MS-1688 Ver : 0A

Calpella Platform

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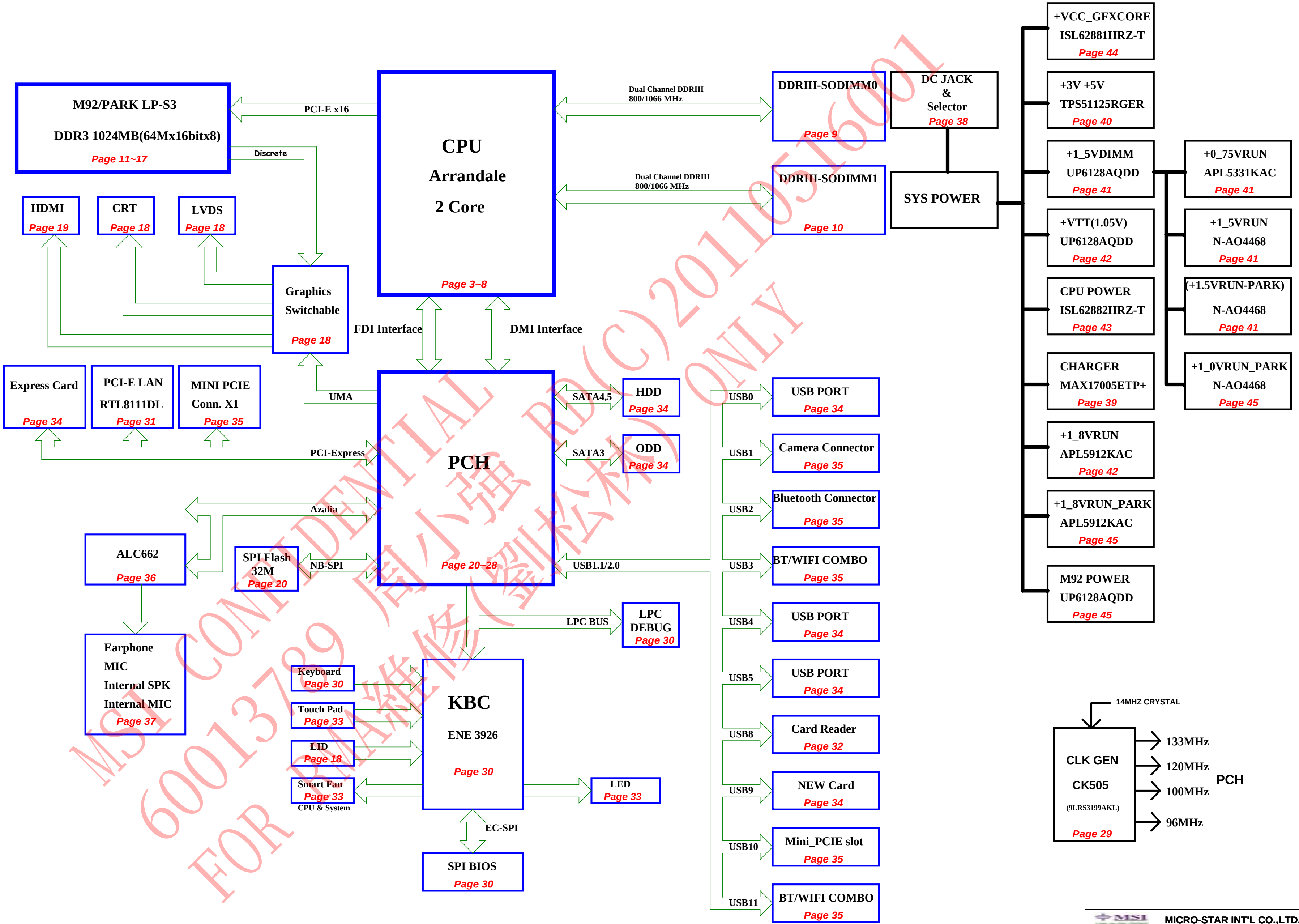
Page Description



MICRO-STAR INT'L CO.,LTD.

Title: BLOCK DIAGRAM

Size	Document Number	Rev
Custom	MS-1688	0A

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SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

Voltage Rails

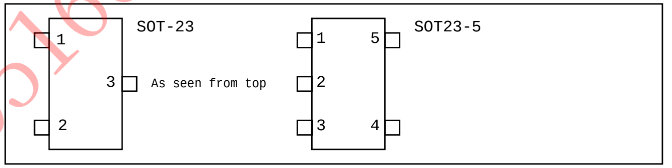
POWER PLANE	VOLTAGE	ACTIVE IN	DESCRIPTION
PWR_SRC	19V	S0,(S3-S5)	
+5VALW	5V	S0,(S3-S5)	
+5VRUN	5V	S0	
+5VSUS	5V	S0	
+3VALW	3.3V	S0,(S3-S5)	
+3VSUS	3.3V	S0,(S3-S5)	LAN
+3VRUN	3.3V	S0	
+1_5VDIMM	1.5V	S0,S3	DDRIII core
+1_5VRUN	1.5V	S0	
VTT	1.05V	S0	PCH
+0_75VRUN	0.75V	S0	DDRIII command & control pull up.
+VCC_CORE	1.05V-1.1V	S0	CPU core rail
+VCC_GFXCORE	1.1V	S0	Graphics core rail (Dual Core only)
M92S_VDD_CORE	0.95V	S0	GPU core power
+1_8VRUN_PARK	1.8V	S0	GPU PCIE power
+1_5VRUN_PARK	1.5V	S0	GPU DDR3 power
+1_0VRUN_PARK	1.0V	S0	GPU PCIE power
VDDR3	3.3V	S0	GPU I/O and DAC power

Net Naming Conventions

Suffix
= Active Low Signal

Prefix
H = Host
M = DDR Memory
TP = Test Point (does not connect anywhere else)

PCB Footprints



AC Mode

Power States	SLP_S3#	SLP_S4#	SLP_S5#	SLP_LAN#	+V*ALWAYS	+V*SUS	+V*RUN	CLK
S0 (Full on)	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3 (Suspend to RAM)	LOW	HIGH	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S5 (Soft Off)	LOW	LOW	LOW	HIGH	ON	ON	OFF	OFF

Battery Mode

Power States	SLP_S3#	SLP_S4#	SLP_S5#	SLP_LAN#	+V*ALWAYS	+V*SUS	+V*RUN	CLK
S0 (Full on)	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3 (Suspend to RAM)	LOW	HIGH	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	HIGH	HIGH	ON	OFF	OFF	OFF
S5 (Soft Off)	LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF

MICRO-STAR INT'L CO.,LTD.
Title: PLATFORM
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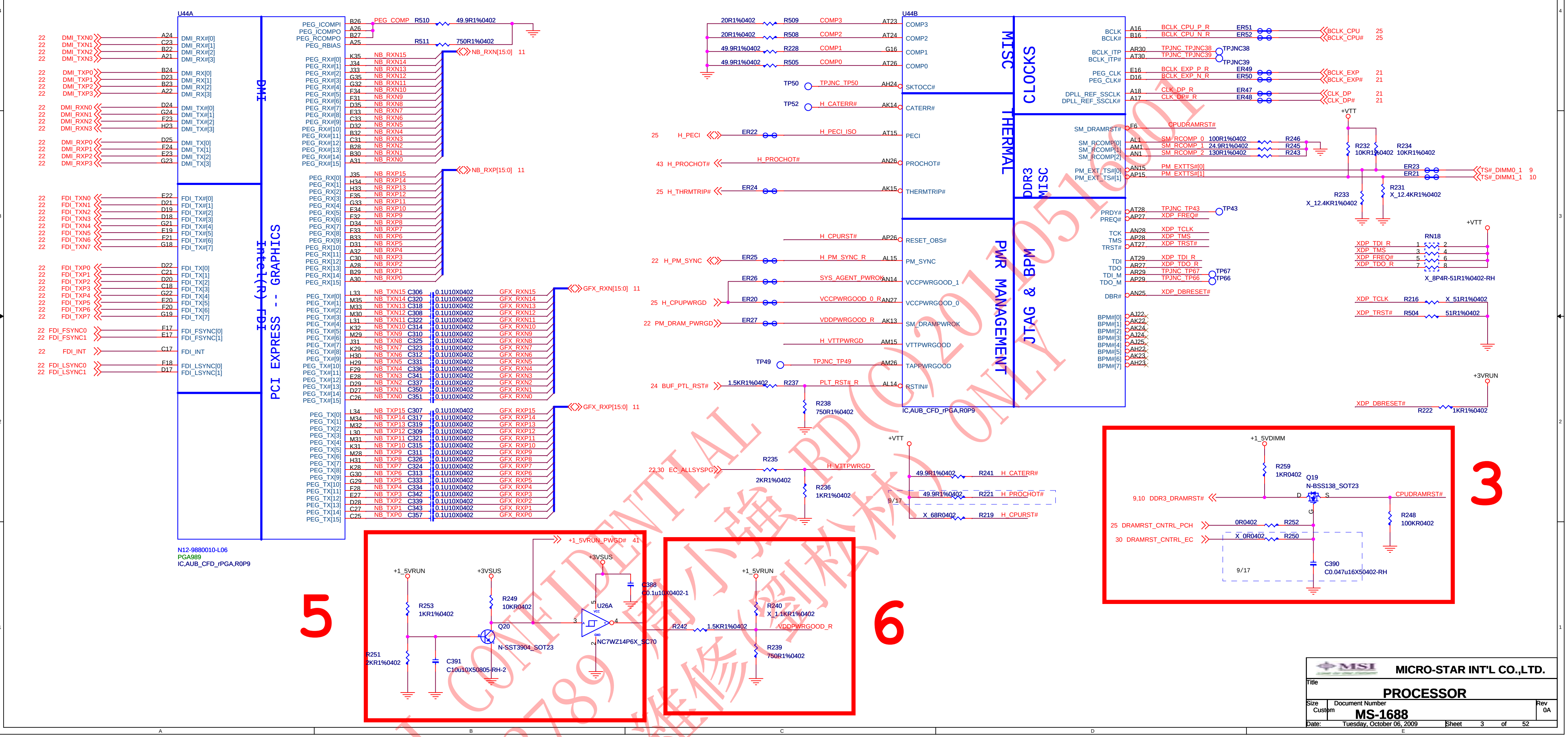
ARRANDALE PROCESSOR (CLK,MISC,JTAG)



MICRO-STAR INT'L CO.,LTD.

Title	PROCESSOR
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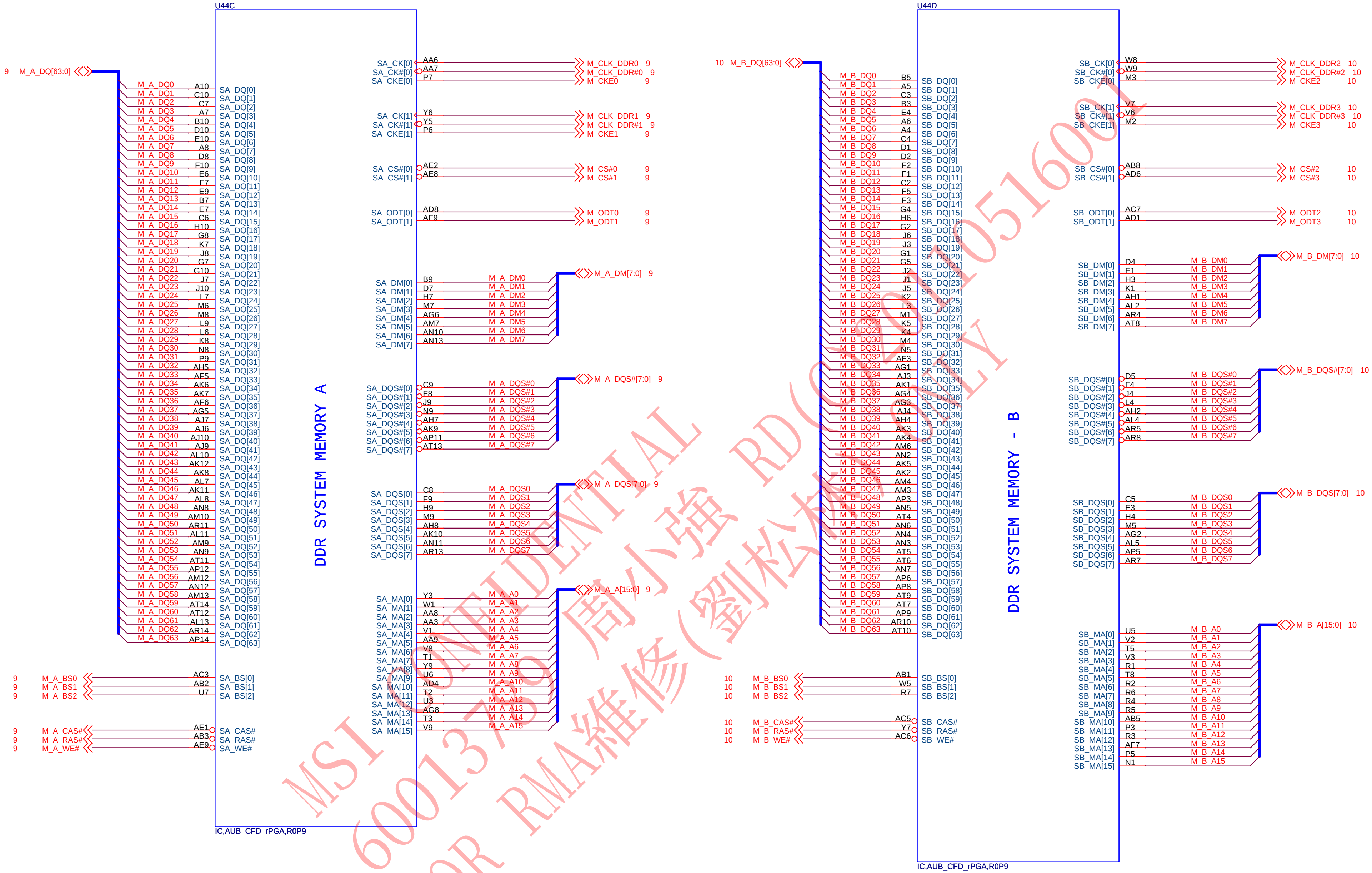
ARRANDALE PROCESSOR (DDR3)



MICRO-STAR INT'L CO.,LTD.

Title: DDR3

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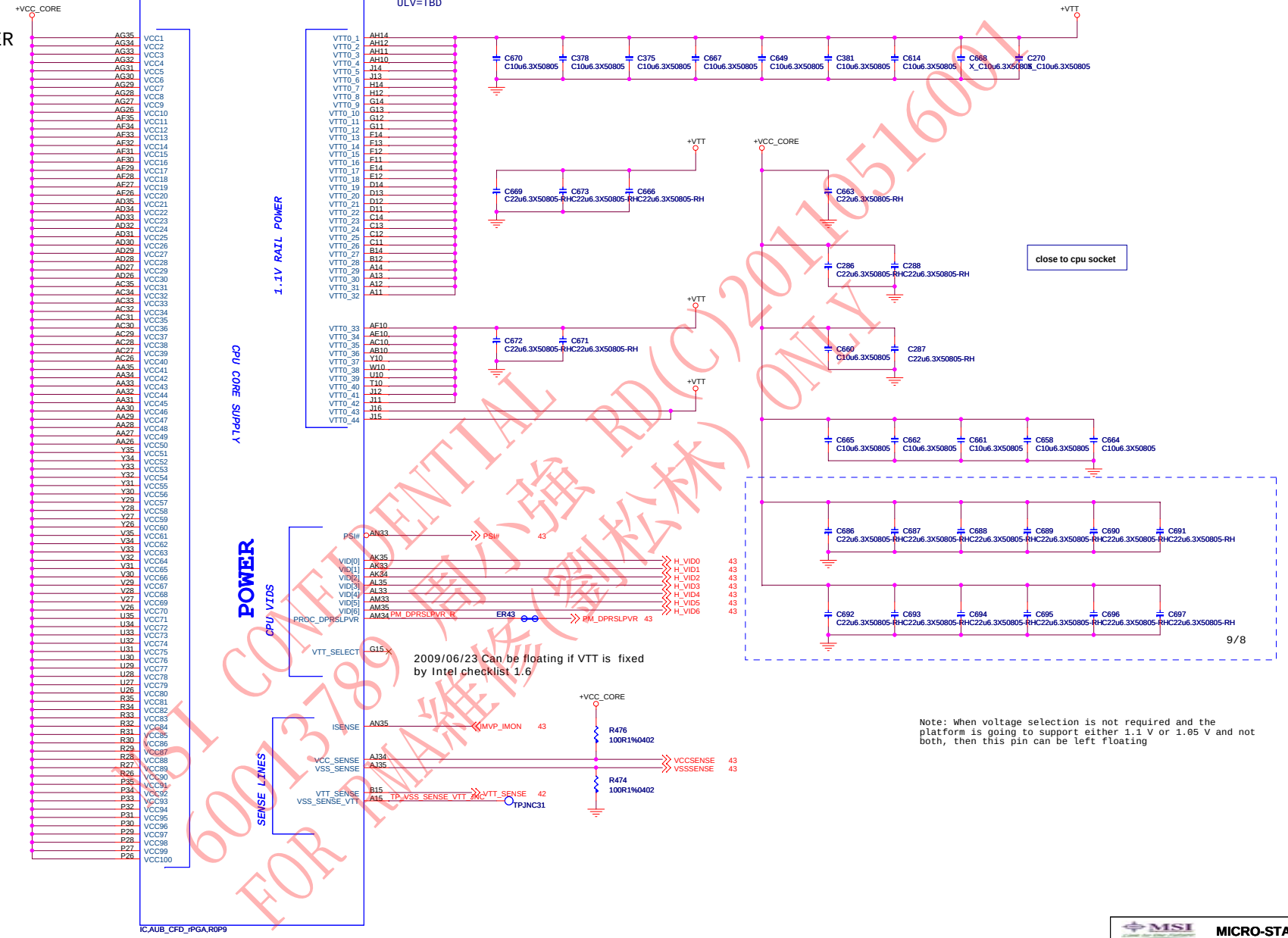
ARRANDALE PROCESSOR (POWER)

ARRANDALE:
SV=48A
LV=35A
ULV=27A

PROCESSOR CORE POWER

ARRANDALE:
SV=18A
LV=TBD
ULV=TBD

PROCESSOR CORE POWER



MSI MICRO-STAR INT'L CO.,LTD.

Title: PROCESSOR POWER

Size: Custom | Document Number: MS-1688 | Rev: 0A

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ARRANDALE PROCESSOR (GRAPHICS POWER)

ARRANDALE:
SV=15A
LV=TBD
ULV=TBD

I=14A

+VCC_GFXCORE

C674 X_C22u6.3X50805-RH
C359 X_C22u6.3X50805-RH
C361 X_C22u6.3X50805-RH
C675 X_C22u6.3X50805-RH
C656 C22u6.3X50805-RH
C655 C22u6.3X50805-RH
C373 C10u6.3X50805
C657 C10u6.3X50805

U44G

VAXG1 VAXG2 VAXG3 VAXG4 VAXG5 VAXG6 VAXG7 VAXG8 VAXG9 VAXG10 VAXG11 VAXG12 VAXG13 VAXG14 VAXG15 VAXG16 VAXG17 VAXG18 VAXG19 VAXG20 VAXG21 VAXG22 VAXG23 VAXG24 VAXG25 VAXG26 VAXG27 VAXG28 VAXG29 VAXG30 VAXG31 VAXG32 VAXG33 VAXG34 VAXG35 VAXG36

GRAPHICS

VAXG_SENSE
VSSAXG_SENSE

SENSE LINES

AR22 AT22

VCC_AXG_SENSE 44
VSS_AXG_SENSE 44

GFX_VID[0] GFX_VID[1] GFX_VID[2] GFX_VID[3] GFX_VID[4] GFX_VID[5] GFX_VID[6]

GRAPHICS VIDs

AM22 AP22 AN22 AP23 AM23 AP24 AN24

GFXVR_VID_0 44
GFXVR_VID_1 44
GFXVR_VID_2 44
GFXVR_VID_3 44
GFXVR_VID_4 44
GFXVR_VID_5 44
GFXVR_VID_6 44

GFX_VR_EN
GFX_DPRSLPVR
GFX_IMON

AR25 AT25 AM24

GFXVR_DPRSLPVR_R 0R0402 R506

GFXVR_EN 44
GFXVR_DPRSLPVR 44
GFXVR_IMON 44

1

ARRANDALE:
3A

+1_5VRUN

VDDQ1 VDDQ2 VDDQ3 VDDQ4 VDDQ5 VDDQ6 VDDQ7 VDDQ8 VDDQ9 VDDQ10 VDDQ11 VDDQ12 VDDQ13 VDDQ14 VDDQ15 VDDQ16 VDDQ17 VDDQ18

AJ1 AF1 AE7 AF4 AC1 AB7 AB4 Y1 W7 W4 U1 T7 T4 P1 N7 N4 L1 H1

C385 C1u16X-RH
C384 C1u16X-RH
C382 C1u16X-RH
C377 C1u16X-RH
C380 C1u16X-RH
C386 C22u6.3X50805-RH
C383 C22u6.3X50805-RH
C389 C330u2.5pSO-1

DDR3 - 1.5V RAILS

+VTT

C363 C22u6.3X50805-RH
C364 C22u6.3X50805-RH

J24 J23 H25

VTT1_45 VTT1_46 VTT1_47

FDI

VTT0_59 VTT0_60 VTT0_61 VTT0_62

P10 N10 L10 K10

C362 C10u6.3X5-RH
C371 C10u6.3X5-RH

+VTT

VTT1_63 VTT1_64 VTT1_65 VTT1_66 VTT1_67 VTT1_68

J22 J20 J18 H21 H20 H19

C367 C22u6.3X50805-RH
C368 C22u6.3X50805-RH

+VTT

+VTT

C360 C22u6.3X50805-RH
C376 C22u6.3X50805-RH
C659 C22u6.3X50805-RH
C652 C22u6.3X50805-RH

K26 J27 J26 J25 H27 G28 G27 G26 F26 E26 E25

VTT1_48 VTT1_49 VTT1_50 VTT1_51 VTT1_52 VTT1_53 VTT1_54 VTT1_55 VTT1_56 VTT1_57 VTT1_58

PEG & DMI

1.1V

1.8V

VCCPLL1 VCCPLL2 VCCPLL3

L26 L27 M26

+1_8VRUN

C345 C1u16X-RH
C346 C1u16X-RH
C347 C2.2u6.3X5
C348 C4.7u6.3X
C349 C22u6.3X50805-RH

ARRANDALE:
0.6A

POWER

IC_AUB_CFD_rPGA_R0P9

MSI	MICRO-STAR INT'L CO.,LTD.		
Title	GRAPHICS POWER		
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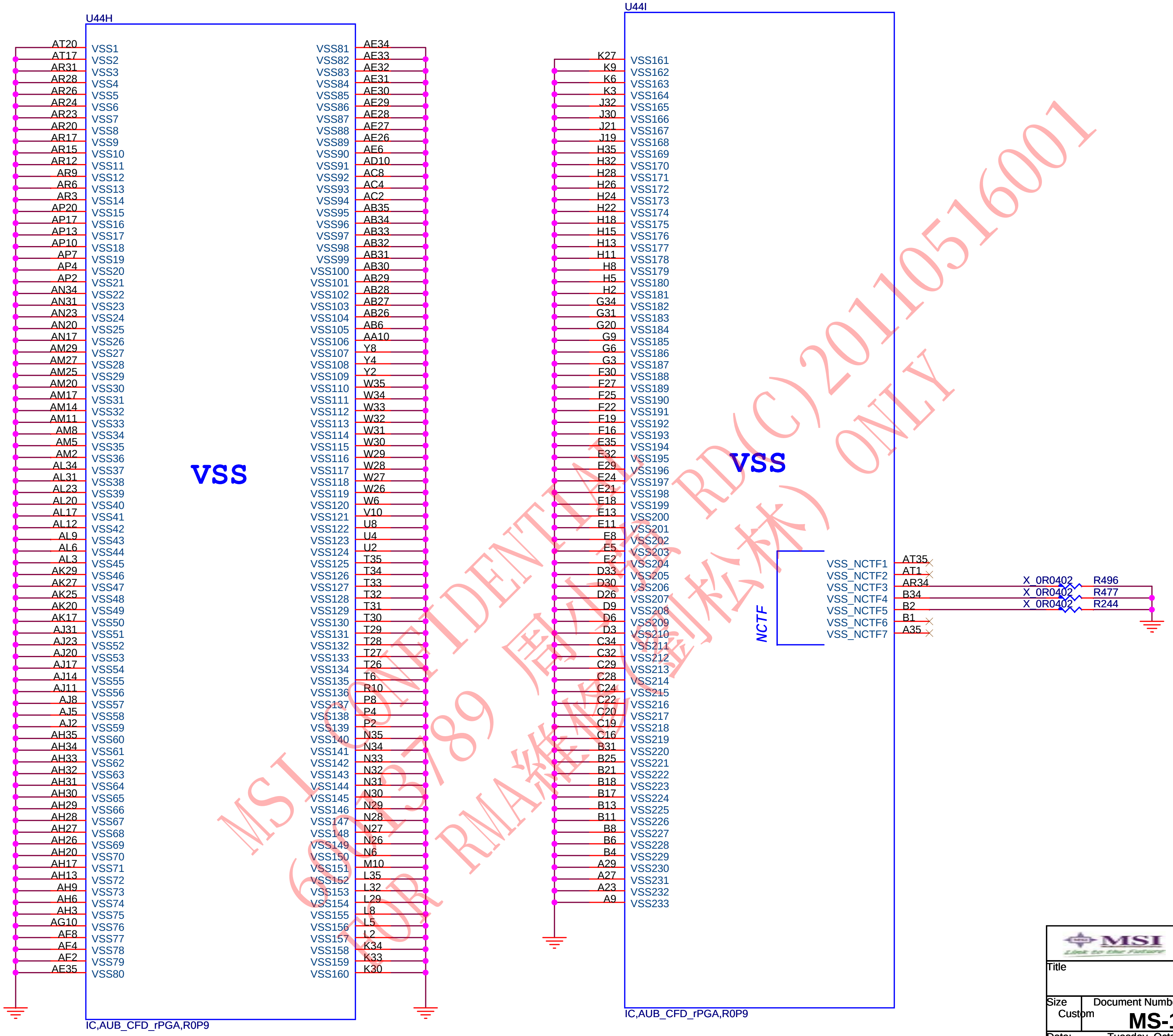
ARRANDALE PROCESSOR (GND)



MICRO-STAR INT'L CO.,LTD.

