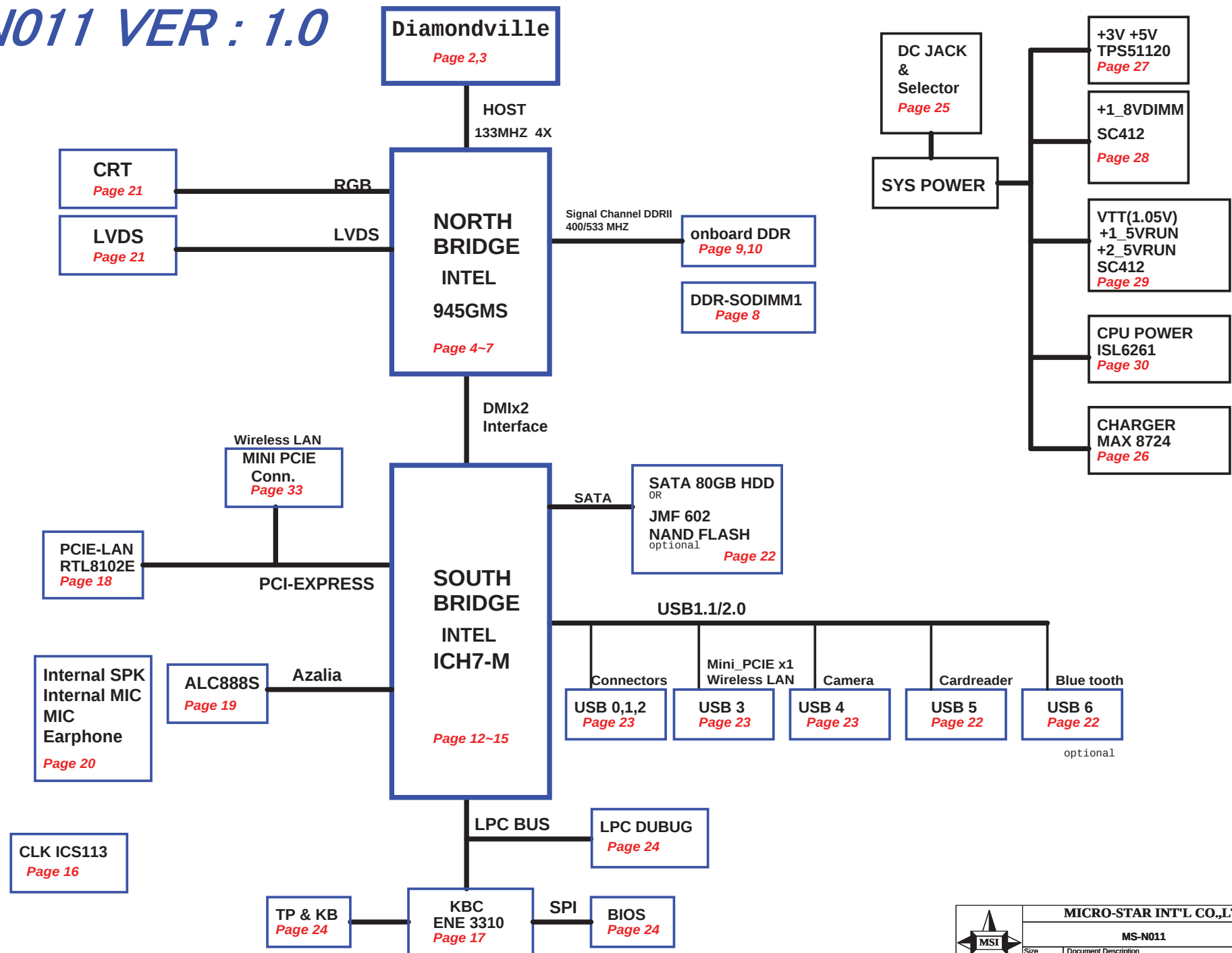
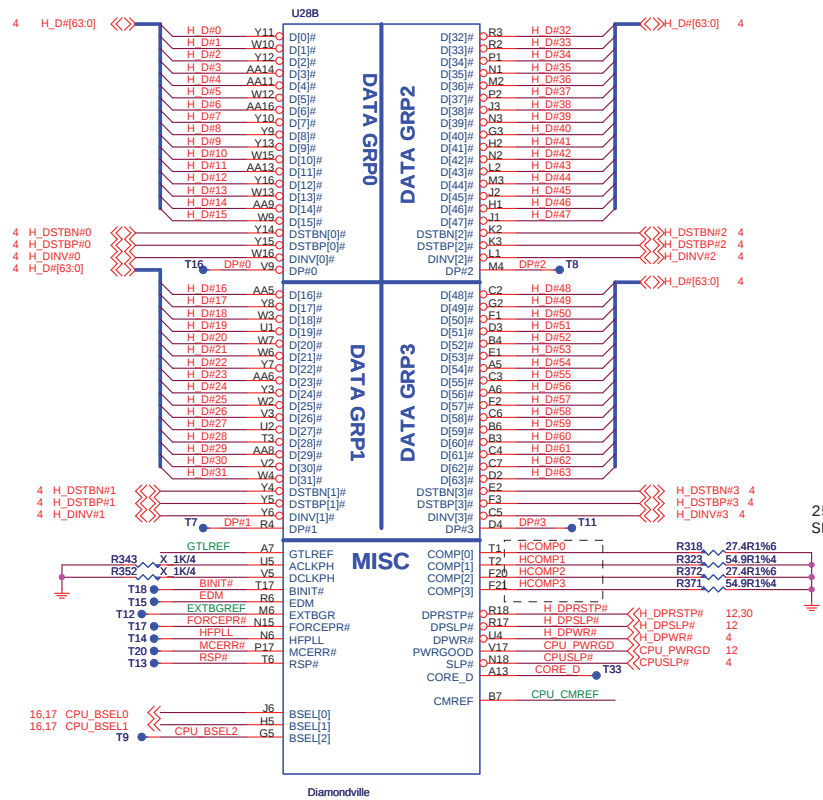
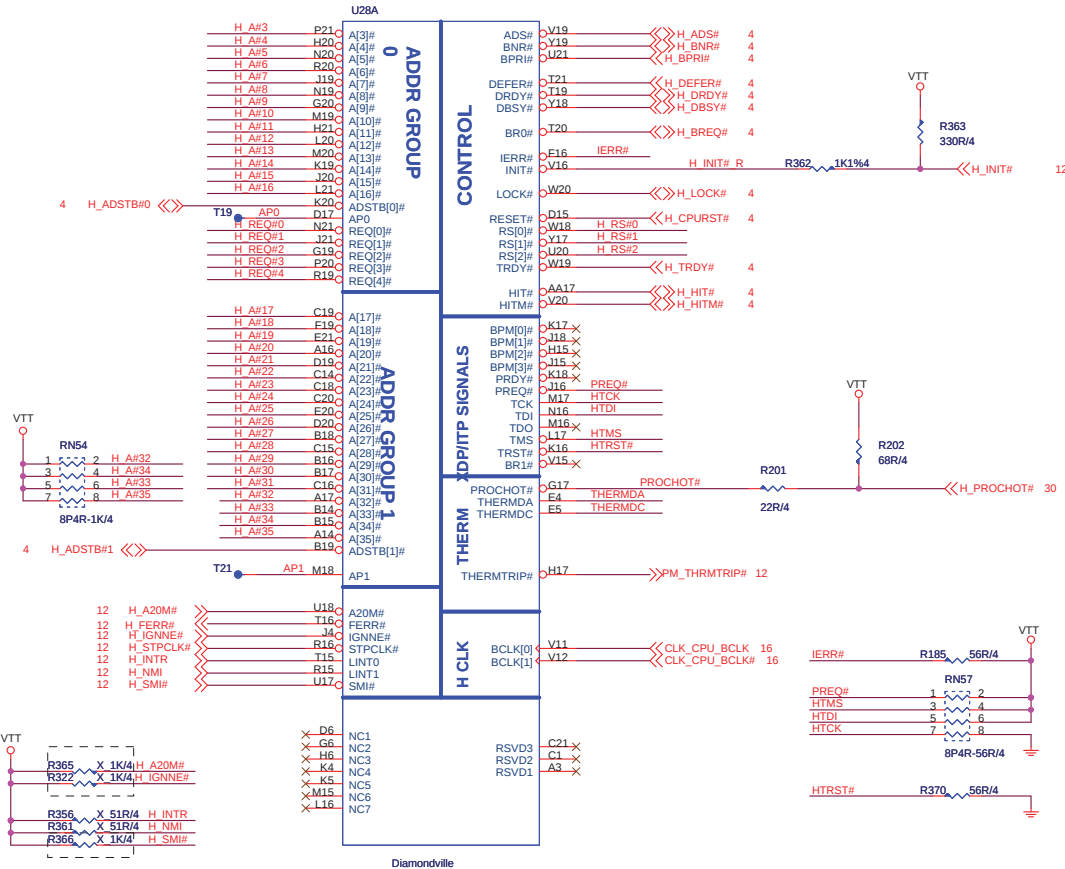


MS-N011 VER: 1.0



MICRO-STAR INT'L CO.,LTD		
MS-N011		
Size	Document Description	Rev
Custom	BLOCK DIAGRAM	1.0
Date: Friday, March 28, 2008	Sheet 1 of 39	

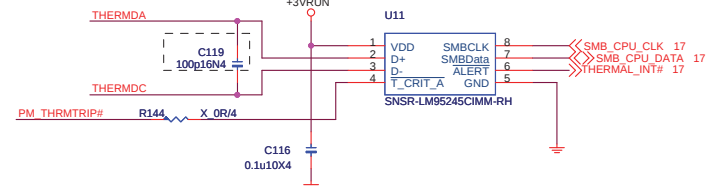
4 H_A# [31:3] <<> H_A# [31:3]
 4 H_RS# [2:0] <<> H_RS# [2:0]
 4 H_REQ# [4:0] <<> H_REQ# [4:0]



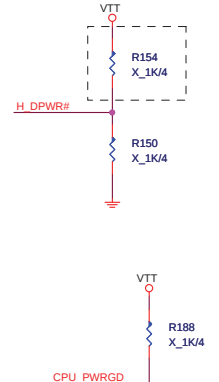
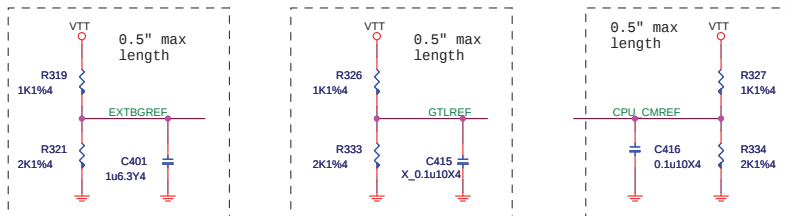
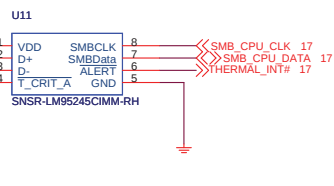
0.5" max length
 25 MIL AWAY FROM HIGH
 SPEED SIGNAL
 HCOMP0,2==>18MIL
 HCOMP1,3==>5MIL

Cap close to
 thermal
 sensor

Trace : 10/4/10



Close to CPU socket

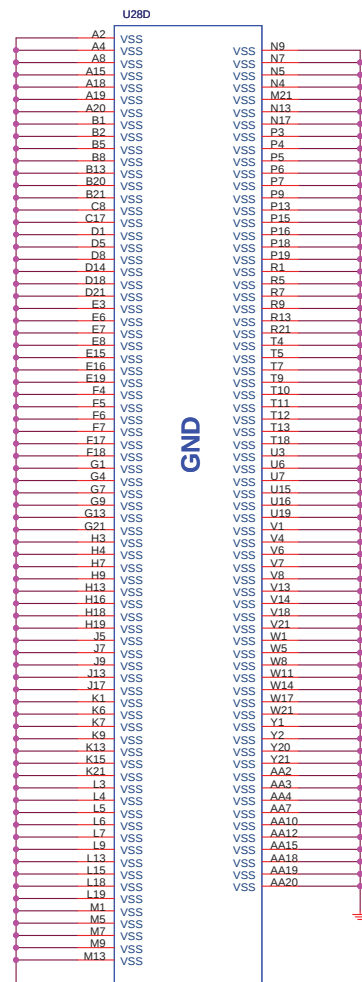


MICRO-STAR INT'L CO.,LTD

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Size	Document Description	Rev
Custom	Diamondville signal	1.0
Date: Friday, April 11, 2008	Sheet 2 of 39	

<http://laptop-motherboard-schematic.blogspot.com/>



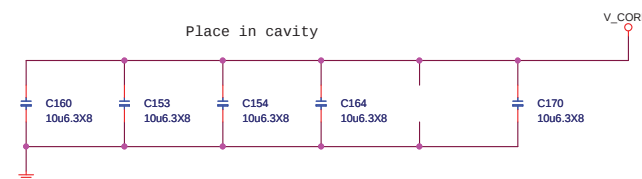
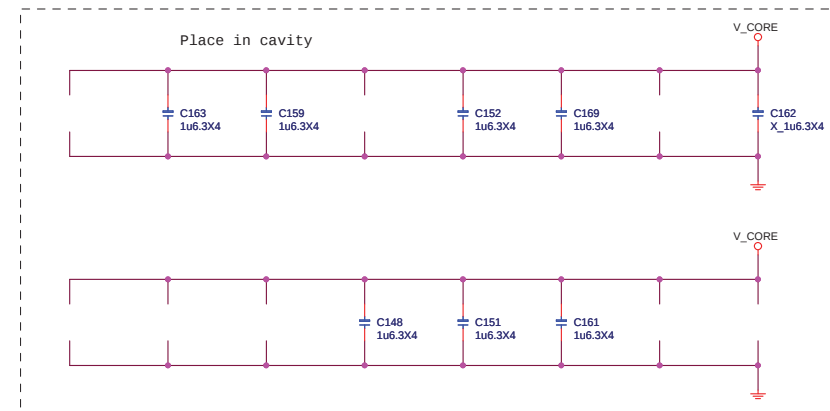
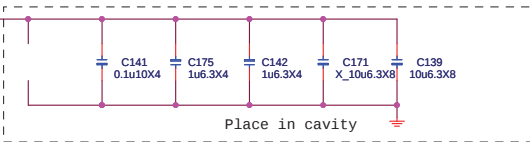
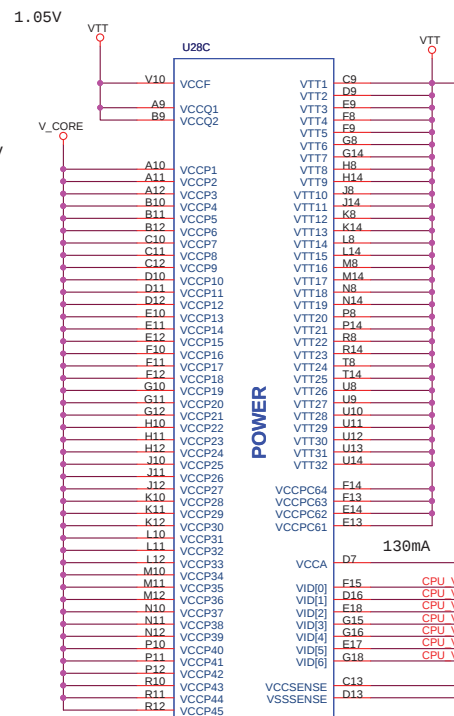
GND

Diamondville

LAYOUT NOTE:
Route VCCSENSE and VSSSENSE
traces at 27.40hms with 50
mil spacing.
Place PU and PD within 1
inch of CPU.

