



MS-7459 VER:1.0

CPU:

AMD Athlon 64 AM3

System Chipset:

AMD/ATI RS880

AMD/ATI SB700

On Board Chipset:

FINTEK Super I/O -- F71889

LAN -- RTL8111DL

HD Codec -- ALC888S-VC2

BIOS -- SPI ROM 8M

Main Memory:

DDR3 SO-DIMM X 2 (Max 4GB)

Expansion Slots:

MINI-PCI-E X 1 *2

IDE X 1

Clock Generator:

Controller--RTM880N-793-VB-GR

PWM:

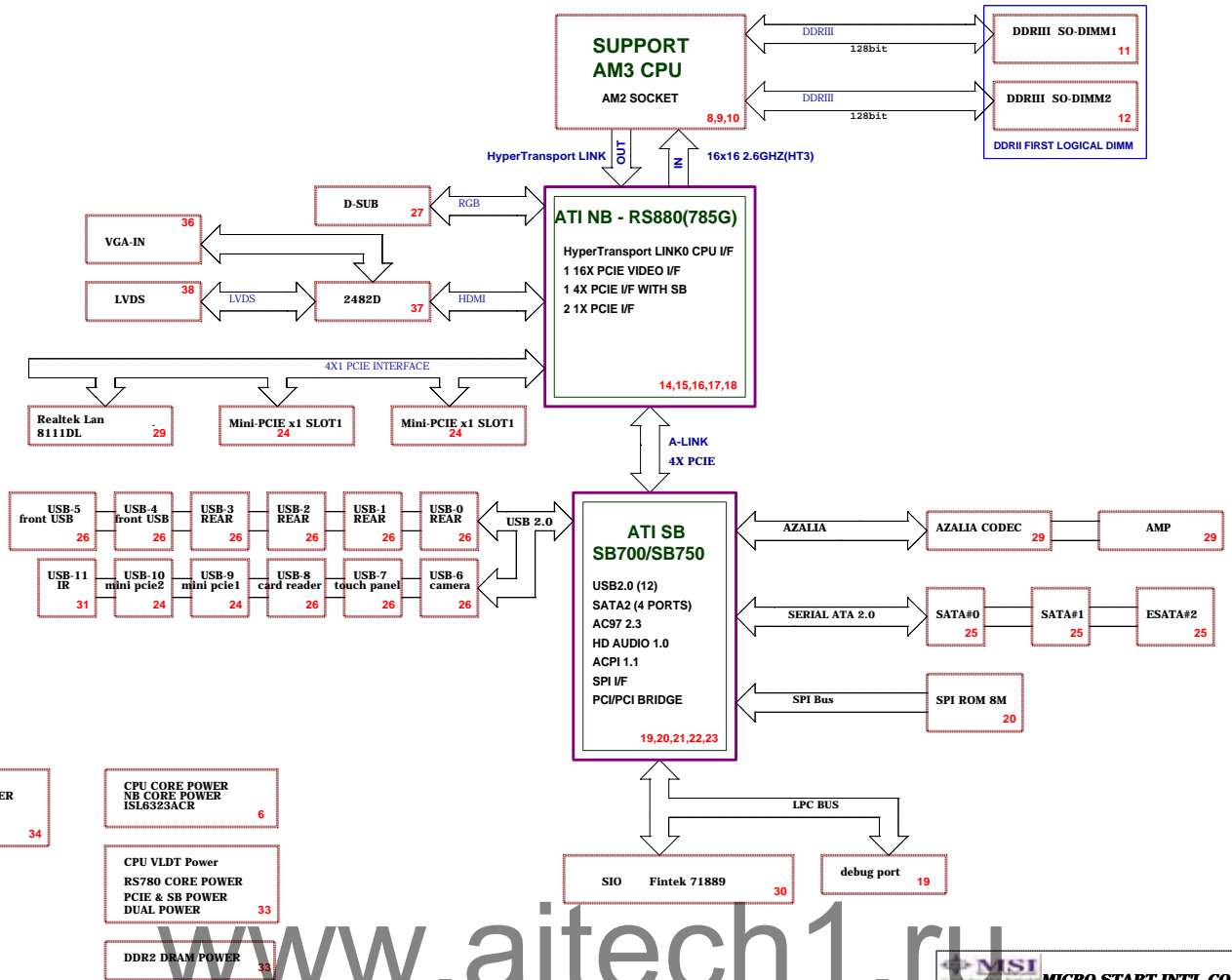
ISL6323CR

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Micro Star Restricted Secret		
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Project RS880 BLOCK DIAGRAM



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MICRO-START INTL CO.,LTD.			
File	BLOCK Diagram		
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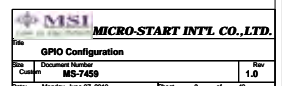
2
SB700/750 GPIO Config

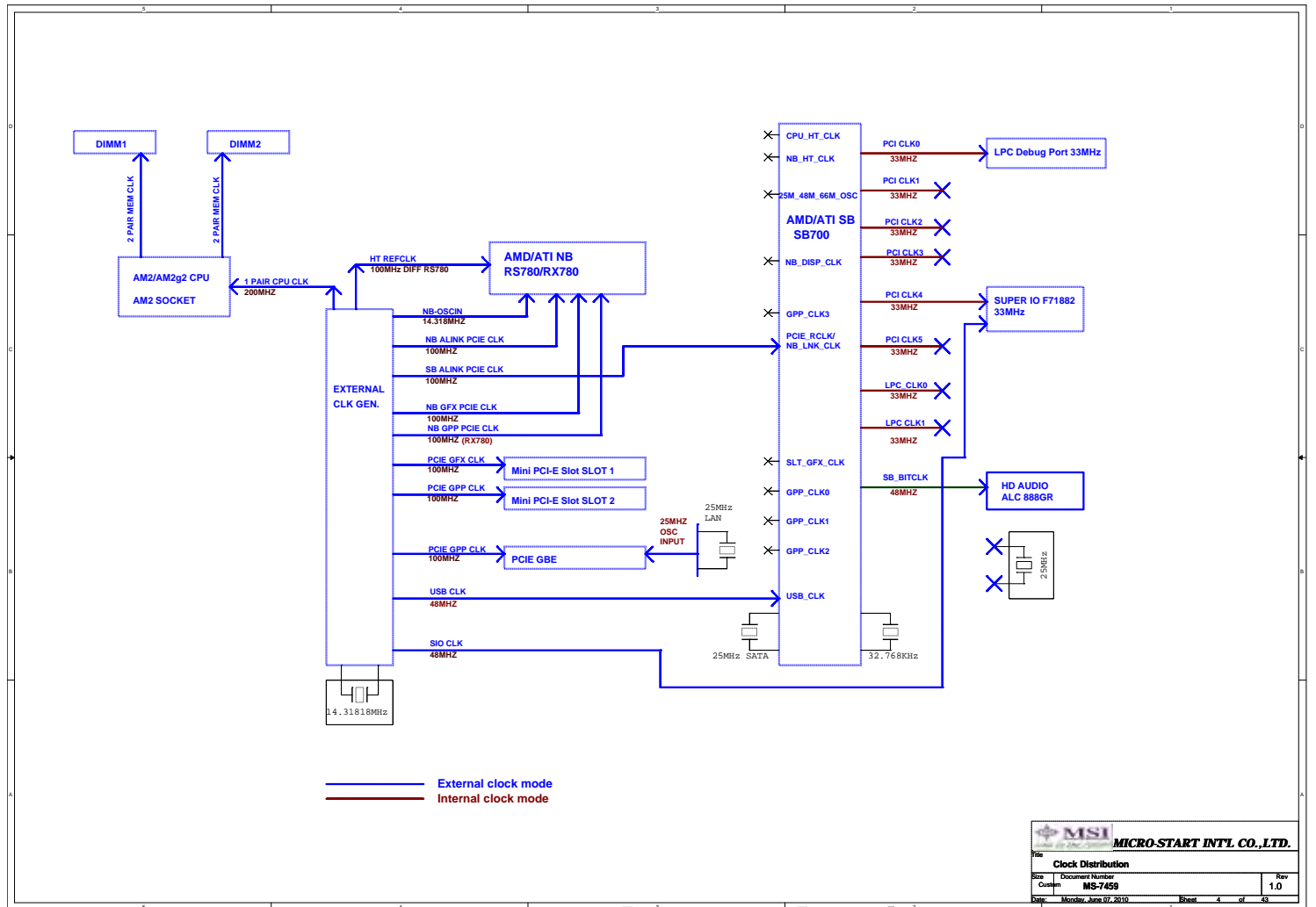
GPIO Name	Type	Function description	Pin	Page
AX_DOCK_RSTN/GBM8	3_V3	Unused	L5	21
PR2_DAT7/EC_GP100		Unused	H19	21
PR2_CLK/EC_GP101		Unused	H20	21
SP1_CS2B/EC_GP102		Unused	H21	21
1DE_RSTN/P_RSTN/EC_GP03		Unused	F25	21
PR2BK_DAT7/EC_GP104		Unused	D22	21
PR2BK_CLK/EC_GP105		Unused	K24	21
PR2M_DAT7/EC_GP106		Unused	K25	21
PR2M_CLK/EC_GP107		Unused	D23	21
USBCLK1/4M_25M_48M_OSC		USB_48M_CLK	C8	21
RC_P16/EC_GP108		Unused	A18	21
TS0_17/EC_GP109		Unused	B18	21
EC_PPM0/EC_GP110		Unused	F21	21
SC1C2/EC_GP111		Unused	D21	21
SDA2/EC_GP112		Unused	F19	21
SC1C3_LV/EC_GP113		Unused	E20	21
SDA3_LV/EC_GP114		Unused	E21	21
EC_PPM1/EC_GP1015		Unused	E19	21
EC_PPM2/EC_GP1016		SB_GP16	D19	21
EC_PPM3/EC_GP1017		Unused	E18	21
KST_0/EC_GP1018		Unused	G20	21
KST_1/EC_GP1019		Unused	G21	21
KST_2/EC_GP1020		Unused	C25	21
KST_3/EC_GP1021		Unused	D24	21
KST_4/EC_GP1022		Unused	C26	21
KST_5/EC_GP1023		Unused	C24	21
KST_6/EC_GP1024		Unused	B25	21
KST_7/EC_GP1025		Unused	C23	21
KSO_0/EC_GP1026		Unused	B24	21
KSO_1/EC_GP1027		Unused	B23	21
KSO_2/EC_GP1028		Unused	A23	21
KSO_3/EC_GP1029		Unused	C22	21
KSO_4/EC_GP1030		Unused	A22	21
KSO_5/EC_GP1031		Unused	B22	21
KSO_6/EC_GP1032		Unused	A21	21
KSO_7/EC_GP1033		Unused	A21	21
KSO_8/EC_GP1034		Unused	D20	21
KSO_9/EC_GP1035		Unused	C20	21
KSO_10/EC_GP1036		Unused	A20	21
KSO_11/EC_GP1037		Unused	B20	21
KSO_12/EC_GP1038		Unused	B19	21
KSO_13/EC_GP1039		Unused	A19	21
KSO_14/EC_GP1040		Unused	D18	21
KSO_15/EC_GP1041		Unused	C18	21
SATA_A07V/CP1067		SATA_LED01	W11	21
IDR_0/GP1016		Unused	A024	21
IDR_1/GP1015		Unused	A023	21
IDR_2/GP1017		Unused	A022	21
IDR_3/GP1018		Unused	A022	21