Title: PROCESSOR GND

Size: Custom | Document Number: MS-1688 | Rev: 0A

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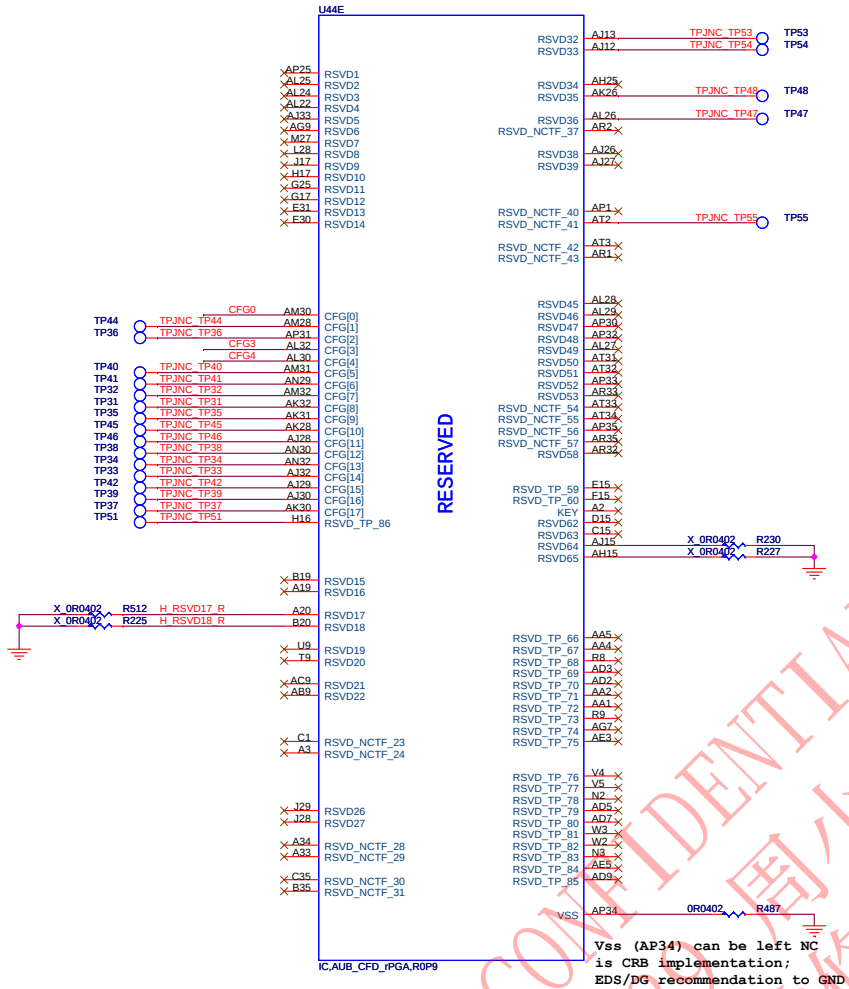
ARRANDALE PROCESSOR (RESERVED)



Vss (AP34) can be left NC is CRB implementation; EDS/DG recommendation to GND

PCI-Express Configuration Select	
CFG0	1:Single PEG 0:Bifurcation enabled

CFG3 - PCI-Express Static Lane Reversal	
CFG3	1 :Normal Operation 0 :Lane Numbers Reversed 15 -> 0, 14 -> 1, ...

CFG4 - Display Port Presence	
CFG4	1:Disabled; No Physical Display Port attached to Embedded Display Port 0:Enabled; An external Display Port device is connected to the Embedded Display Port

CFG0 — NO_STUFF — R212 X_3.01KR1%0402

CFG3 — STUFF — R213 3.01KR1%0402

CFG4 — NO_STUFF — R214 X_3.01KR1%0402

Layout Note:
Location of all CFG strap resistors needs to be close to trace to minimize stub

CFG[3] – PCI Express* Static Lane Numbering Reversal. Lane Reversal will be applied across all 16 Lanes.
- 1: No lane reversal
- 0: Reversal

MICRO-STAR INT'L CO.,LTD.

Title: PROCESSOR RESERVED

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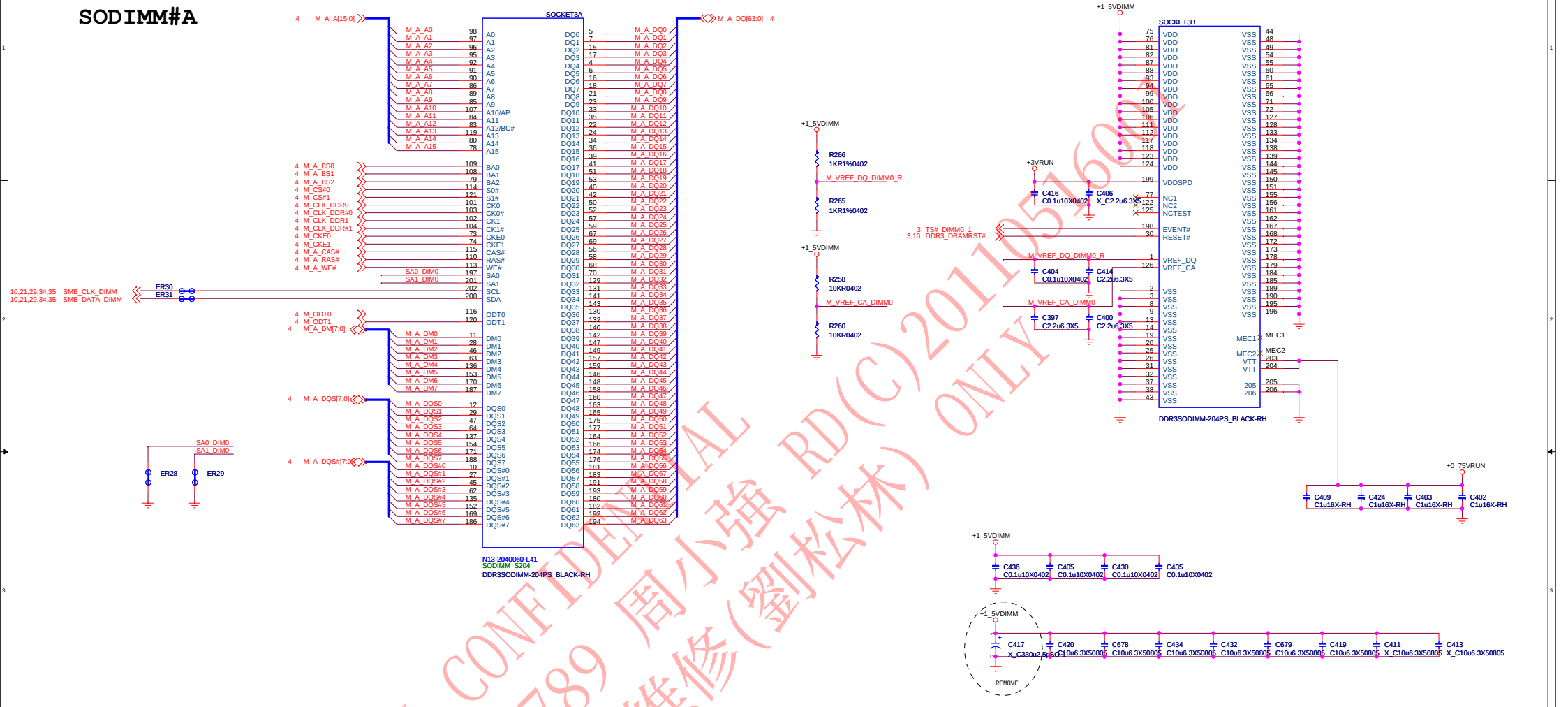
SODIMM#A



MICRO-STAR INT'L CO.,LTD.

Title: DDR3 SODIMM0

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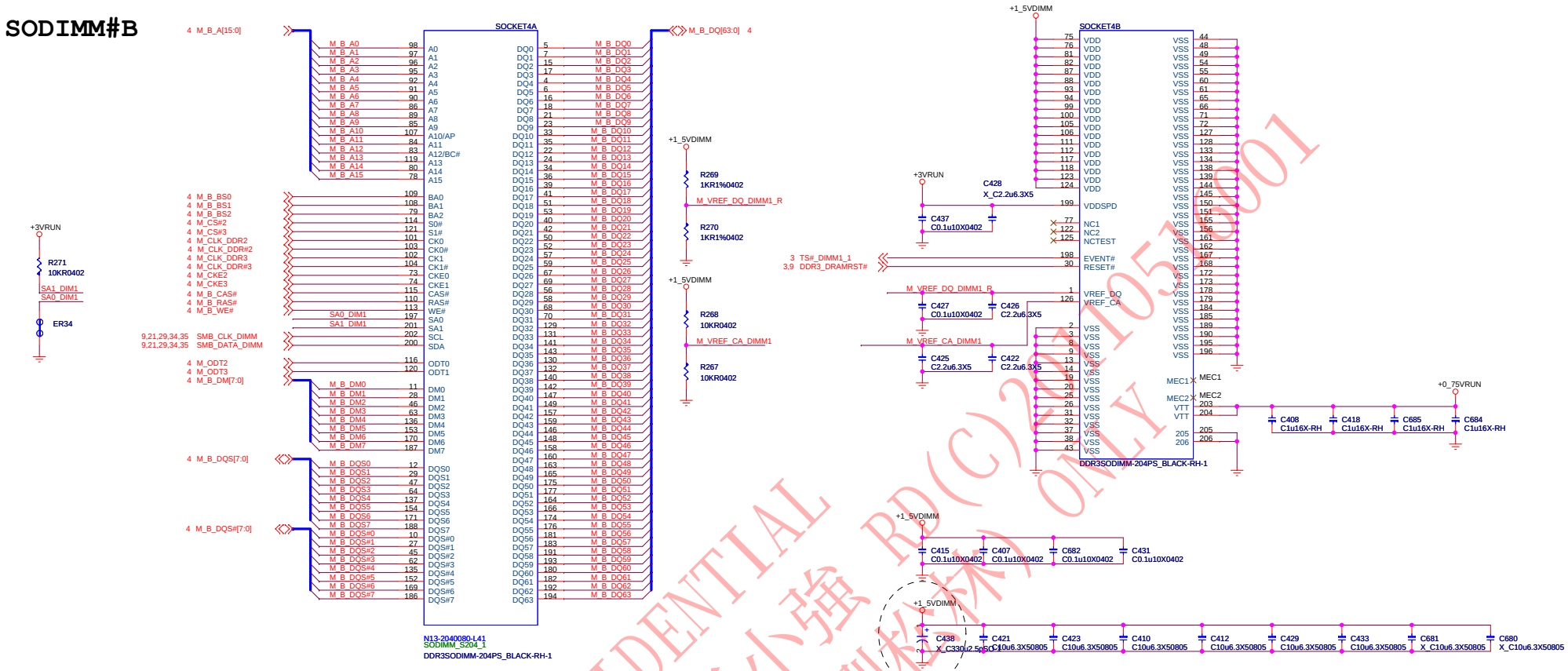
SODIMM#B



MICRO-STAR INT'L CO.,LTD.			
Title: DDR3 SODIMM1			
Size: Custom	Document Number: MS-1688		Rev: 0A
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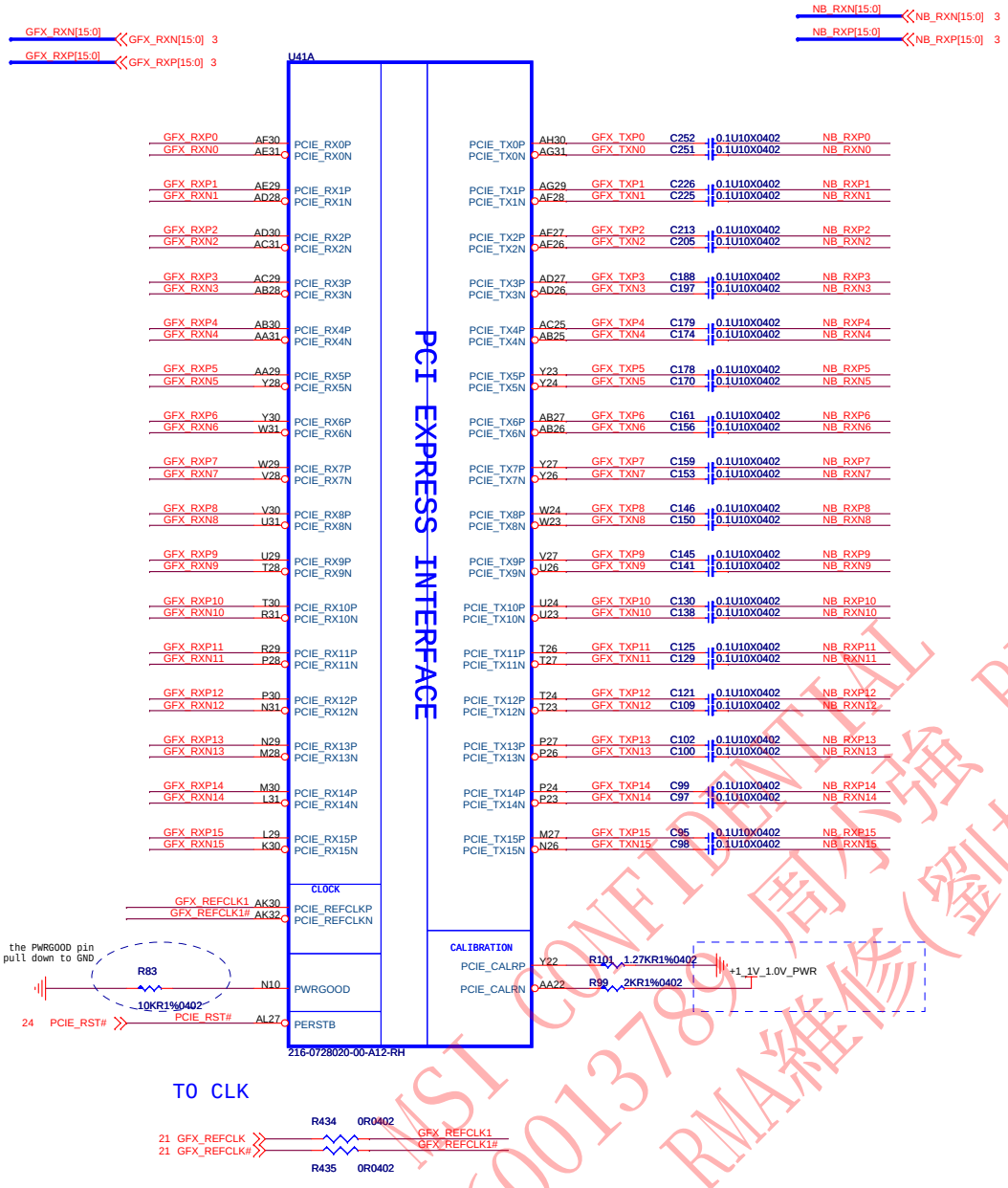
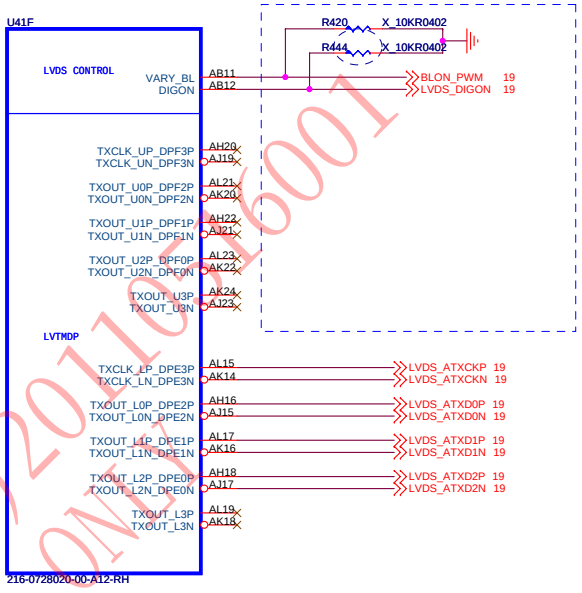


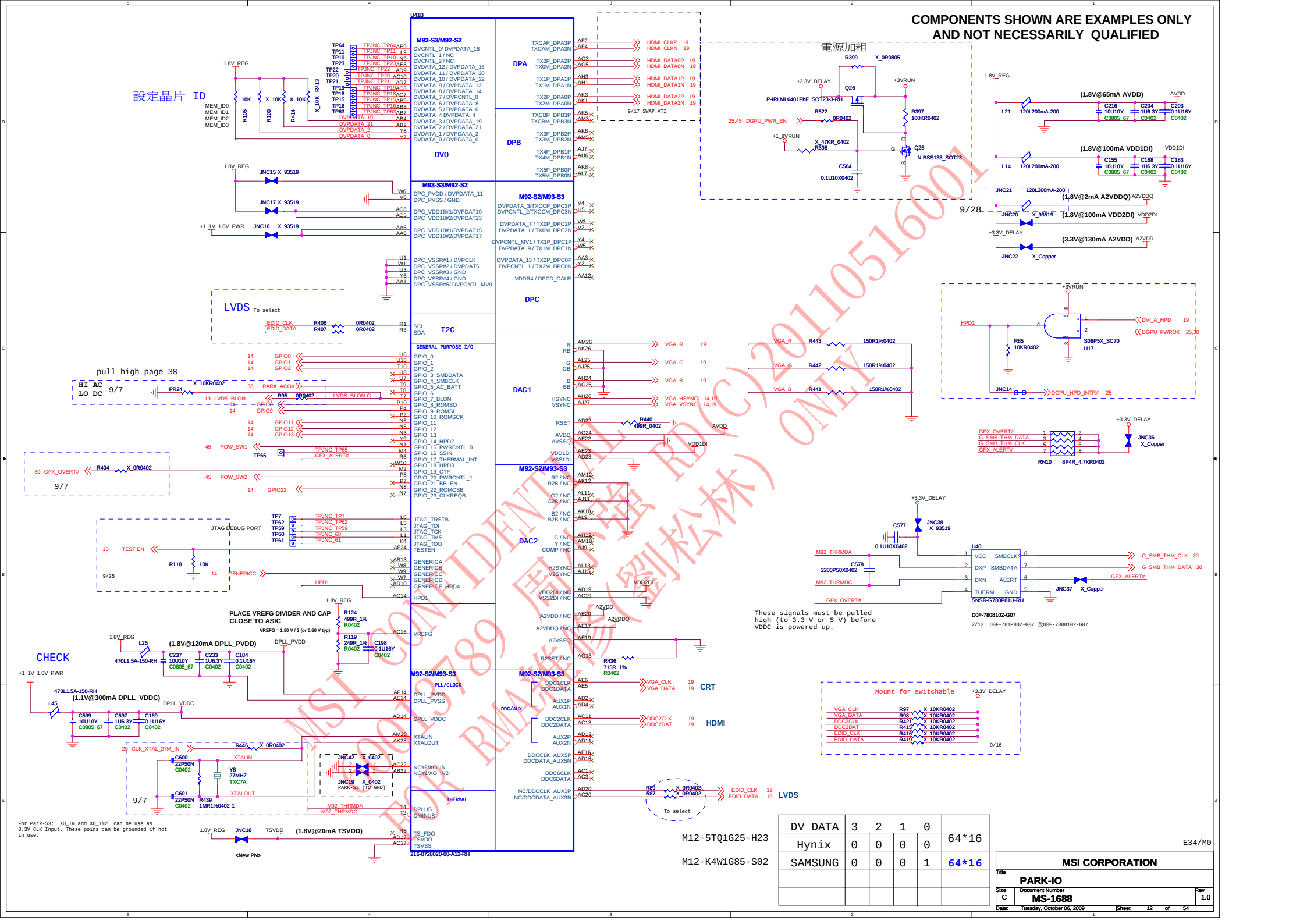
LVDS Interface



DisplayPort E Configuration

MSI CORPORATION		
Title: PARK-HOST/LVDS		
Size: Custom	Document Number: MS-1688	Rev: 1.0
Date: Tuesday, October 06, 2009	Sheet 11 of 54	

COMPONENTS SHOWN ARE EXAMPLES ONLY
AND NOT NECESSARILY QUALIFIED



DV DATA	3	2	1	0	
Hynix	0	0	0	0	64*16
SAMSUNG	0	0	0	1	64*16

MSI CORPORATION

Title: PARK-IO

Size: C | Document Number: MS-1688 | Rev: 1.0

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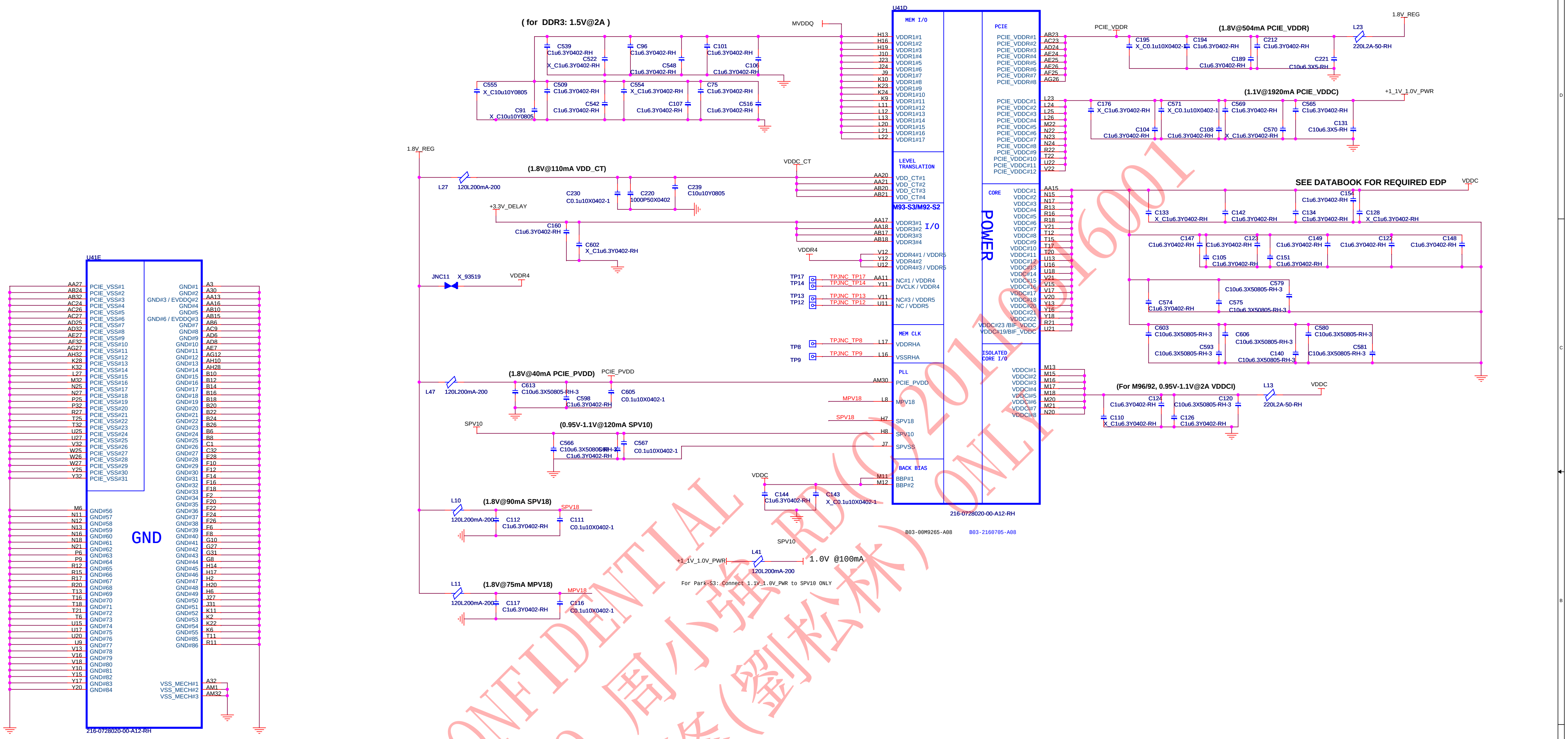

E69/M0

MSI CORPORATION

Title	PARK-POWER
Size: Custom	Document Number: MS-1688
Rev	1.0
Date:	Tuesday, October 06, 2009
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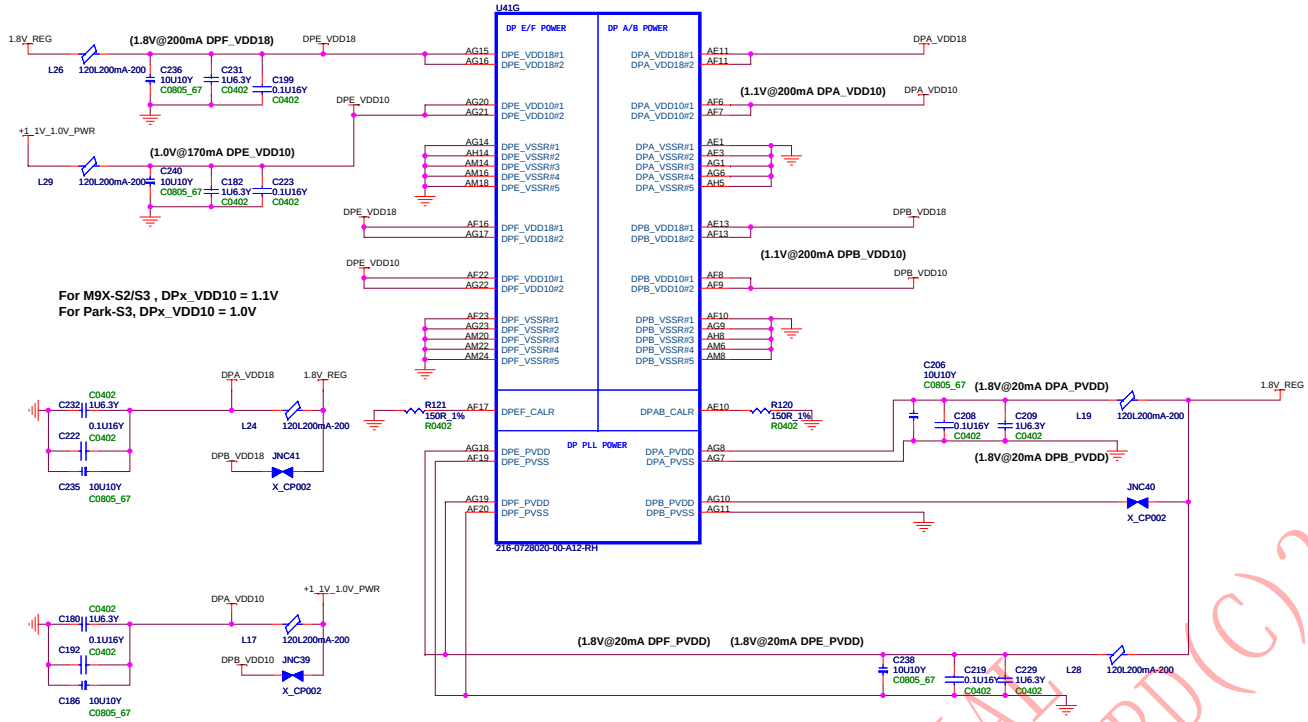
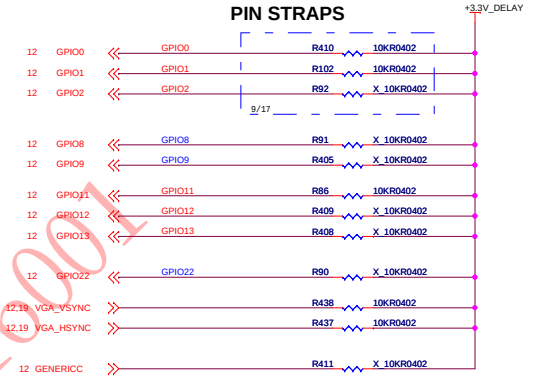


PIN STRAPS



CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

RECOMMENDED SETTINGS
0= DO NOT INSTALL RESISTOR
1 = INSTALL 10K RESISTOR
X = DESIGN DEPENDANT
NA = NOT APPLICABLE

STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	
TX_PWRS_ENB	GPIO0	PCIE FULL TX OUTPUT SWING	X
TX_DEEMPH_EN	GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLED	X
BIF_GEN2_EN_A	GPIO2	PCIE GEN2 ENABLED	X
RSVD BIF_VGA_DIS RSVD	GPIO8 GPIO9 GPIO21	VGA ENABLED	0 0 0
BIOS_ROM_EN	GPIO_22_ROMCSB	ENABLE EXTERNAL BIOS ROM	X
ROMIDCFG(2:0)	GPIO[13:11]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT	X X X
VIP_DEVICE_STRAP_ENA	V2SYNC	IGNORE VIP DEVICE STRAPS	X
RSVD AUD[1] AUD[0]	GENERICC HSYNC VSYNC	AUD[1] AUD[0] 0 0 No audio function 0 1 Audio for DisplayPort and HDMI if dongle is detected 1 0 Audio for DisplayPort only 1 1 Audio for both DisplayPort and HDMI	0 0 X X

GPIO 13 12 11

Size of the primary memory apertures	CONFIG[2:0]
128 MB	000
256 MB	001
64 MB	010
512 MB 1G MB	001

Due to memory management constraints, the aperture size should be the same size as the frame buffer for 64 MB, 128 MB
and 256 MB. For frame buffers larger than 256 MB (e.g. 512 MB, 1 GB) the aperture size should be 256 MB.