2.5A: before VCC stable
1.5A: after VCC stable

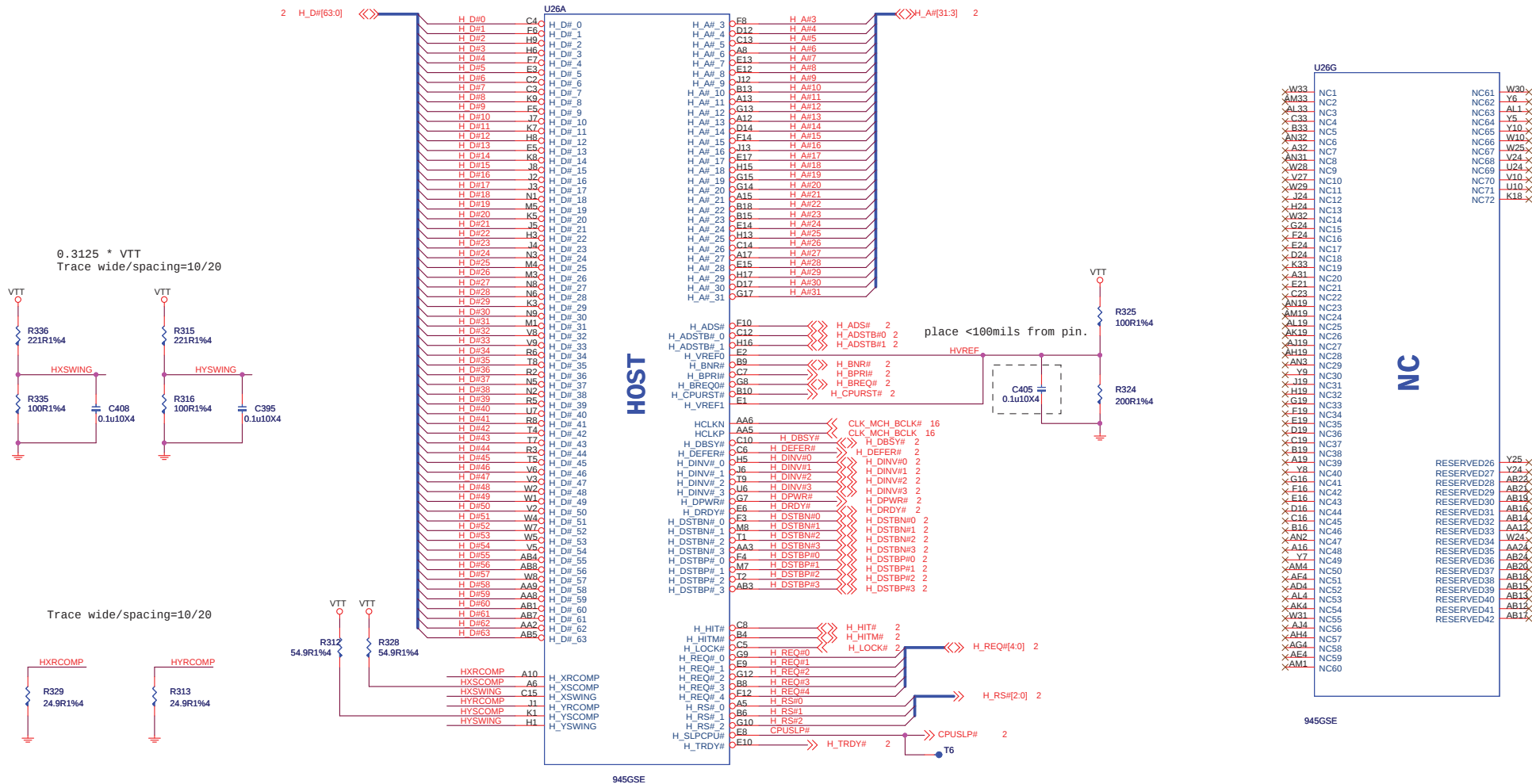
Diamondville

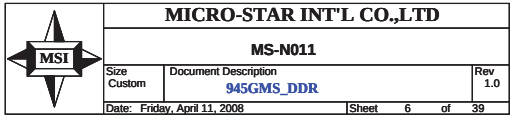


MICRO-STAR INT'L CO.,LTD

MS-N011

Size	Document Description	Rev
Custom	Diamondville Pown/GND	1.0
Date: Friday, April 11, 2008	Sheet 3 of 39	





945 GMS Power

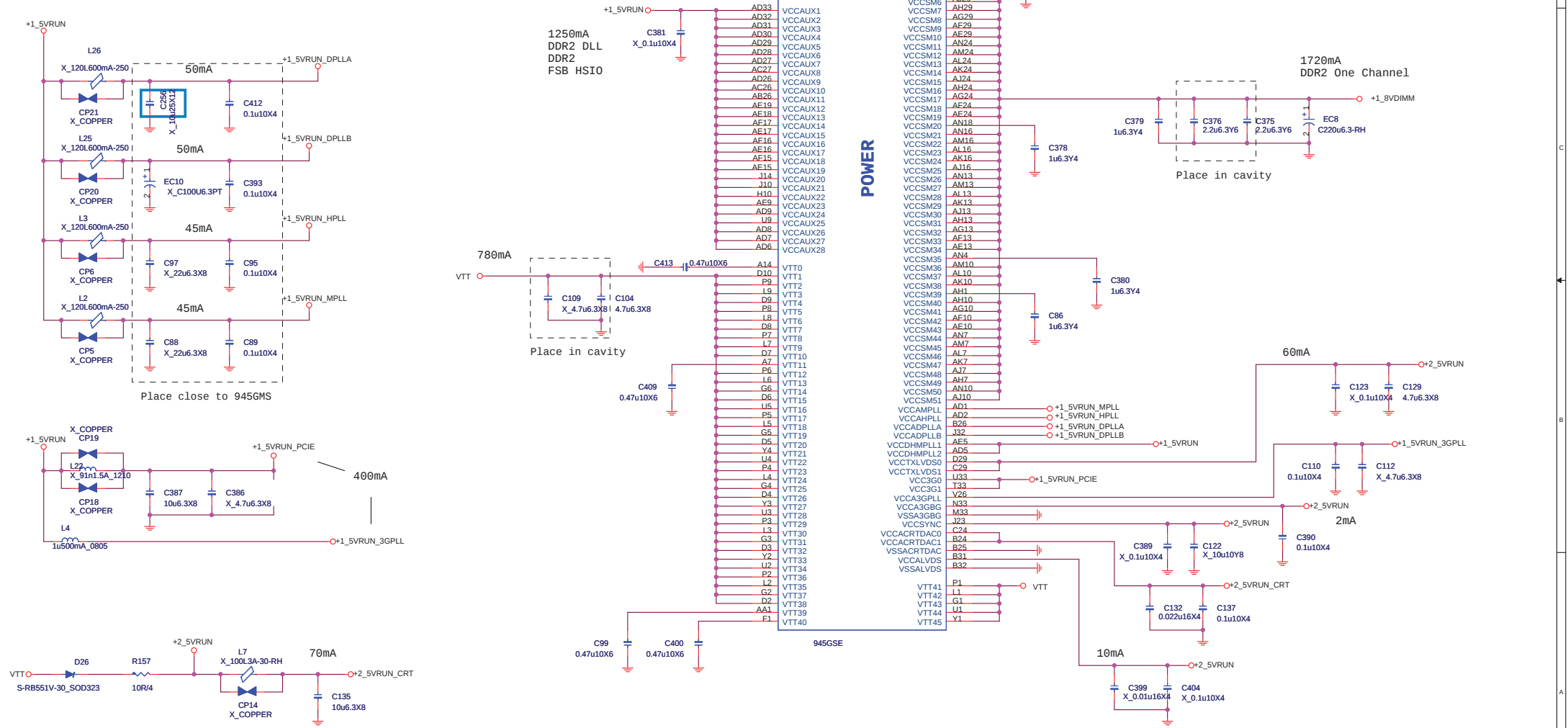
VTT=> 3.72A

+1_5VRUN=> 1.98A

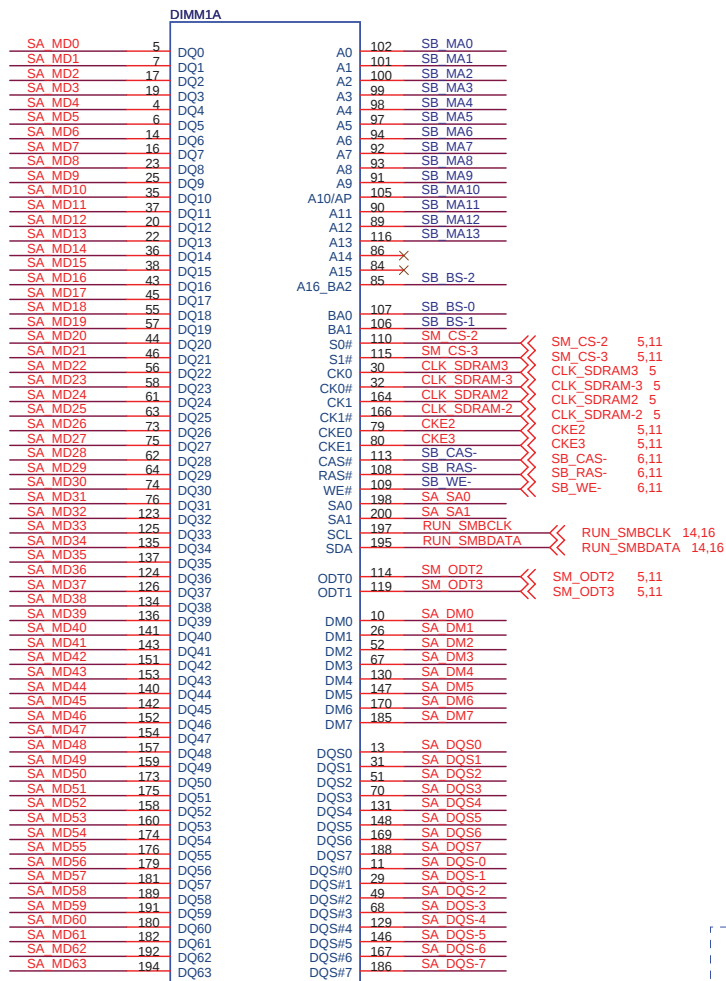
+1_8VDIMM=> 1.72A

+2_5VRUN=>142mA

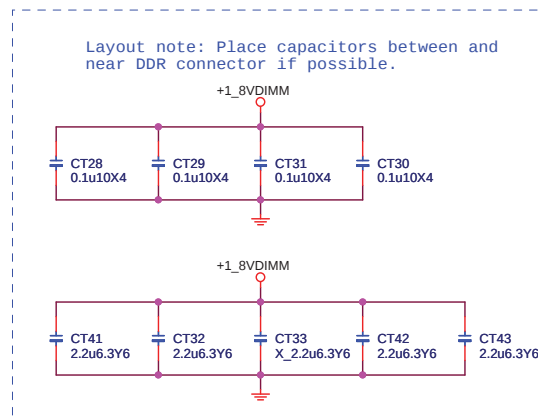
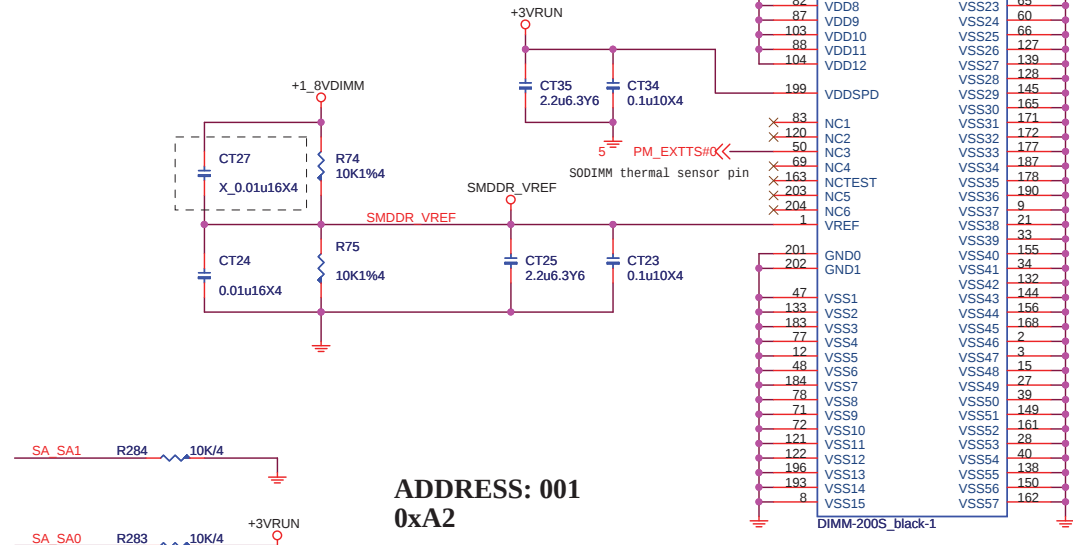
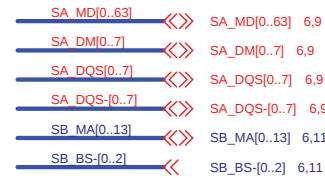
+3VRUN=> 40mA



MICRO-STAR INT'L CO.,LTD			
MS-N011			
Size	Document Description	Rev	
Custom	945GMS_POWER	1.0	
Date: Friday, April 11, 2008		Sheet 7 of 39	



N13-2000220-A10
Bottom

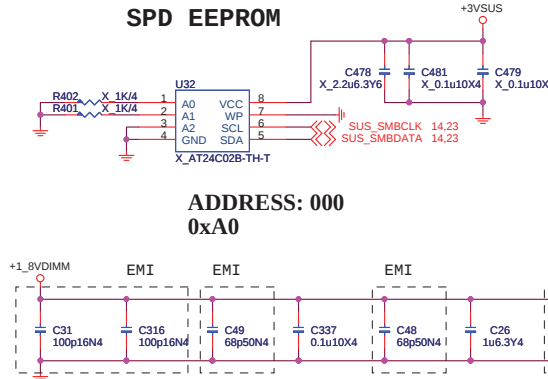
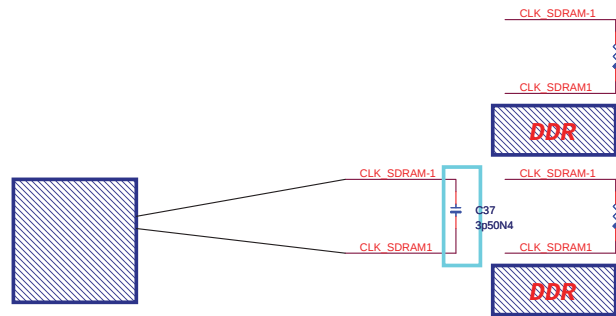
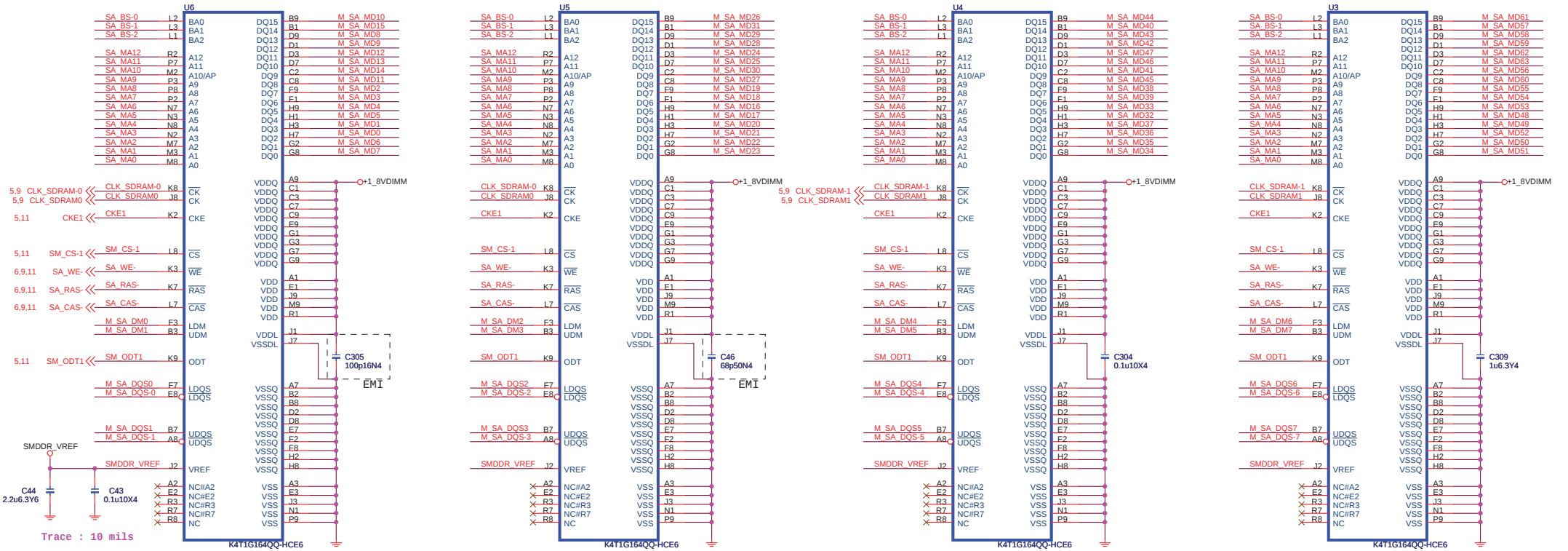


MICRO-STAR INT'L CO.,LTD			
MS-N011			
Size B	Document Description	Rev 1.0	
		ONBOARD DDR2 memory	
Date: Friday, April 11, 2008		Sheet 8	of 39

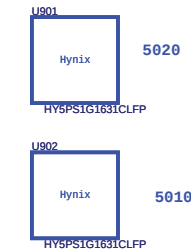


6,8,9 SA_MD[0..63] <<>> SA MD[0..63]
 6,8,9 SA_DS[0..7] <<>> SA DS[0..7]
 6,9,11 SA_MA[0..12] <<>> SA MA[0..12]
 9 M_SA_DS[0..7] <<>> M SA DS[0..7]
 6,9,11 SA_BS[0..2] <<>> SA BS[0..2]
 9 M_SA_DS[0..7] <<>> M SA DS[0..7]
 6,8,9 SA_DM[0..7] <<>> SA DM[0..7]
 9 M_SA_DS[0..7] <<>> M SA DS[0..7]
 6,8,9 SA_DS[0..7] <<>> SA DS[0..7]
 9 M_SA_DM[0..7] <<>> M SA DM[0..7]

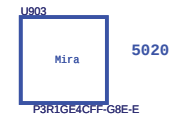
M12-K4T1G05-S02 D-die turn to Q-die next version