[illegible]

PCI Config.

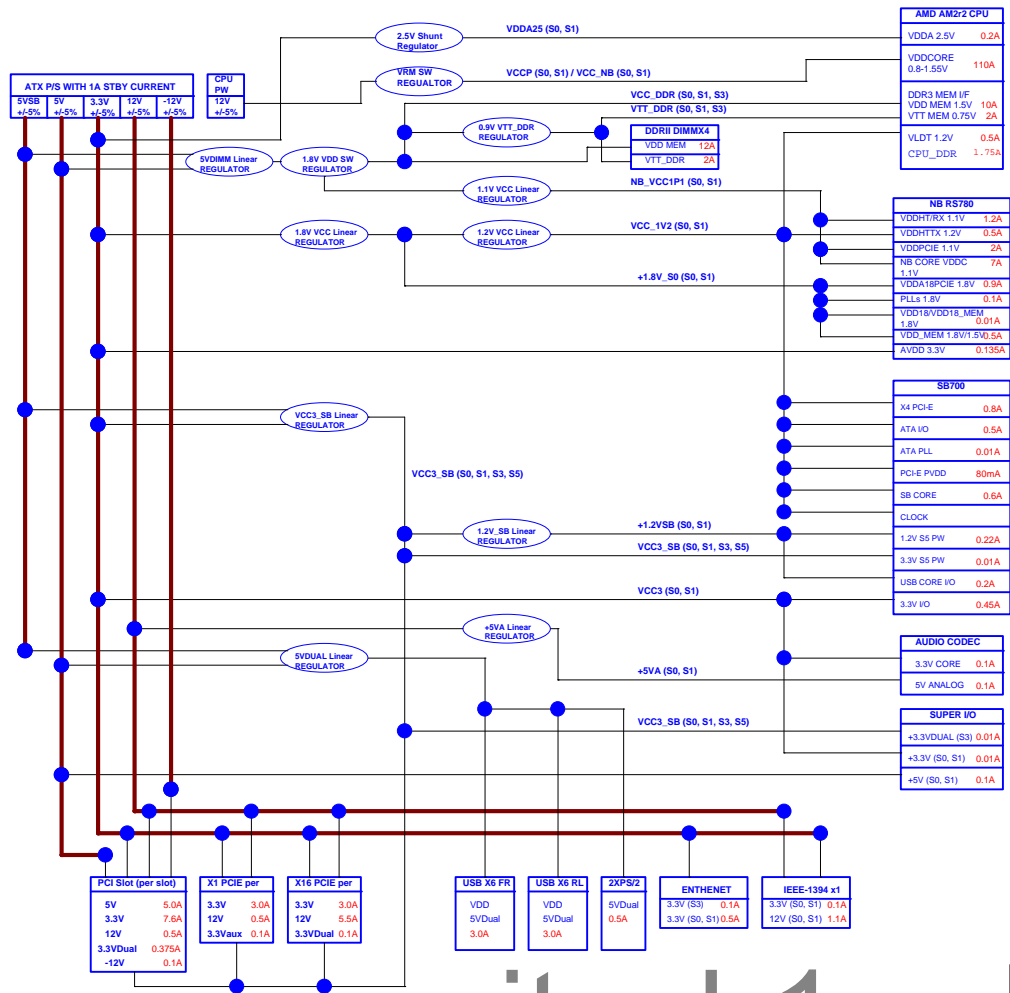
DEVICE	MCPI INT Pin	REQ#/GNT#	IDSEL	CLOCK
PCI Slot 1	PCI_INTE# PCI_INTF# PCI_INTG# PCI_INTH#	PREQ#0 PGNT#0	AD21	PCICLK0
PCI Slot 2	PCI_INTE# PCI_INTG# PCI_INTH# PCI_INTE#	PREQ#1 PGNT#1	AD22	PCICLK1
PCI Slot 3	PCI_INTG# PCI_INTH# PCI_INTE# PCI_INT#	PREQ#2 PGNT#2	AD23	PCICLK3



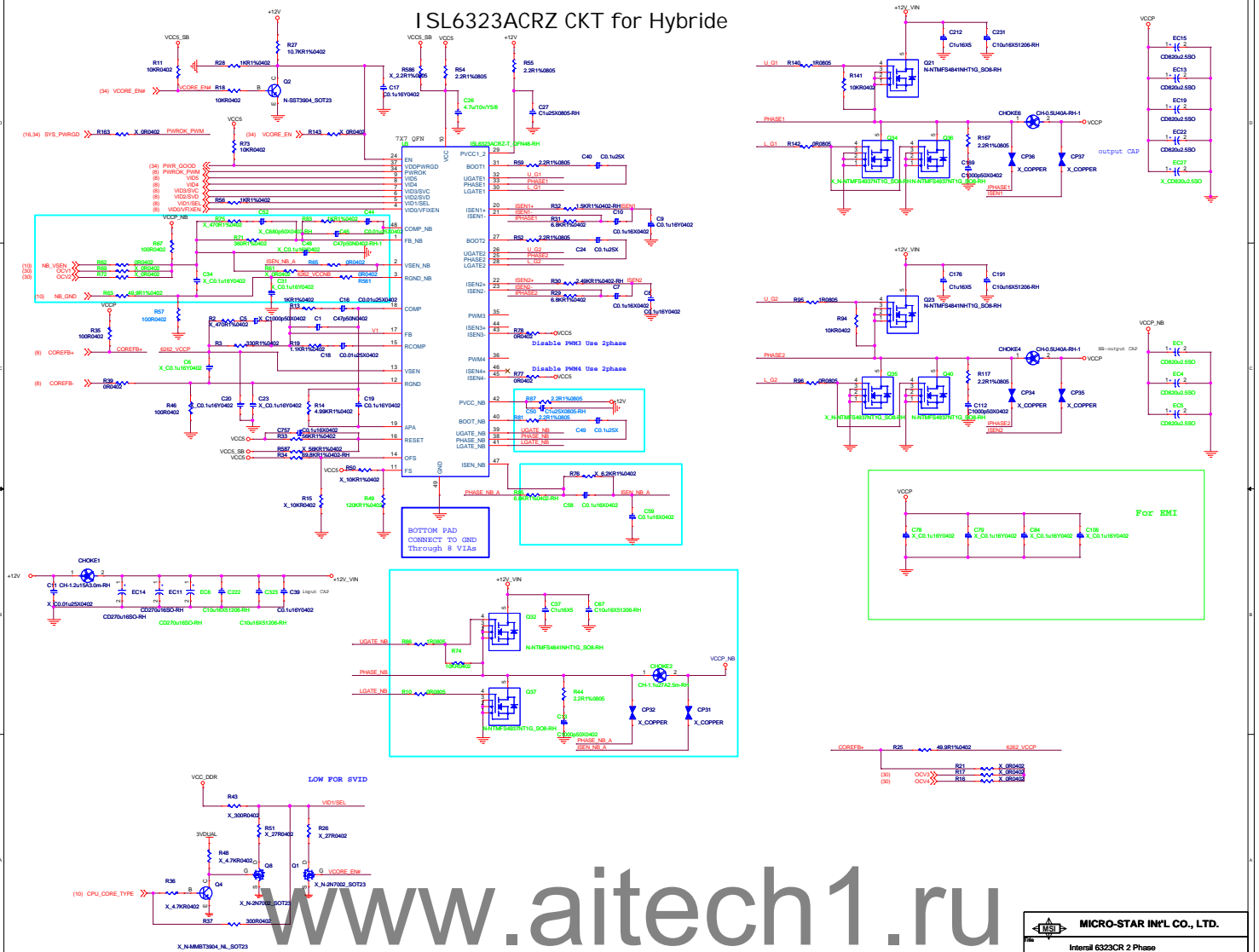


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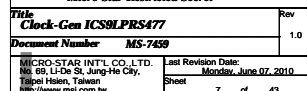
Power Deliver Chart



