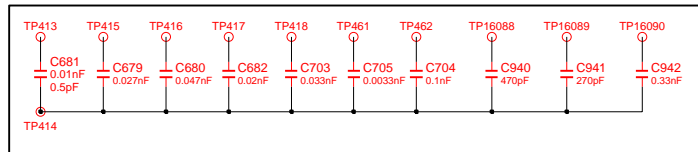
MT19
RMNT-2-5-7.0-1P



1 - 499 SIDE



500 - SIDE



REV1
1 O
2 O O3

PCB REVISION CONTROL (ICT)				
NO	CONNECTION	DATE(Y/M/DD)	REVISION	STEP
1	N.C.			
2	1-2			
3	2-3			
4	3-1			
5	1-2-3			
6	N.C.			
7	1-2			
8	2-3			
9	3-1			
10	1-2-3			

DRAW	ZHOU JUN	DATE		TITLE	TORINO MAIN MOUNT HOLE	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	MP			PART NO. BA41-00602A/3A
APPROVAL	KEVIN LEE	REV	1.0			
MODULE CODE		LAST EDIT				PAGE 48 OF 50

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TP15882/CMC1
TP15883/MC2
TP15884/COEX1
TP15885/COEX2
TP15886/COEX3
TP15887/LIMS
TP15888/CBS_D2
TP15889/DIE_A0
TP15890/DIE_A1
TP15891/DIE_A2
TP15904/'PWCN'
TP15905/'SCLED'
TP15906/CBS_A18
TP15907/CBS_A19
TP15908/CBS_A20
TP15909/DIE_IRQ
TP15910/COEX2
TP15864/NUMLED
TP15865/D023_SEL
TP15866/CAPSLED*
TP15867/COEX3
TP15868/CBS_CPA1
TP15869/CBS_CVS1
TP15870/CBS_CVS2
TP15871/CBS_CPKR
TP15872/CBS_CPS1
TP15873/'HP_OUT_L'
TP15874/'HP_OUT_L'
TP15875/DIE_CS1*
TP15876/DIE_CS3*
TP15877/DIE_CS4*
TP15878/DIE_D1
TP15879/DIE_D2
TP15880/DIE_D3
TP15881/DIE_D4
TP15882/DIE_D5
TP15883/DIE_D6
TP15884/DIE_D7
TP15885/DIE_D8
TP15886/DIE_D9
TP15887/DIE_DREQ
TP15836/DIE_IOR*
TP15837/DIE_IOW*
TP15838/JCK_SSEN
TP15839/DIE_I2C
TP15840/COEX_PARS
TP15841/COEX_CLK
TP15842/VMG3_REL
TP15843/COEX_CD1*
TP15844/COEX_CD2*
TP15845/COEX_CGN*
TP15846/CBS_CINT*
TP15847/CBS_CREQ*
TP15848/CBS_CRSR*
TP15849/CBS_CRS2*
TP15814/CHP3_SPT1
TP15815/CLK1_SMT4
TP15816/CLK1_FAT8
TP15827/DHDD_LED
TP15828/DHDD1_LED*
TP15829/DHDD2_LED*
TP15799/DIE_D11
TP15800/DIE_D12
TP15801/DIE_D13
TP15802/DIE_D14
TP15803/DIE_D15
TP15804/DIE_DACK*
TP15805/DIE_DASP*
TP15806/DIE_IORDY
TP15807/DIE_IOWD*
TP15808/KBC3_RST1
TP15809/KBC3_VRON
TP15810/LAN3_ACT
TP15812/PCG3_RST1
TP15813/PCG3_RST2
TP15820/CPU1_INTR
TP15821/CPU1_SLP
TP15825/CPU1_SLP*
TP15826/CPU1_SLP*
TP15827/CPU1_SLP*
TP15828/CPU1_SLP*
TP15829/CPU1_SLP*

[illegible][illegible][illegible]