AMD RESERVED CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

H2SYNC GENERICC

PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

GPIO21_BB_EN

E23/M0

MSI CORPORATION

Title: **PARK-power straps**

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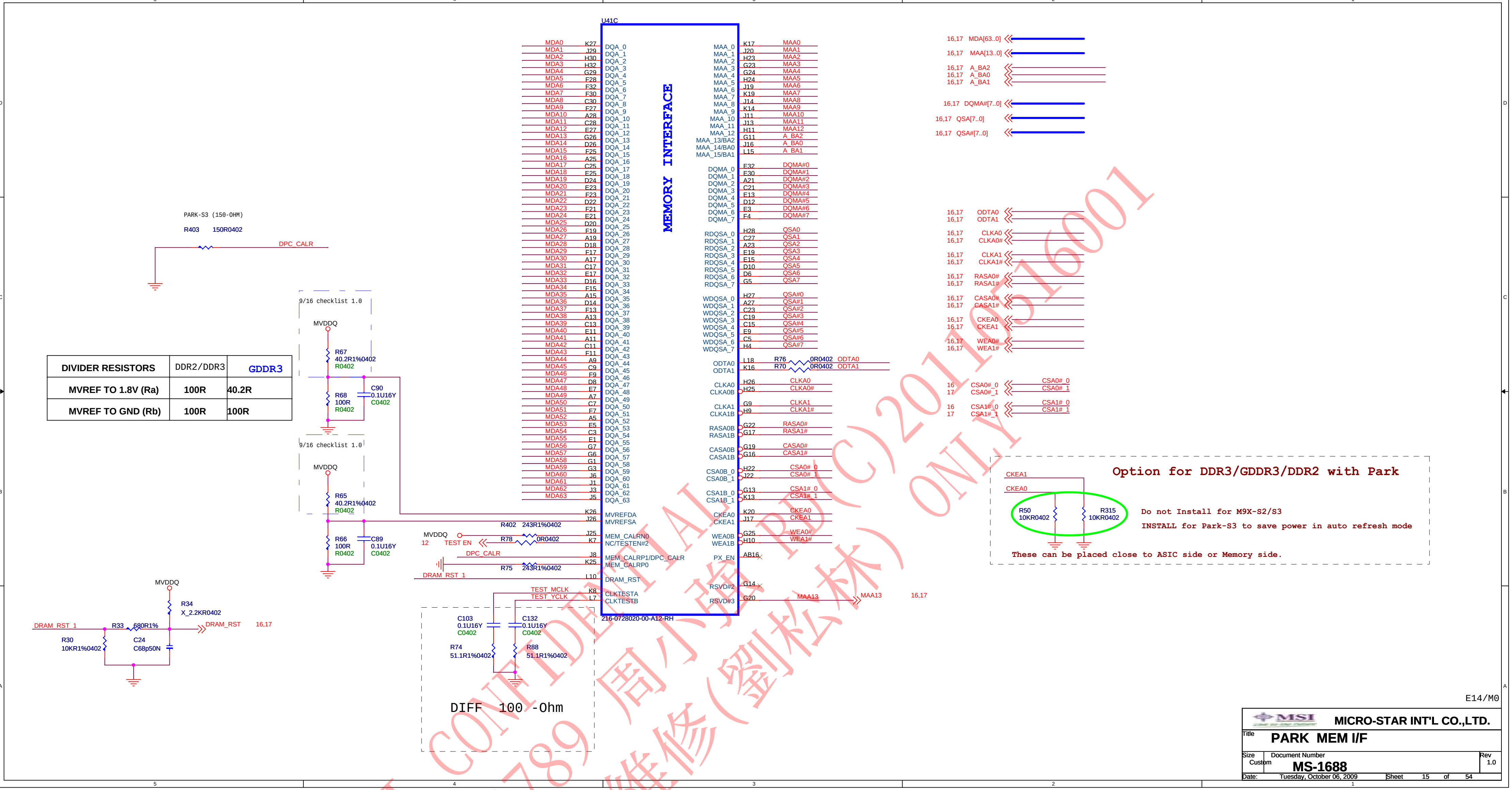

DIVIDER RESISTORS	DDR2/DDR3	GDDR3
MVREF TO 1.8V (Ra)	100R	40.2R
MVREF TO GND (Rb)	100R	100R

MICRO-STAR INT'L CO.,LTD.

Title: PARK MEM I/F

Size: Custom | Document Number: MS-1688 | Rev: 1.0

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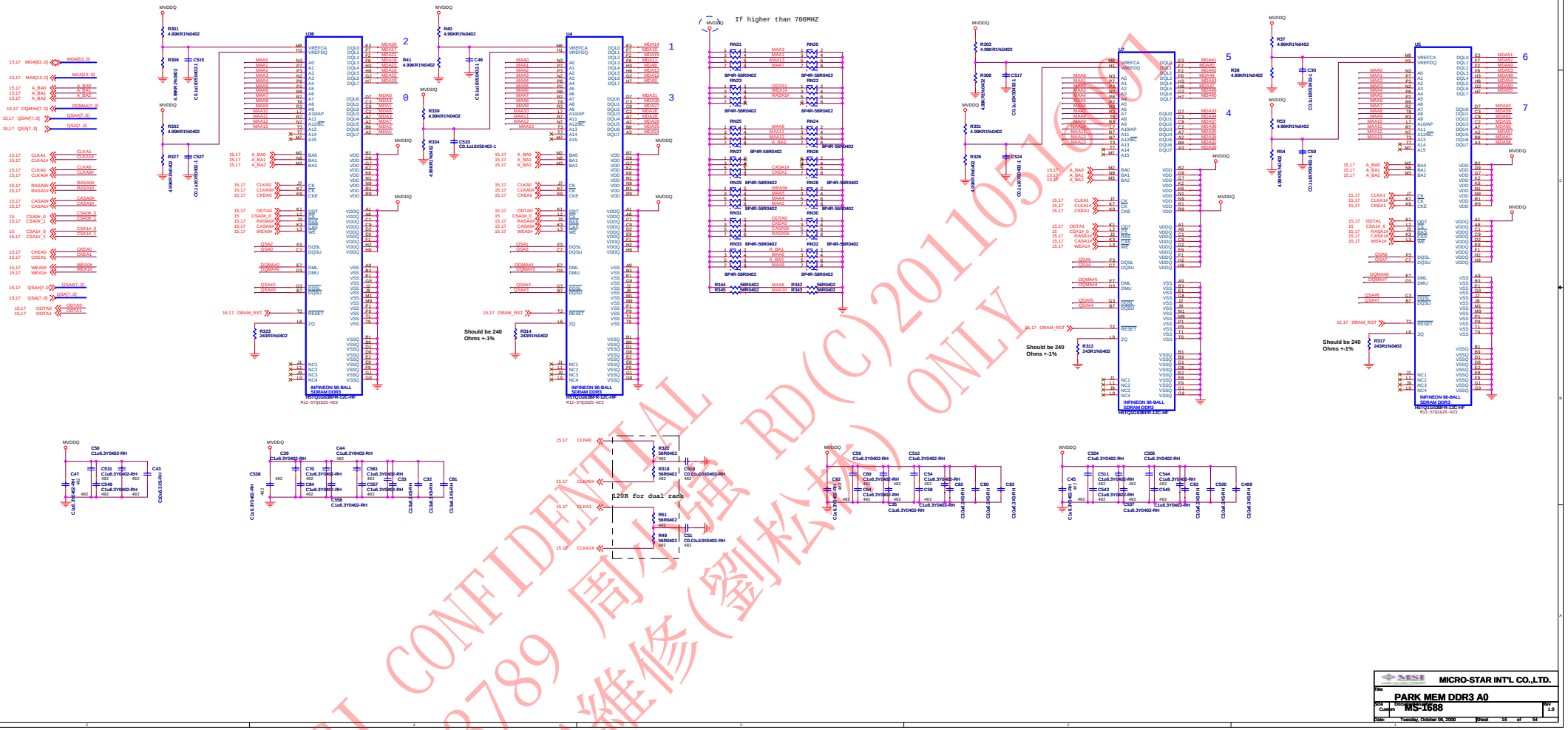

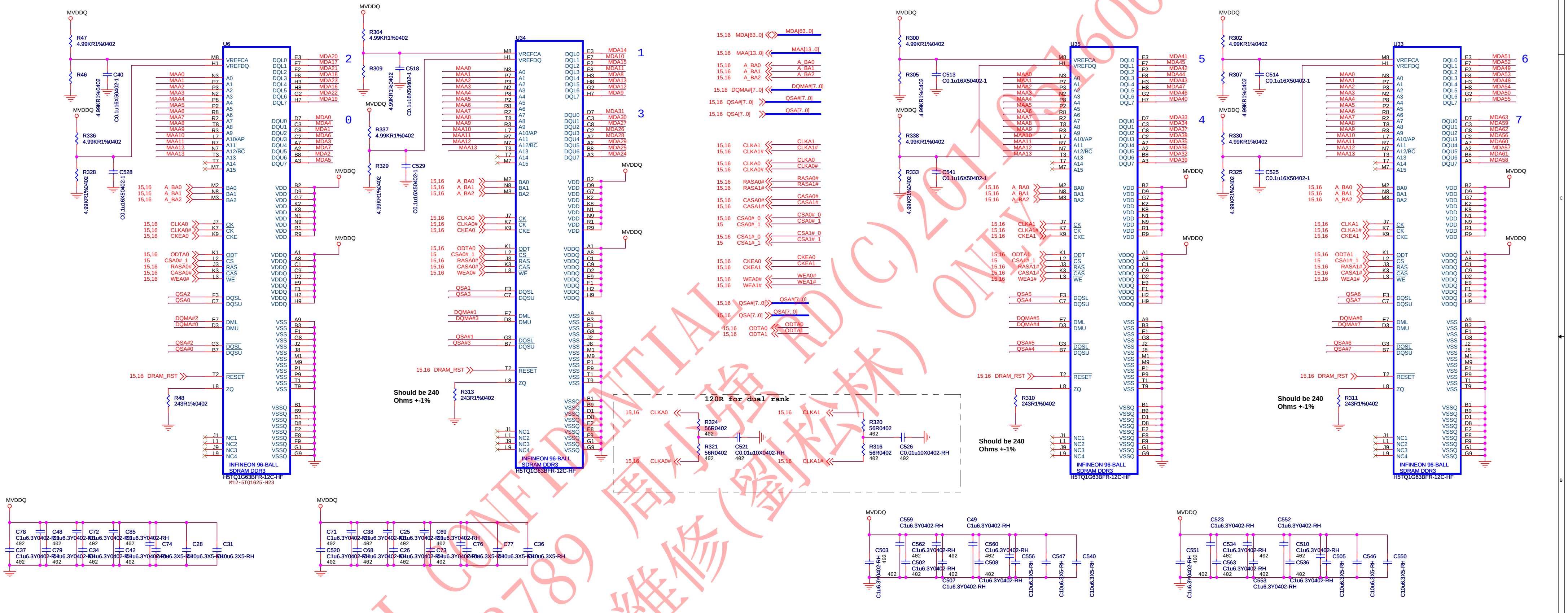

MICRO-STAR INT'L CO.,LTD.

Title: **PARK MEM DDR3 A1**

Size	Document Number	Rev
Custom	MS-1688	1.0

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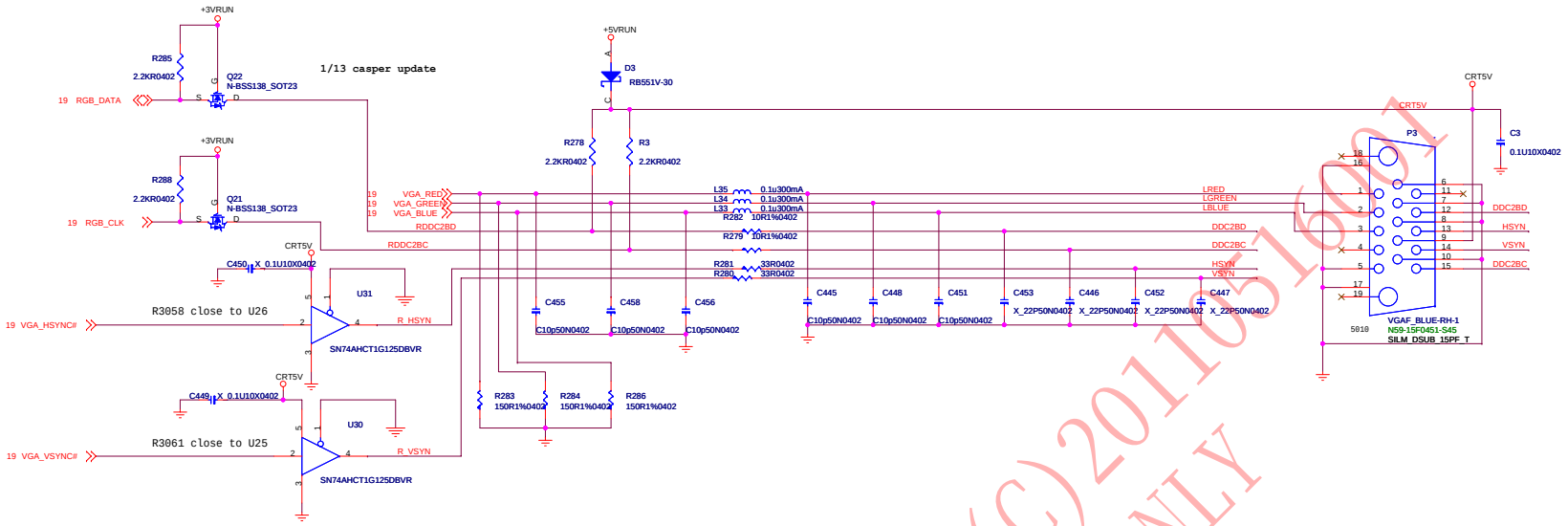

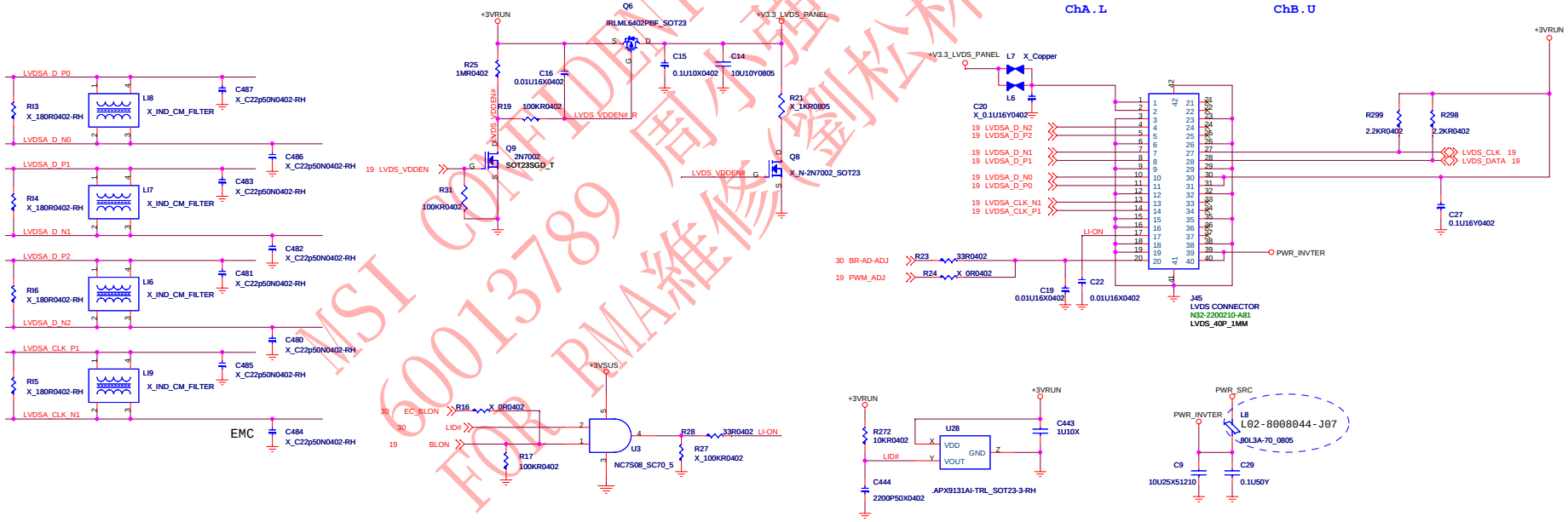

MSI MICRO-STAR INT'L CO.,LTD.			
Title: CRT,LVDS connector & LID			
Size: Custom	Document Number: MS-1688		Rev: 0A
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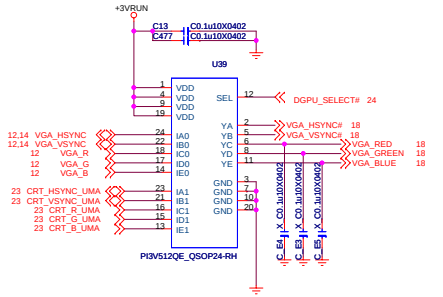
CRT Switch

2009/07/14 Change RGB SW

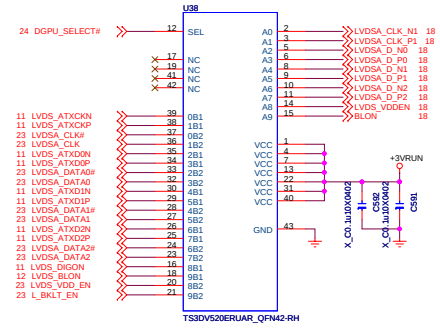
Logic Input	Function
0	S2 PORT
1	S1 PORT

BR-ADJ

MXM only	1. MXM 2. EC
Switchable	1. MXM 2. iGPU 3. EC

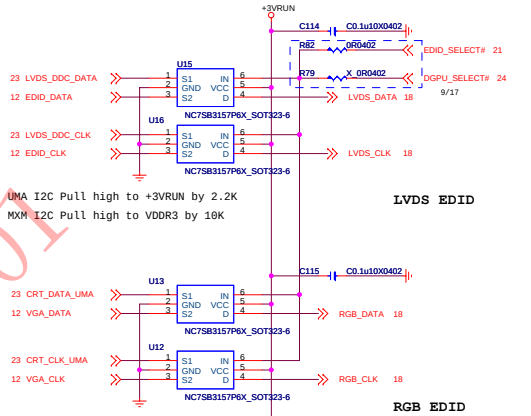


LVDS Switch



TS3DV520ERUAR

EDID Switch (CRT,LVDS)



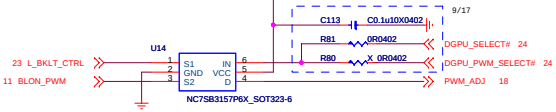
UMA I2C Pull high to +3VRUN by 2.2K
MXM I2C Pull high to VDDR3 by 10K

LVDS EDID

UMA I2C Pull high to +3VRUN by 2.2K
MXM I2C Pull high to VDDR3 by 10K

RGB EDID

2009/07/14 DEL HDMI I2C SW (U26,U27)

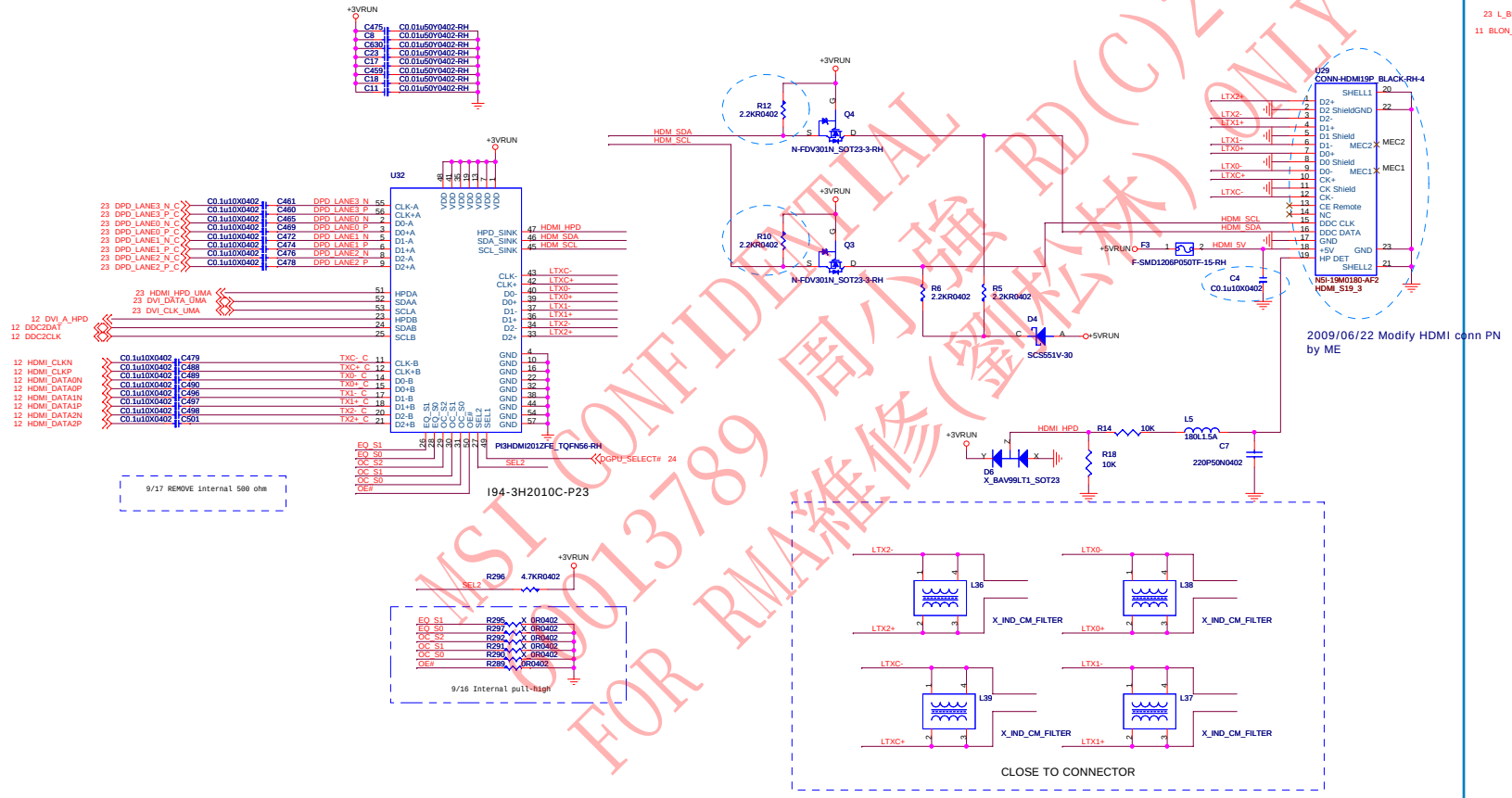


Logic Input	Function
0	PORT 1
1	PORT 2

HDMI Switch

2009/07/14 Change HDMI SW

Logic Input	Function
0	B PORT
1	A PORT



2009/06/22 Modify HDMI conn PN by ME

MICRO-STAR INT'L CO.,LTD.