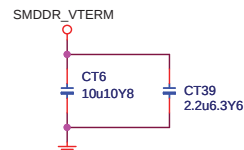
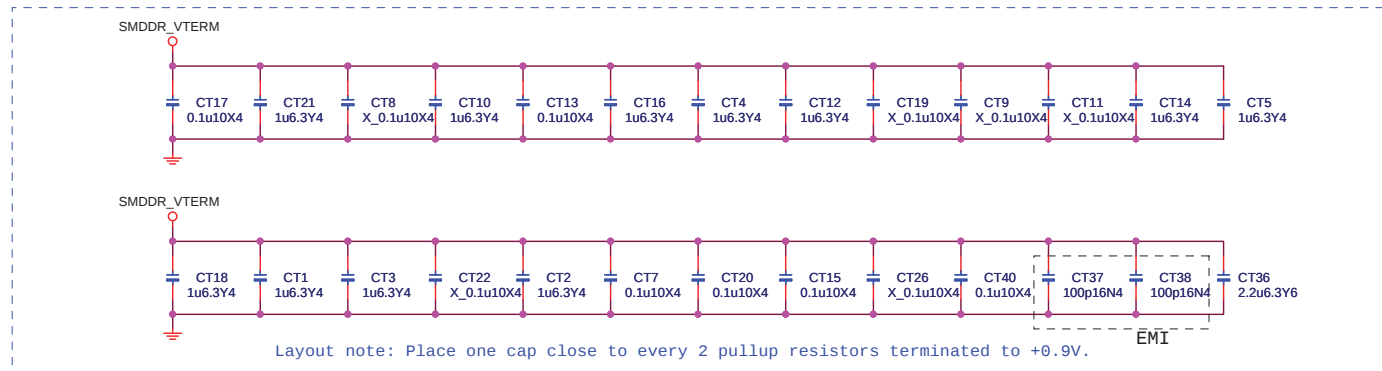
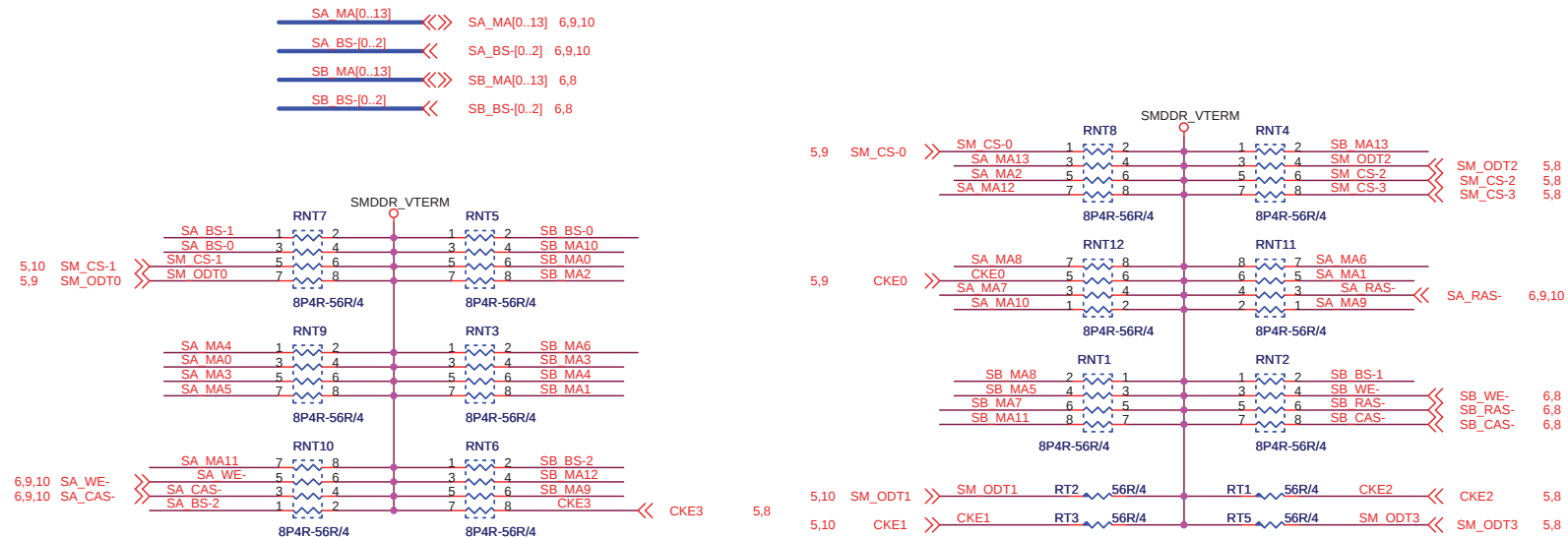
M12-5PS1G25-H23



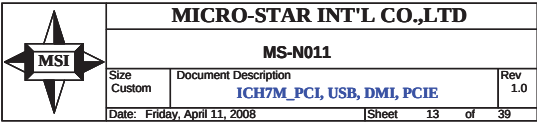
M12-1GE4C05-M20



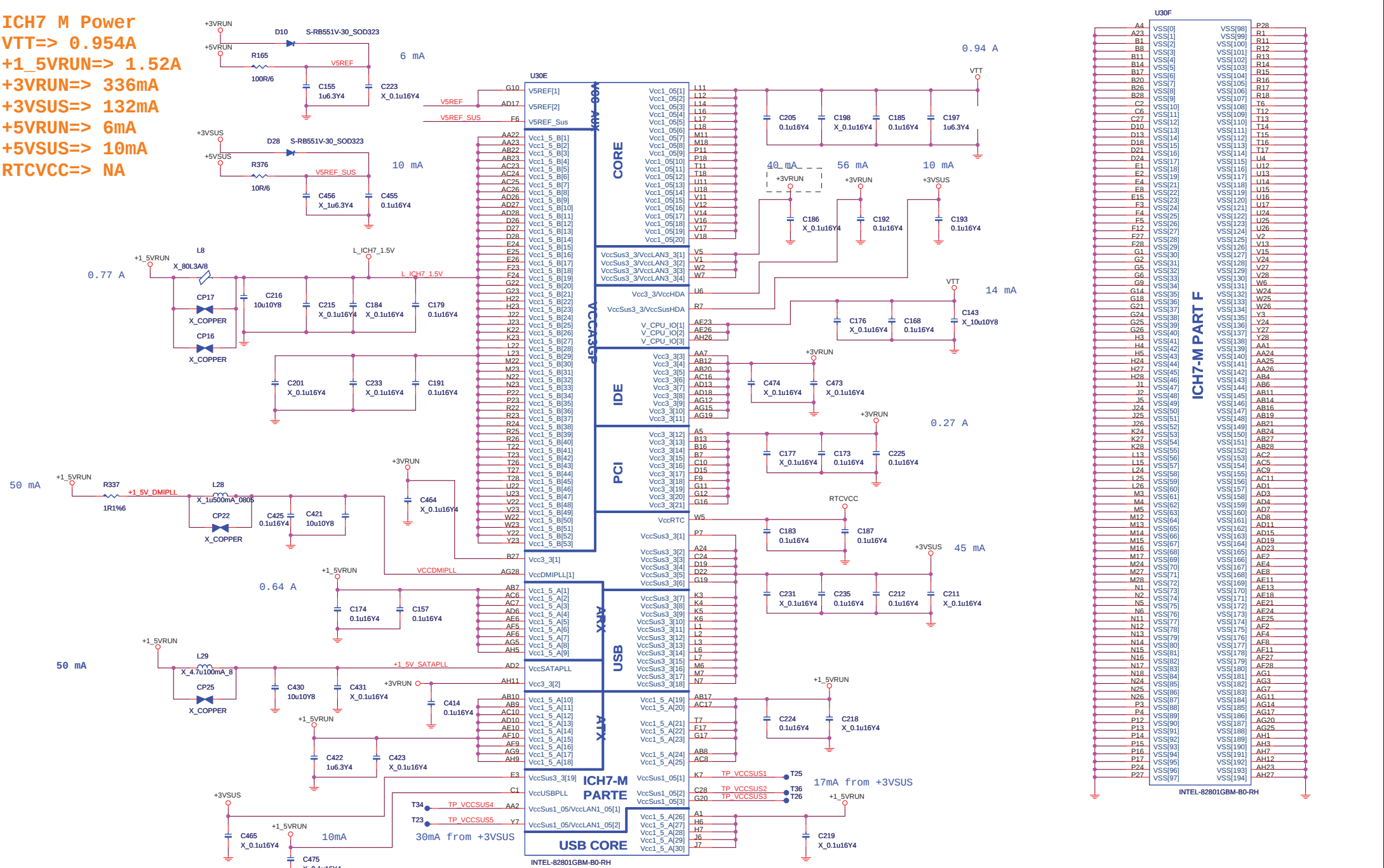
MICRO-STAR INT'L CO.,LTD
MS-N011
 Size Custom Document Description
DDR2 64*16 BGA B
 Date: Monday, April 14, 2008 Sheet 10 of 39



MICRO-STAR INT'L CO.,LTD			
MS-N011			
Size B	Document Description		Rev 1.0
	DDR2 Termination		
Date: Friday, April 11, 2008		Sheet 11 of 39	



ICH7 M Power
VTT=> 0.954A
+1_5VRUN=> 1.52A
+3VRUN=> 336mA
+3VSUS=> 132mA
+5VRUN=> 6mA
+5VSUS=> 10mA
RTCVCC=> NA



PIN AA2,Y7,K7,C28,G20 : VccSus 1.05V for RTCVCC



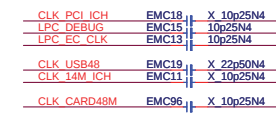
MICRO-STAR INT'L CO.,LTD

MS-N011

Size	Document Description	Rev
Custom	ICH7M_POWER	1.0

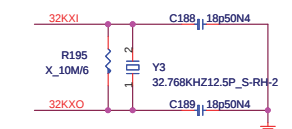
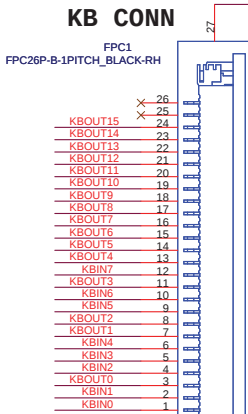
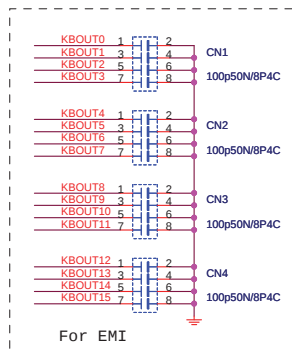
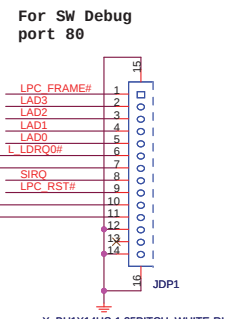
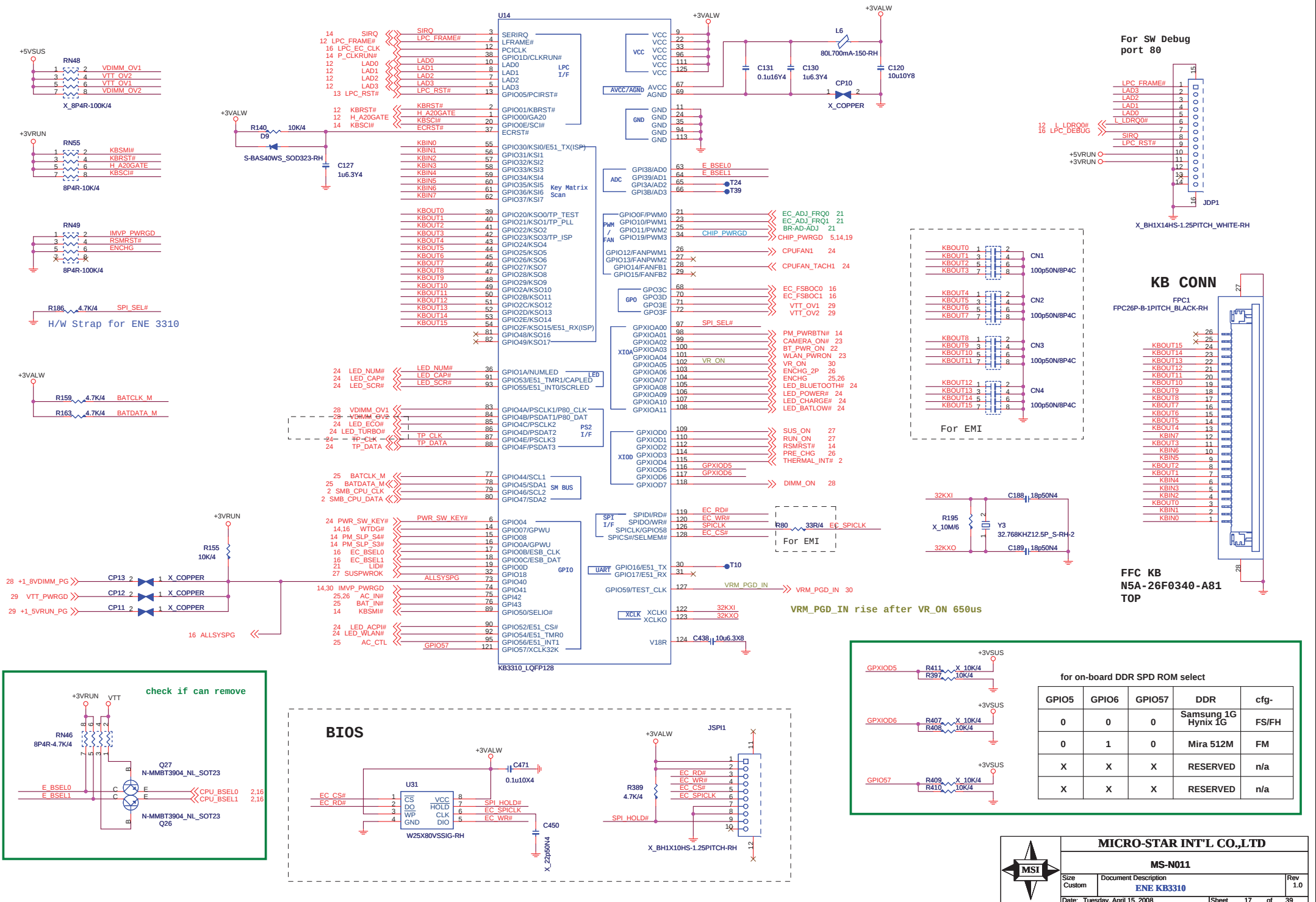
Date: Friday, April 11, 2008 Sheet 15 of 39

CLOCK GEN STRAPING

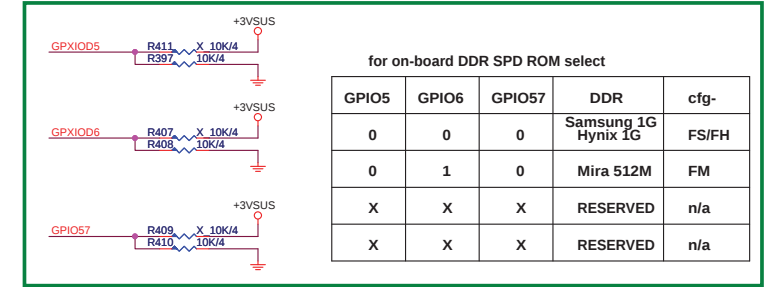
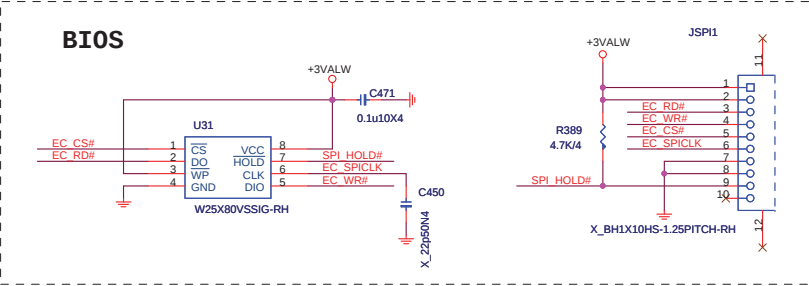
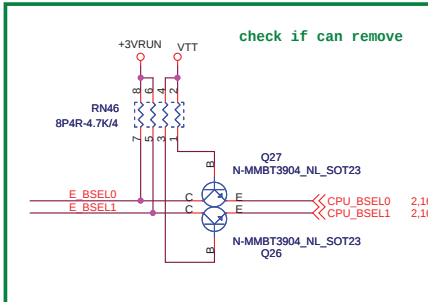


Size Custom	Document Description CLK_GEN_113	Rev 1.0
Date: Friday, April 11, 2008		Sheet 16 of 39