TP15417 KCBS_KSO121
TP15418 KCBS_KSO121
TP15419 KCBS_KSO121
TP15386 KCBS_KSO124
TP15387 KCBS_KSO124
TP15391 LOD3_SWITCH*
TP15392 LPC3_FRAME*
TP15393 MCH3_CG101
TP15394 MCH3_CG110
TP15395 MCH3_CG121
TP15396 MCH3_CG131
TP15397 MCH3_CG136
TP15398 MCH3_CG139
TP15399 MCH3_CG120
TP15400 MCH3_CG120*
TP15519 PO33_CKLVN*
TP15518 PO33_DEVEL*
TP15517 THERM_ALERT*
TP15516 VAGER_DCCDATA
TP15515 VAGER_DCCDATA
TP15514 CB3_MD_XL_ALE
TP15513 CB3_MD_XL_CE*
TP15512 CB3_MD_XL_CLE
TP15511 CB3_MD_XL_WIP
TP15510 CB3_MD_XL_WIP*
TP15509 CHP3_CAPLES*
TP15508 CHP3_DRPDLPLVR
TP15507 CHP3_VTPPWRN*
TP15506 CHP3_SUBSTAT*
TP15505 CHP3_VTPPWRN*
TP15490 CPU1_PVRGDCPU
TP15491 CPU1_VCCSSNE
TP15492 CPU1_VSSSNE
TP15493 GMCH1_HXWSNG
TP15494 GMCH1_HXWSNG
TP15495 GMCH3_CKBS*
TP15496 GMCH3_CMBR9Y
TP15497 GMCH3_EXTT50*
TP15498 KCBS_CKPCWPN*
TP15499 KCBS_CKPCWPN*
TP15500 KCBS_SWPWRN*
TP15501 KCBS_WAKESCI*
TP15502 KCBS_WKON_LAN
TP15503 LOD3_KCS
TP15504 LOD3_KCS_CTLR
TP15505 LOD3_EID_CLK
TP15481 AUDS_SPIOF_OUT
TP15476 KCBS_PCKMCHIN*
TP15475 KCBS_PCKMCHIN*
TP15474 GMCH3_IJCYNIC*
TP15473 KCBS_CKHPKRWN*
TP15472 KCBS_LED_ACSN*
TP15471 LOD3_LINK_100*
TP15470 LOD3_LINK_100*
TP15469 VRMS_CPU_PWRGD
TP15468 AUDS_LINE_OUT*
TP15467 AUDS_LINE_OUT_R
TP15466 CB3_MD_DATA_X
TP15465 CB3_MD_DATA_X*
TP15464 CB3_MD_DATA_X
TP15463 CB3_MD_DATA_X
TP15462 CB3_MD_DATA_X
TP15461 CB3_MD_DATA_X
TP15460 CB3_MD_DATA_X
TP15459 CB3_MD_DATA_X
TP15458 CB3_MD_DATA_X
TP15457 CB3_MD_DATA_X
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TP15423 CB3_MD_DATA_X
TP15422 CB3_MD_DATA_X
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TP16060 CHP3, SATCLK_REG
TP16061 KBK3, LED, CHARGE*
TP16062 KBK3, THERM, SMCCLK
TP16063 CBK3, MS, INS, XD, CD*
TP16064 CBK3, MS, WP, XD, R, B*
TP16065 KBK3, THERM, SMDATA
TP16066 MINIPCIS3, CLKREG*
TP16067 CB3, SD, DATAO, MS, SDOIO
TP16068 AGND
TP16069 AGND
TP16070 AMP, VDD
TP16074 AGND, AUD
TP16075 AGND, CHG
TP16076 AGND, CHG
TP16077 AGND, CHG
TP16078 BATT, DC
TP16079 BATT, DC

TP15975 BLT, P3.3V
TP15977 CGND
TP15981 CG, AGND
TP15986 CB, VCCA
TP15991 CB, VPPA
TP16000 CHG, REF
TP15941 CG, M3, VCC
TP15942 INV, VCC
TP15947 LCD, VDD3V
TP15952 LDO, P5, V
TP15957 OCM, P4F
TP15958 OCM, VREF
TP15961 MEM, VREF
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TP15966 MICOM, P3V
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TP16083 P5V, EXP
TP16084 P

TP15580○P3.3V_LAN
TP15581○P3.3V_LAN
TP15582○P3.3V_LAN

TP15526○P1.5V_PCIE
TP15527○P1.5V_PCIE
TP15531○P3.3V_AUX_EXP
TP15536○VDC
TP15537○VDC
TP15538○VDC
TP15539○VDC
TP15540○VDC
TP15542○VCC_CRT
TP15546○VCC_CORE
TP15547○VCC_CORE
TP15548○VCC_CORE
TP15549○VCC_CORE
TP15550○VCC_CORE
TP16073○P3.3V
TP16074○P3.3V
TP16075○P3.3V
TP16076○P3.3V
TP16077○VCCP
TP16078○VCCP
TP16079○VCCP
TP16080○VCCP
TP16081○GROUND
TP16082○GROUND
TP16093○GROUND
TP16094○GROUND
TP16096○GROUND
TP16095○GROUND
TP16097○GROUND
TP16083○P3.3V_AUX
TP16084○P3.3V_AUX
TP16085○P3.3V_AUX
TP16086○P3.3V_AUX

DRAW	ZHOU JUN	DATE	TORINO MAIN TEST POINT(1)	SAMSUNG ELECTRONICS	
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