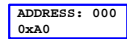
ISL6323ACRZ KCT for Hybride



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ADDR=1010000B

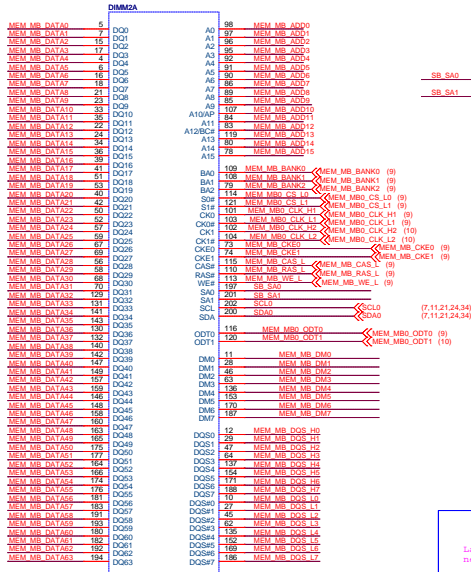


Micro Star Restricted Secret	
Title	DDR SO-DIMMI
Document Number	MS-7450
Revised	1.0
MICRO-STAR INT'L CO.,LTD. No. 69, Li-De St, Jung-He City, Taipet Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, June 07, 2010 Sheet 11 of 43

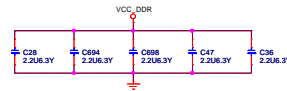
DDR3 SODIMM B0

ADDR=1010010B

(R) MEM_MB_DQS_L[7:0] X MEM_MB_DQS_L[7:0]
 (R) MEM_MB_DQS_H[7:0] X MEM_MB_DQS_H[7:0]
 (R) MEM_MB_DM[7:0] X MEM_MB_DM[7:0]
 (R) MEM_MB_ADD[15:0] X MEM_MB_ADD[15:0]
 (R) MEM_MB_DATA[63:0] X MEM_MB_DATA[63:0]



Layout note: Place capacitors between and near DDR connector if possible.



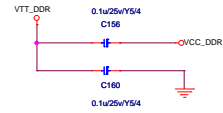
ADDRESS: 000
0xA0

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File		Rev	
DDR SO-DIMM2		1.0	
Document Number		MS-7459	
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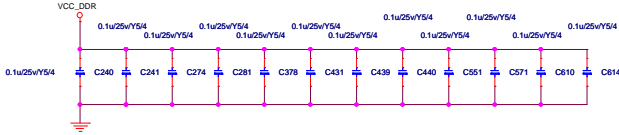
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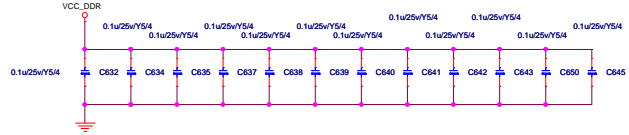
DE-COUPLING FOR CHANNEL A SODIMM



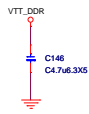
DE-COUPLING FOR CHANNEL B SODIMM



DE-COUPLING FOR CHANNEL A SODIMM (ONE CAP PER POWER PIN)



DE-COUPLING FOR CHANNEL B SODIMM (ONE CAP PER POWER PIN)



LAYOUT: PLACE CLOSE TO DIMMs

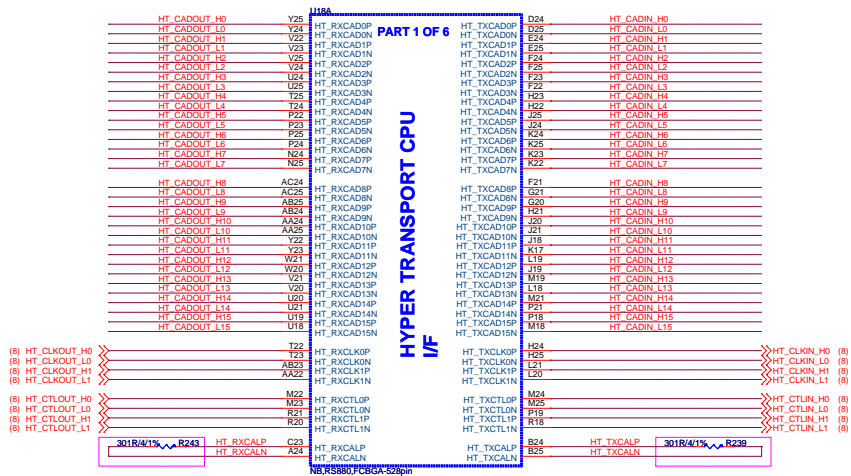


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Document Number	MS-7459	1.0
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-Hsi City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, June 07, 2010
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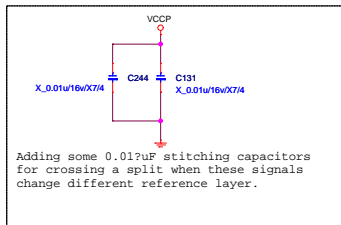
(B) HT_CADOUT_H[15:0] >> HT_CADOUT_H[15:0]
(B) HT_CADOUT_L[15:0] >> HT_CADOUT_L[15:0]

(B) HT_CADIN_H[15:0] >> HT_CADIN_H[15:0]
(B) HT_CADIN_L[15:0] >> HT_CADIN_L[15:0]



RX780/RS740/RS780 difference table (HT LINK)

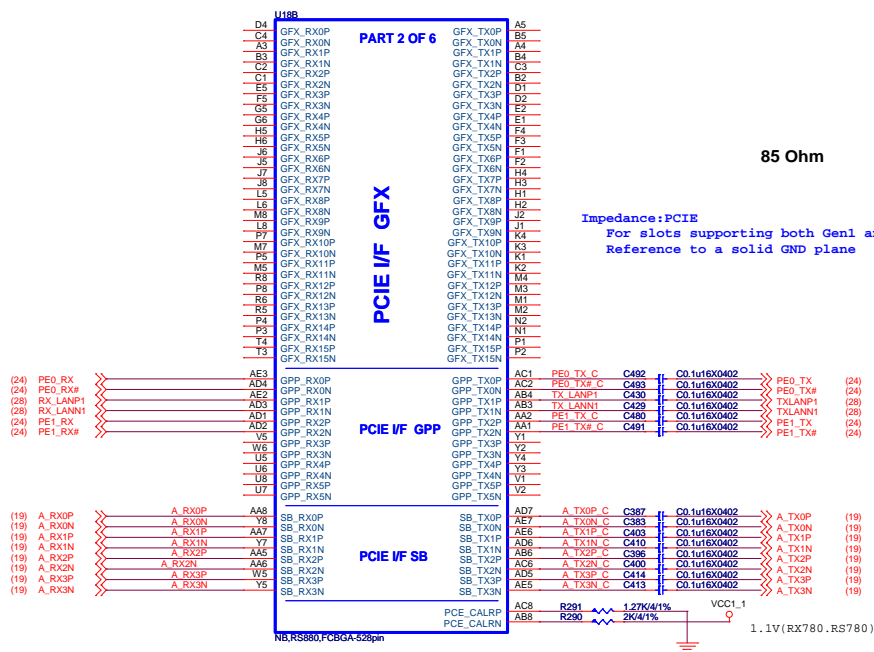
SIGNALS	RS740	RX780	RS780
HT_RXCALP	49.9R (GND)	1.21K	301R
HT_RXCALN	49.9R (VDDHT)		
HT_TXCALP	100R	1.21K	301R
HT_TXCALN			