BSEL[2]	BSEL[1]	BSEL[0]	BCLK
H	L	H	100MHZ
L	L	H	133MHZ
L	H	L	200MHz
L	H	H	166MHZ



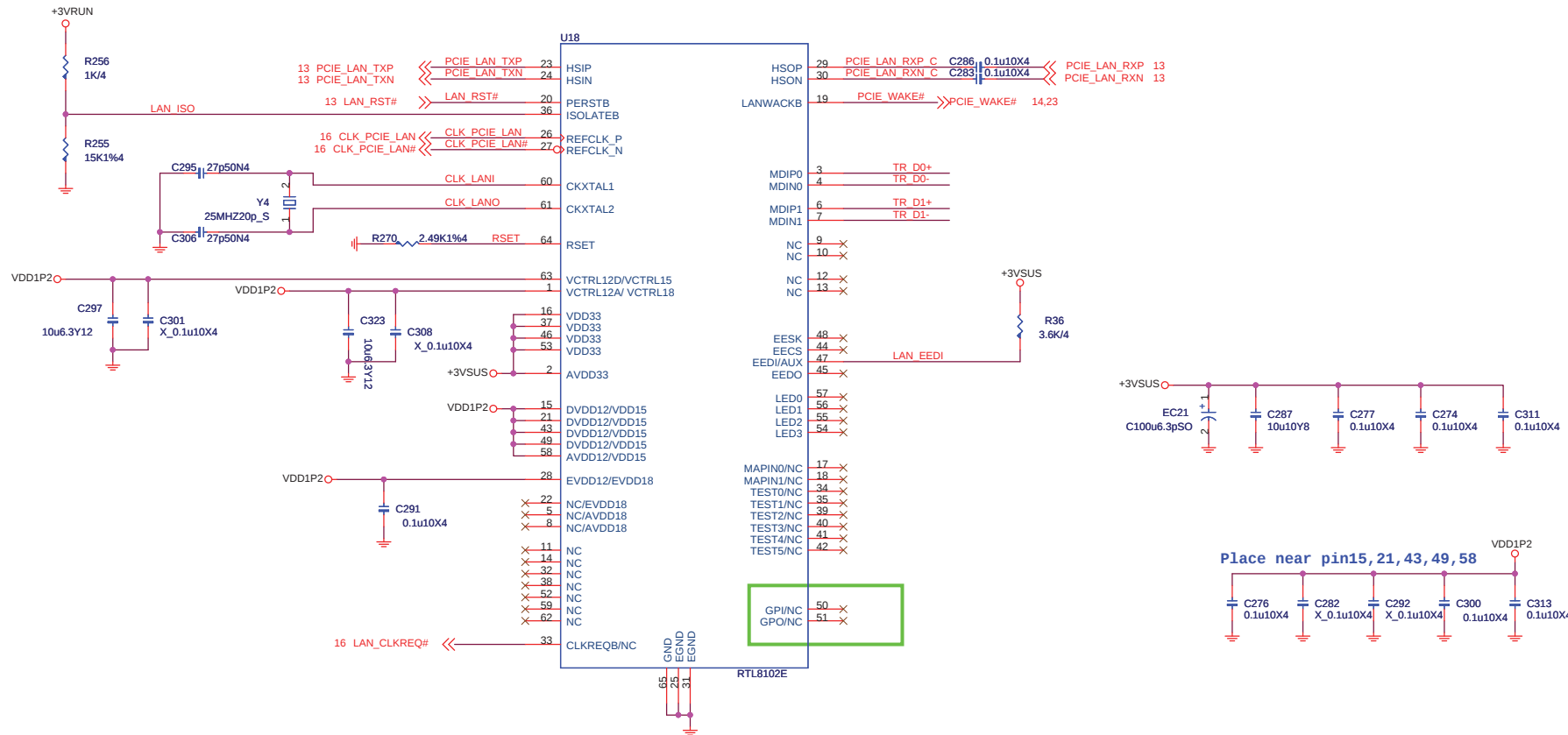
FFC KB
N5A-26F0340-A81
TOP



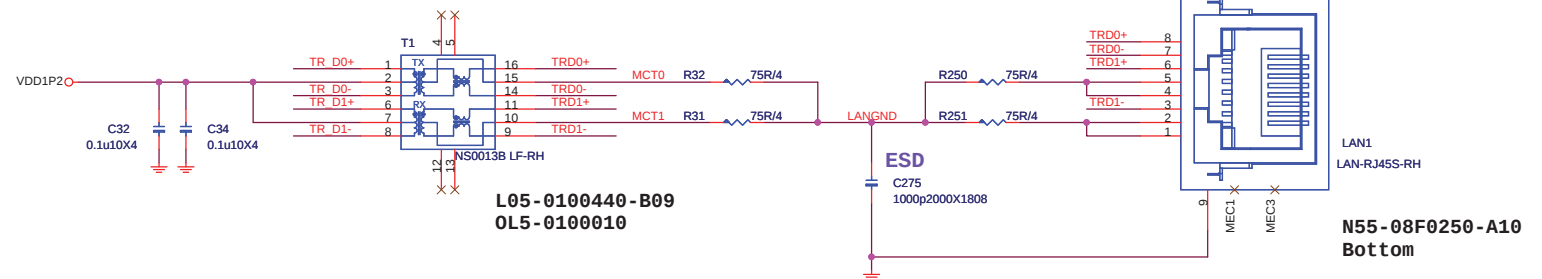
for on-board DDR SPD ROM select				
GPIO5	GPIO6	GPIO7	DDR	cfg-
0	0	0	Samsung 1G Hynix 1G	FS/FH
0	1	0	Mira 512M	FM
X	X	X	RESERVED	n/a
X	X	X	RESERVED	n/a

MICRO-STAR INT'L CO.,LTD
MS-N011
Size Custom | Document Description **ENE KB3310** | Rev 1.0
Date: Tuesday, April 15, 2008 | Sheet 17 of 39

RTL8102E 10/100M LAN



LAN MAGNETICS



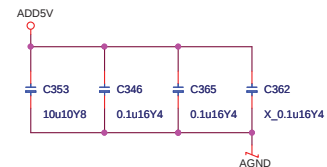
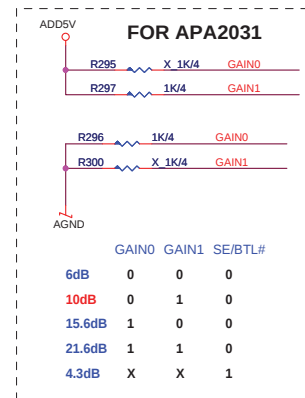
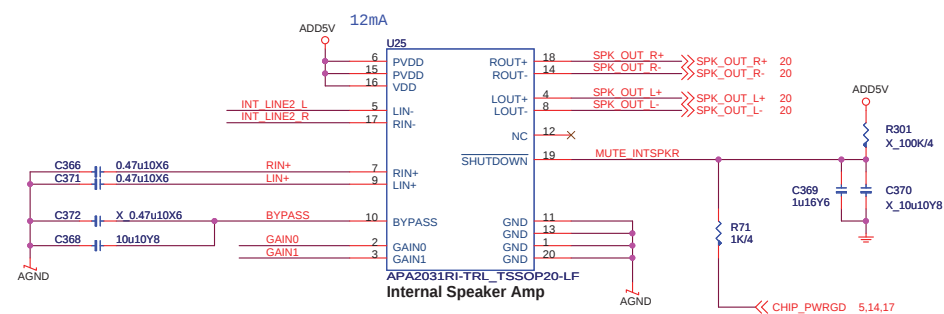
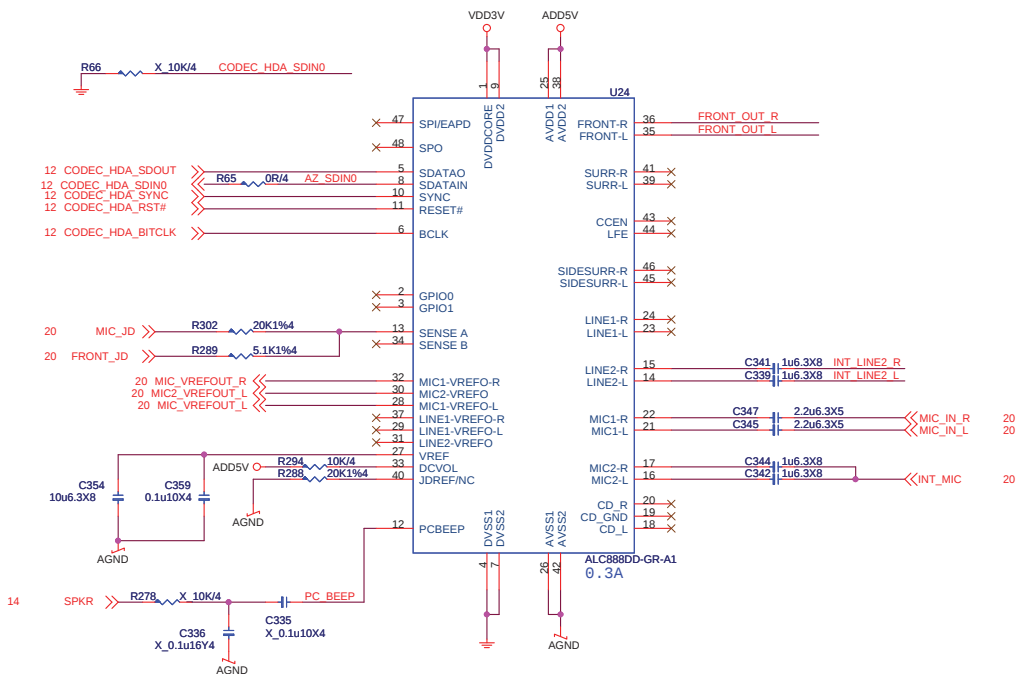
POWER			
BOOT DEVICE	VDD1P2	VDD1P8	VDD33
8101E (378.3mW)	1.5V	1.8V	3.3V
8102E	1.2V	NC	3.3V
365mA			



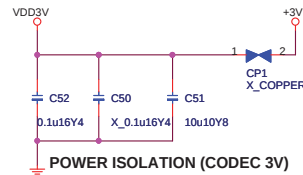
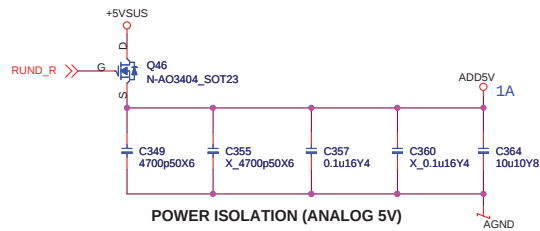
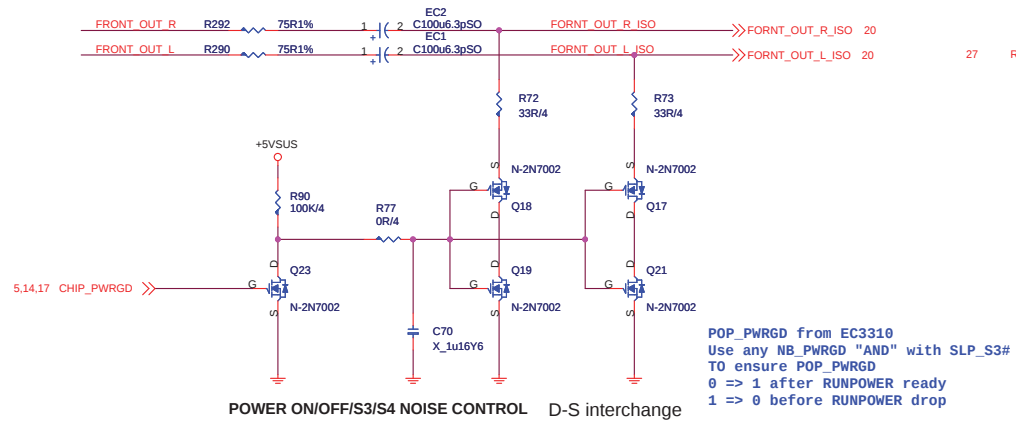
MICRO-STAR INT'L CO.,LTD

MS-N011

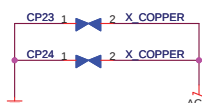
Size A3	Document Description	Rev 1.0
LAN_RTL8102E/8101E		
Date: Friday, April 11, 2008	Sheet 18	of 39



ANTIPOP CIRCUIT



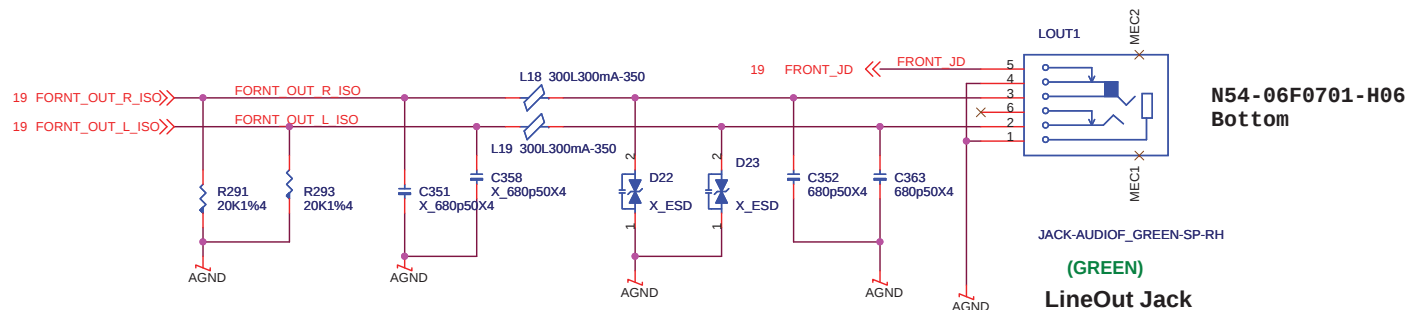
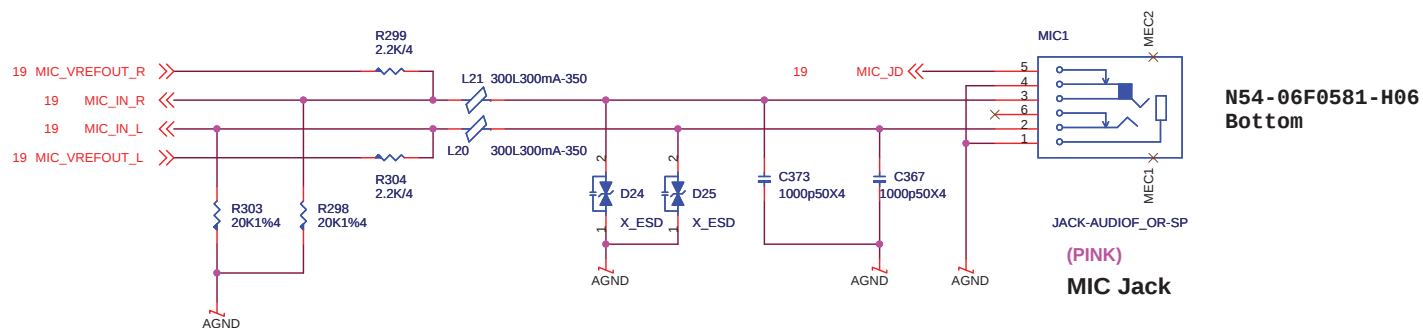
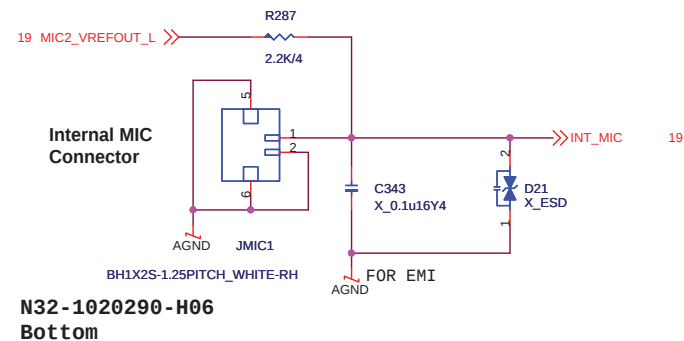
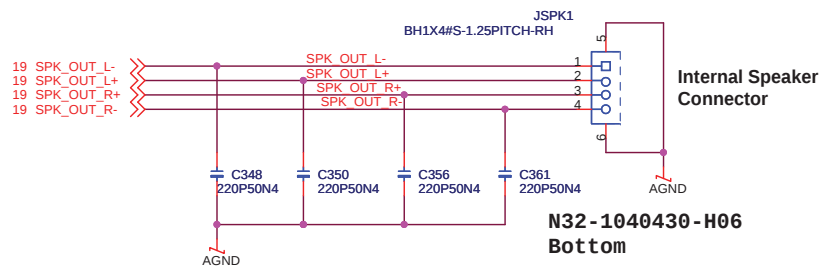
For EMI solution



MICRO-STAR INT'L CO.,LTD

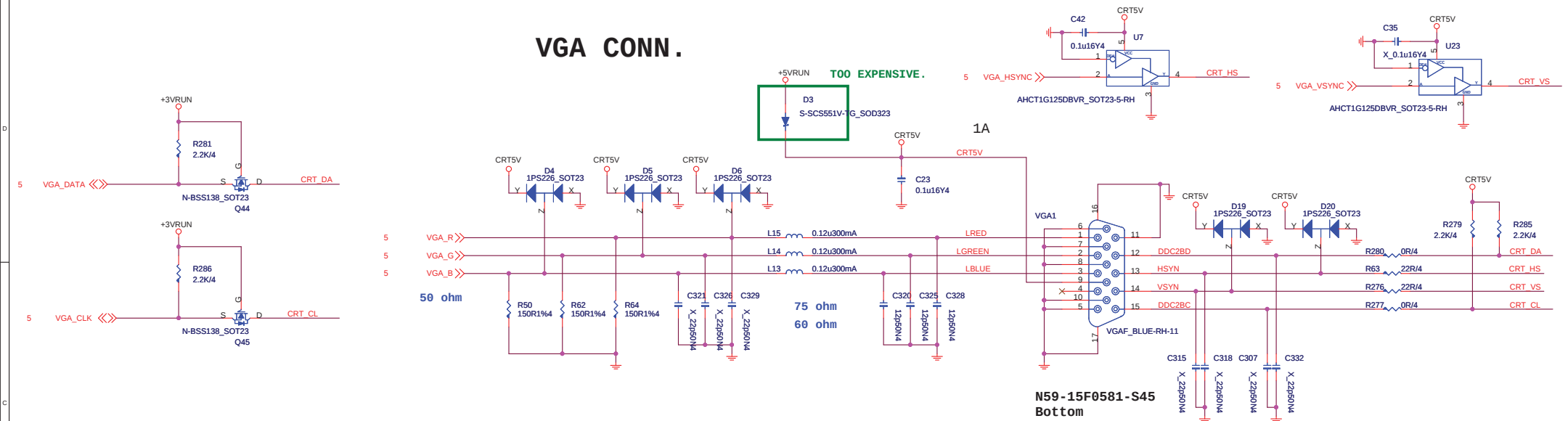
MS-N011

Size Custom	Document Description	Rev 1.0
	ALC888S	
Date: Friday, April 11, 2008	Sheet 19 of 39	

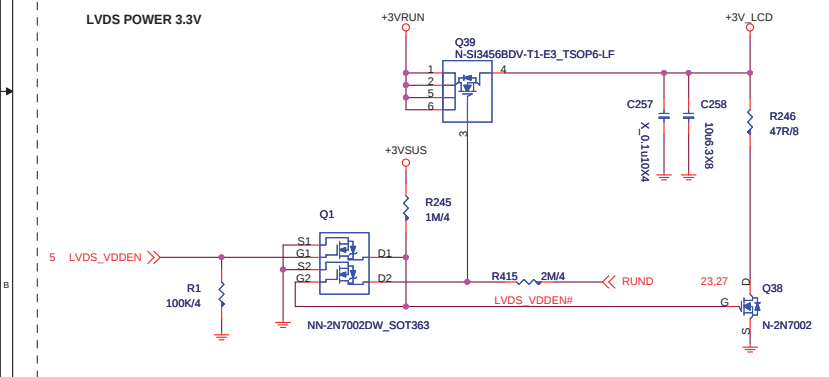


MICRO-STAR INT'L CO.,LTD			
MS-N011			
Size Custom	Document Description Audio JACKS		Rev 1.0
Date: Friday, April 11, 2008		Sheet 20	of 39

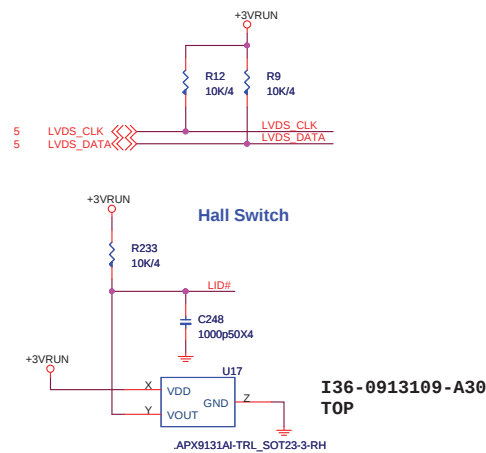
VGA CONN.