Title: SWITCH&HDMI

Size: Custom | Document Number: MS-1688 | Rev: 0A

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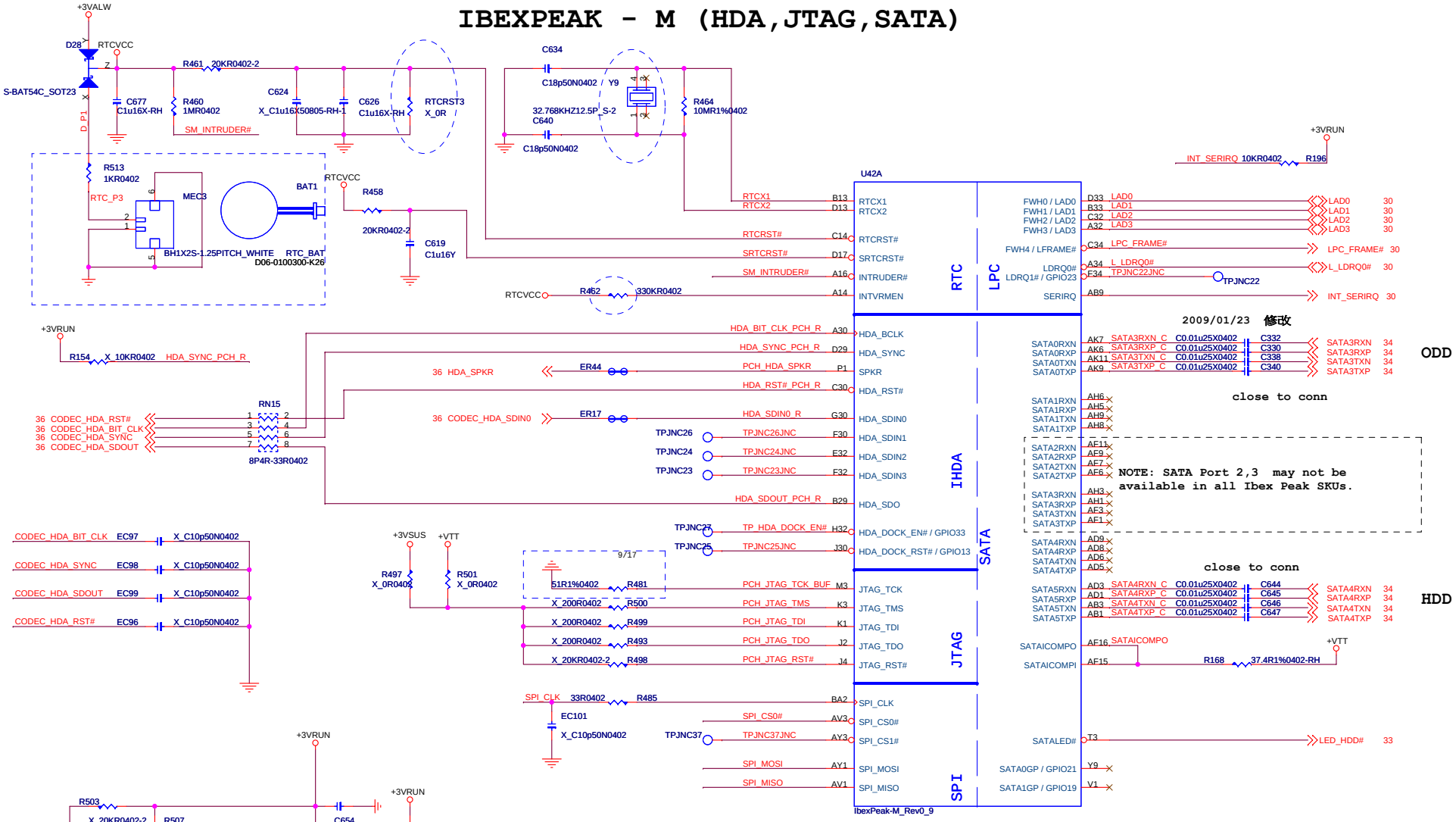
IBEXPEAK - M (HDA,JTAG,SATA)



SPI_MOSI :Enable iTPM: Connect to Vcc3_3 with 8.2-kΩ weak pull-up resistor
Disable iTPM: Left floating, no pull-down required.

PCH Pin	RefDes	Pre-Production Systems ES1	Pre-Production Systems ES2	Production Systems
TDO	R1	No Stff	200 Ohms	No Stuff
	R2	No Stff	100 Ohms	No Stuff
TMS	R3	200 Ohms	200 Ohms	No Stuff
	R4	100 Ohms	100 Ohms	No Stuff
TDI	R5	200 Ohms	200 Ohms	No Stuff
	R6	100 Ohms	100 Ohms	No Stuff
TCK	R7	51 Ohms	51 Ohms	51 Ohms
TRST#	R8	20K Ohms	Not Applicable[1]	Not Applicable[1]
	R9	10K Ohms	Not Applicable[1]	Not Applicable[1]

Note 1: For IBX ES2 and later, TRST# does not require an external pull-up; but should be routed to a test point pad for PCH JTAG debug purposes

MICRO-STAR INT'L CO.,LTD.

Title: IBEXPEAK - M (HDA,JTAG,SATA)

Size: Custom | Document Number: MS-1688 | Rev: 0A

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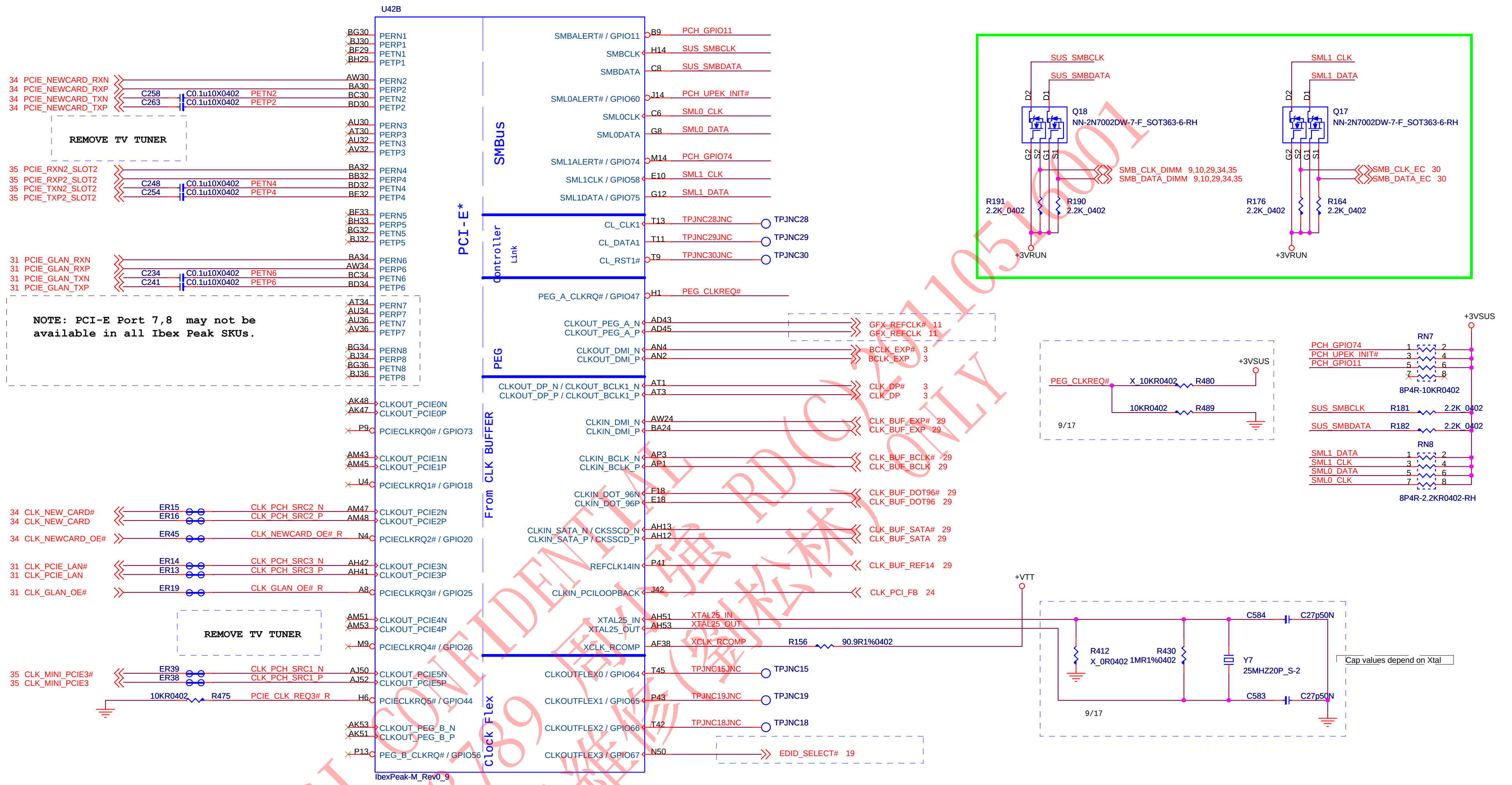
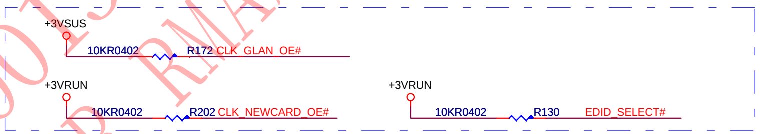
IBEXPEAK - M (PCI-E,SMBUS,CLK)



PCIECLKRQ1# / GPIO18 PCIECLKRQ1# / GPIO20	RUN Well
PCIECLKRQ0# and PCIECLKRQ3# ~ PCIECLKRQ7# PEG_A_CLKRQ# PEG_B_CLKRQ#	SUS Well



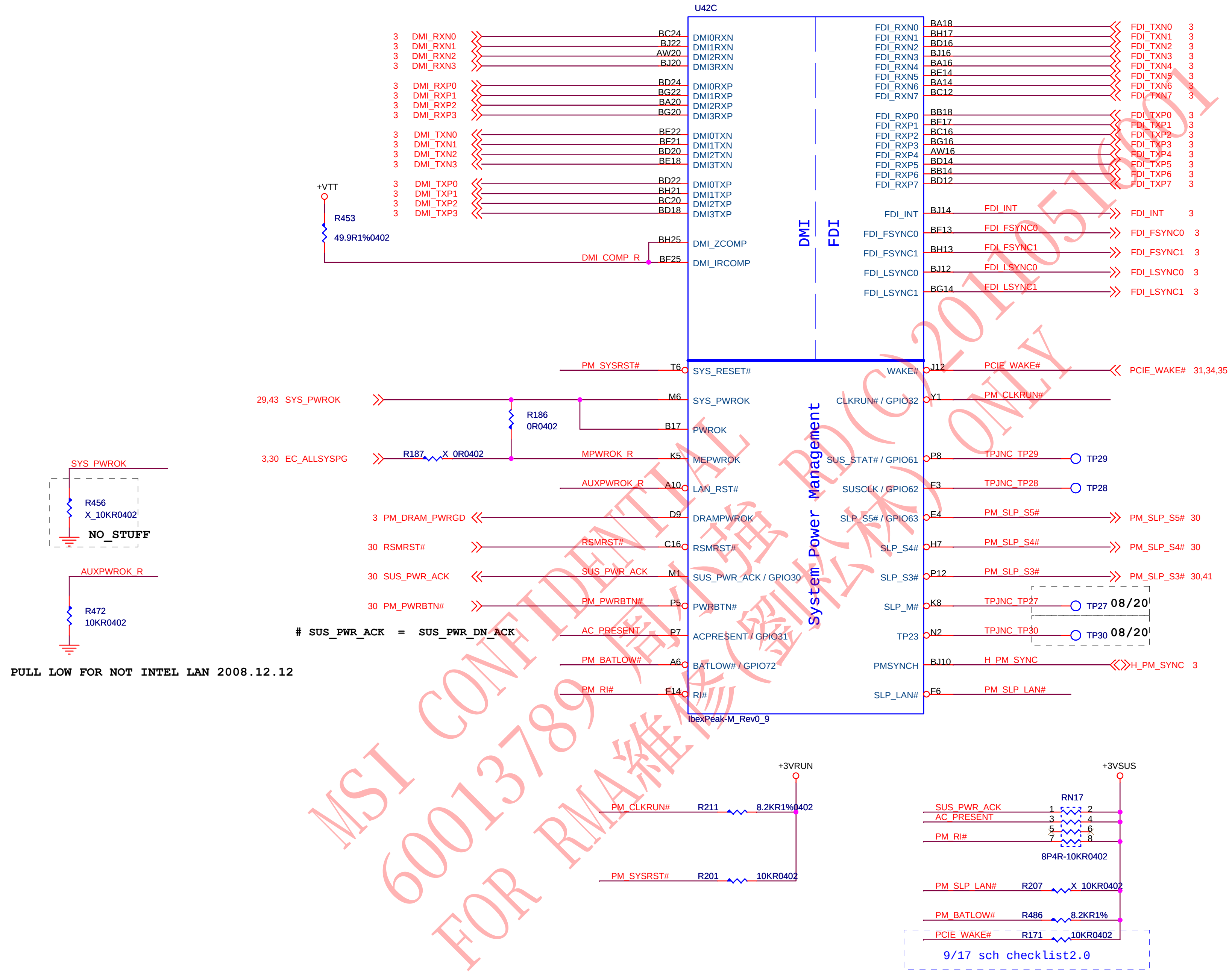
MICRO-STAR INT'L CO.,LTD.

Title: IBEXPEAK - M (PCI-E,SMBUS,CLK)

Size: Custom | Document Number: MS-1688 | Rev: 0A

Date: Tuesday, October 06, 2009 | Sheet 21 of 52

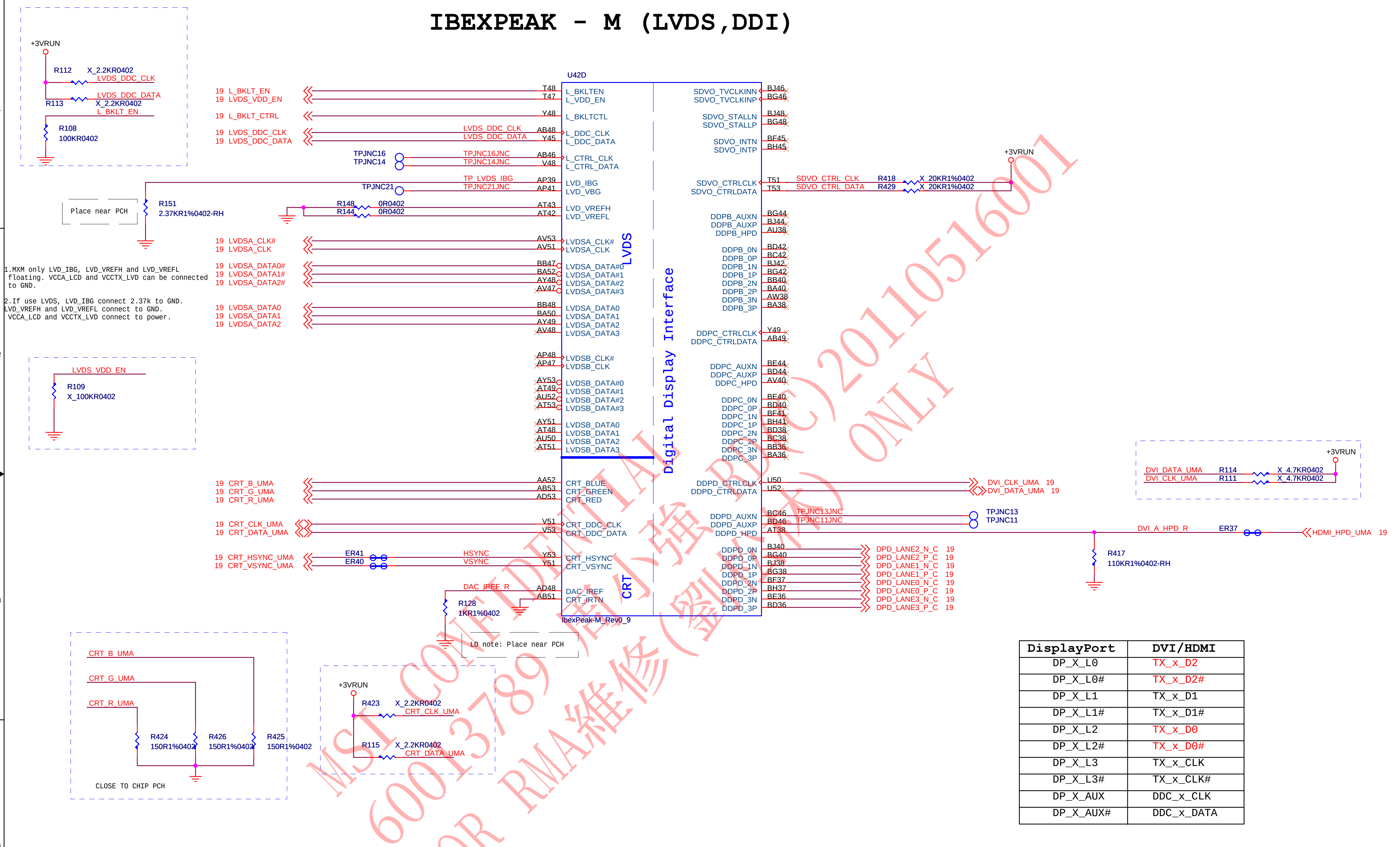
IBEXPEAK - M (DMI,FDI,GPIO)



MICRO-STAR INT'L CO.,LTD.

Title	IBEXPEAK - M (DMI,FDI,GPIO)	
Size: Custom	Document Number: MS-1688	Rev: 0A
Date: Tuesday, October 06, 2009	Sheet 22 of 52	

IBEXPEAK - M (LVDS,DDI)



DisplayPort	DVI/HDMI
DP_X_L0	TX_x_D2
DP_X_L0#	TX_x_D2#
DP_X_L1	TX_x_D1
DP_X_L1#	TX_x_D1#
DP_X_L2	TX_x_D0
DP_X_L2#	TX_x_D0#
DP_X_L3	TX_x_CLK
DP_X_L3#	TX_x_CLK#
DP_X_AUX	DDC_x_CLK
DP_X_AUX#	DDC_x_DATA

MSI MICRO-STAR INT'L CO.,LTD.

Title: IBEXPEAK - M (LVDS,DDI)

Size: Custom | Document Number: MS-1688 | Rev: 0A

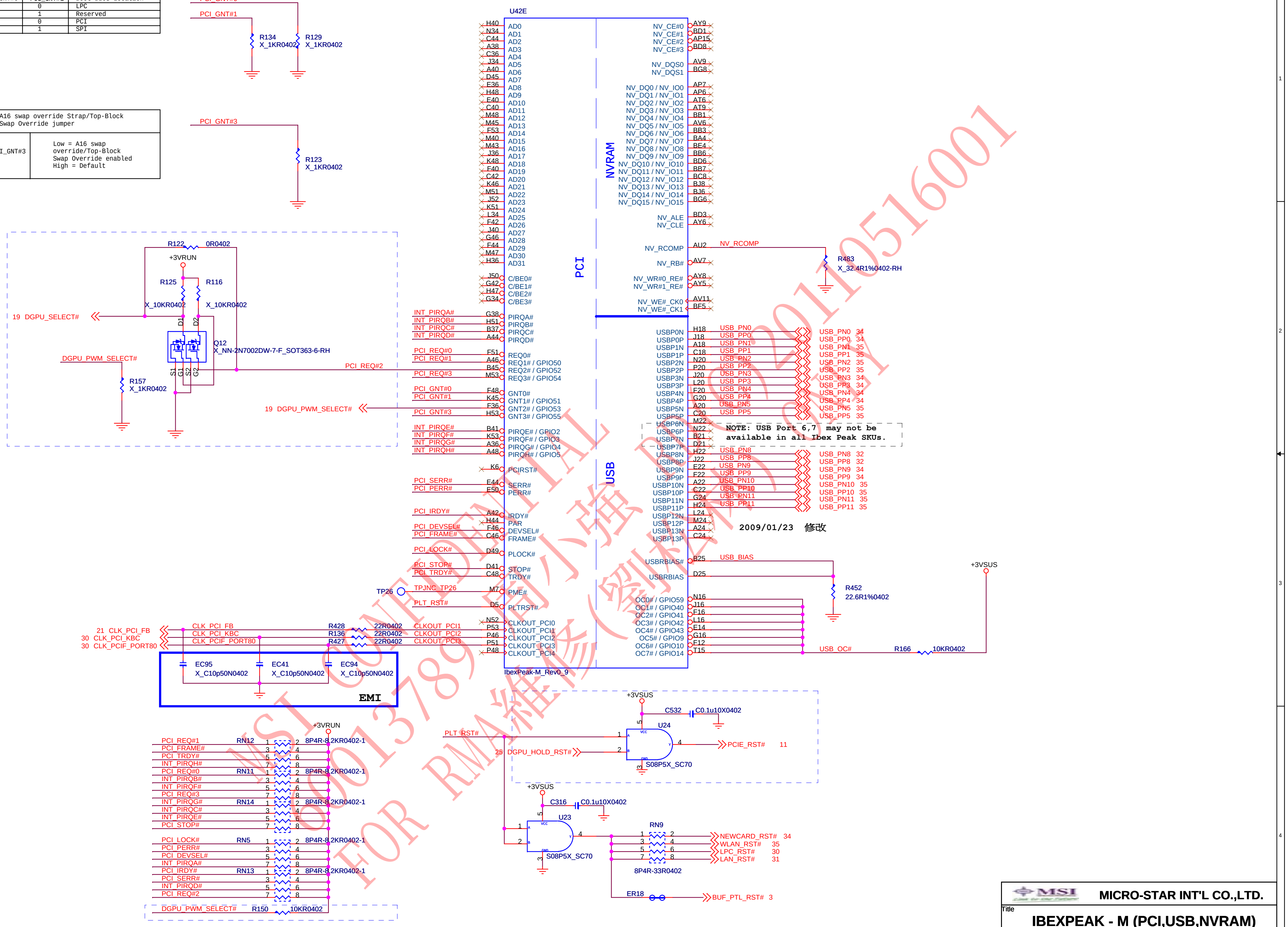
Date: Tuesday, October 06, 2009 | Sheet 23 of 52

IBEXPEAK - M (PCI,USB,NVRAM)

Boot BIOS Strap

PCI_GNT#0	PCI_GNT#1	Boot BIOS Location
0	0	LPC
0	1	Reserved
1	0	PCI
1	1	SPI

A16 swap override Strap/Top-Block Swap Override jumper	
PCI_GNT#3	Low = A16 swap override/Top-Block Swap Override enabled High = Default



U42E
PCI
NVRAM
USB
IbexPeak-M_Rev0_9
AD0 … AD31
C/BE0# C/BE1# C/BE2# C/BE3#
PIRQA# PIRQB# PIRQC# PIRQD#
REQ0# REQ1# / GPIO50 REQ2# / GPIO52 REQ3# / GPIO54
GNT0# GNT1# / GPIO51 GNT2# / GPIO53 GNT3# / GPIO55
PIRQE# / GPIO2 PIRQF# / GPIO3 PIRQG# / GPIO4 PIRQH# / GPIO5
PCIRST#
SERR# PERR#
IRDY# PAR DEVSEL# FRAME#
PLOCK#
STOP# TRDY#
PME#
PLTRST#
CLKOUT_PCI0 CLKOUT_PCI1 CLKOUT_PCI2 CLKOUT_PCI3 CLKOUT_PCI4
NV_CE#0 NV_CE#1 NV_CE#2 NV_CE#3
NV_DQS0 NV_DQS1
NV_DQ0 / NV_IO0 … NV_DQ15 / NV_IO15
NV_ALE NV_CLE
NV_RCOMP
NV_RB#
NV_WR#0_RE# NV_WR#1_RE#
NV_WE#_CK0 NV_WE#_CK1
USBP0N USBP0P … USBP13N USBP13P
USBRBIAS# USBRBIAS
OC0# / GPIO59 OC1# / GPIO40 OC2# / GPIO41 OC3# / GPIO42 OC4# / GPIO43 OC5# / GPIO9 OC6# / GPIO10 OC7# / GPIO14
NOTE: USB Port 6,7 may not be available in all Ibex Peak SKUs.
2009/01/23 修改
R483 X_32.4R1%0402-RH
R452 22.6R1%0402
+3VSUS
R166 10KR0402
USB_OC#
PCI_GNT#0 PCI_GNT#1 PCI_GNT#3
R134 X_1KR0402
R129 X_1KR0402
R123 X_1KR0402
R122 0R0402
+3VRUN
R125 R116 X_10KR0402
19 DGPU_SELECT#
Q12 X_NN-2N7002DW-7-F_SOT363-6-RH
DGPU_PWM_SELECT#
R157 X_1KR0402
PCI_REQ#2
19 DGPU_PWM_SELECT#
TP26 TPJNC_TP26
PLT_RST#
21 CLK_PCI_FB
30 CLK_PCI_KBC
30 CLK_PCIF_PORT80
R428 R136 R427 22R0402
CLKOUT_PCI1 CLKOUT_PCI2 CLKOUT_PCI3
EC95 X_C10p50N0402
EC41 X_C10p50N0402
EC94 X_C10p50N0402
EMI
RN12 RN11 RN14 RN5 RN13 8P4R-8.2KR0402-1
R150 10KR0402
C532 C0.1u10X0402
U24 S08P5X_SC70
25 DGPU_HOLD_RST#
PCIE_RST# 11
C316 C0.1u10X0402
U23 S08P5X_SC70
RN9 8P4R-33R0402
NEWCARD_RST# 34
WLAN_RST# 35
LPC_RST# 30
LAN_RST# 31
ER18
BUF_PTL_RST# 3

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Title	IBEXPEAK - M (PCI,USB,NVRAM)		
Size: Custom	Document Number: MS-1688		Rev: 0A
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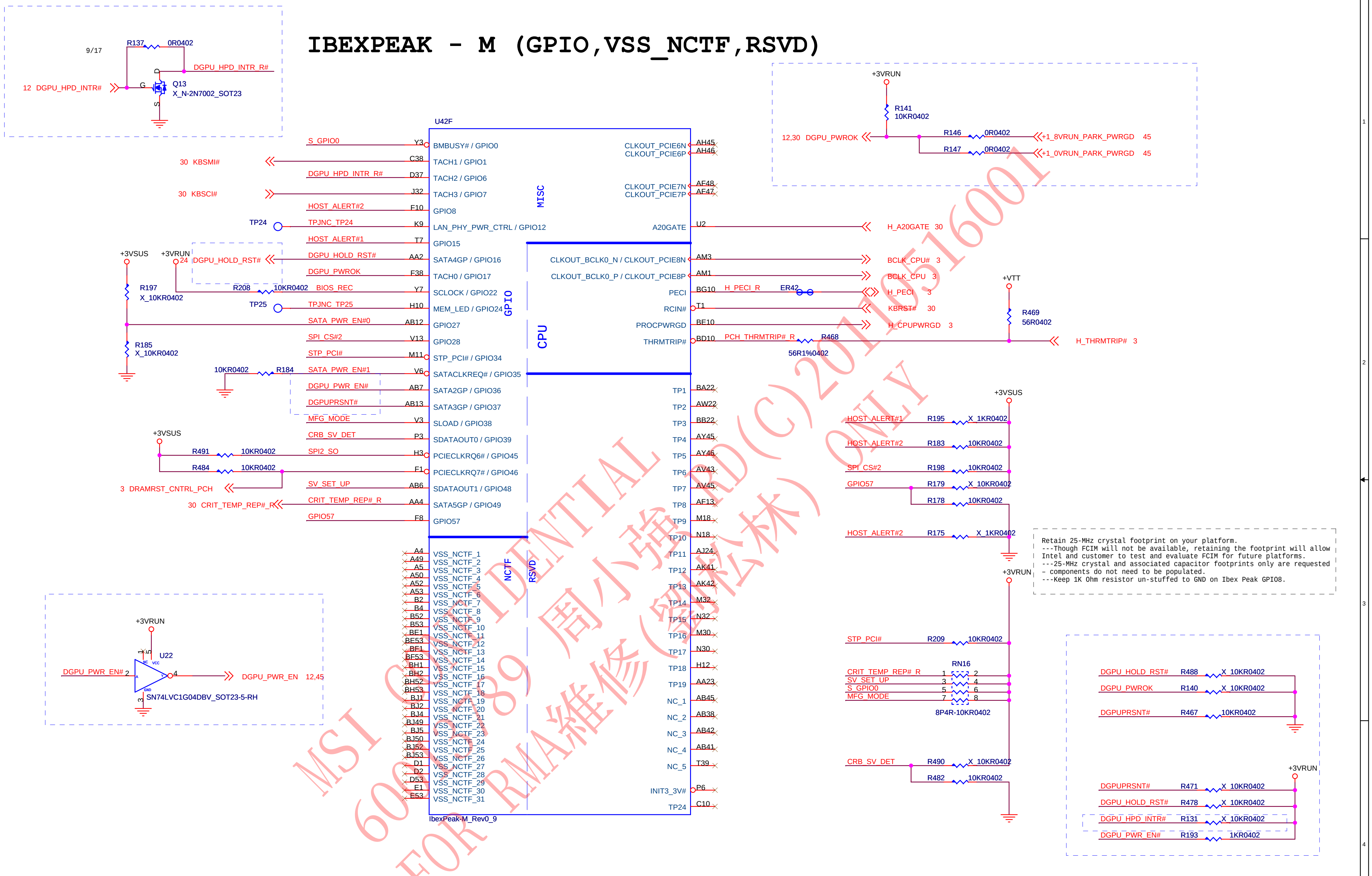
IBEXPEAK - M (GPIO,VSS_NCTF,RSVD)



Retain 25-MHz crystal footprint on your platform.
---Though FCIM will not be available, retaining the footprint will allow Intel and customer to test and evaluate FCIM for future platforms.
---25-MHz crystal and associated capacitor footprints only are requested - components do not need to be populated.
---Keep 1K Ohm resistor un-stuffed to GND on Ibex Peak GPIO8.