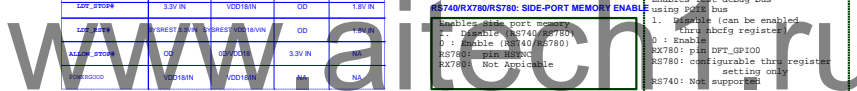


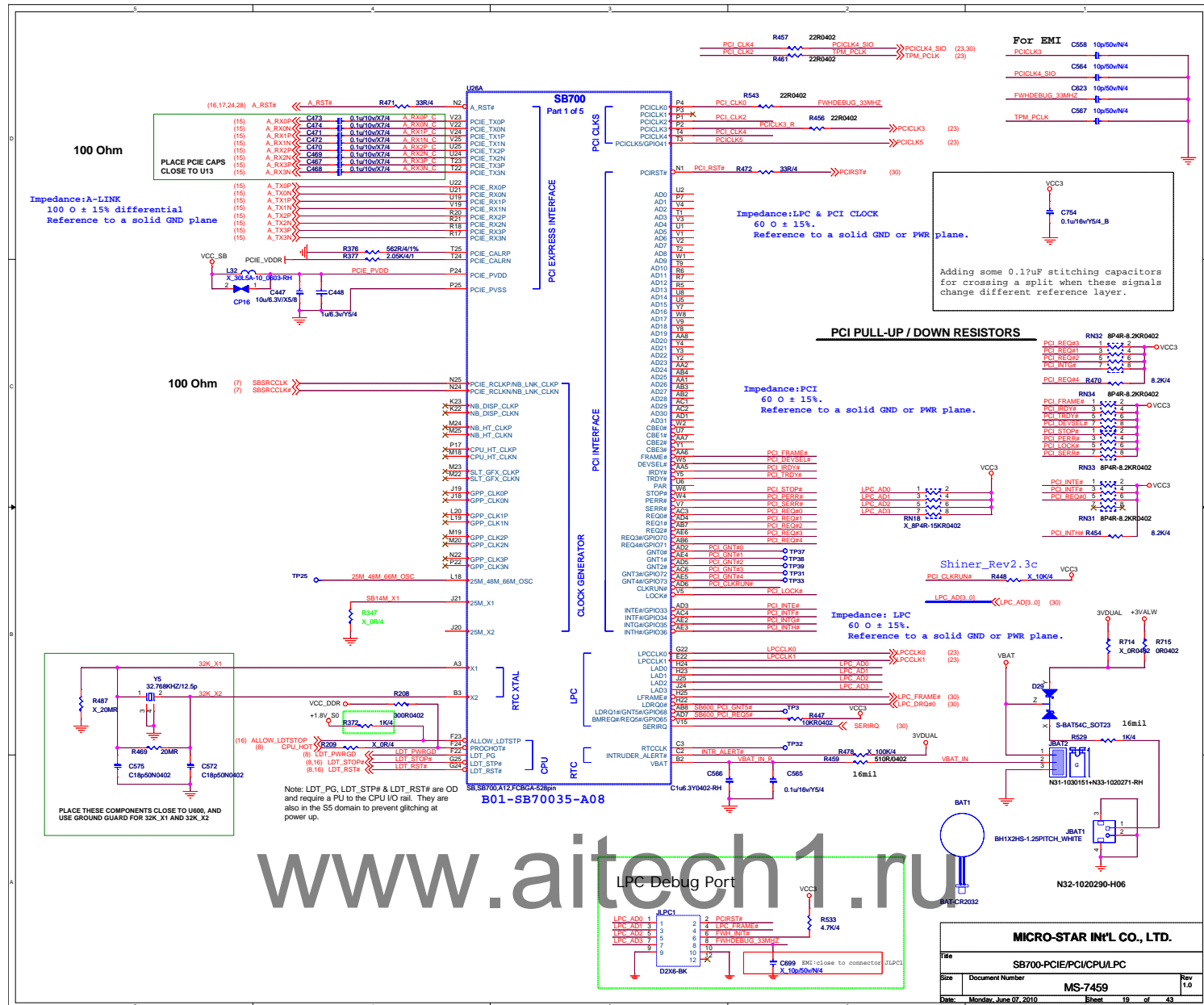
MICRO-STAR IN'L CO., LTD.

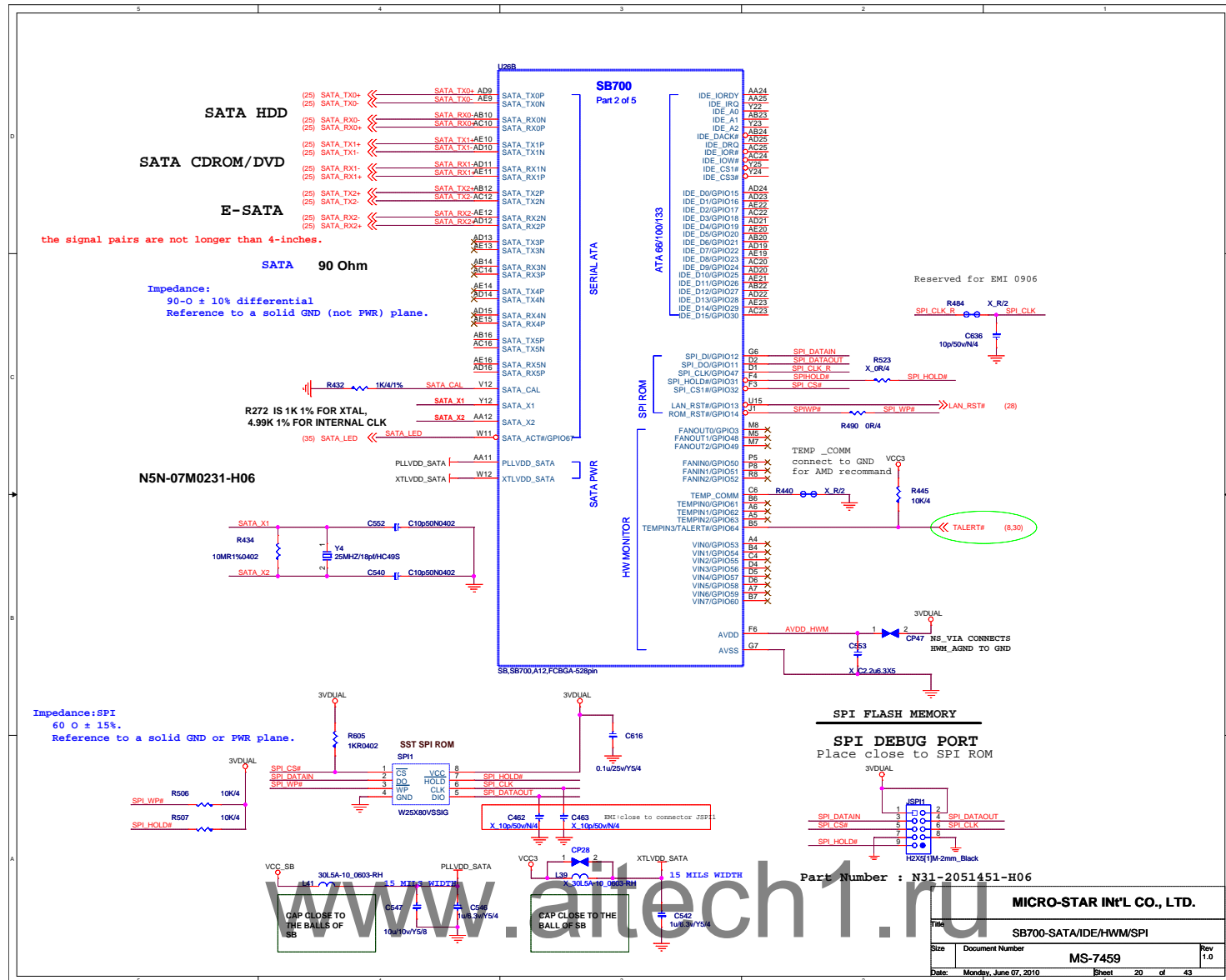
Title RS780-HT L			
Size	Document Number	MS-7459	Rev 1.0
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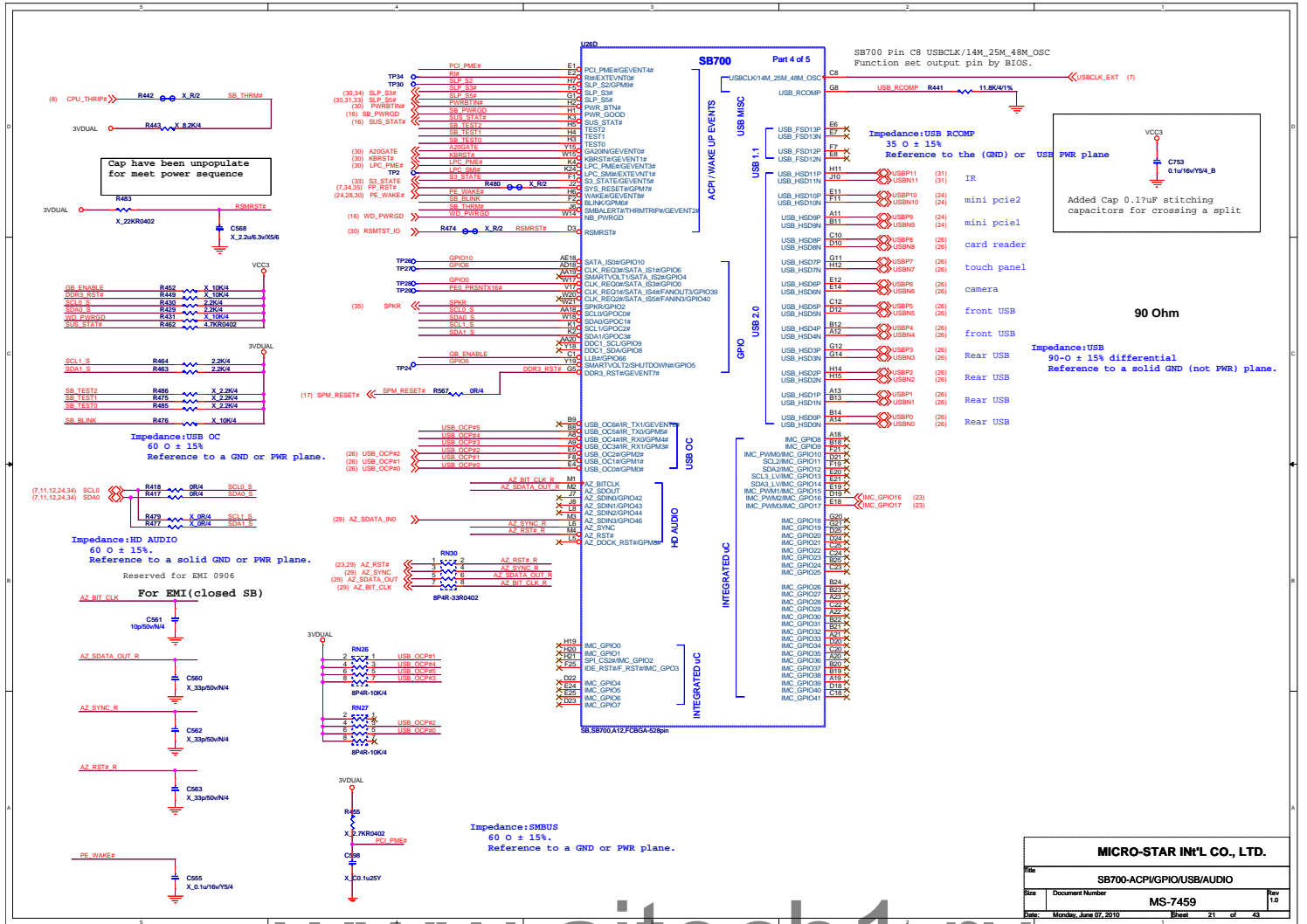
Title		RS780-PCIE I/F	
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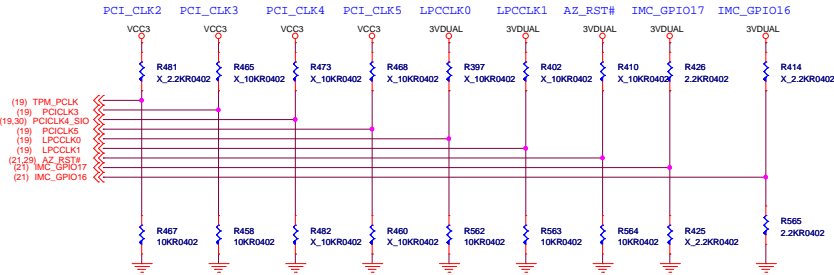
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File			
SB700-POWER & DECOUPLING			
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REQUIRED STRAPS