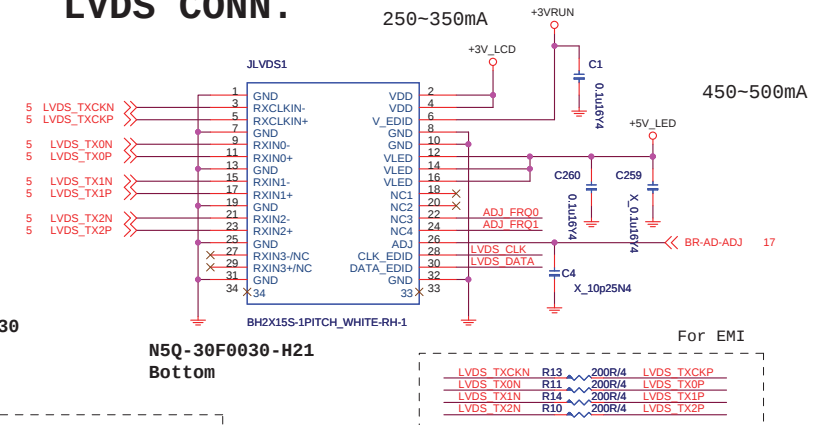
LVDS POWER 3.3V



Hall Switch

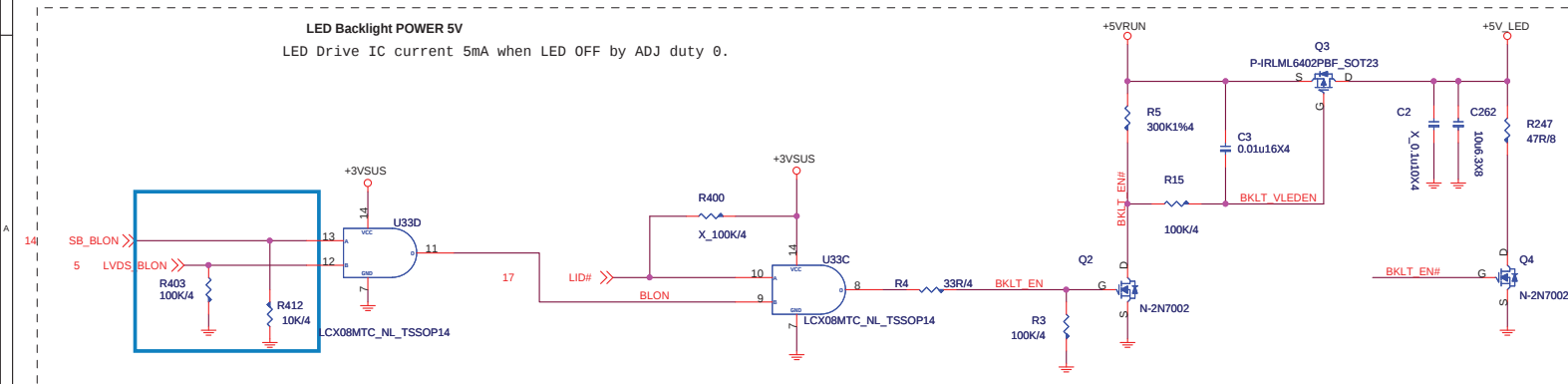


LVDS CONN.



LED Backlight POWER 5V

LED Drive IC current 5mA when LED OFF by ADJ duty 0.

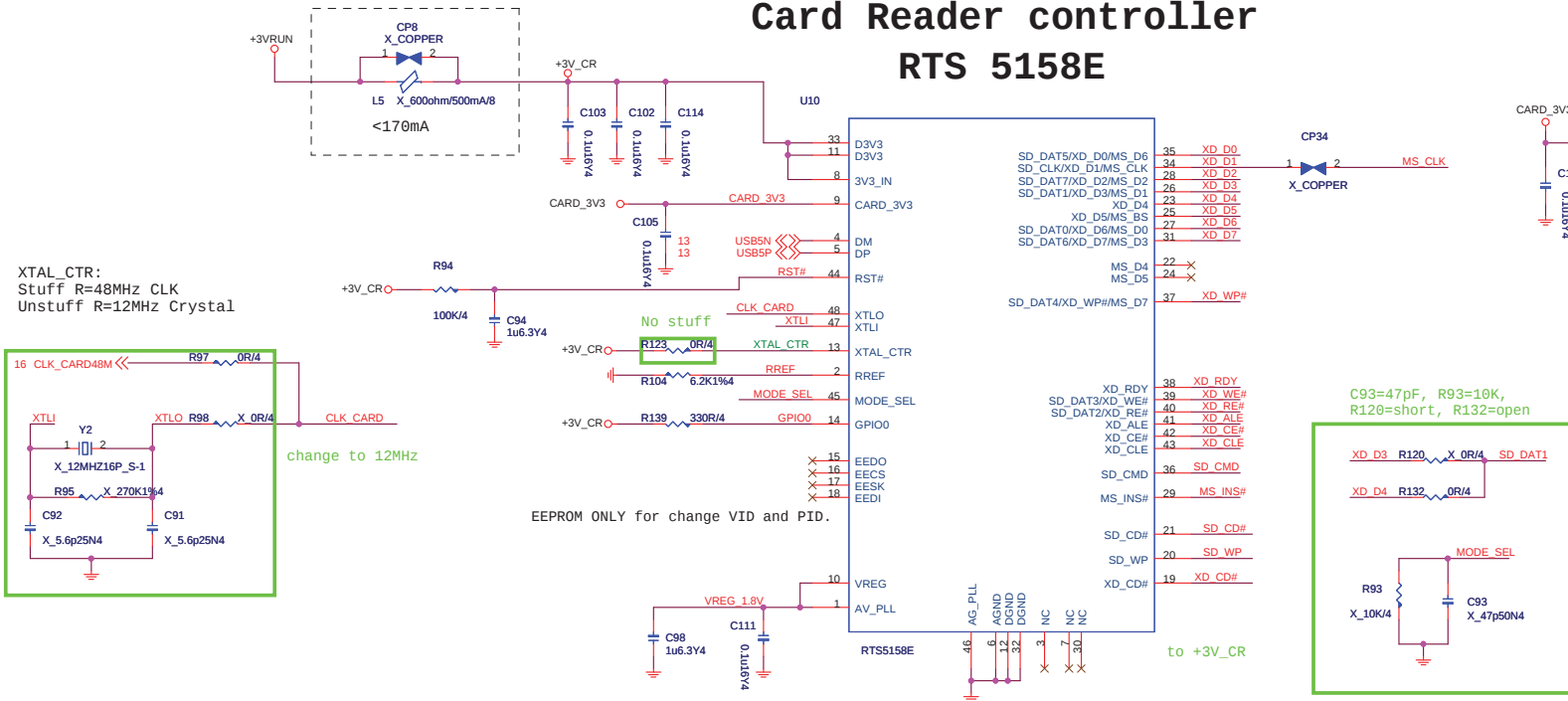


EC_ADJ_FRQ0	EC_ADJ_FRQ1	Vendor	Adj Freq
0	0	CPT/HannStar	20KHZ
0	1	INNOLUX	300Hz
1	0	Reserve	Reserve
1	1	Reserve	Reserve

MICRO-STAR INT'L CO.,LTD			
MS-N011			
Size	Document Description	Rev	
Custom	CRT, LVDS CONN	1.0	
Date: Friday, April 11, 2008	Sheet	21	of 39

Card Reader controller RTS 5158E

Flash Card Socket

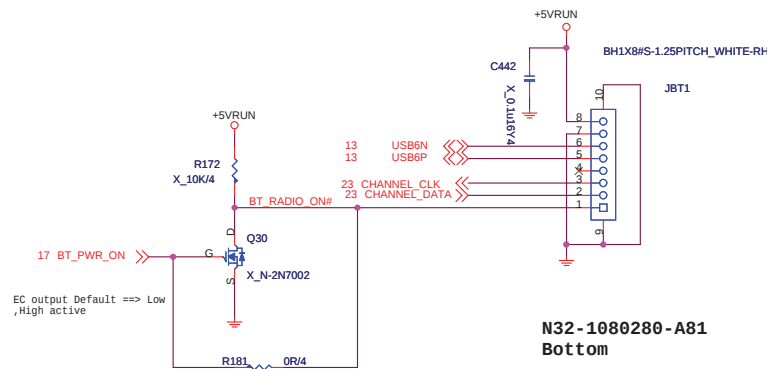


Media I/F (Chip)	SD Card	Memory Stick	xD Card
XD_RDY	X	X	XD_R/B
XD_RE#/SD_DAT2	SD_D2	X	XD_RE
XD_CE#	X	X	XD_CE
XD_CLE	X	X	XD_CLE
XD_ALE	X	X	XD_ALE
XD_WE#/SD_DAT3	SD_D3	X	XD_WE
XD_WP#/SD_DAT4/MS_D7	X	X	XD_WP
XD_D0/SD_DAT0/MS_D6	X	X	XD_D0
XD_D1/SD_CLK/MS_CLK	SD_CLK	MS_CLK	XD_D1
XD_D2/SD_DAT7/MS_D2	X	MS_D2	XD_D2
XD_D3/SD_DAT1/MS_D1	SD_D1	MS_D1	XD_D3
XD_D4	X	X	XD_D4
XD_D5/MS_BS	X	MS_BS	XD_D5
XD_D6/SD_DAT0/MS_D0	SD_D0	MS_D0	XD_D6
XD_D7/SD_DAT6/MS_D3	X	MS_D3	XD_D7
XD_CD#	X	X	XD_CD_SW
SD_CMD	SD_CMD	X	X
SD_CD#	SD_CD_SW	X	X
SD_WP	SD_WP_SW	X	X
MS_INS#	X	MS_INS	X
MS_D4	X	X	X
MS_D5	X	X	X

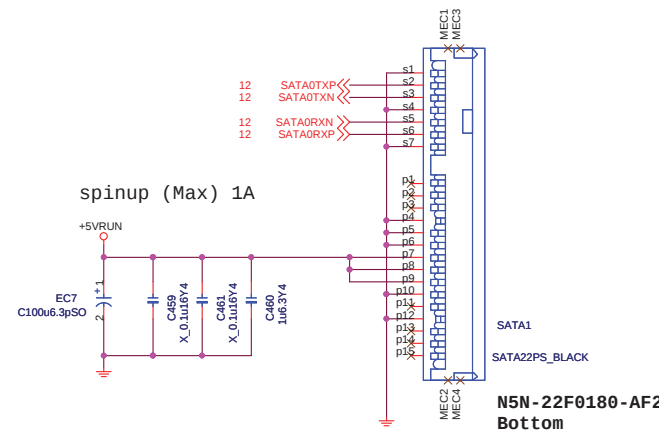
SATA HDD

SATA, 2.5 inch, 80GB, 5400RPM
WD S71-2408505-W36
Fujitsu S71-2408511-F06
Toshiba S71-2408517-T14

BLUETOOTH

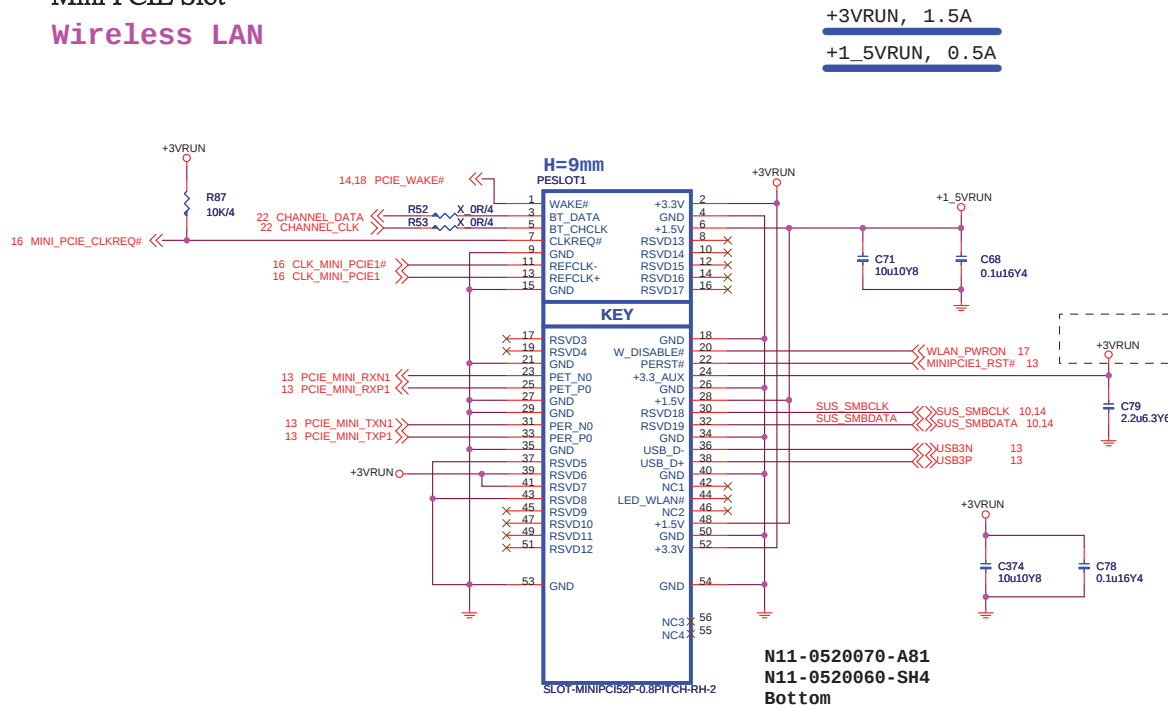


SATA HDD CONN

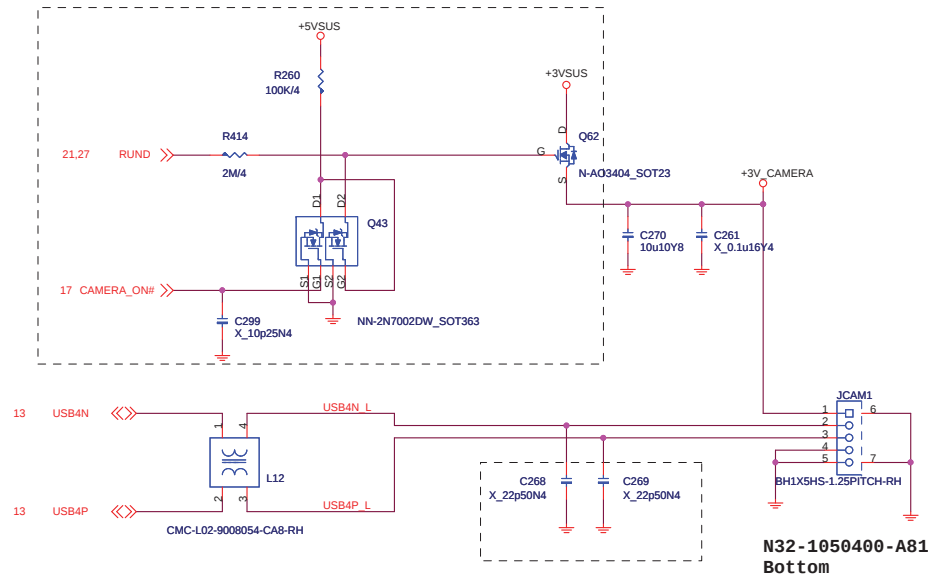


MICRO-STAR INT'L CO.,LTD			
MS-N011			
Size	Document Description	Rev	
Custom	CardReader RTS5158E/ BT/ SATA HDD	1.0	
Date: Friday, April 11, 2008	Sheet 22 of 39		