MICRO-STAR INT'L CO.,LTD.

Title: IBEXPEAK-M(GPIO,VSS_NCTF,RSVD)

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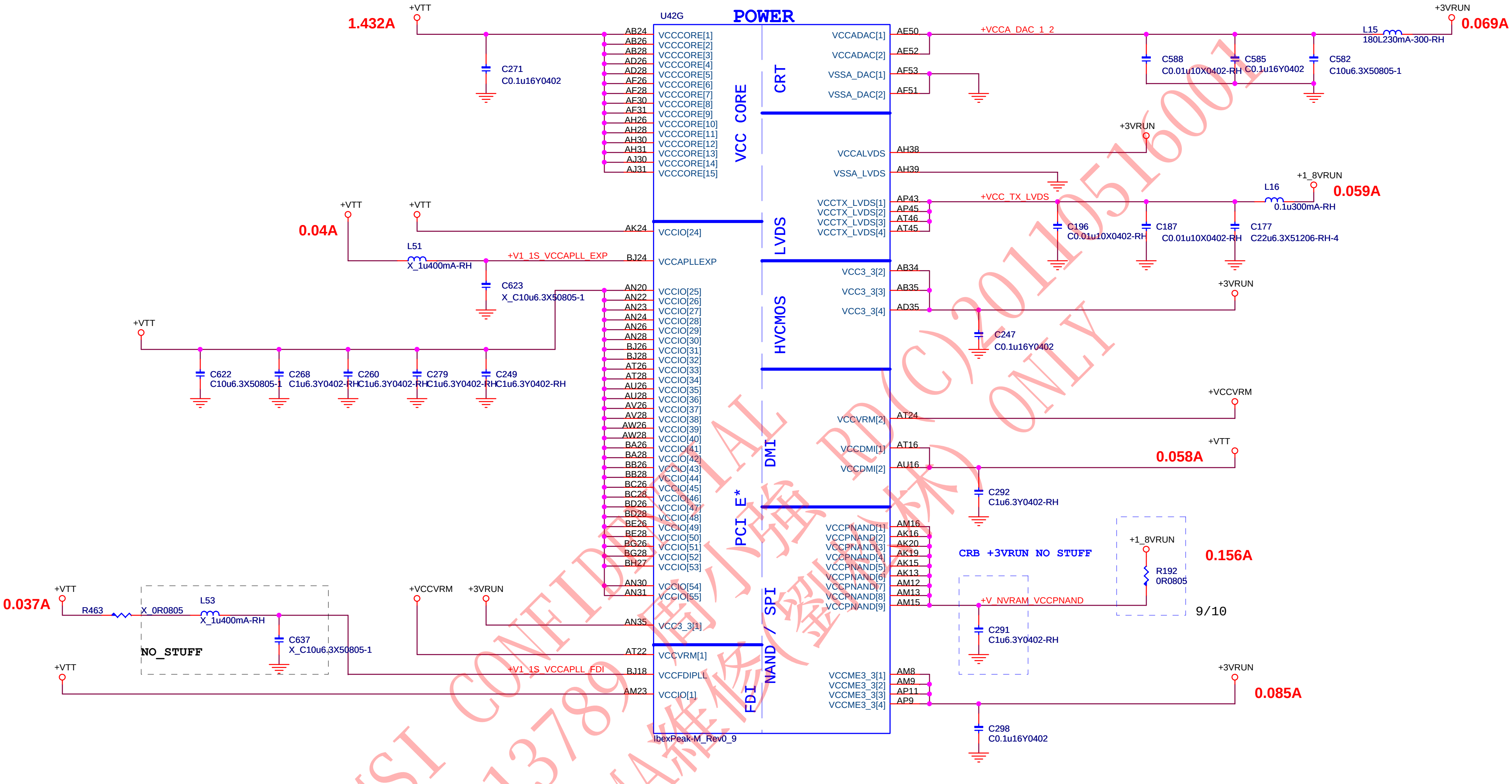
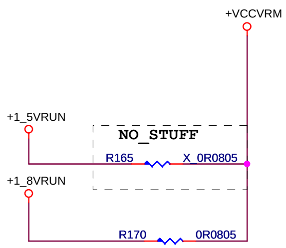
IBEXPEAK - M (POWER)





The VCCVRM rail (1.8 V/1.5 V) powers an internal voltage regulator module (VRM) that regulates clean 1.05-V voltage supply for analog rails (VCCAClk, VccapllEXP, VCCFDIPLL, and VCCSATAPLL). This solution will allow us to remove the LC filter requirements for those rails, thereby reducing platform BOM cost. VCCVRM is enabled by default via internal pull up to GPIO27, therefore GPIO27 should be left as No Connect. The following diagram shows implementation details on how to enable and disable VccVRM.

MICRO-STAR INT'L CO.,LTD.

Title	IBEXPEAK - M (POWER)	
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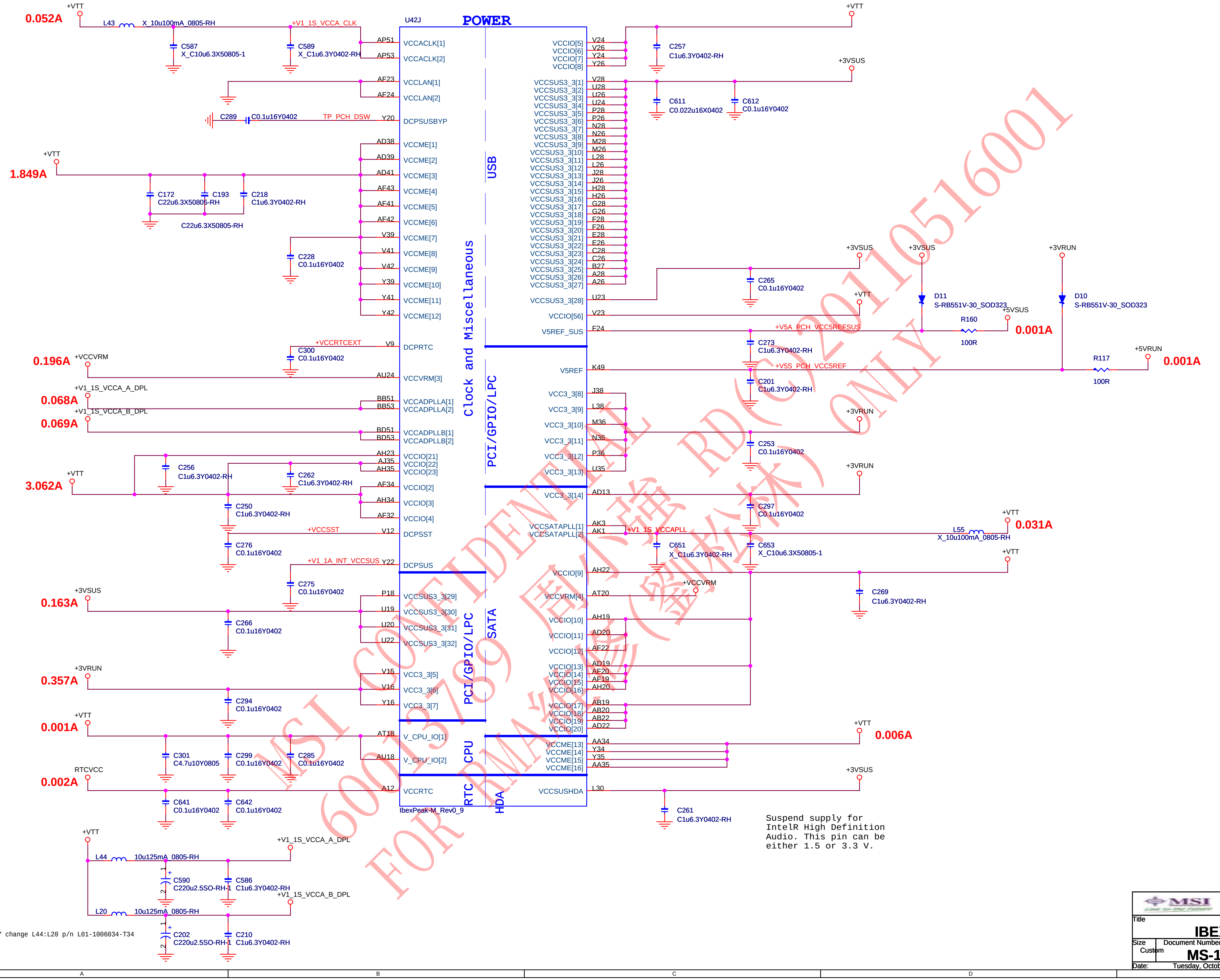
VccLAN may be grounded if Intel LAN is disabled.

IBEXPEAK - M (POWER)



Suspend supply for IntelR High Definition Audio. This pin can be either 1.5 or 3.3 V.

MICRO-STAR INT'L CO.,LTD.

Title: IBEXPEAK - M (POWER)

Size: Custom | Document Number: MS-1688 | Rev: 0A

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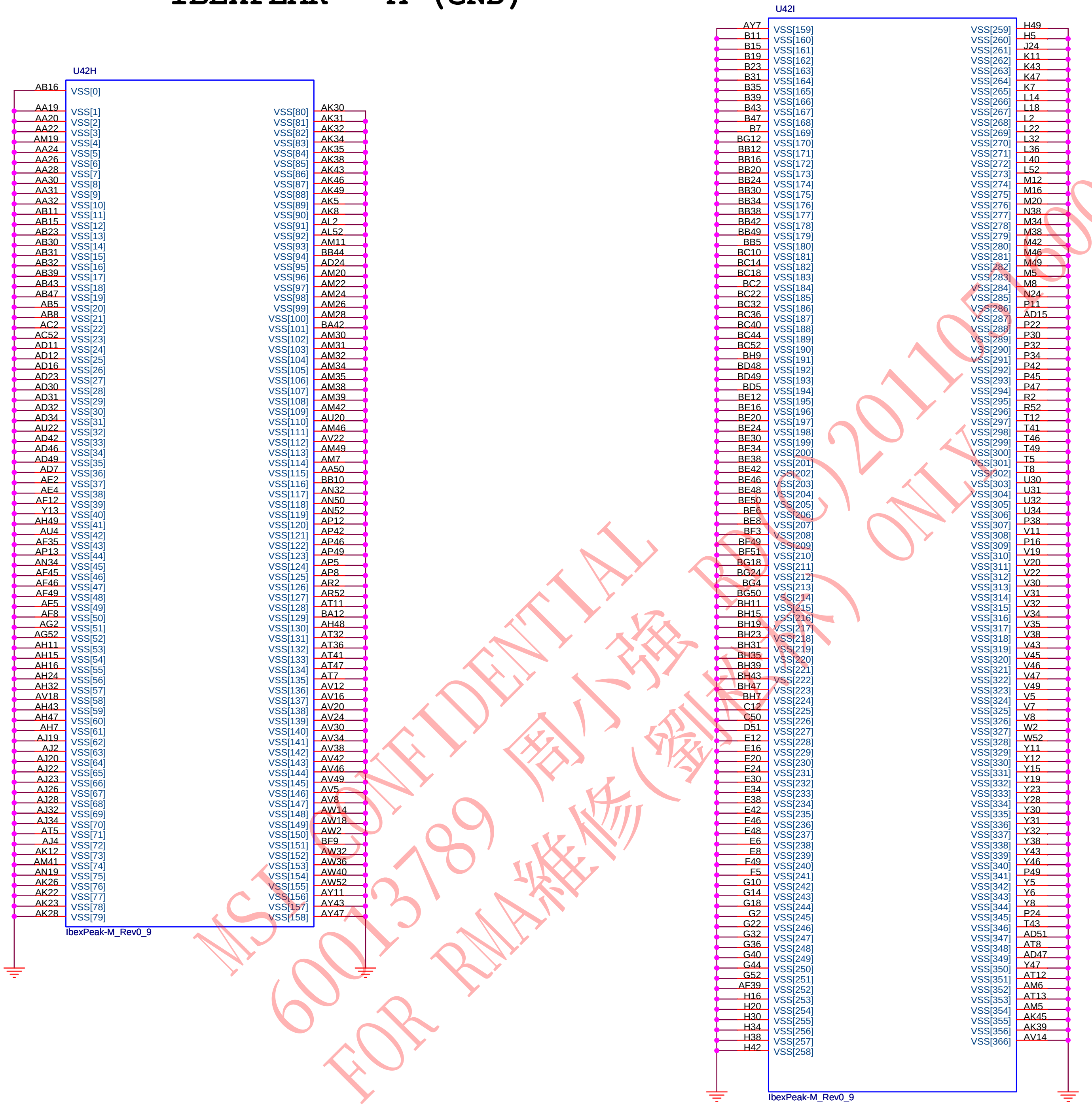
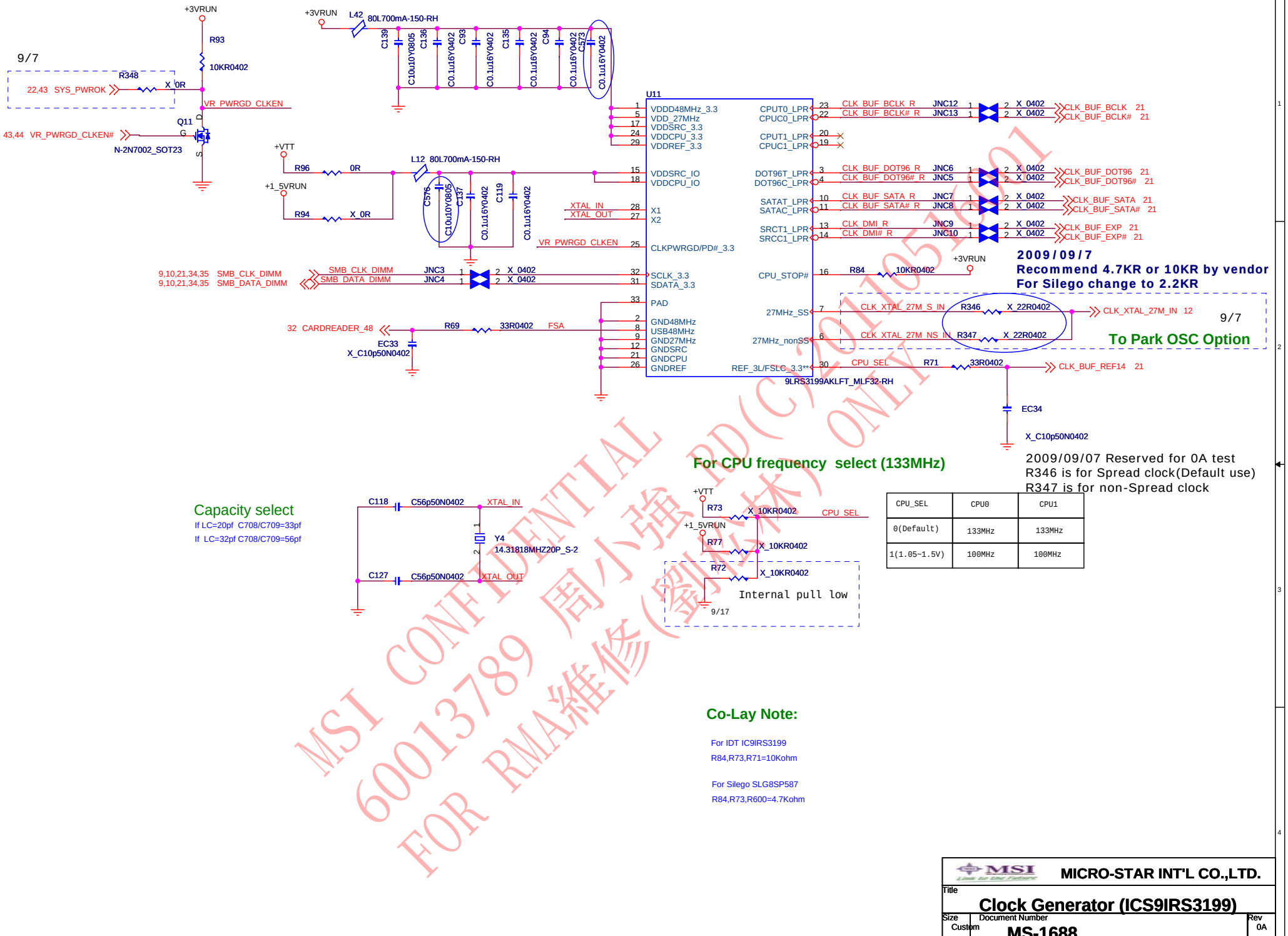
IBEXPEAK - M (GND)



MSI	MICRO-STAR INT'L CO.,LTD.		
Title	IBEXPEAK - M (GND)		
Size: Custom	Document Number: MS-1688		Rev: 0A
Date: Tuesday, October 06, 2009	Sheet 28 of 52		



CPU_SEL	CPU0	CPU1
0(Default)	133MHz	133MHz
1(1.05~1.5V)	100MHz	100MHz

MICRO-STAR INT'L CO.,LTD.

Title: Clock Generator (ICS9IRS3199)

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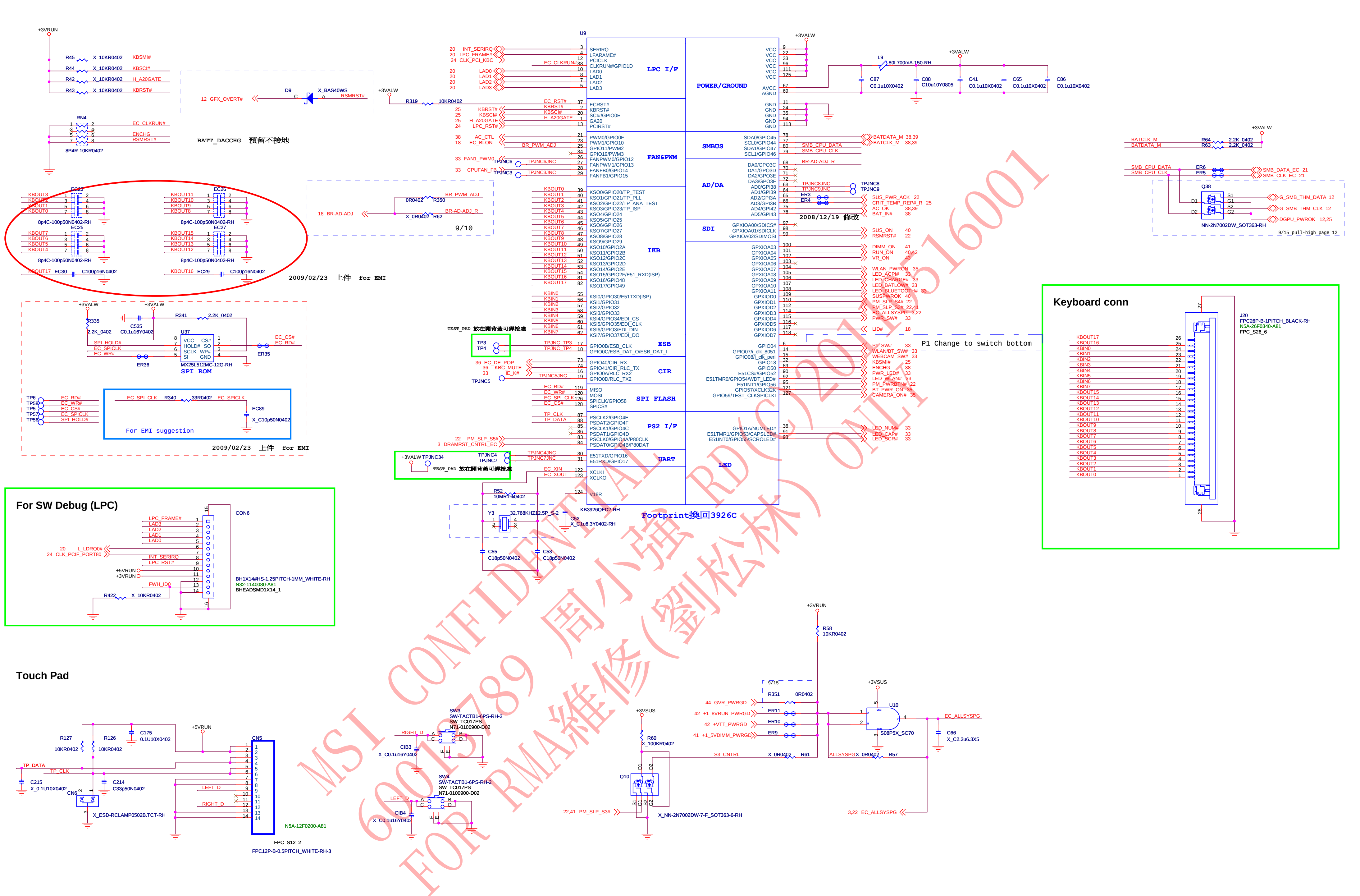
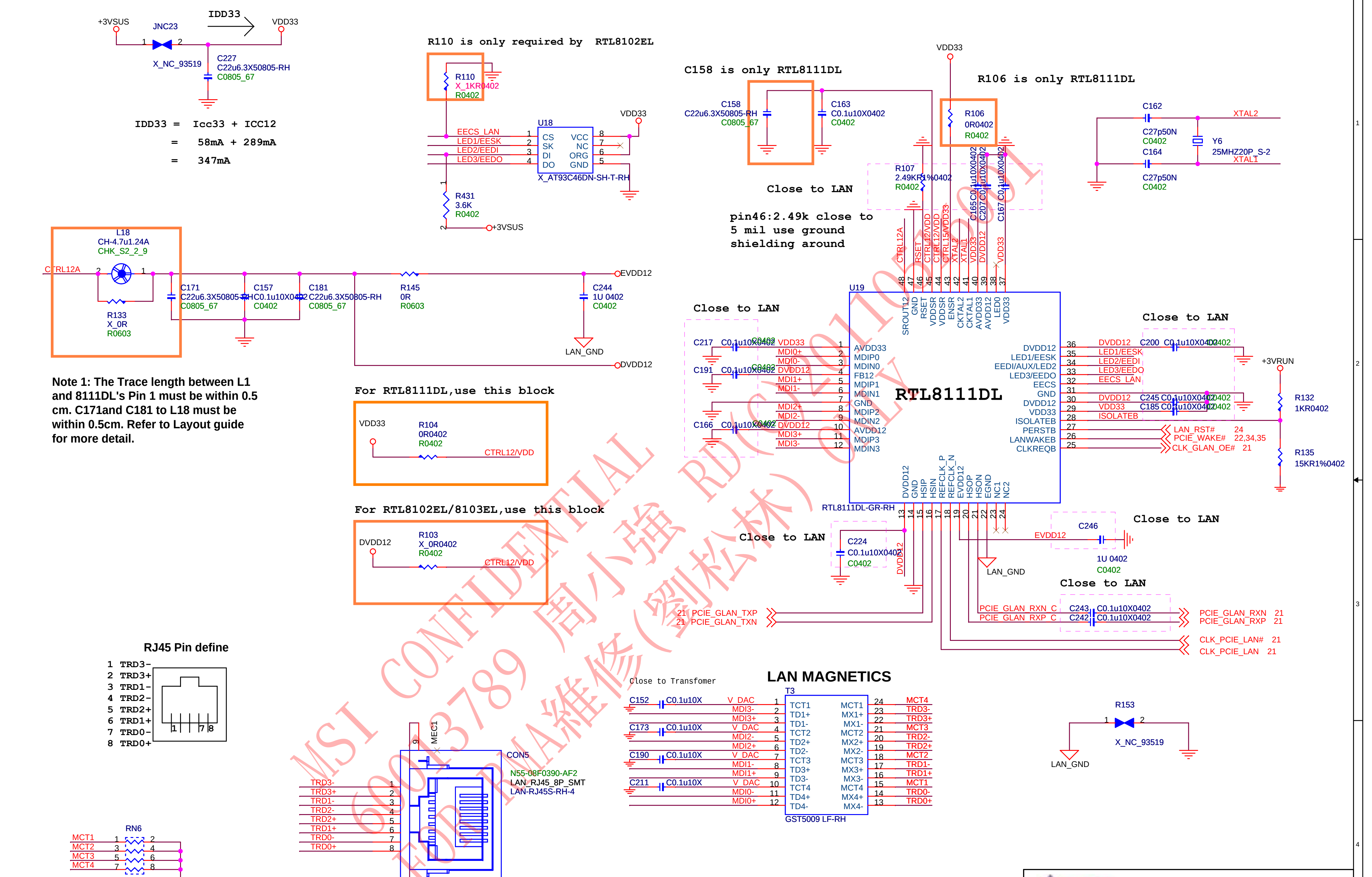


MICRO-STAR INT'L CO.,LTD.