NOTE: SB700 HAS INTERNAL 15K PULL UP RESISTOR FOR RTC_CLK



	PCI_CLK2	PCI_CLK3	PCI_CLK4	PCI_CLK5	LPC_CLK0	LPC_CLK1	AZ_RST#	IMC_GPIO17	IMC_GPIO16
PULL HIGH	WATCHDOG TIMER ON NB_PWRGD ENABLED	USE DEBUG STRAPS	RESERVED	RESERVED	ENABLE PCI MEM BOOT	CLKGEN ENABLED	IMC ENABLED	ROM TYPE: H, H = Reserved	H, L = SPI ROM DEFAULT
PULL LOW	WATCHDOG TIMER ON NB_PWRGD DISABLED DEFAULT	IGNORE DEBUG STRAPS DEFAULT			DISABLE PCI MEM BOOT DEFAULT	CLKGEN DISABLED DEFAULT	IMC DISABLED DEFAULT	L, H = LPC ROM	L, L = FWH ROM

DEBUG STRAPS

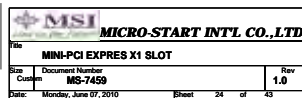
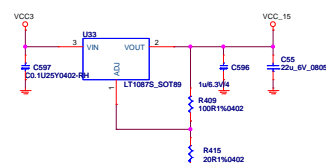
SB700 HAS 15K INTERNAL PU FOR PCI_AD[30:23]

	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE LONG RESET DEFAULT	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	RESERVED
PULL LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	

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Title	SB700-STRAPS		
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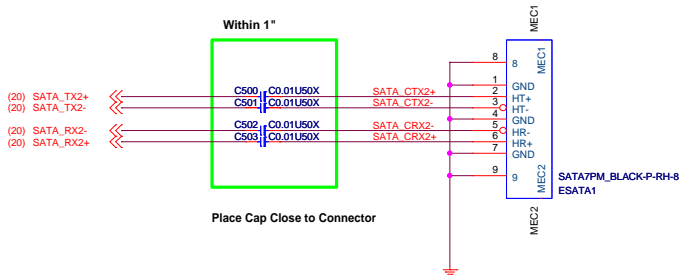
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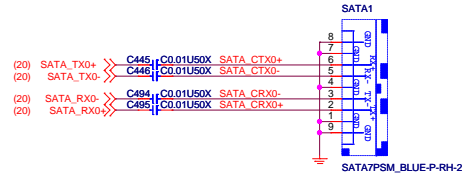


SERIAL ATA CONNECTOR BLOCK

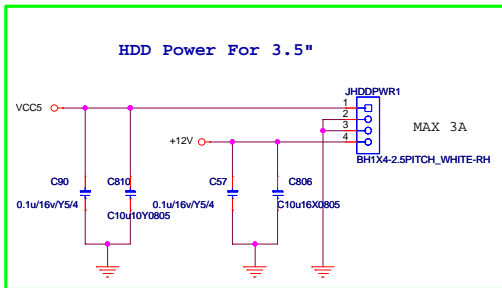
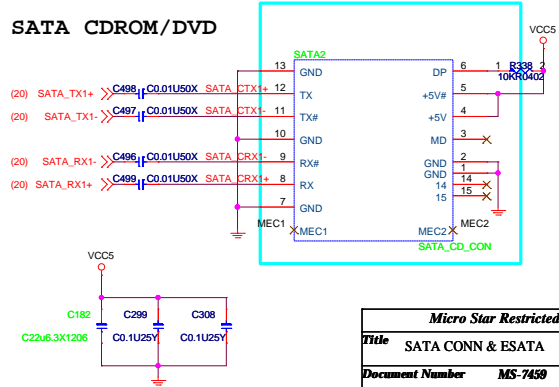
E-SATA



SATA HDD



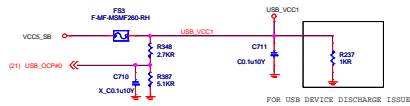
SATA CDROM/DVD



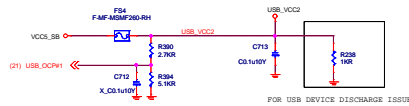
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Title	SATA CONN & ESATA	Rev 1.0
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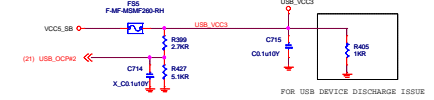
POWER CIRCUIT FOR USB PORT 0,1



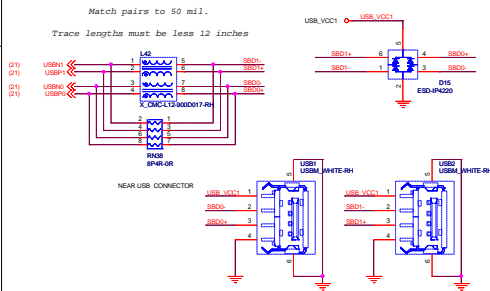
POWER CIRCUIT FOR USB PORT 2,3



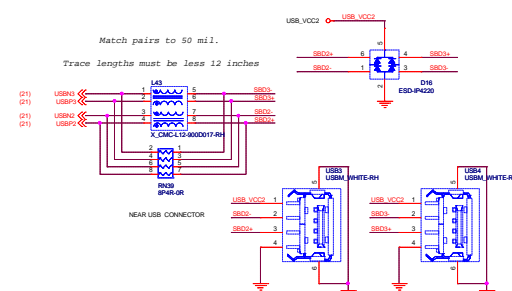
POWER CIRCUIT FOR USB PORT 4,5



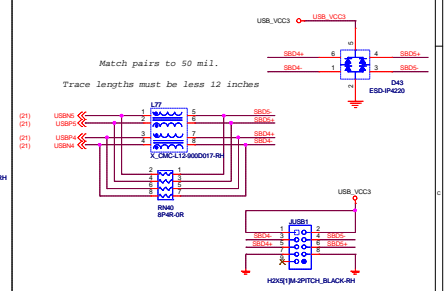
REAR PANEL USB CONNECTOR FOR USB PORT 0,1



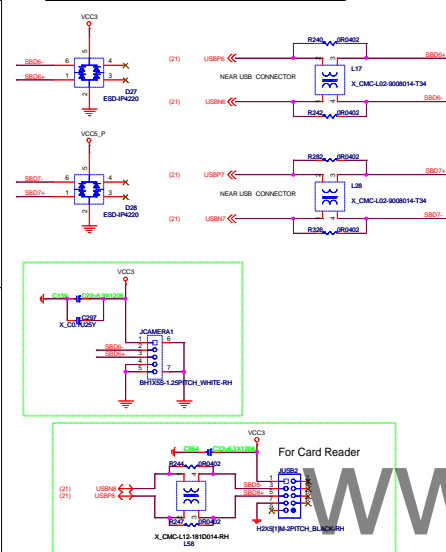
REAR PANEL USB CONNECTOR FOR USB PORT 2,3



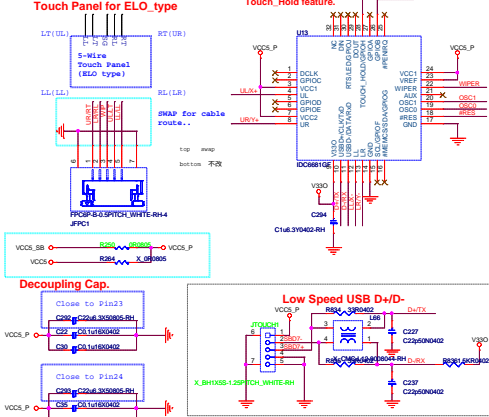
REAR PANEL USB CONNECTOR FOR USB PORT 4,5



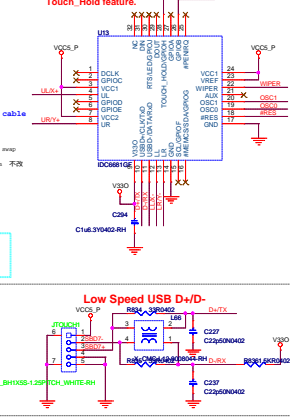
REAR PANEL USB CONNECTOR FOR USB PORT 6,7



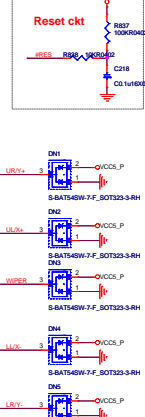
(Option 1) 5-Wire Resistive Touch Panel for ELO type



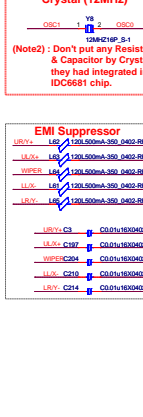
(Note1) : Pull-low to disable the Touch_Hold feature.