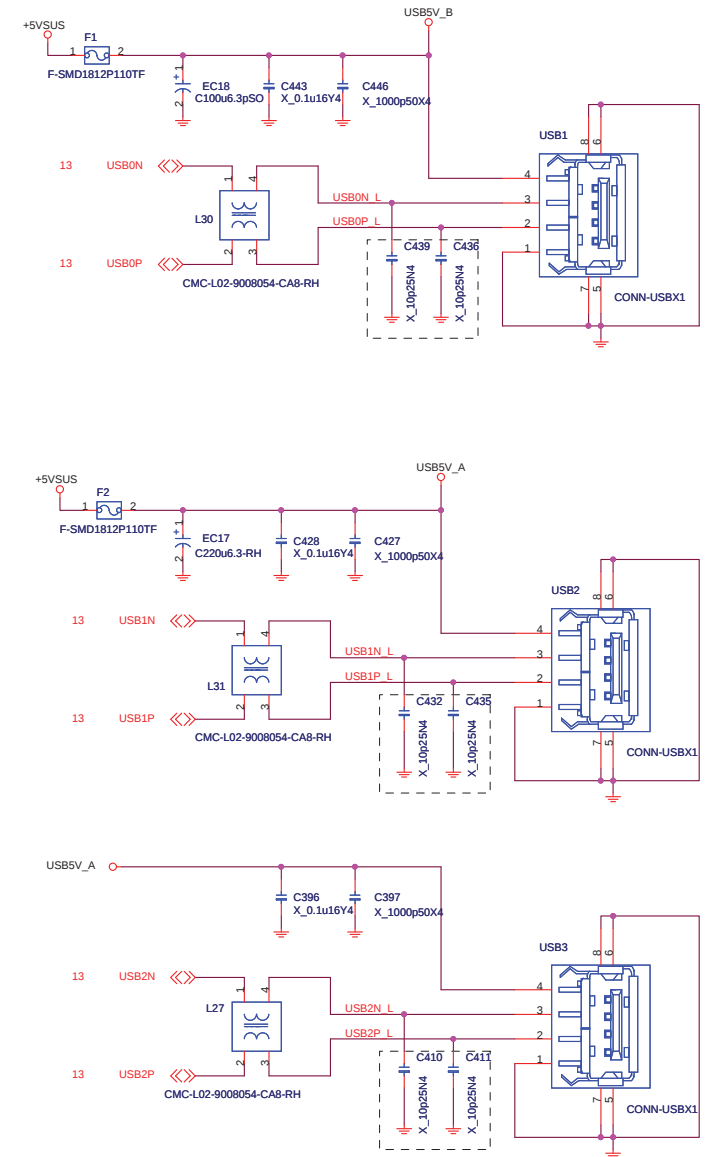
Mini PCIE Slot Wireless LAN



CAMERA



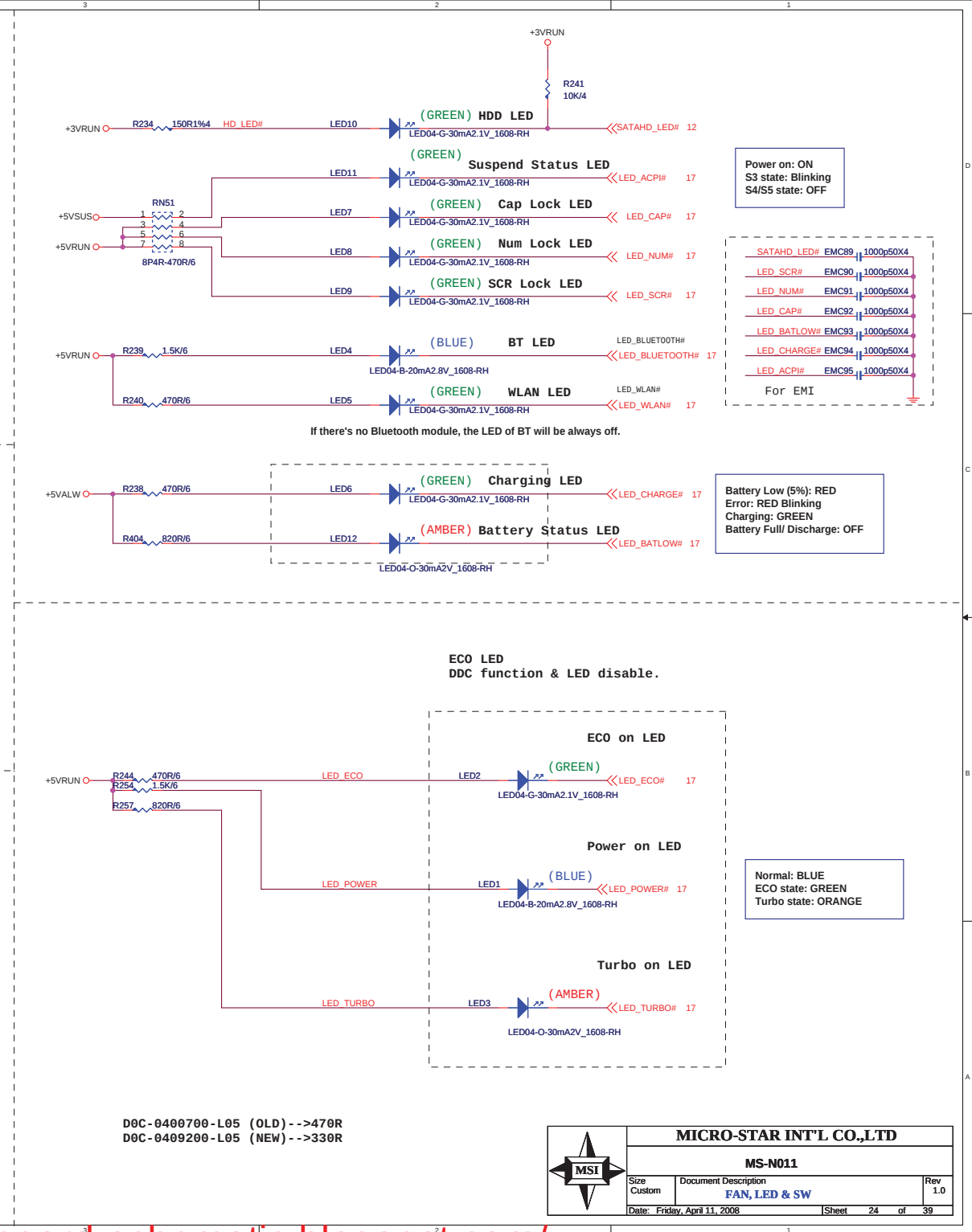
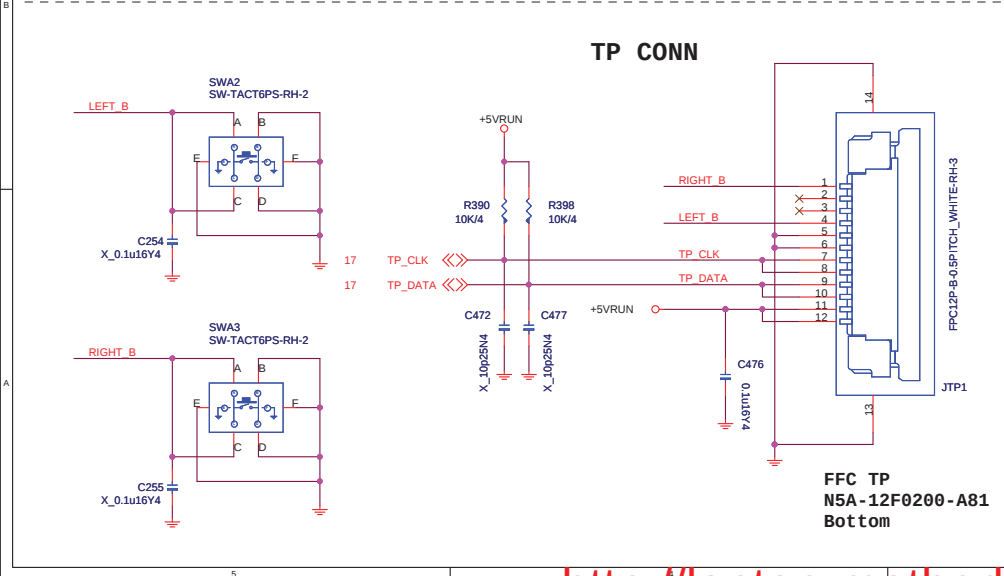
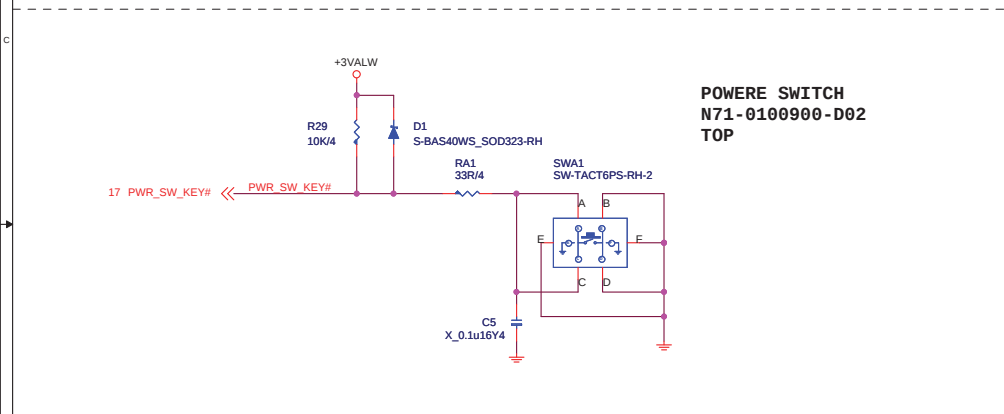
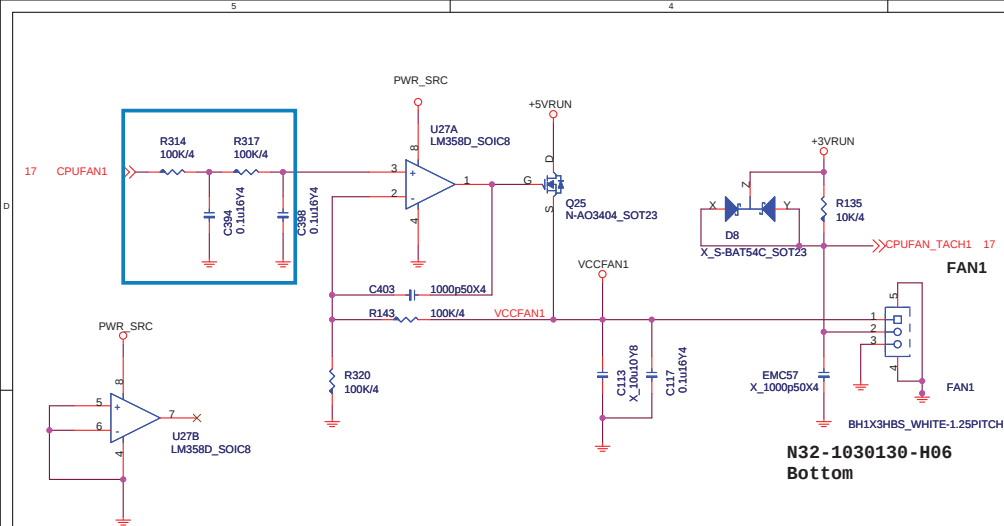
USB CONN

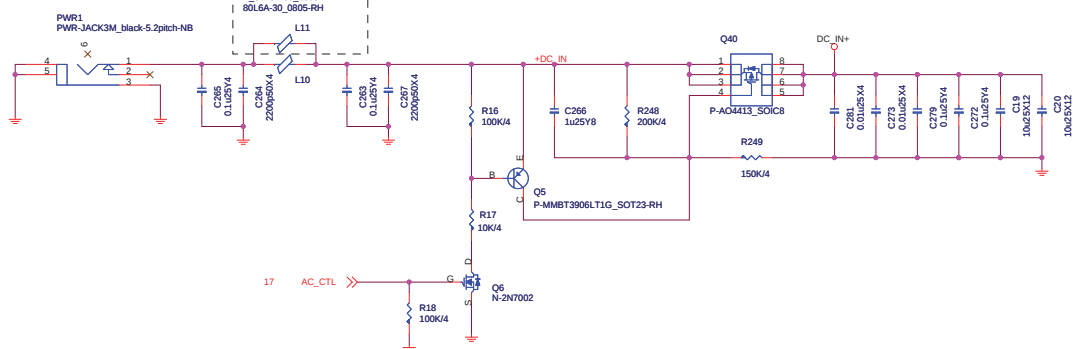


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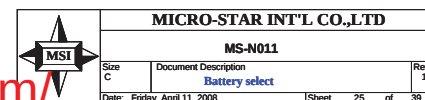
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Size	Document Description	Rev
Custom	Mini PCIE, CAMERA, USB CONN	1.0
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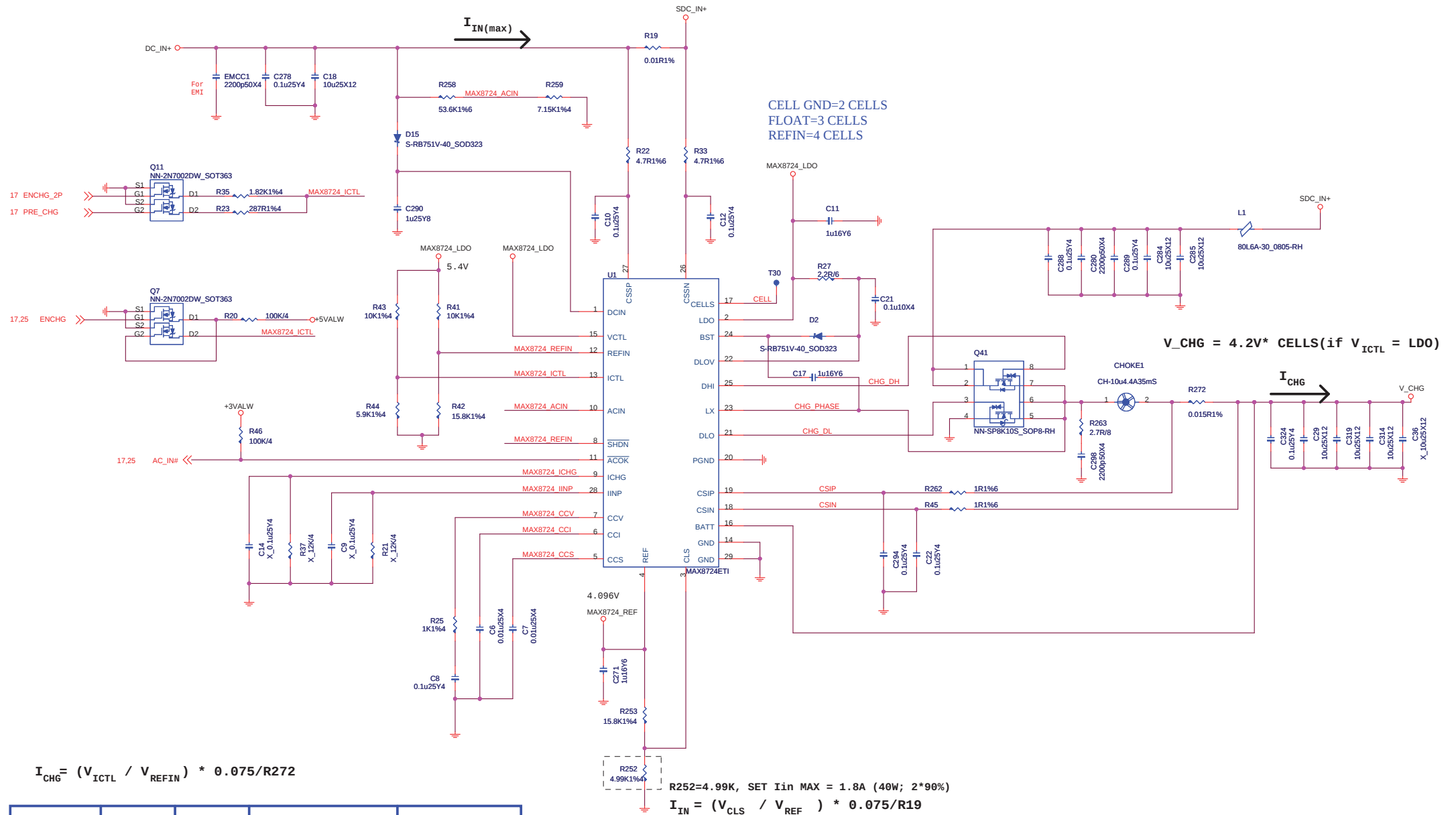




9: VBATA+
8: VBATA+
7: NC
6: NC
5: SMBCLK
4: SMBDATA
3: BAT_IN#
2: GND
1: GND



Adapter= 40 W
Adapter input voltage set 20 Voltage 2 Amps



ENCHG-2P	PRE_CHG	ENCHG	charge status	charge current
0	1	1	Pre-charge	220 mA
1	0	1	3S-Fast charge	1.0 A
0	0	1	3S2P-Fast charge	3A
X	X	0	STOP CHARGE	0

0.747A
 ICH7M : 132mA ;
 PCIE LAN: 365mA ;
 MINI PCIE +3VRUN: 250mA;