Title: KBC/EC/uP (ENE3926-LFQP144)

Size: Custom | Document Number: MS-1688 | Rev: 0A

Date: Tuesday, October 06, 2009 | Sheet 30 of 52



MICRO-STAR INT'L CO.,LTD.

Title: PCIE GIGA LAN (RTL8111DL)

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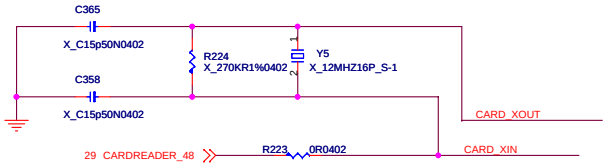
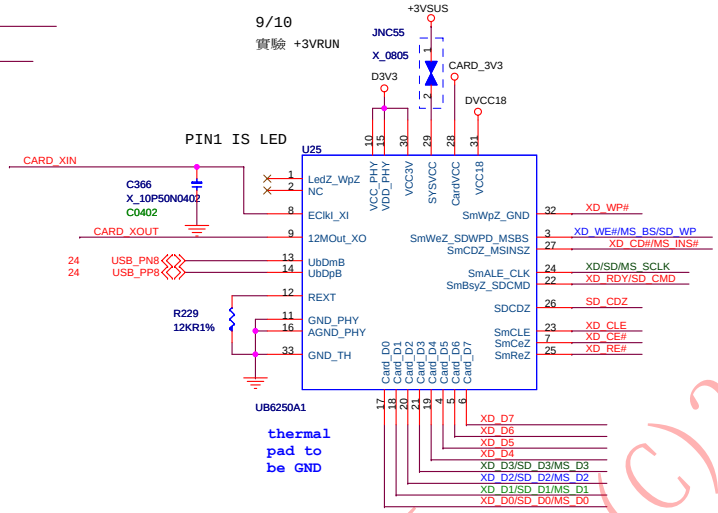
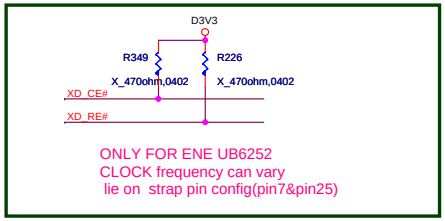


9/10
實驗 +3VRUN



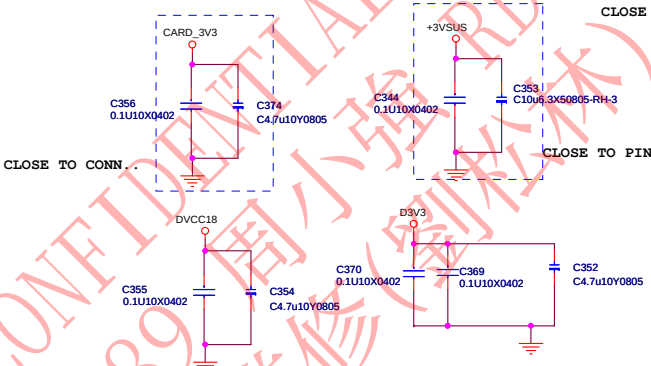
ENE UB6250 USB20 Flash Card Reader Controller
Pins for SD, MMC, MS, and xD memory cards

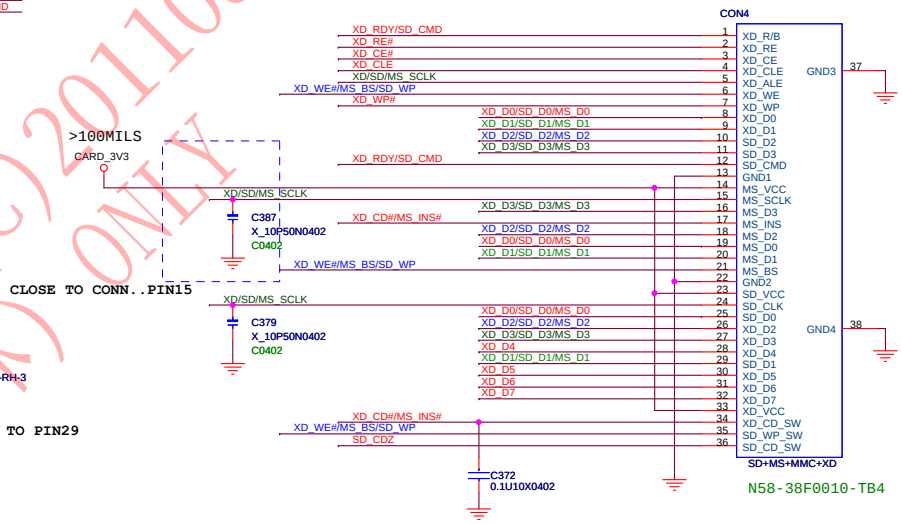
Name	No	I/O	XD	SD	MMC	MS
xDCeZ	7	O	xD card EN			
xDCle	23	O	xD CMD latch EN			
xDAle	24	O	xD ADDR latch EN	SD clock	MMC clock	MS serial clock
xDBsyZ	22	B	xD Ready/busy	SD CMD/response	MMC CMD/response	
xDData0	17	B	xD D0	SD D0	MMC D0	MS D0
xDData1	18	B	xD D1	SD D1	MMC D1	MS D1
xDData2	20	B	xD D2	SD D2	MMC D2	MS D2
xDData3	21	B	xD D3	SD D3	MMC D3	MS D3
xDData4	19	B	xD D4		MMC D4	MS D4
xDData5	4	B	xD D5		MMC D5	MS D5
xDData6	5	B	xD D6		MMC D6	MS D6
xDData7	6	B	xD D7		MMC D7	MS D7
xDWeZ	3	B	xD W EN	SD WP		MS Busy
xDReZ	25	O	xD R EN			
xDWpZ	32	O	xD WP			
SdCdZ	26	I		SD CD	MMC CD	
xDCdZ	27	I	xD CD			MS CD



Configurations for Clock Source Selection:

4.7K Pull-high Resistor on		Frequency of external clock source to EClkin pin
xDReZ	xDCeZ	
NC	NC	48MHz
NC	O	24MHz
O	NC	12MHz





MICRO-STAR INT'L CO.,LTD.

Title: Cardreader(UB6250)

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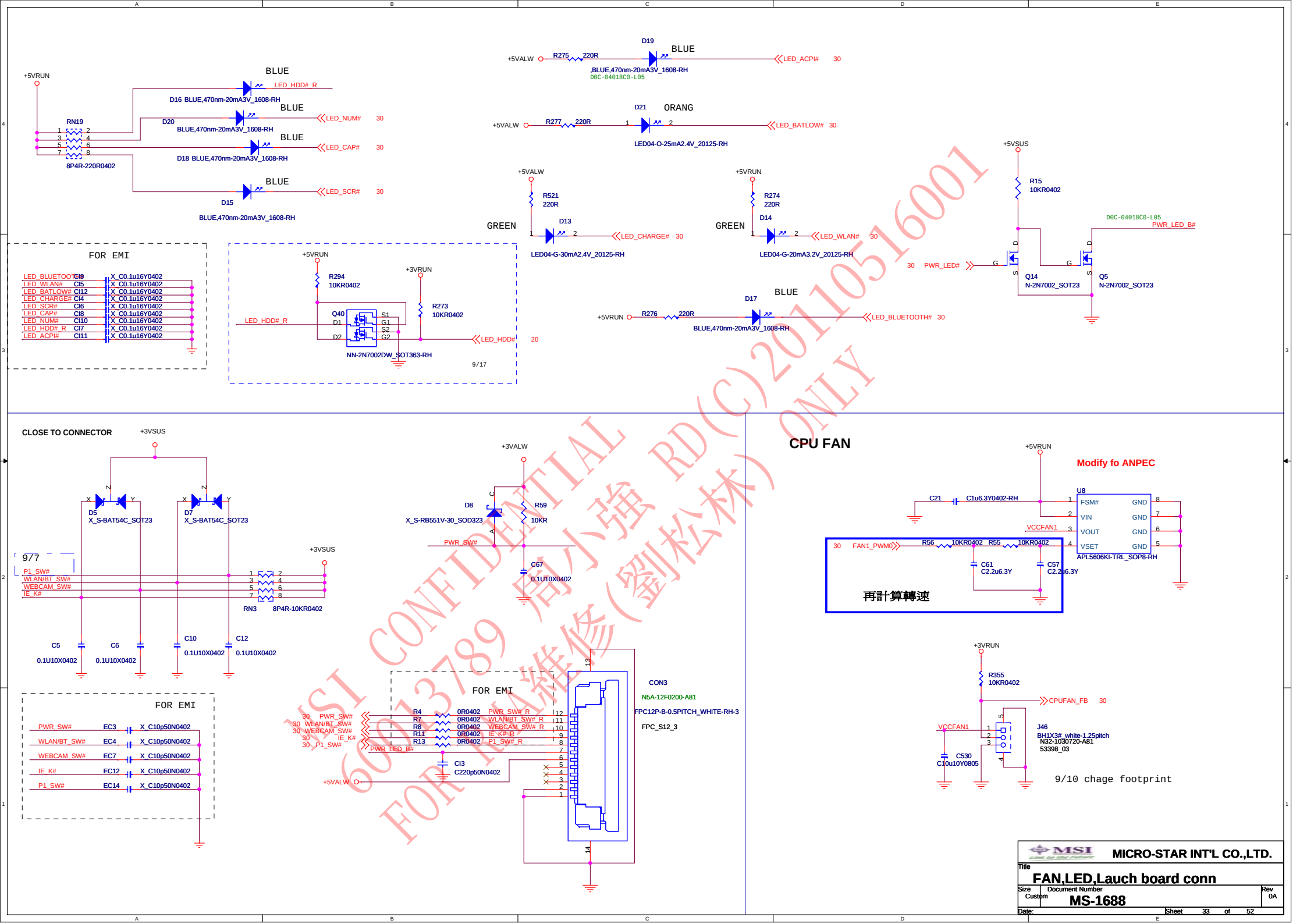

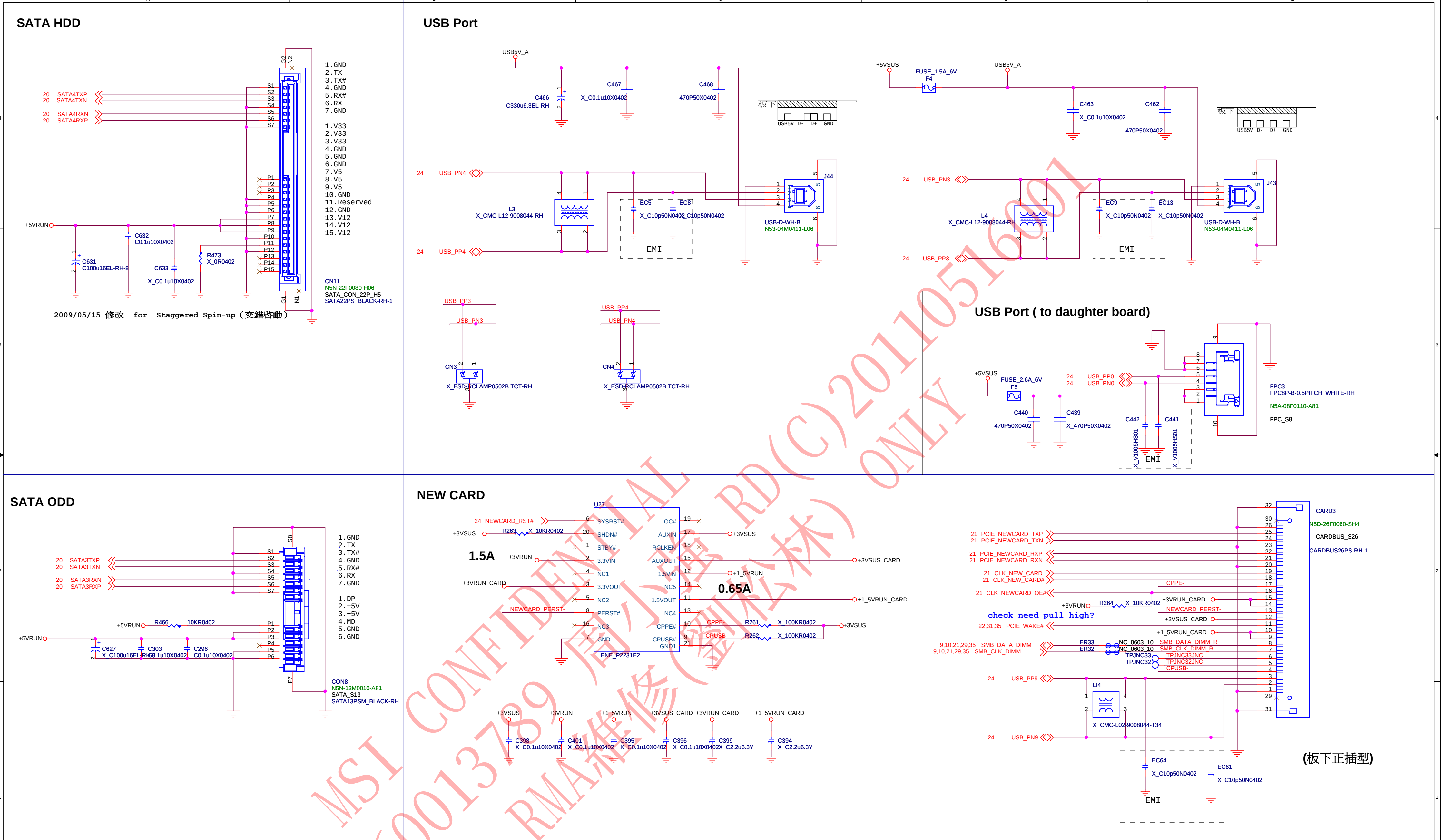

MICRO-STAR INT'L CO.,LTD.

Title: HDD,CDROM,USB ,NEW CARD

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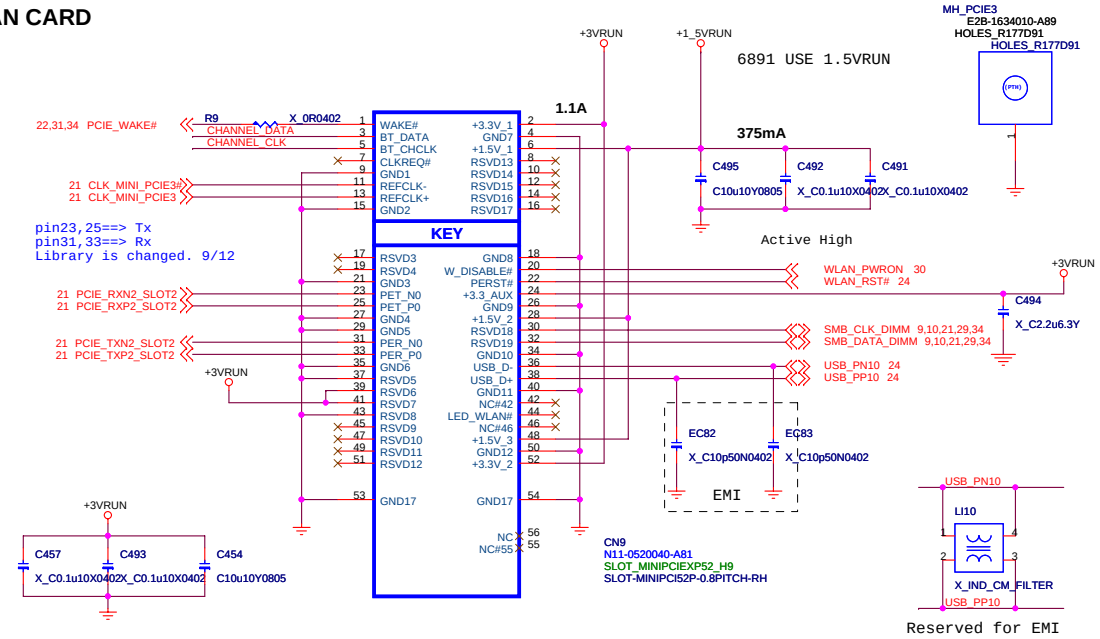
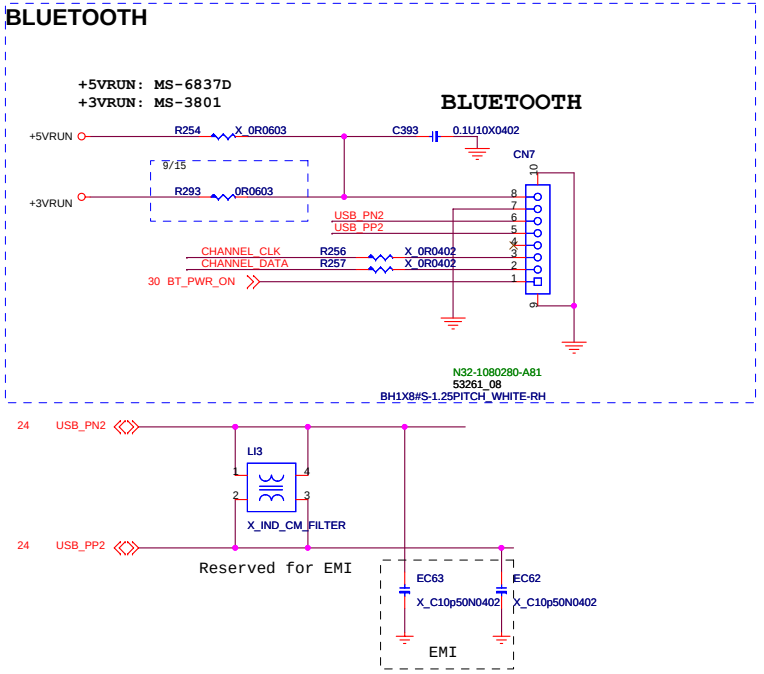
WLAN CARD