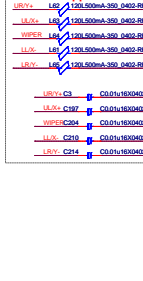
Reset ckt



Crystal (12MHz)



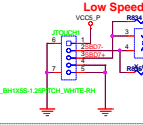
EMI Suppressor



Decoupling Cap.



Low Speed USB D+/D-

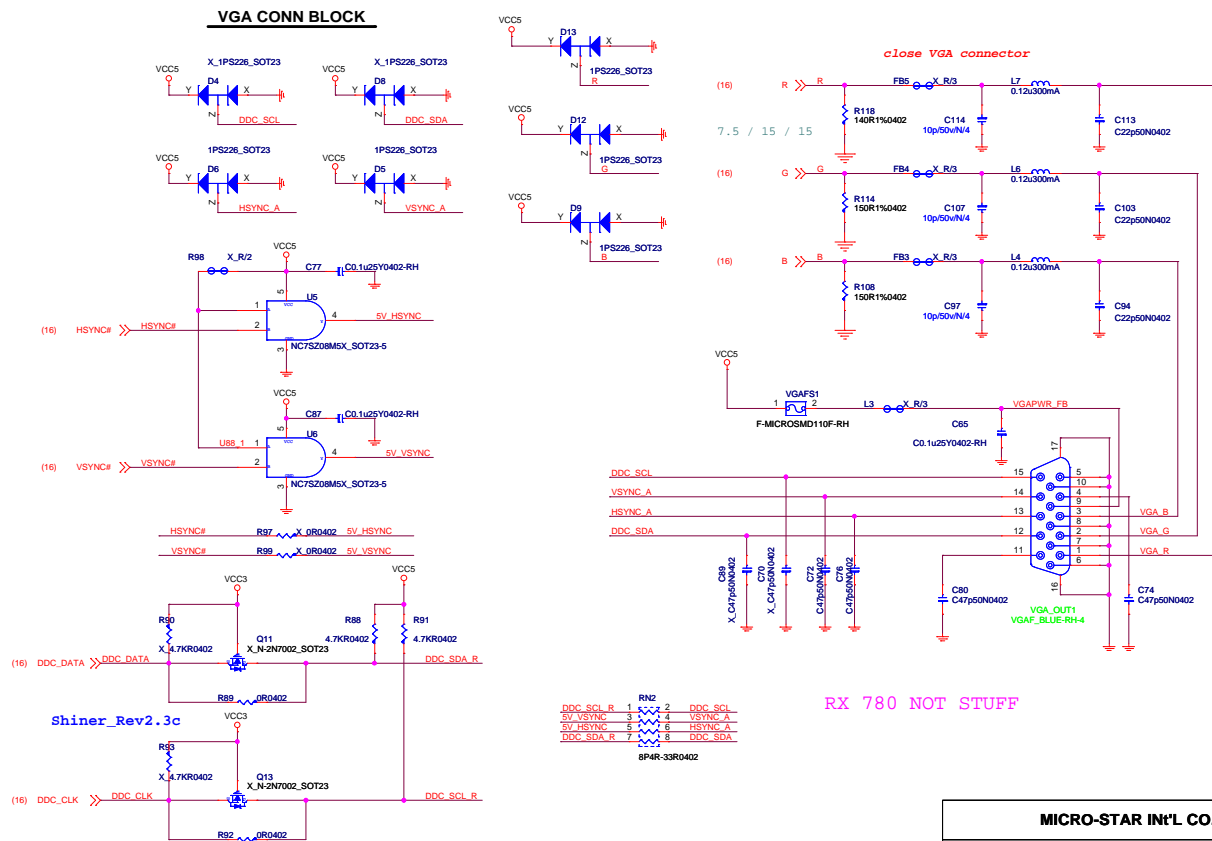


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Doc	USB CONS & CAMERA & TOUCH	
Rev	Document Number	MS-7459
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Rev	1.0	

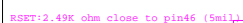
ok

VGA CONN BLOCK



MICRO-STAR INT'L CO., LTD.			
Title			
VGA-OUT CONN			
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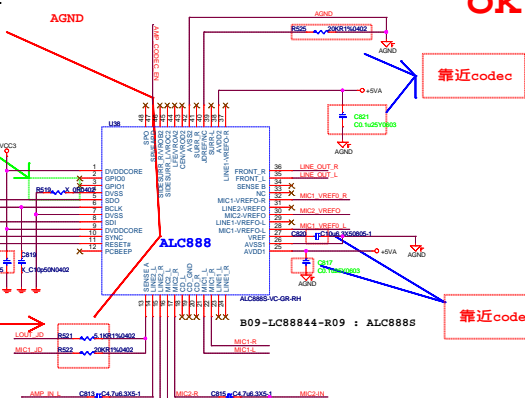
ALC888 CO-LAY

ALC889
default ==>ALC888
option ==>ALC889

ALC889 : Stuff
ALC888 : No Stuff

(21) AZ_DATA_OUT
(21) AZ_DATA_IN
(21) AZ_SYNC
(21,29) AZ_RSTA

靠近codec



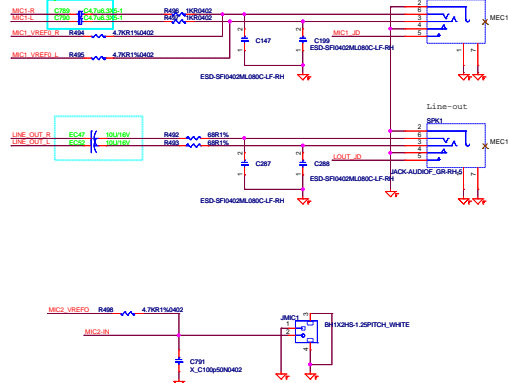
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靠近codec

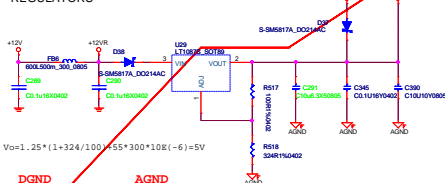
靠近codec

ALC889 : C11-1067424-Y01
ALC888 : C11-4757013-W08

REAR IO



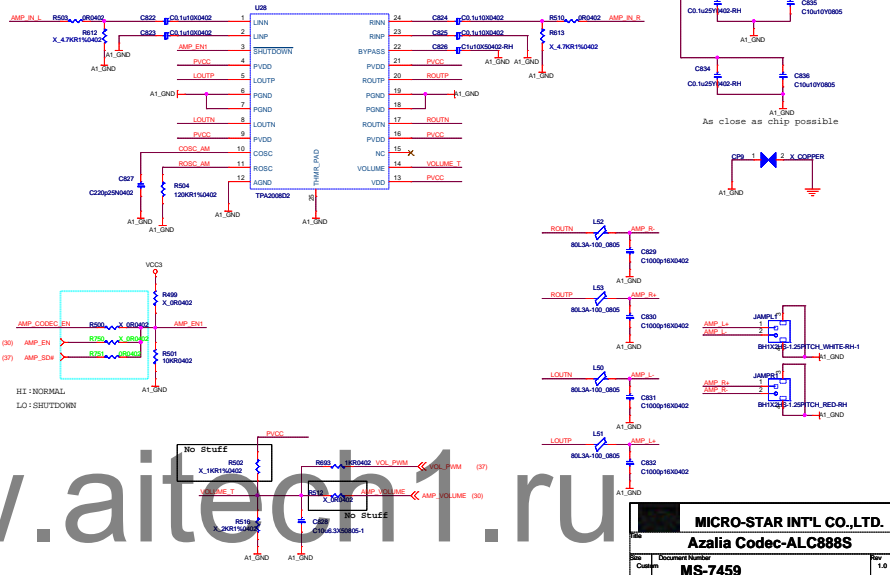
AUDIO CODE REGULATORS



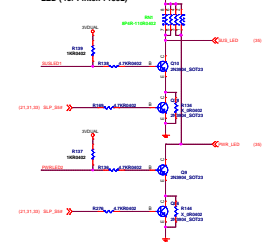
$$V_{os} = 1.25 \times (1 + 324 / 100) \times 55 \times 300 \times 10E(-6) = 5V$$

避開power走線以及noise干擾

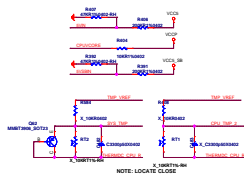
For EMI



MICRO-STAR INT'L CO.,LTD.			
Azalia Codec-ALC888S			
Doc	Document Number	MS-7459	Rev 1.0
Rev	Version	1.0	1.0