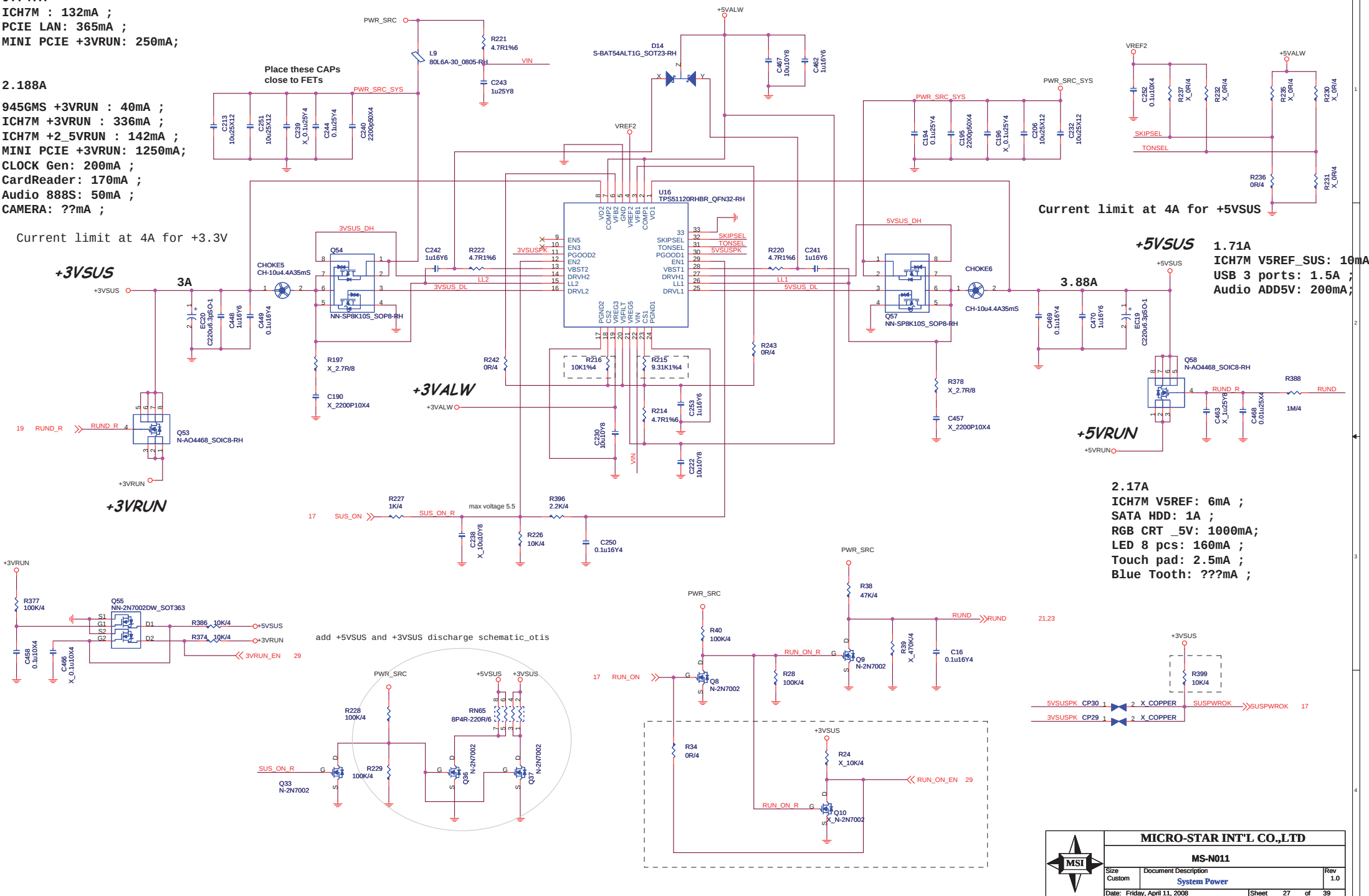
2.188A

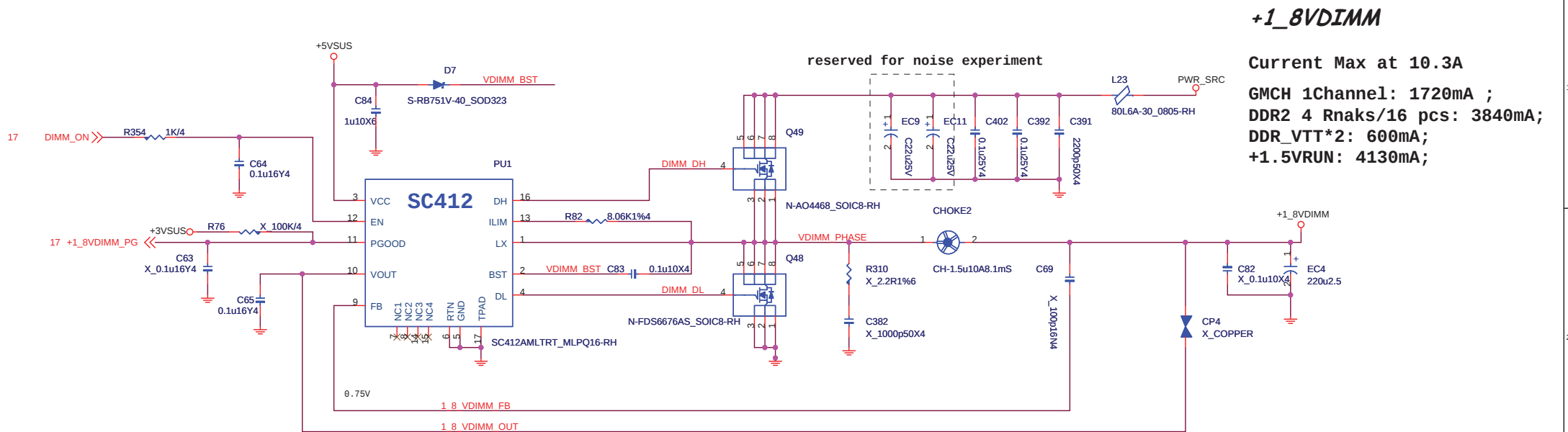
945GMS +3VRUN : 40mA ;
 ICH7M +3VRUN : 336mA ;
 ICH7M +2.5VRUN : 142mA ;
 MINI PCIE +3VRUN: 1250mA ;
 CLOCK Gen: 200mA ;
 CardReader: 170mA ;
 Audio 888S: 50mA ;
 CAMERA: ??mA ;

Current limit at 4A for +3.3V

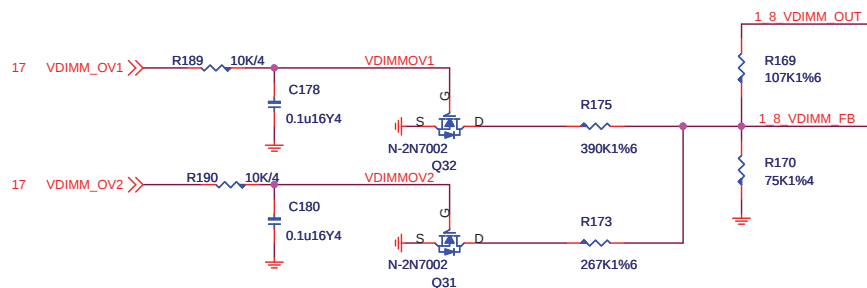
NEXT VERSION CHANGE TO TI/TPS51125 FOR COST DOWN

+5VALW





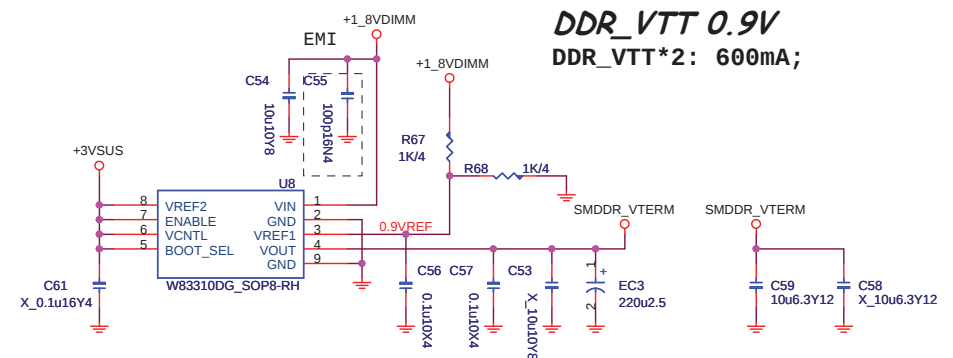
VDIMM OC



VDIMM OverVoltage TABLE

OV1	OV2	VDIMM OverVoltage
0	0	1.85V(default)
1	0	2V
0	1	2.15V

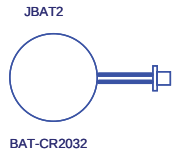
Note: 1=> HIGH 0=> LOW



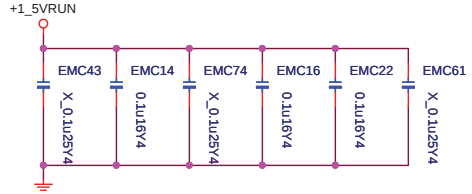
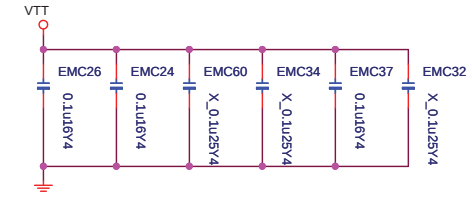
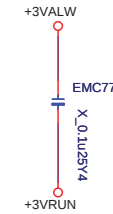
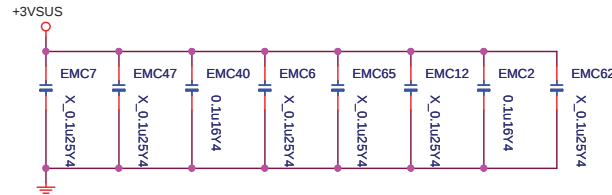
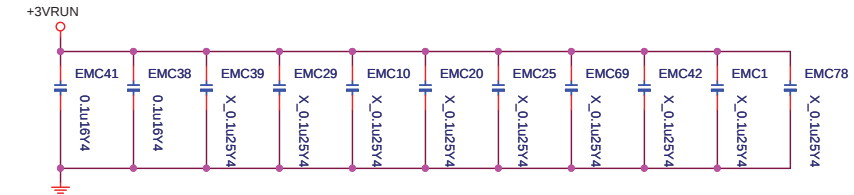
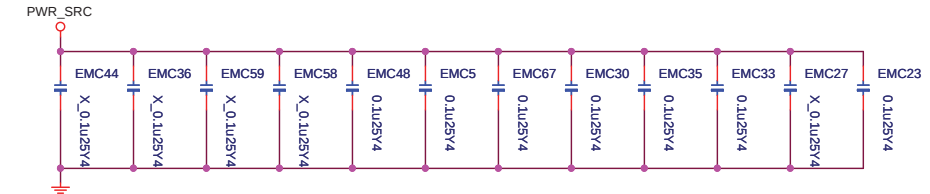
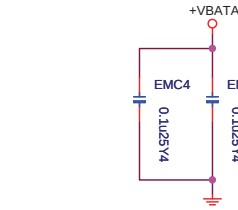
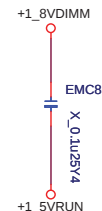
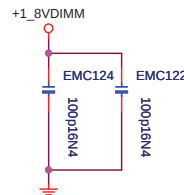
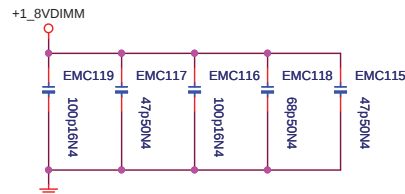
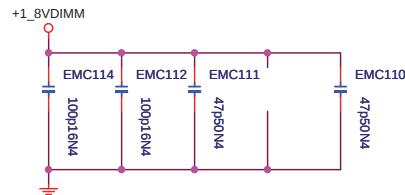
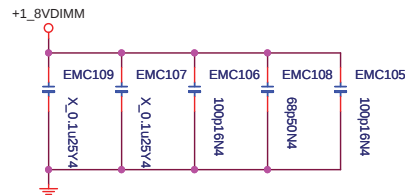
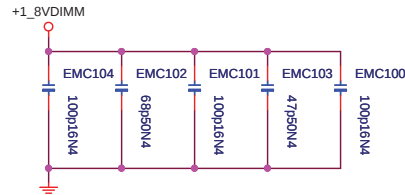
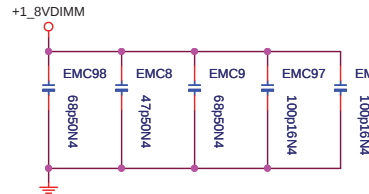
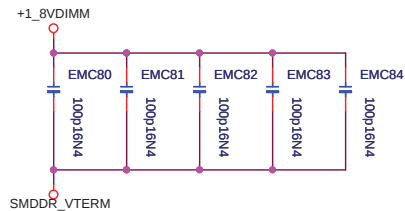
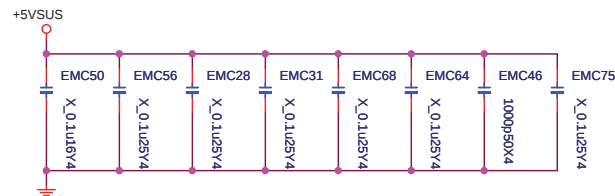
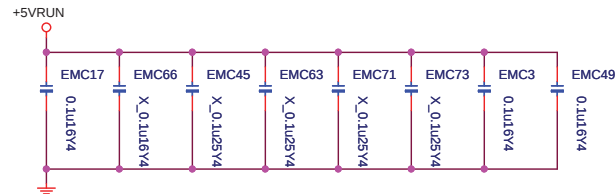
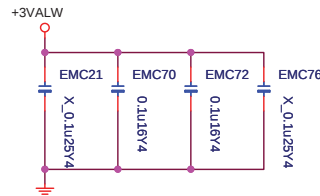
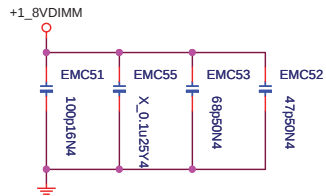
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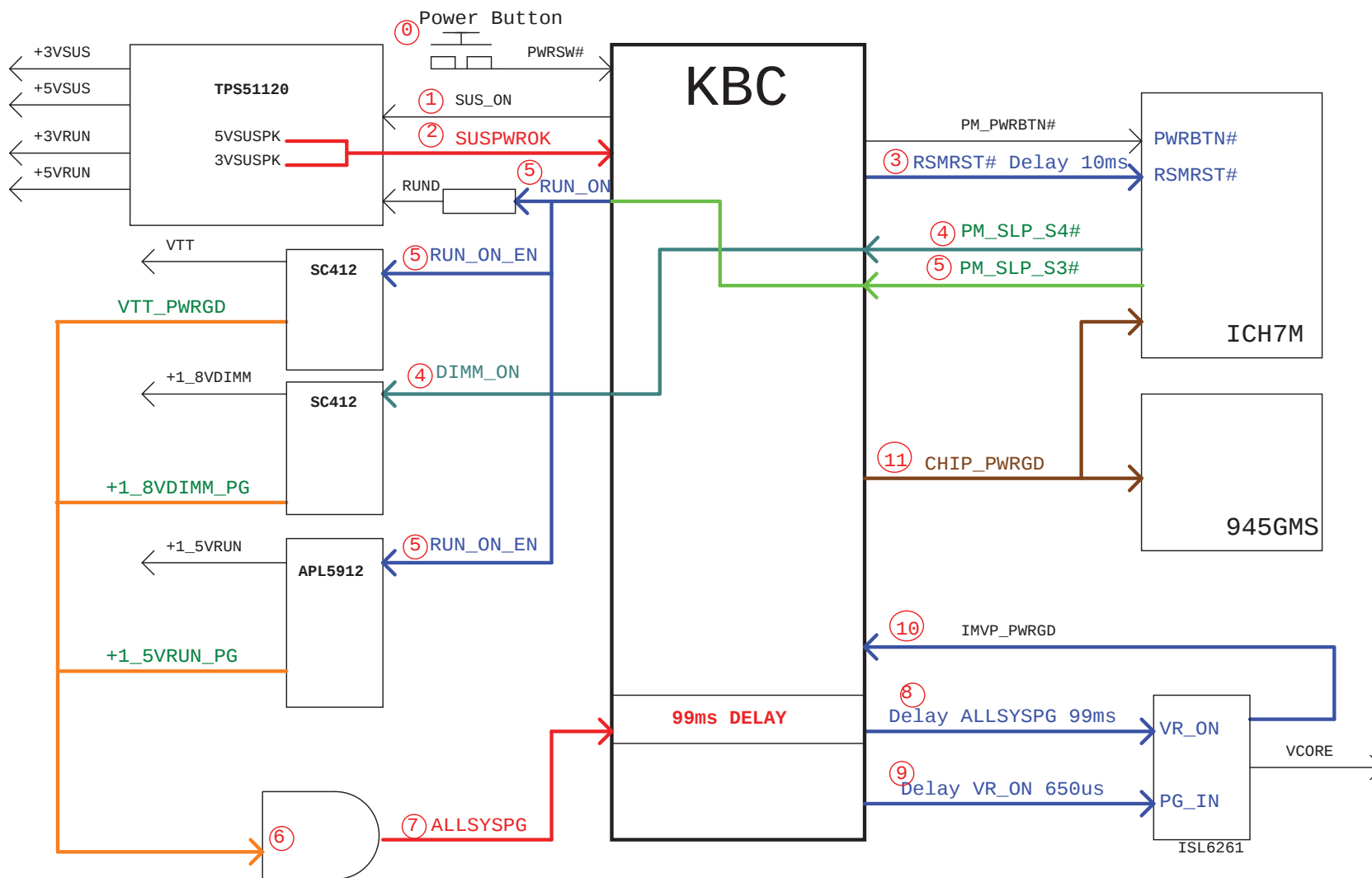
Size	Document Description	Rev
B	DDR & VTT_DDR Power	1.0
Date: Friday, April 11, 2008	Sheet 28 of 39	