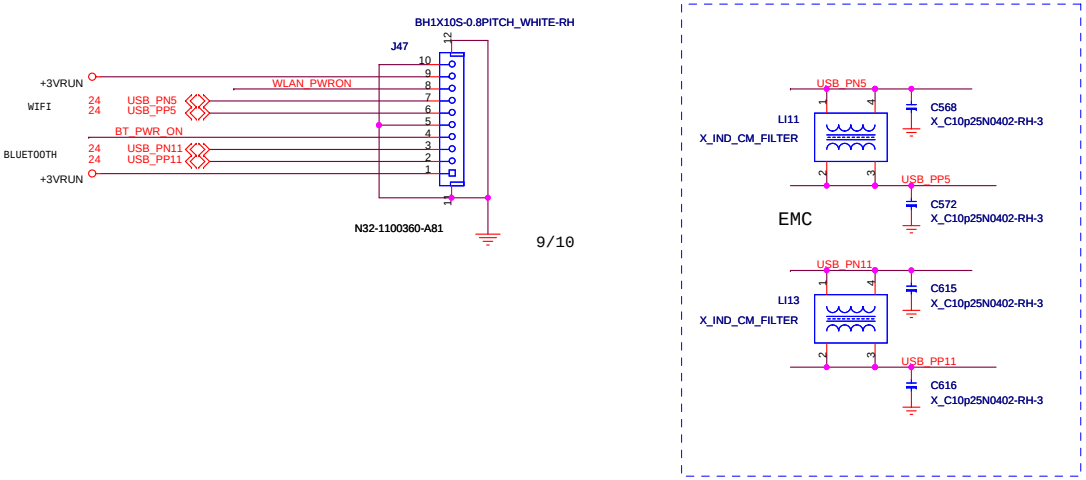


BLUETOOTH

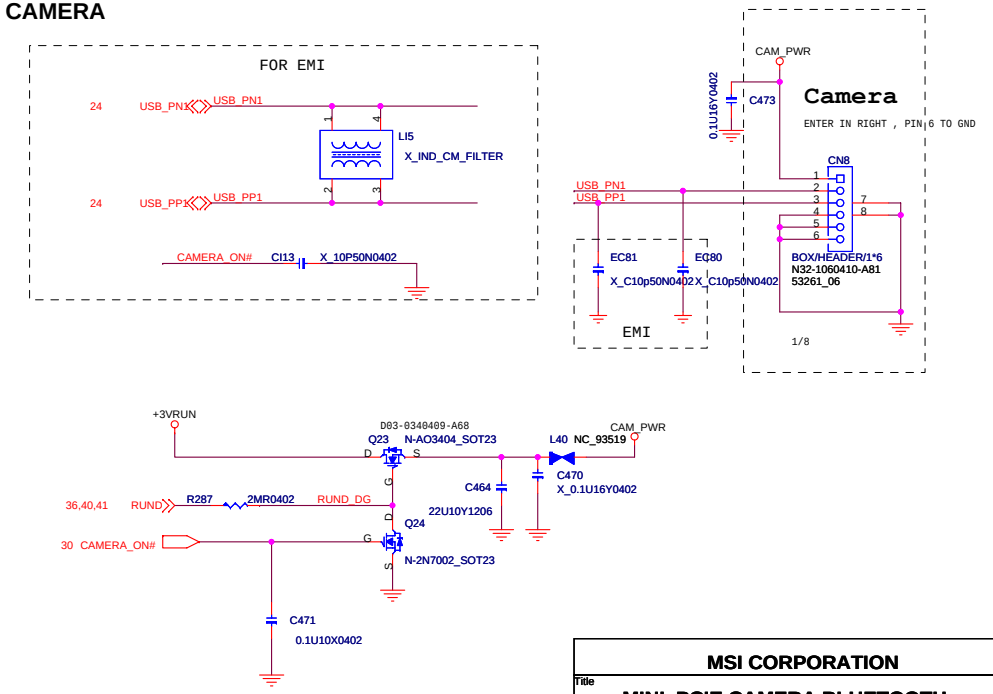


REMOVE TV TUNER

MS-3870



CAMERA



MSI CORPORATION		
Title: MINI_PCIE,CAMERA,BLUETOOTH		
Size: Custom	Document Number: MS-1688	Rev: 0A
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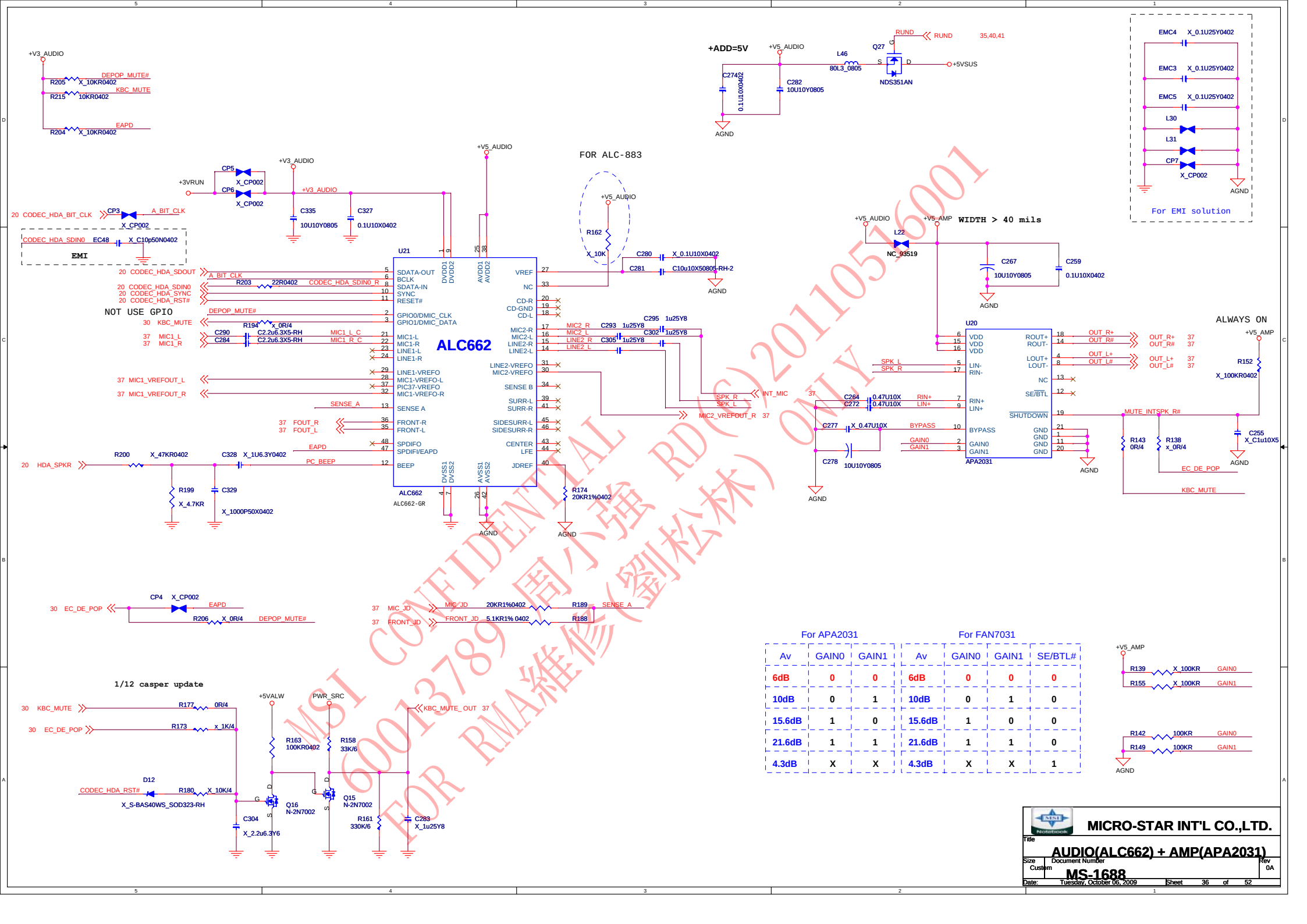
+V3_AUDIO
DEPOP_MUTE#
R205 X_10KR0402
KBC_MUTE
R215 10KR0402
EAPD
R204 X_10KR0402
+ADD=5V
+V5_AUDIO
L46
80L3_0805
Q27
NDS351AN
RUND
35,40,41
+5VSUS
C274
0.1U10X0402
C282
10U10Y0805
AGND
EMC4 X_0.1U25Y0402
EMC3 X_0.1U25Y0402
EMC5 X_0.1U25Y0402
L30
L31
CP7
X_CP002
For EMI solution
+3VRUN
CP5
CP6
X_CP002
+V3_AUDIO
C335
10U10Y0805
C327
0.1U10X0402
20 CODEC_HDA_BIT_CLK
CP3
A_BIT_CLK
CODEC_HDA_SDIN0 EC48 X_C10p50N0402
EMI
FOR ALC-883
R162
X_10K
C280
X_0.1U10X0402
C281
C10u10X50805-RH-2
U21
ALC662
ALC662-GR
20 CODEC_HDA_SDOUT
20 CODEC_HDA_SDIN0
20 CODEC_HDA_SYNC
20 CODEC_HDA_RST#
R203 22R0402
CODEC_HDA_SDIN0_R
NOT USE GPIO
30 KBC_MUTE
R194 X_0R/4
37 MIC1_L
37 MIC1_R
C290 C2.2u6.3X5-RH
C284 C2.2u6.3X5-RH
MIC1_L_C
MIC1_R_C
37 MIC1_VREFOUT_L
37 MIC1_VREFOUT_R
SENSE_A
37 FOUT_R
37 FOUT_L
EAPD
PC_BEEP
C295 1u25Y8
C293 1u25Y8
C302 1u25Y8
C305 1u25Y8
INT_MIC
MIC2_VREFOUT_R 37
R200 X_47KR0402
C328 X_1U6.3Y0402
20 HDA_SPKR
R199 X_4.7KR
C329
X_1000P50X0402
R174 20KR1%0402
ALWAYS ON
+V5_AMP
WIDTH > 40 mils
L22
NC_93519
C267 10U10Y0805
C259 0.1U10X0402
U20
APA2031
SPK_L
SPK_R
C264 0.47U10X
C272 0.47U10X
C277 X_0.47U10X
C278 10U10Y0805
BYPASS
GAIN0
GAIN1
OUT_R+
OUT_R#
OUT_L+
OUT_L#
R152 X_100KR0402
R143 0R/4
R138 x_0R/4
C255 X_C1u10X5
MUTE_INTSPK_R#
EC_DE_POP
KBC_MUTE
CP4 X_CP002
30 EC_DE_POP
EAPD
R206 X_0R/4
DEPOP_MUTE#
37 MIC_JD
37 FRONT_JD
MIC_JD 20KR1%0402 R189 SENSE_A
FRONT_JD 5.1KR1% 0402 R188
1/12 casper update
+5VALW
PWR_SRC
KBC_MUTE_OUT 37
R177 0R/4
R173 x_1K/4
R163 100KR0402
R158 33K/6
D12
X_S-BAS40WS_SOD323-RH
CODEC_HDA_RST#
R180 X_10K/4
Q16 N-2N7002
Q15 N-2N7002
C304 X_2.2u6.3Y6
R161 330K/6
C283 X_1u25Y8
For APA2031
For FAN7031
Av GAIN0 GAIN1
6dB 0 0
10dB 0 1
15.6dB 1 0
21.6dB 1 1
4.3dB X X
Av GAIN0 GAIN1 SE/BTL#
6dB 0 0 0
10dB 0 1 0
15.6dB 1 0 0
21.6dB 1 1 0
4.3dB X X 1
R139 X_100KR GAIN0
R155 X_100KR GAIN1
R142 100KR GAIN0
R149 100KR GAIN1
MSI CONFIDENTIAL
60013789 周小强 RD(C)20110516001
FOR RMA維修(劉松林) ONLY
MICRO-STAR INT'L CO.,LTD.
Title
AUDIO(ALC662) + AMP(APA2031)
Size Custom
Document Number MS-1688
Rev 0A
Date: Tuesday, October 06, 2009
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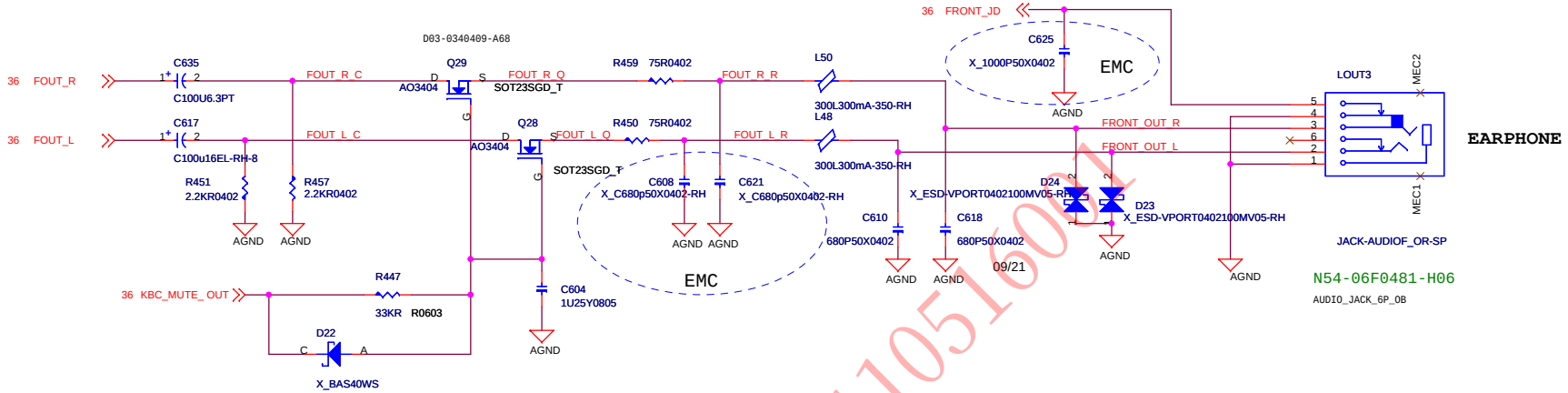
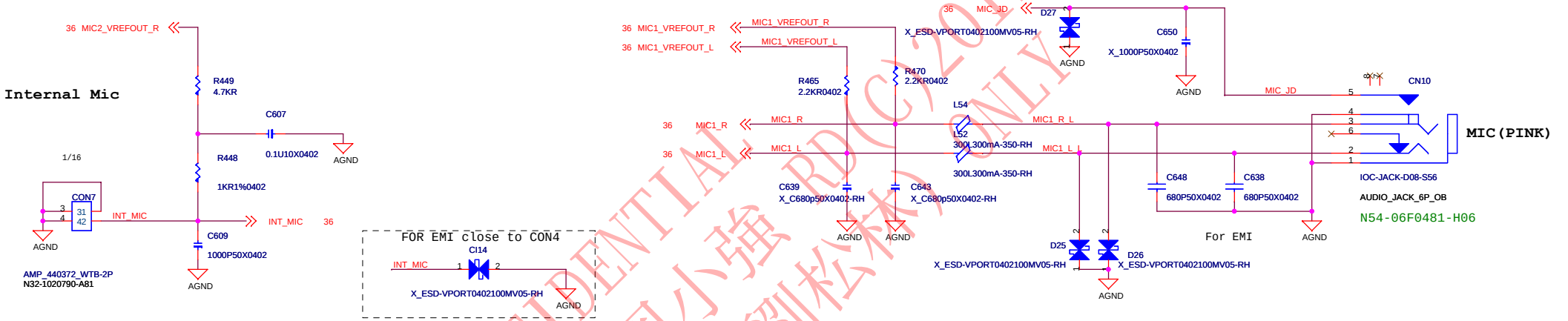
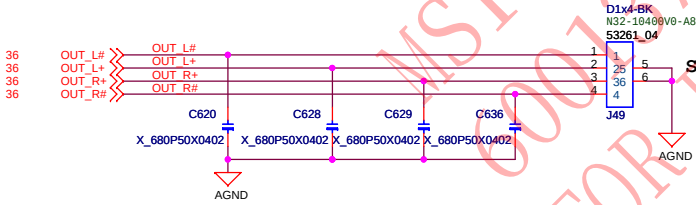
1/20 EAPD DELAY 650ms

HP IN IS LOW

D03-0340409-A68







MICRO-STAR INT'L CO.,LTD.

Title: SPK / HP / MIC — E28/M0

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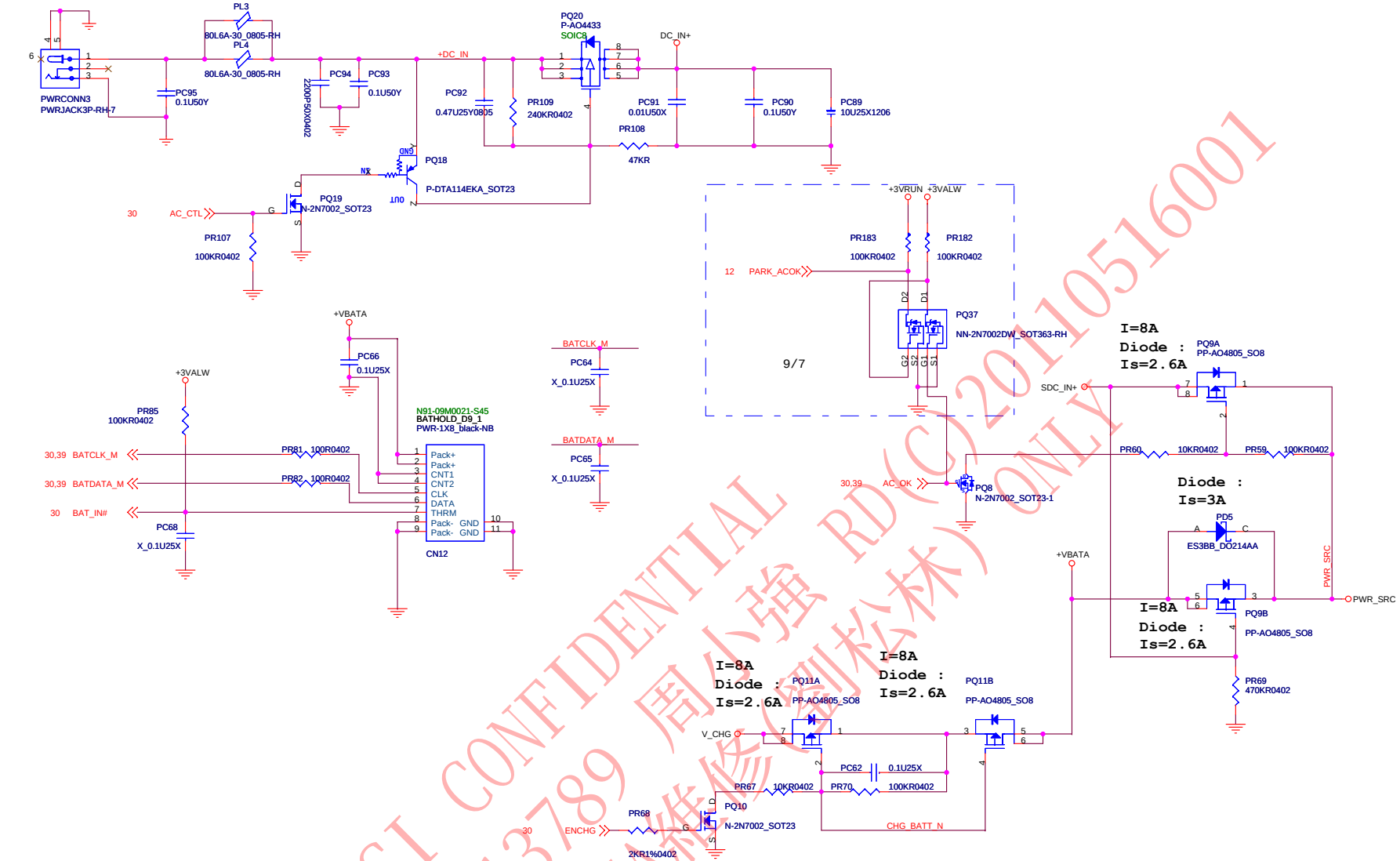
N92-03M0351-AF2



MICRO-STAR INT'L CO.,LTD.

Title: Battery select

E39/M0

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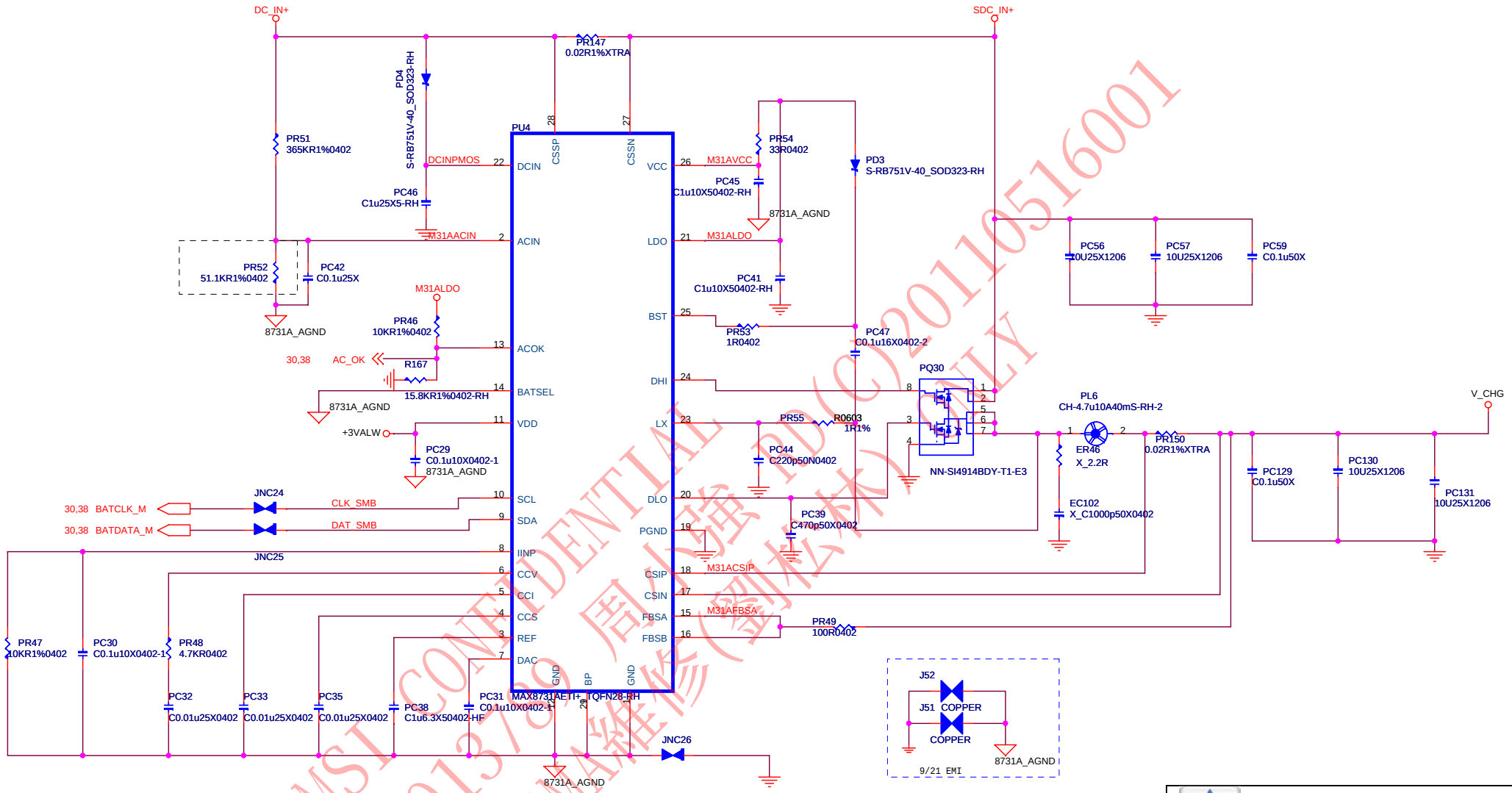
Adapter input voltage set 19 Voltage



IINP :
1. The transconductance from (CSSP - CSSN) to IINP is 3mA/V.
2. V_IINP = IINPUT x RS1 x 3mA/V x PR25

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Title: Battery Charger		E51/M0
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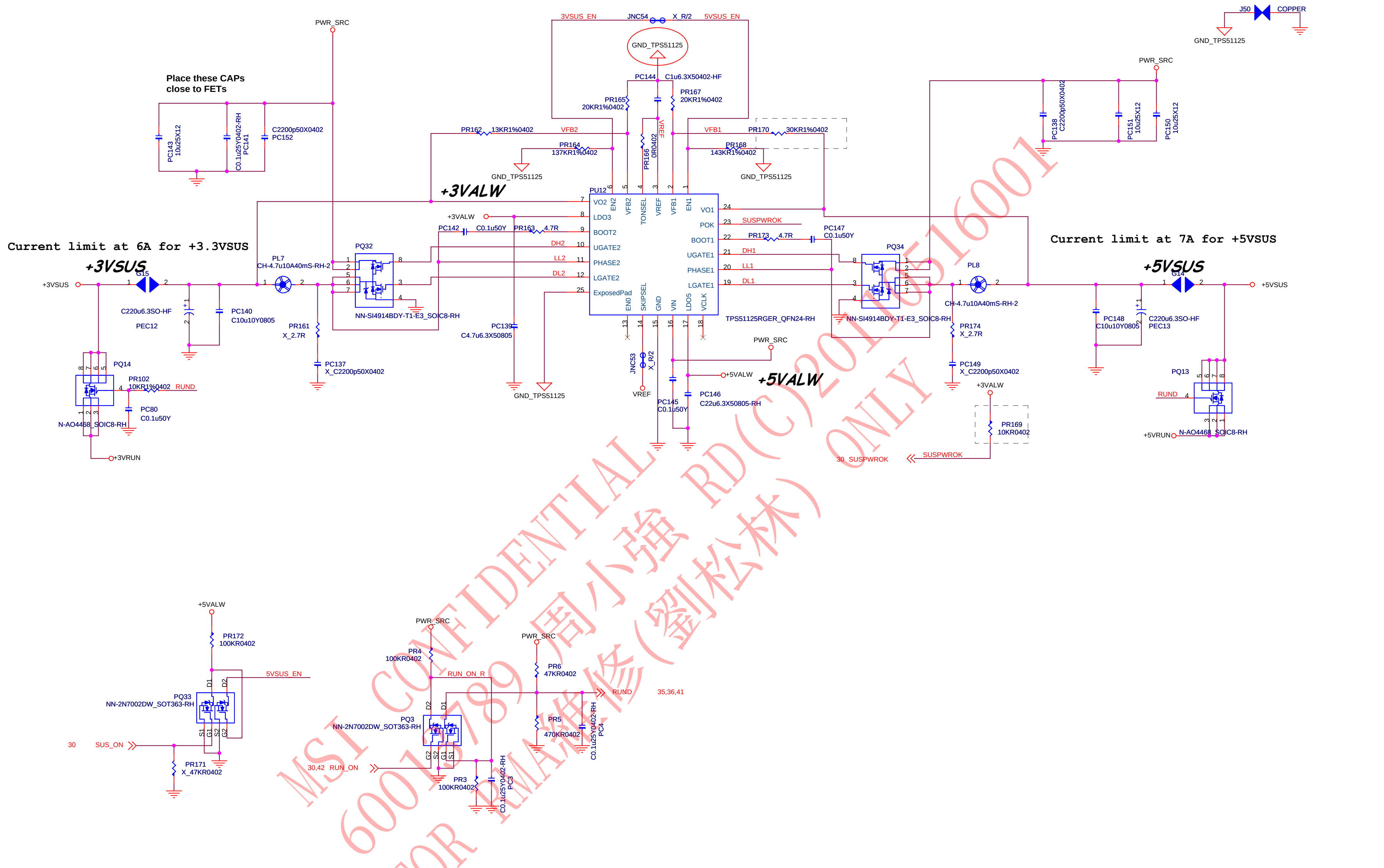

MICRO-STAR INT'L CO.,LTD.

Title: System power

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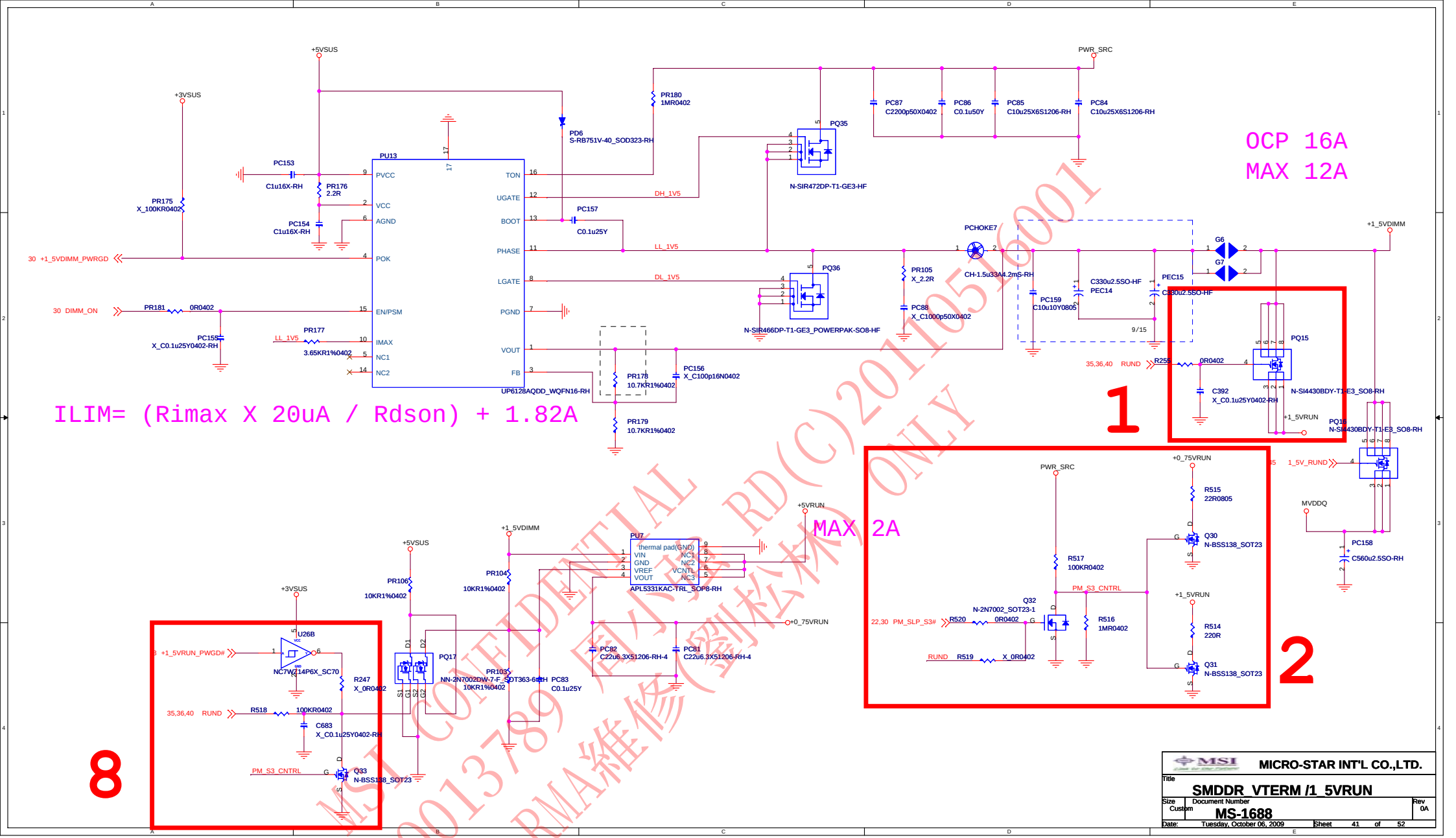