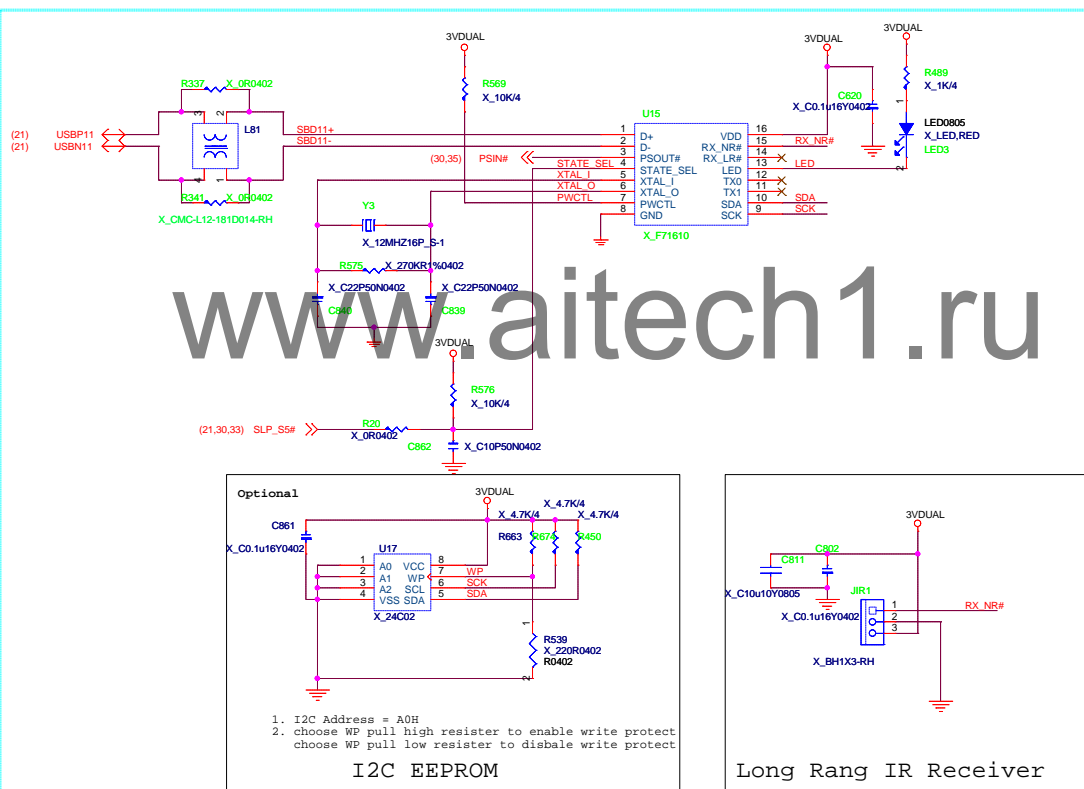
[illegible]

	Don't STUFF (R)	STUFF (L)
ST003	FIN FAN	LEGEND FAN
ST0A3	ENDIAN 80 Post	DIAGNOSIS 80 Post
ST07A	1E	2E
ST0A3	FAN START DUTY 45A	FAN START DUTY 101A
ST083	SP1 ASD & BACKUP RIDGE	SP1 ASD A PRIMARY RIDGE
ST07E	SP1 DIABLO	SP1 DIABLO
SPC_INQ10	PIN 11-55 AND 80	PIN 11-55 AND SP10
SL102	PULL-REM 126 PIN 100-115 AS FVID CONTROLLER	PULL-REM 476 PIN 100-104 AND PIN 105-114 AS SP10



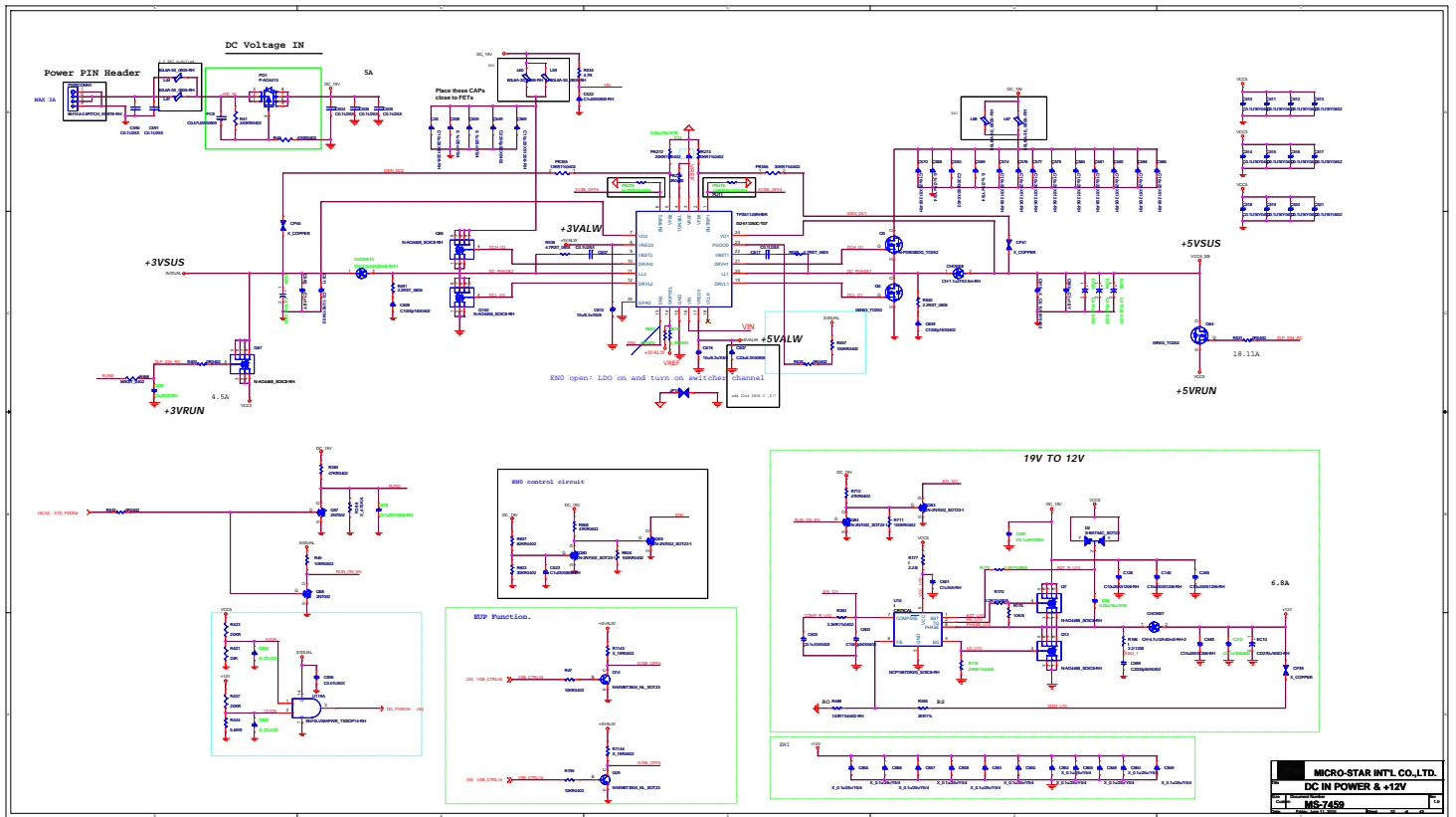
Origin:		MICRO-STAR INT'L CO., LTD.	
File		LPC-F71889	
File	Document Number	MS-7459	Rev. 1.0

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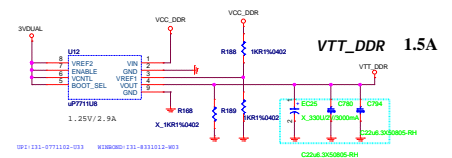
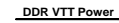
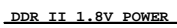
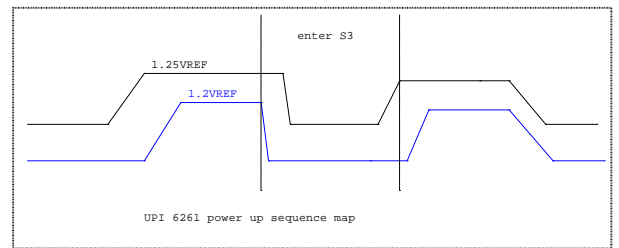
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Document Number		
MS-7459		
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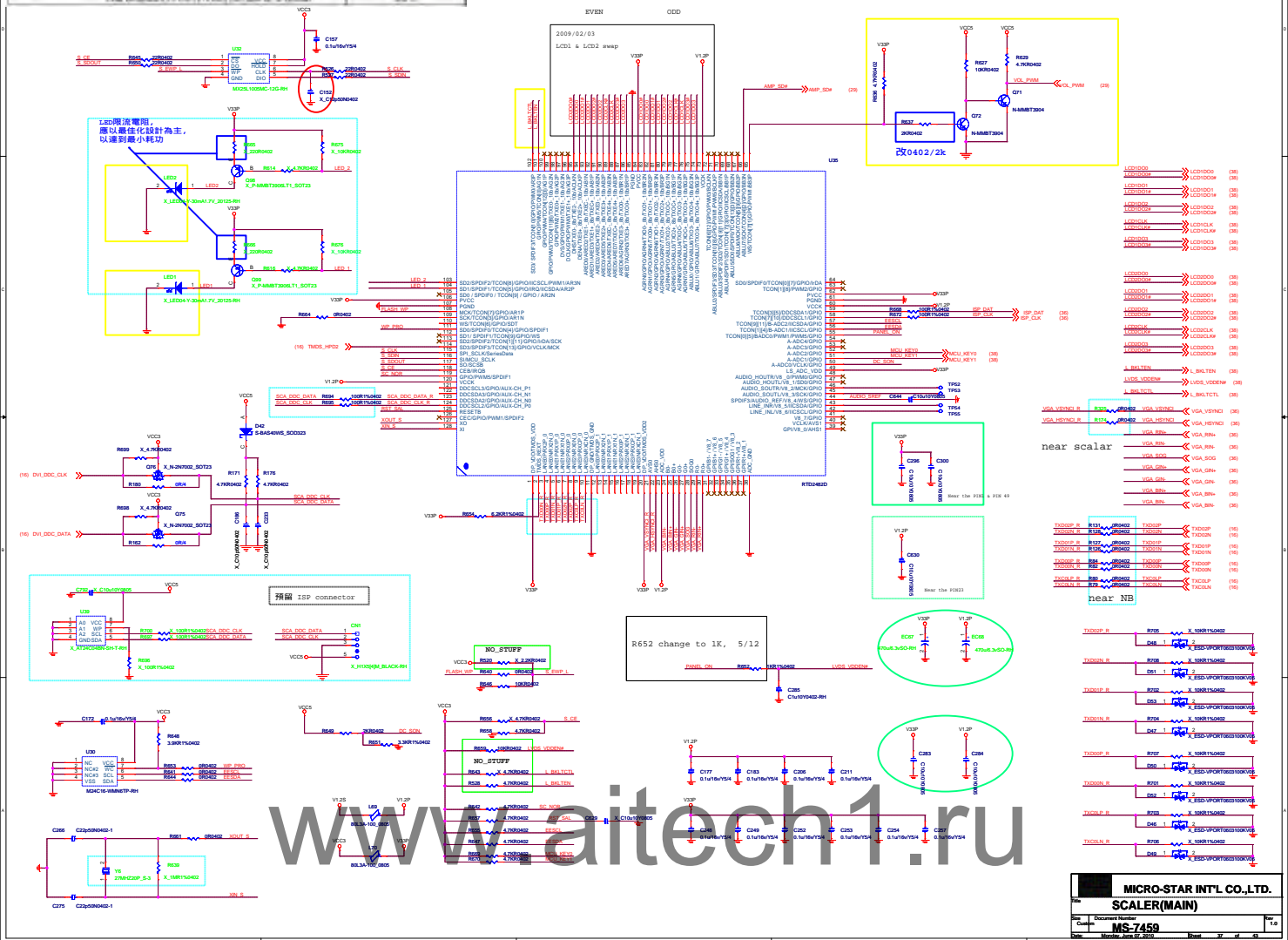