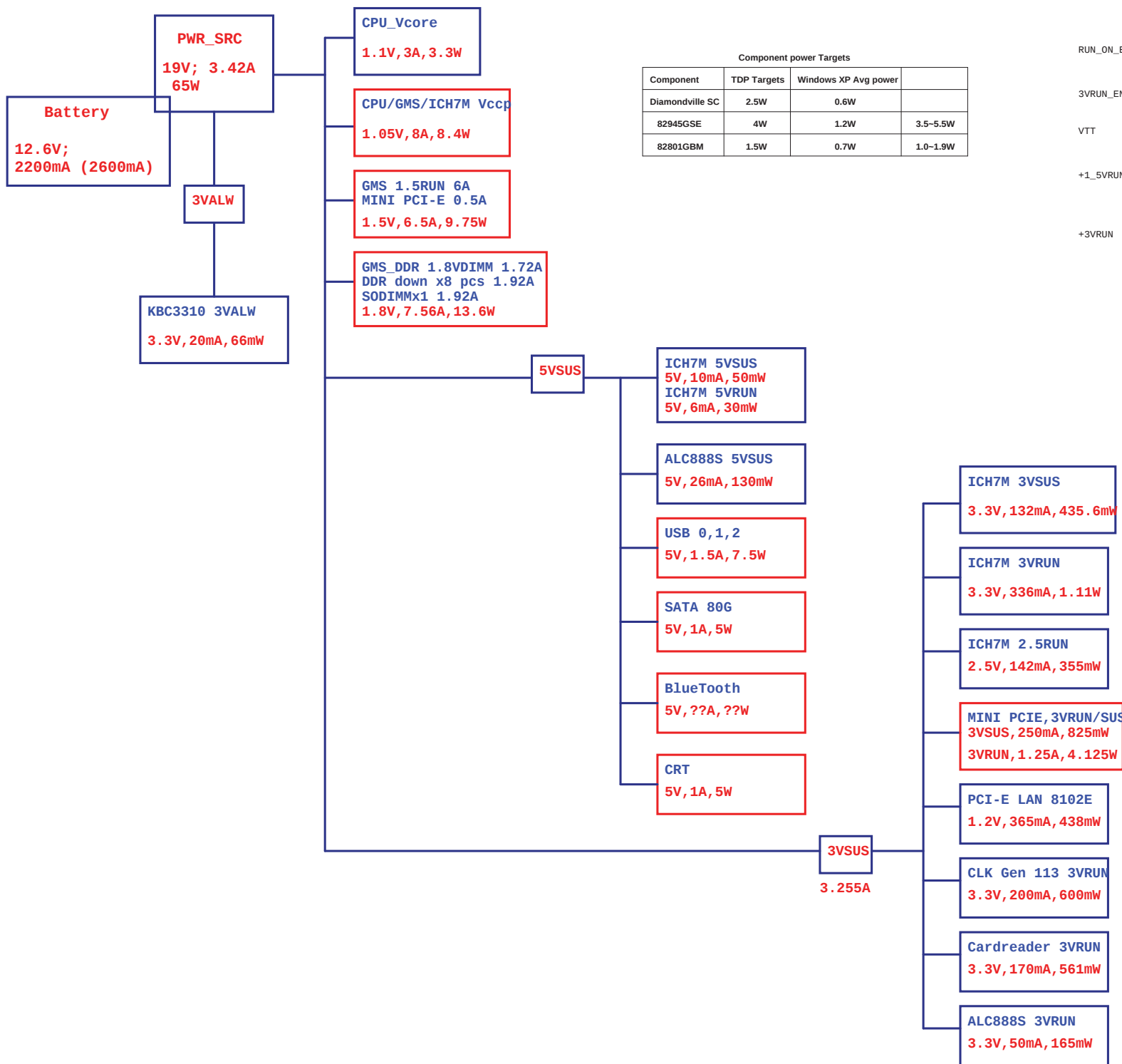


P30-N011110-H73/D05/Y34

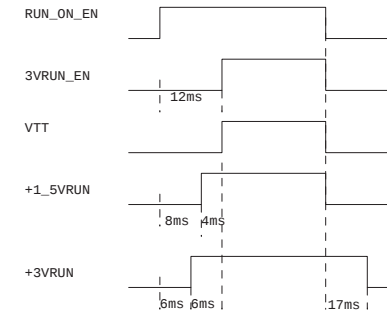


			
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Size B	Document Description		Rev 1.0
		Manual Parts	
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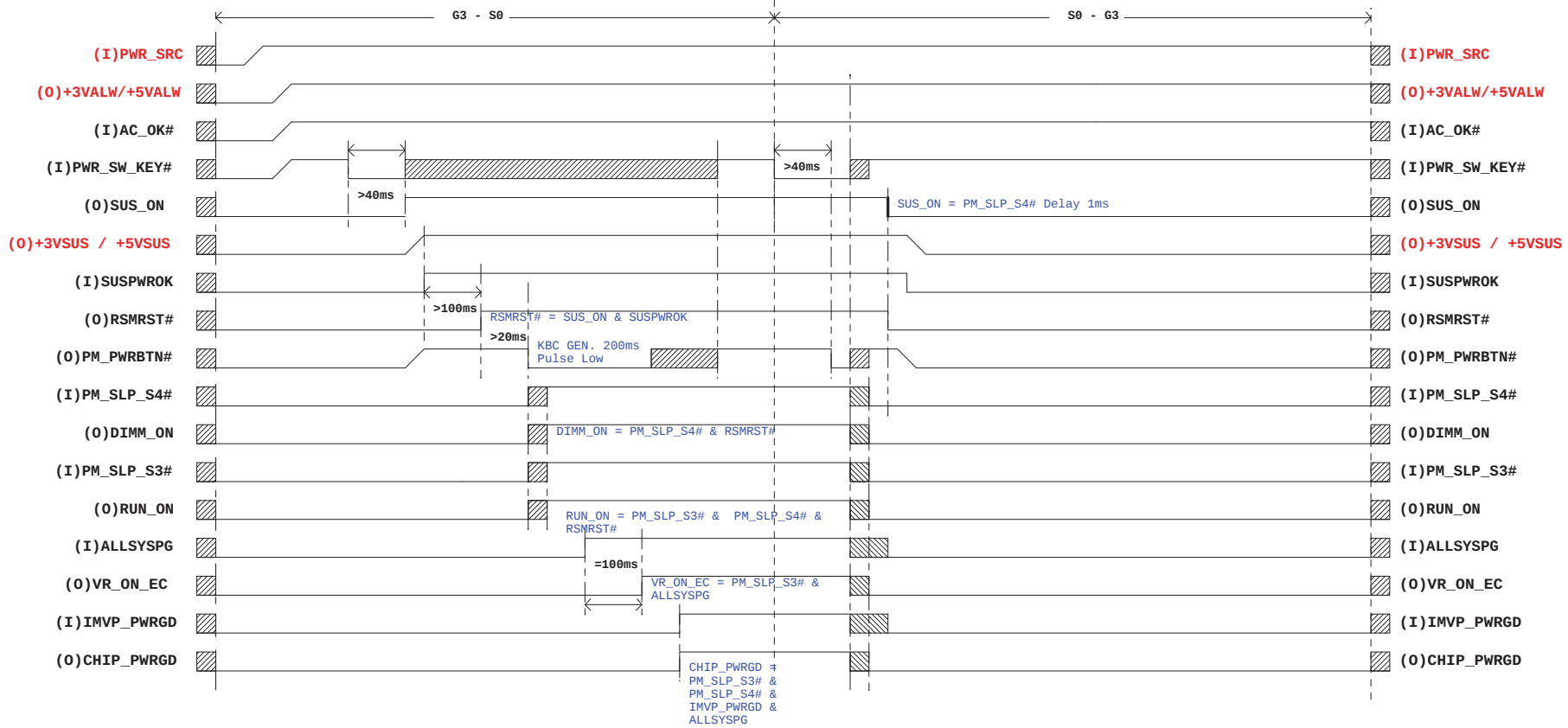


Component power Targets			
Component	TDP Targets	Windows XP Avg power	
Diamondville SC	2.5W	0.6W	
82945GSE	4W	1.2W	3.5-5.5W
82801GBM	1.5W	0.7W	1.0-1.9W



RED: POWER
BLACK: KBC

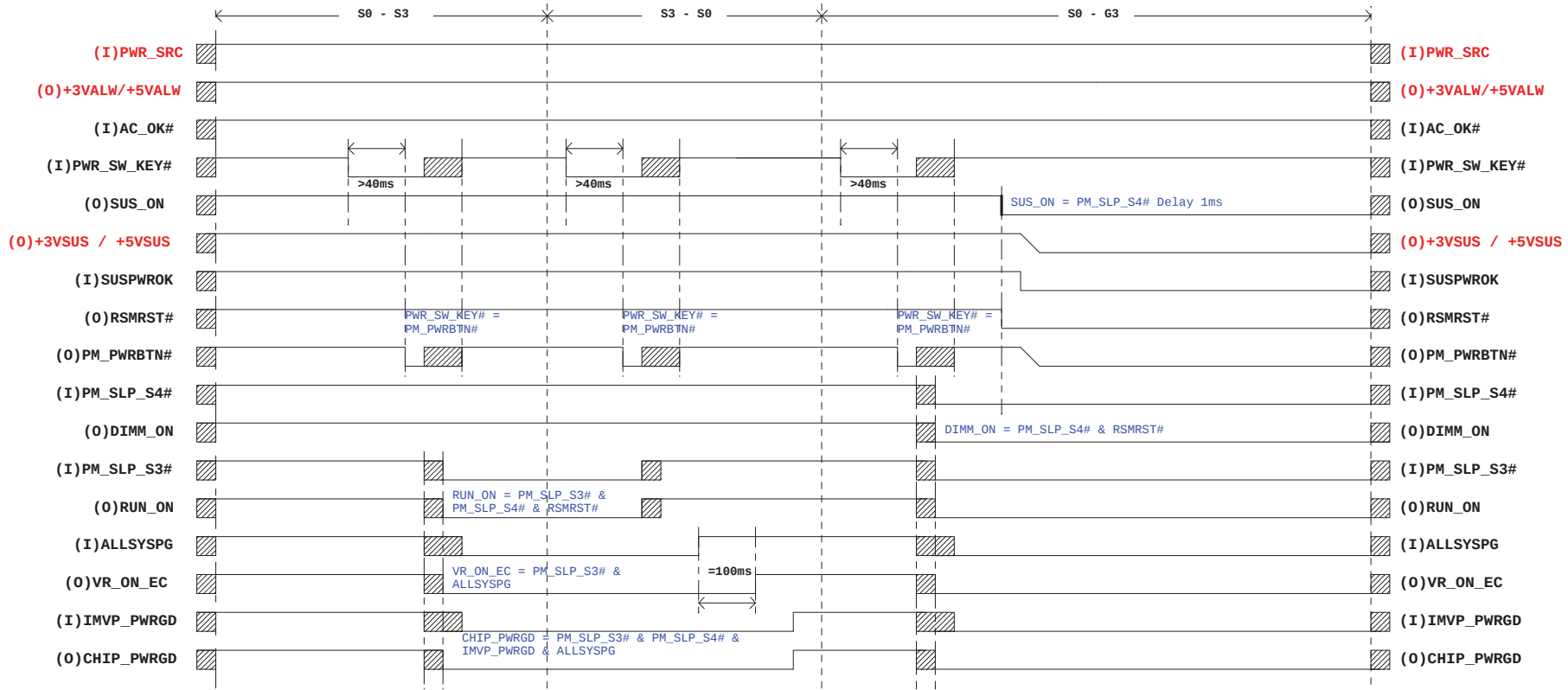
Battery Mode G3 - S0 - G3



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Size	Document Description	Rev	
Custom	timing1	1.0	
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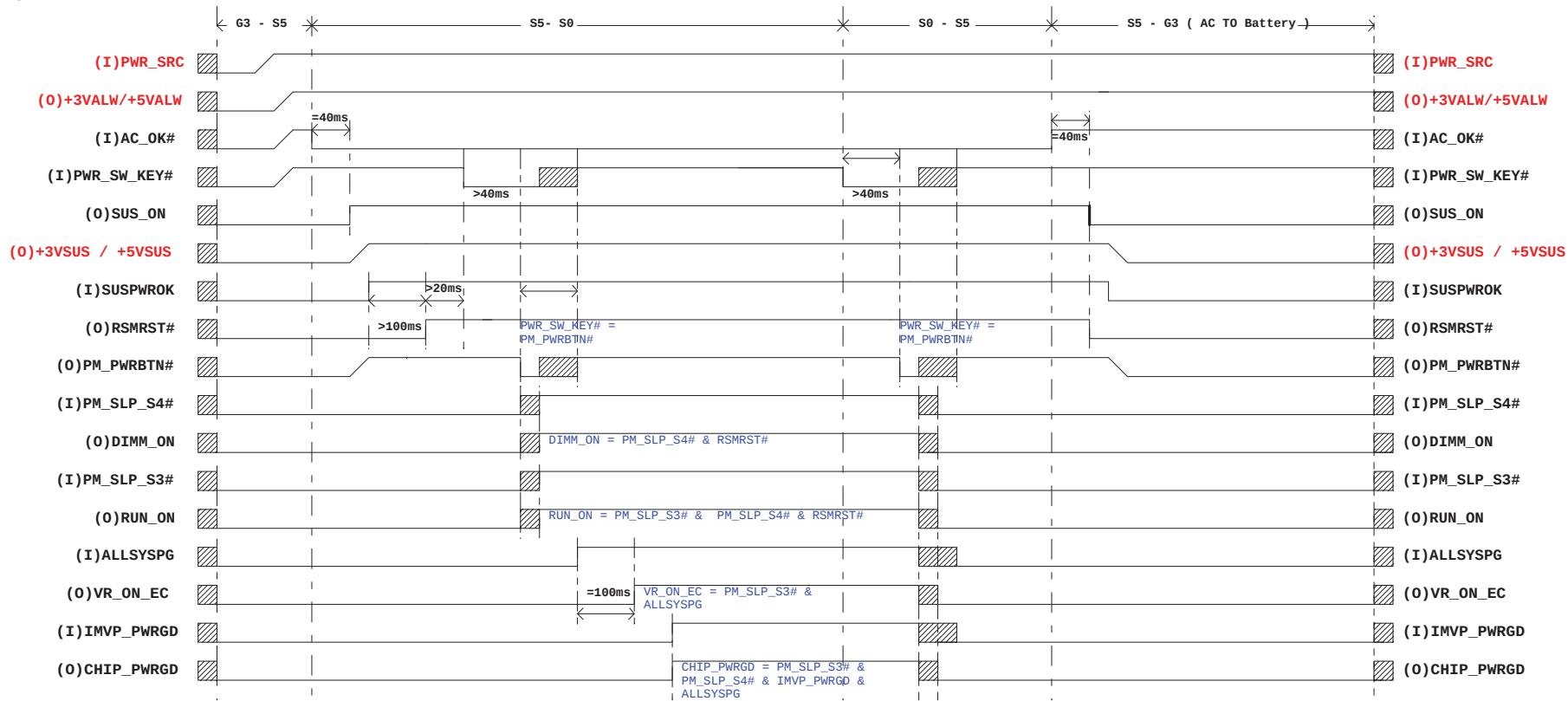
RED: POWER
BLACK: KBC

Battery Mode S0 - S3 - S0

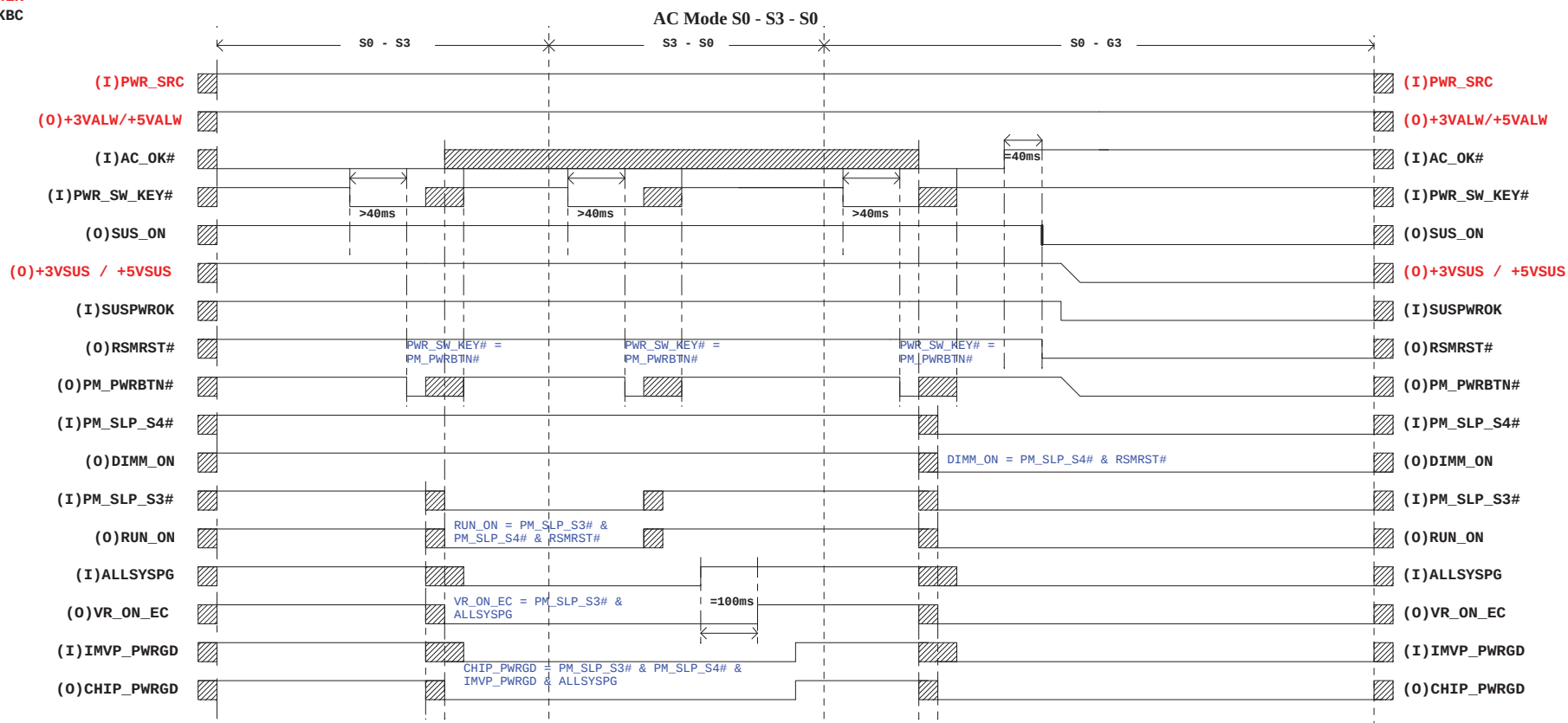


RED: POWER
BLACK: KBC

AC Mode G3 - S5 - S0 - S5 - G3



RED: POWER
BLACK: KBC



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Custom	timing4	1.0	
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1. PAGE7: EC15 close to ICH7M cause RMA difficult to rework, change EC15 to C256 (1206) size.
2. PAGE21: Remove R413 & change R412 pull down to GND for LCD backlight blinking while power on.
3. Swap BT & WLAN LED.
4. PAGE25: JBAT1 pin6,7 connector to GND.
5. PAGE23: Remove CP35, CP34.
6. PAGE24: RN47 separate to R244, R254, R257. For tune LED brightness.
7. PAGE23: USB add CMC for EMI request.
8. PAGE23: Add EMC96 for EMI request.
9. PAGE26: Modify R252 value to match new 40W /20V Adapter.
9. PAGE27,29: Modify R215=9.31KR, R216=10KR, R183=5.9KR by power team.

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	MS-N011		
	Size	Document Description	Rev
	Custom	History	1.
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