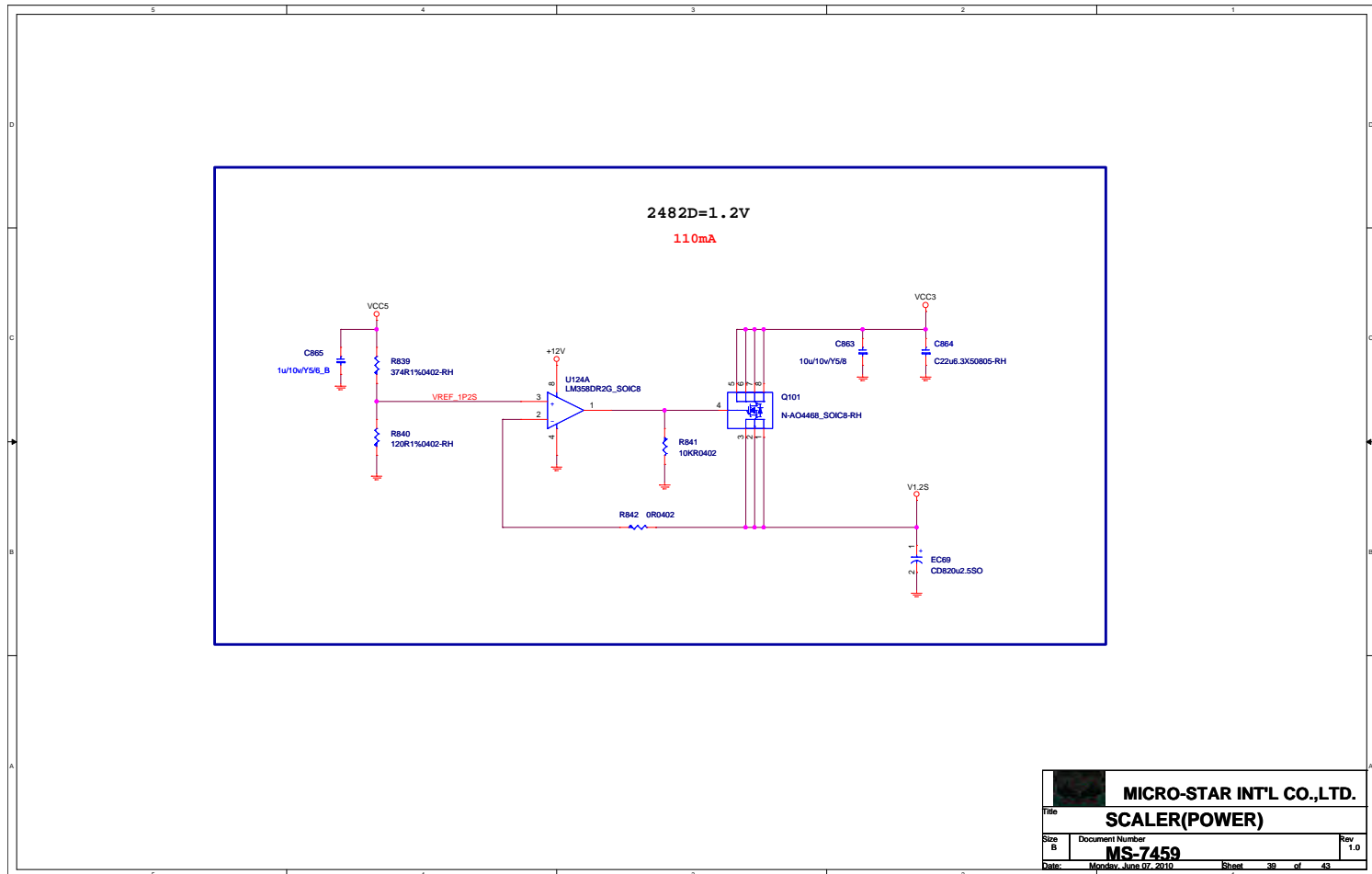
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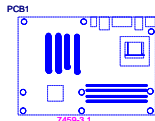






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PCB

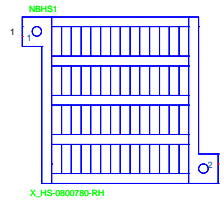


PCB : 1080

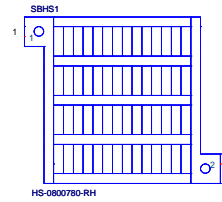
CPU RM



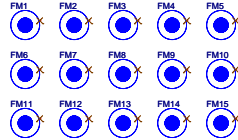
NB HEAT-SINK



SB HEAT-SINK

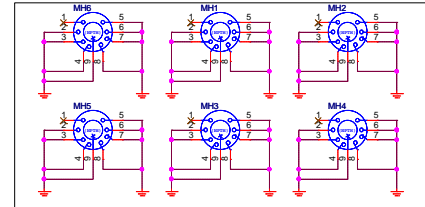


Optics Orientation Holes



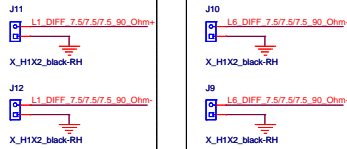
LABEL1
RESISTOR
LABEL1

Main Board Holes

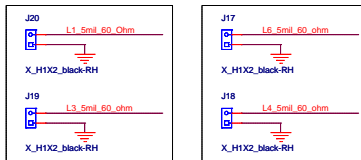


Simulation

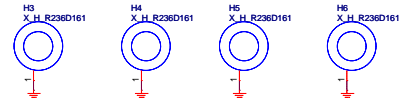
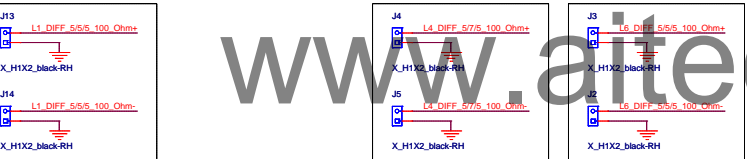
Diff 90ohm



Single End 60ohm



Diff 100ohm



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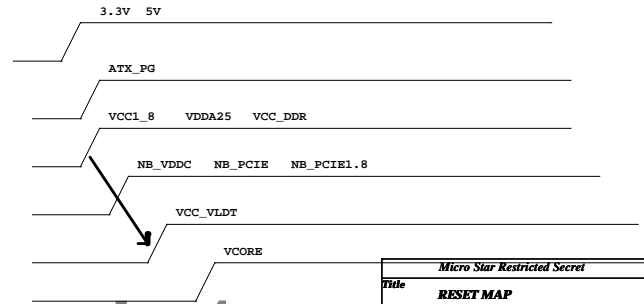
MS-7459 0A change 1.0

1.Lan LED reverse.
2.change U32 to M31-25L1002-M24
3.fan connector 1 and 3 pin reverse and add R617 預防逆電流.
4.Remove C6 解不上CPU電壓會不正常切換.
5.sata2 connector 換料.
6.remove R250 staff R264解touch ic s3 resume no power issue.
7.將U14&U46U8 pin5改接SLP_S3#.
8.remove DC-POWER OK CIRCUIT.
9.change EC46,EC32,EC47,EC52,EC25,C142,C182,Q47,Q47,Y6 COST DOWN.
10.modify ISP_CLK & ISP_DATA.
11.change CN1 & HDMI -IN signal & SCALAR IC 2382

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