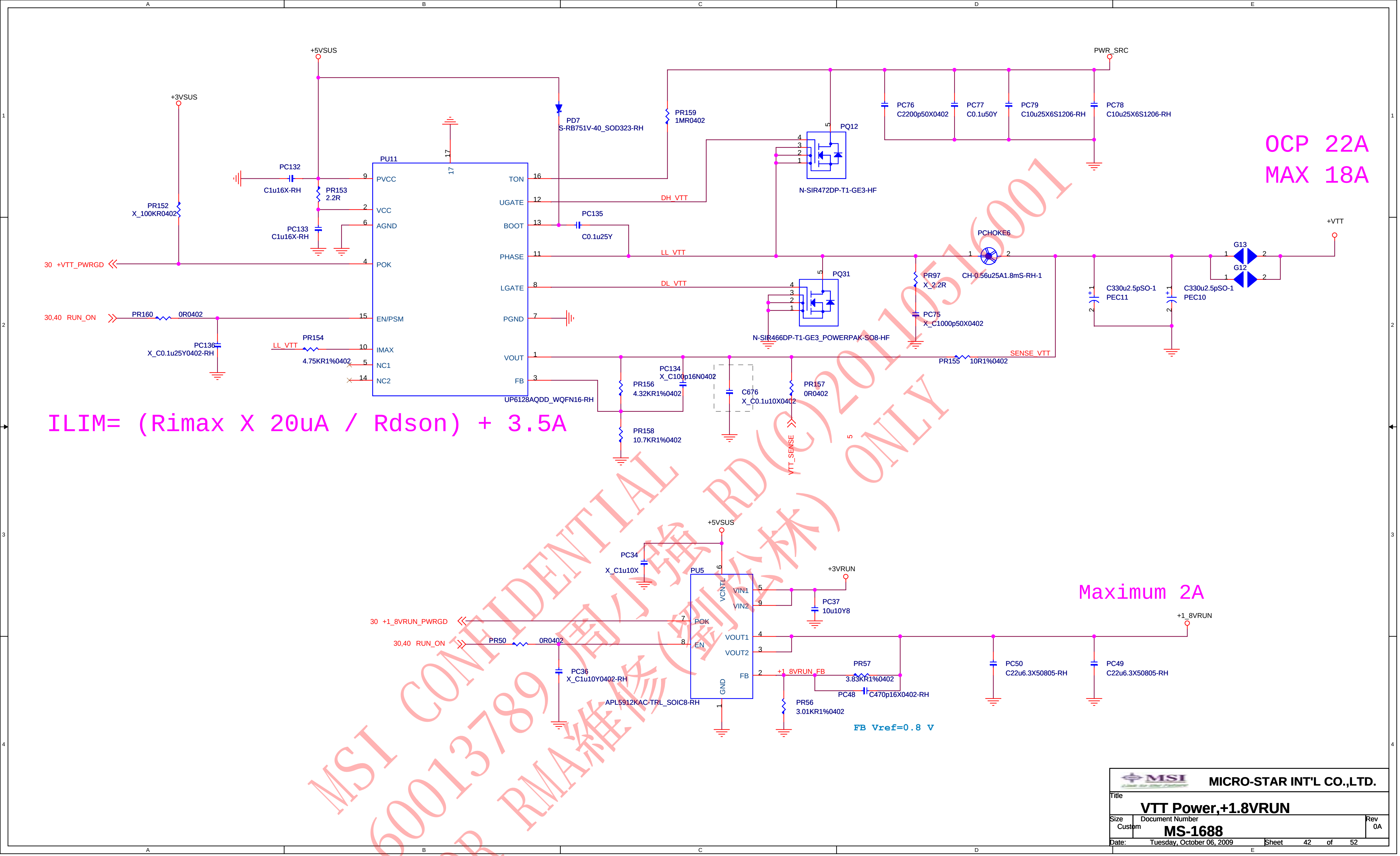

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Title: VTT Power,+1.8VRUN

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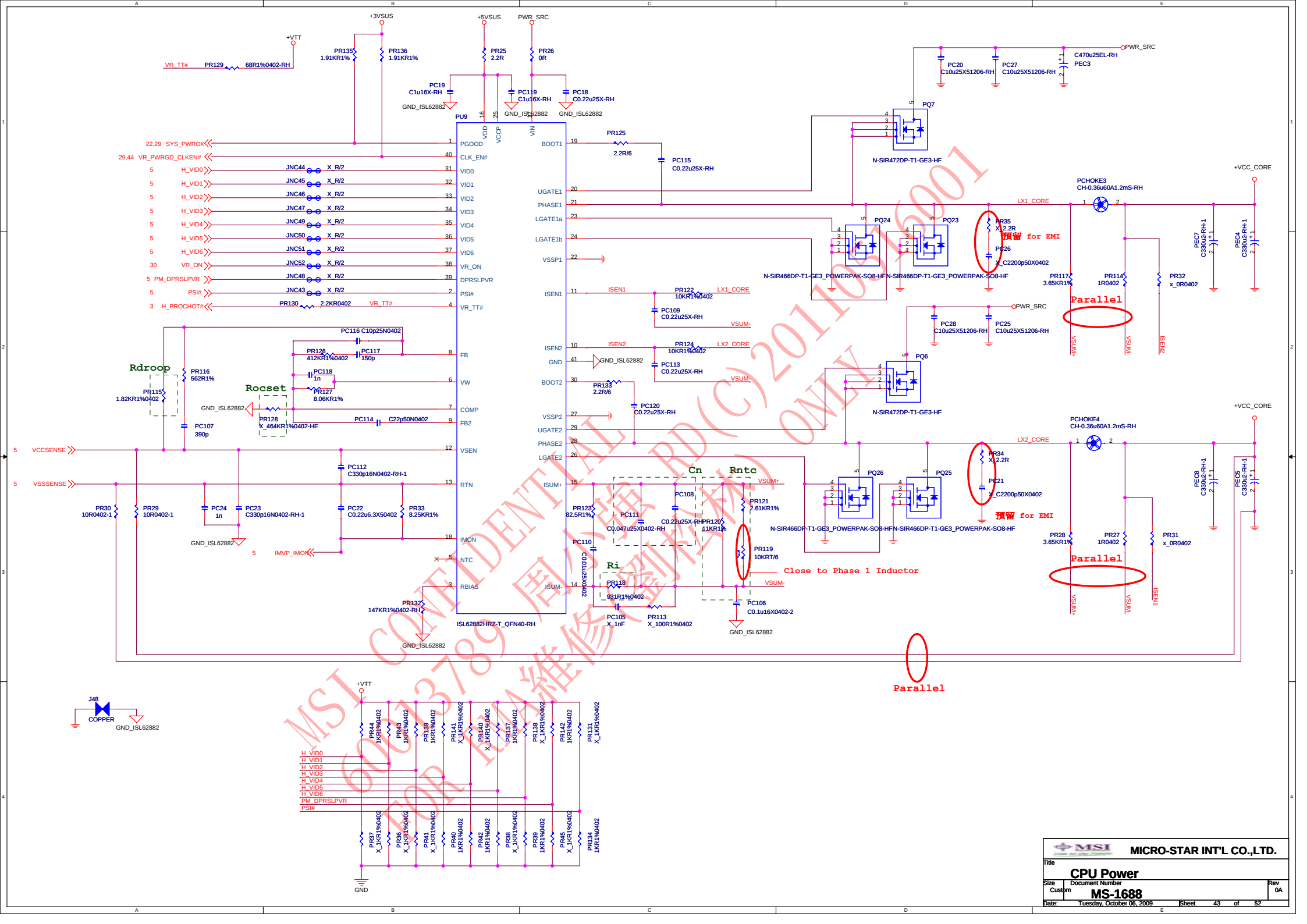

MSI	MICRO-STAR INT'L CO.,LTD.		
Title	CPU Power		
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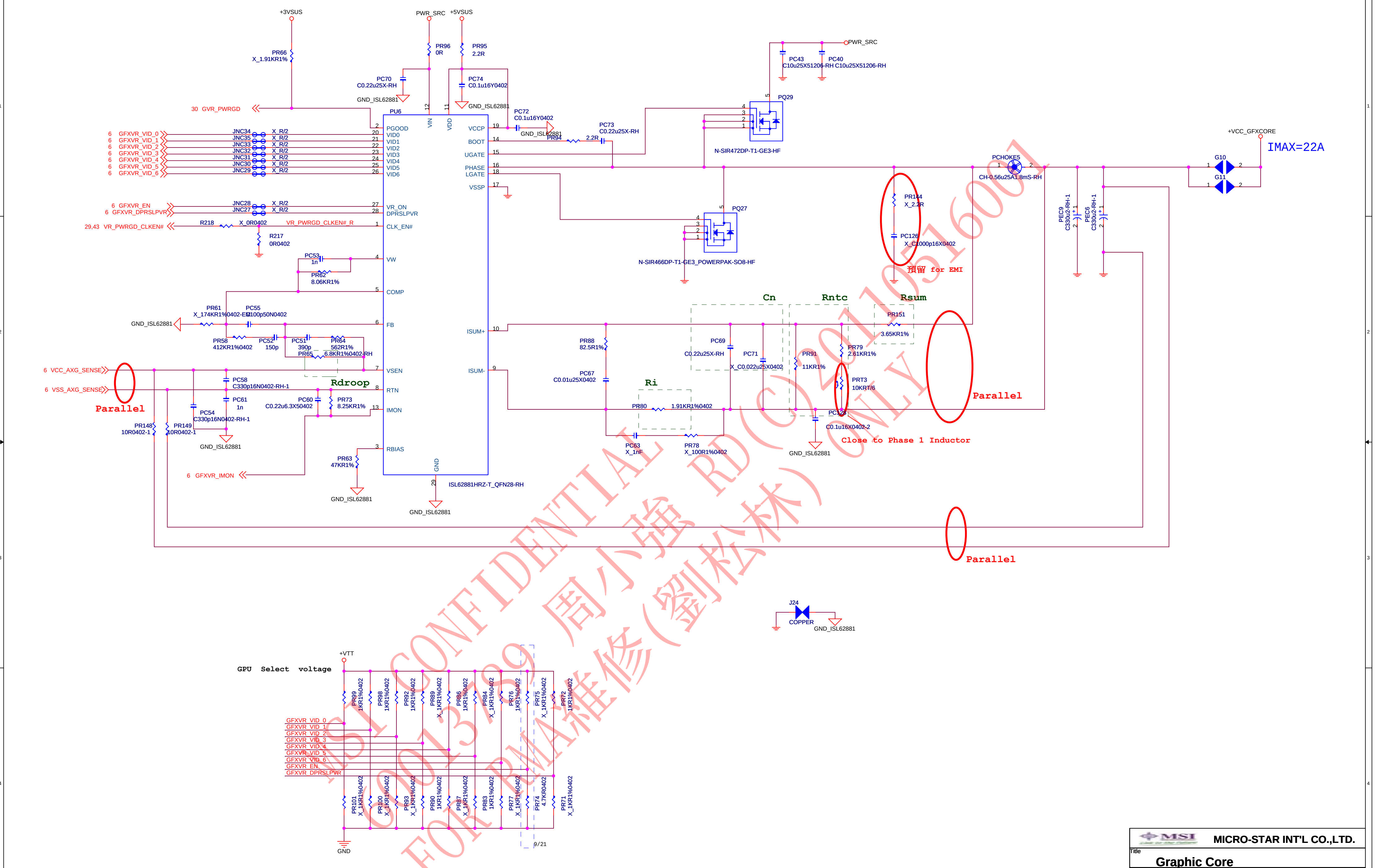

MICRO-STAR INT'L CO.,LTD.

Title	Graphic Core		
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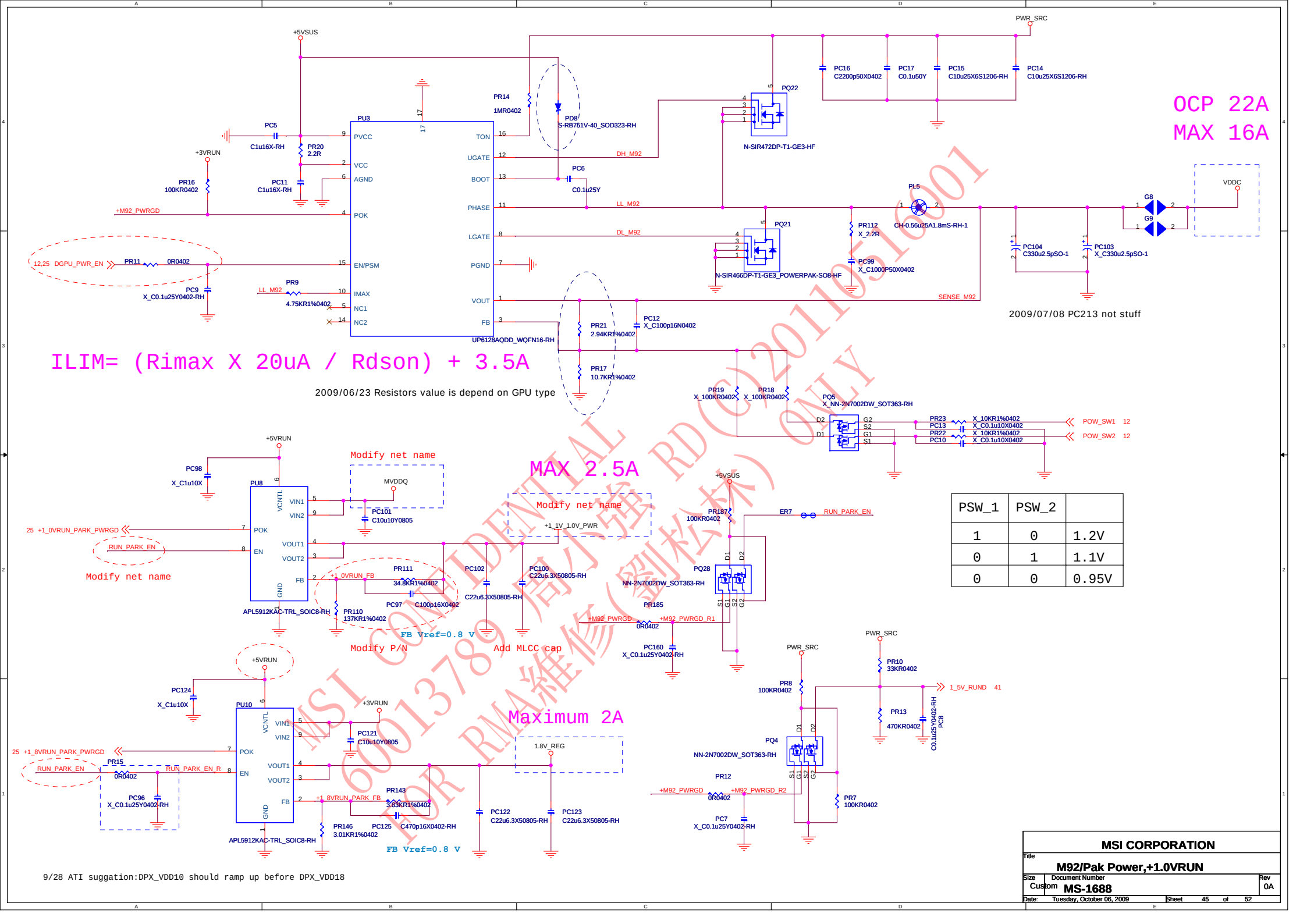
OCP 22A
MAX 16A
ILIM= (Rimax X 20uA / Rdson) + 3.5A
2009/06/23 Resistors value is depend on GPU type
2009/07/08 PC213 not stuff
MAX 2.5A
Maximum 2A
Modify net name
Modify P/N
Add MLCC cap
FB Vref=0.8 V
PSW_1 PSW_2
1 0 1.2V
0 1 1.1V
0 0 0.95V
9/28 ATI suggation:DPX_VDD10 should ramp up before DPX_VDD18
MSI CONFIDENTIAL
60013789 周小强 RD(C)20110516001
FOR RMA維修(劉松林) ONLY
MSI CORPORATION
M92/Pak Power,+1.0VRUN
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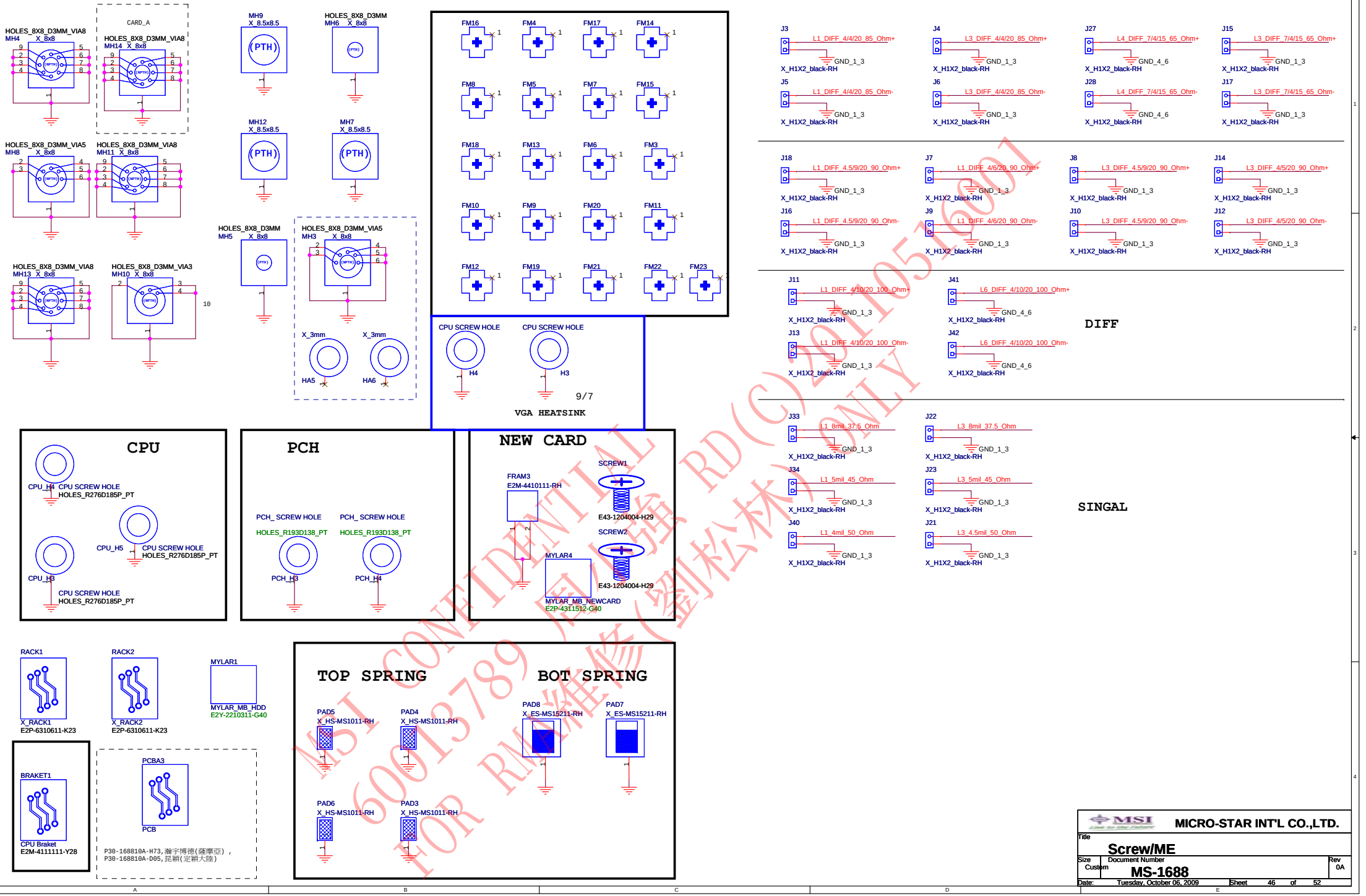

MSI MICRO-STAR INT'L CO.,LTD.

Title: Screw/ME

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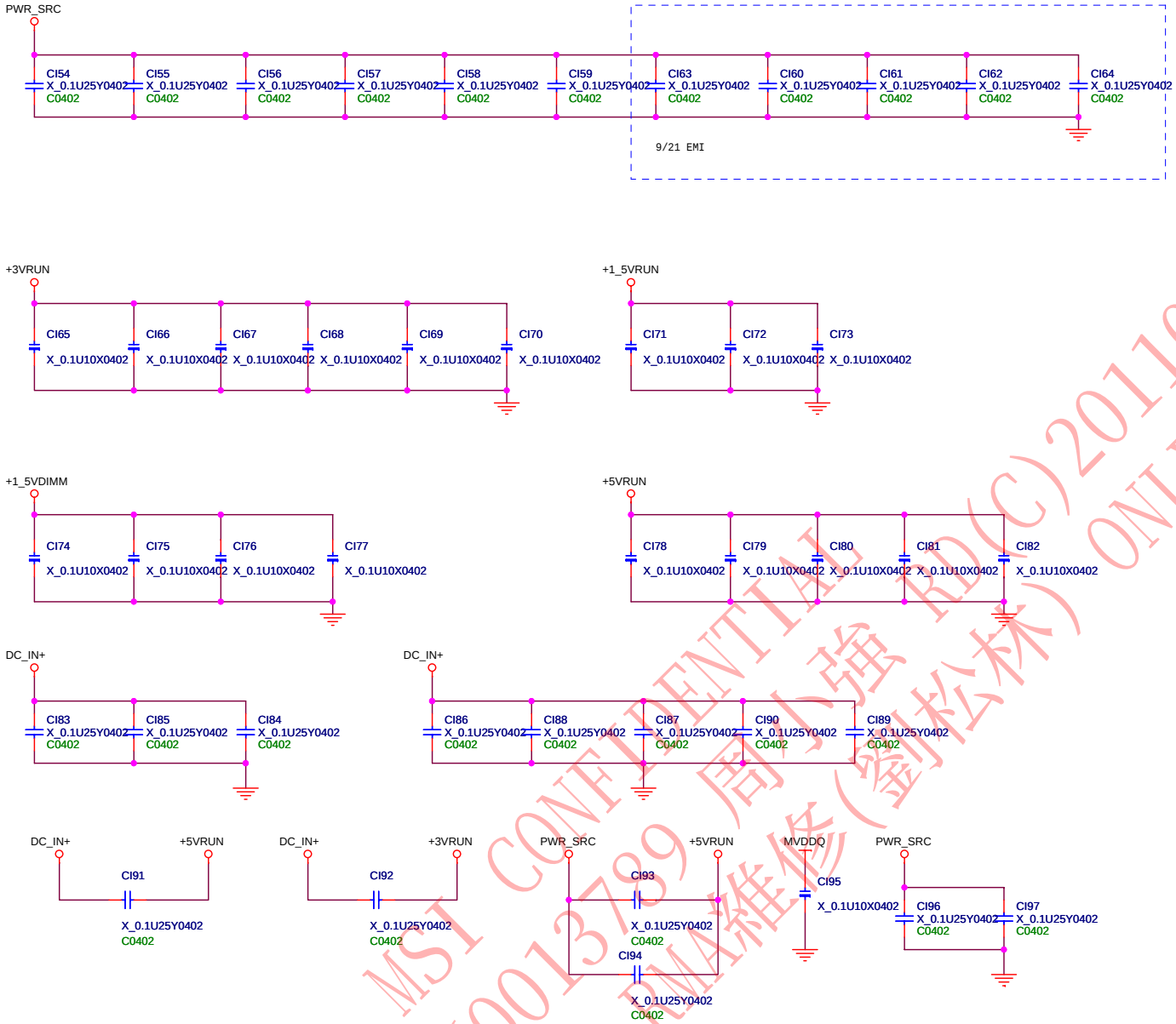

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Title	EMI
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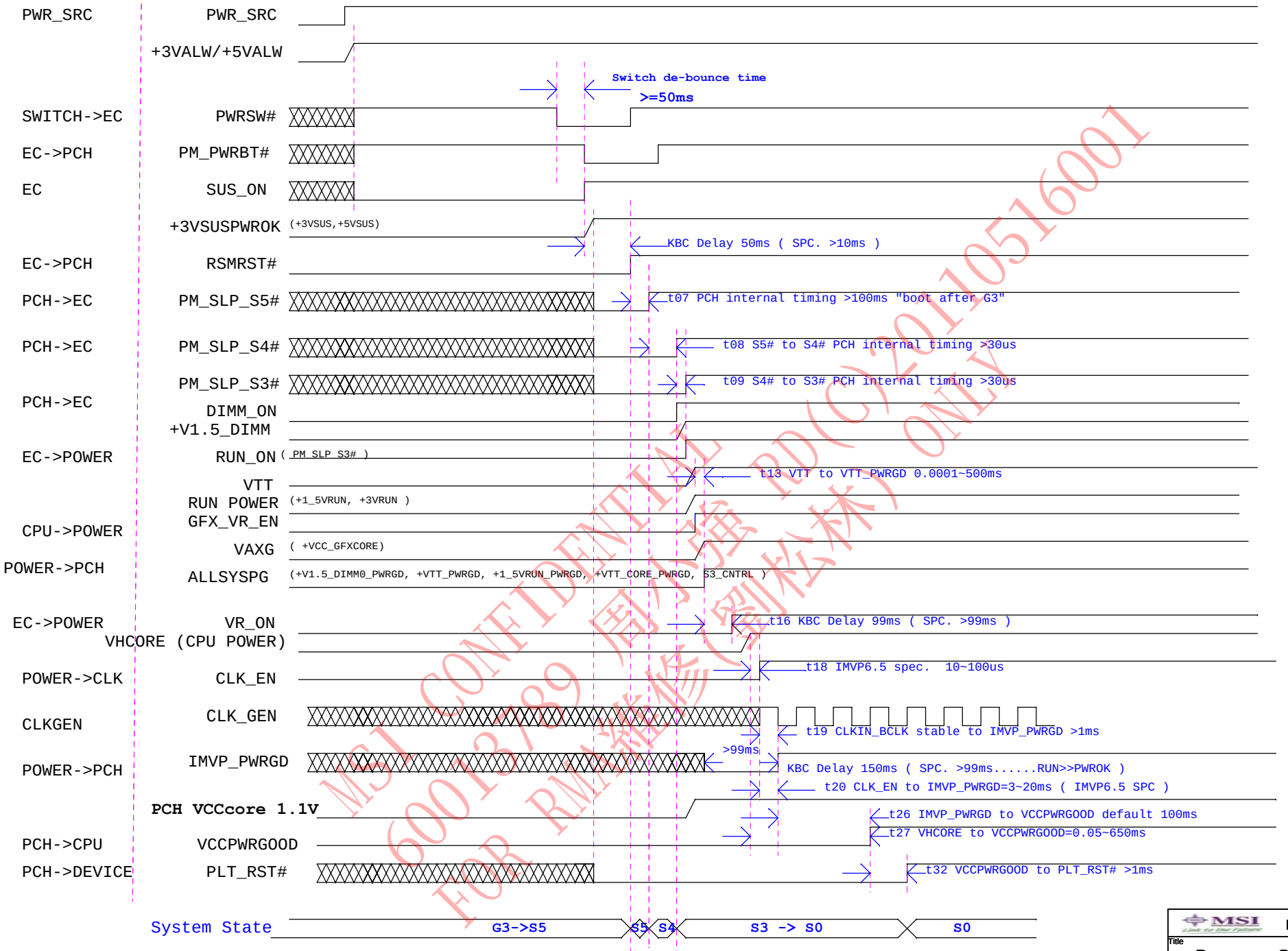
Calpella System Power on Sequence DC mode



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Title: Power on Sequency

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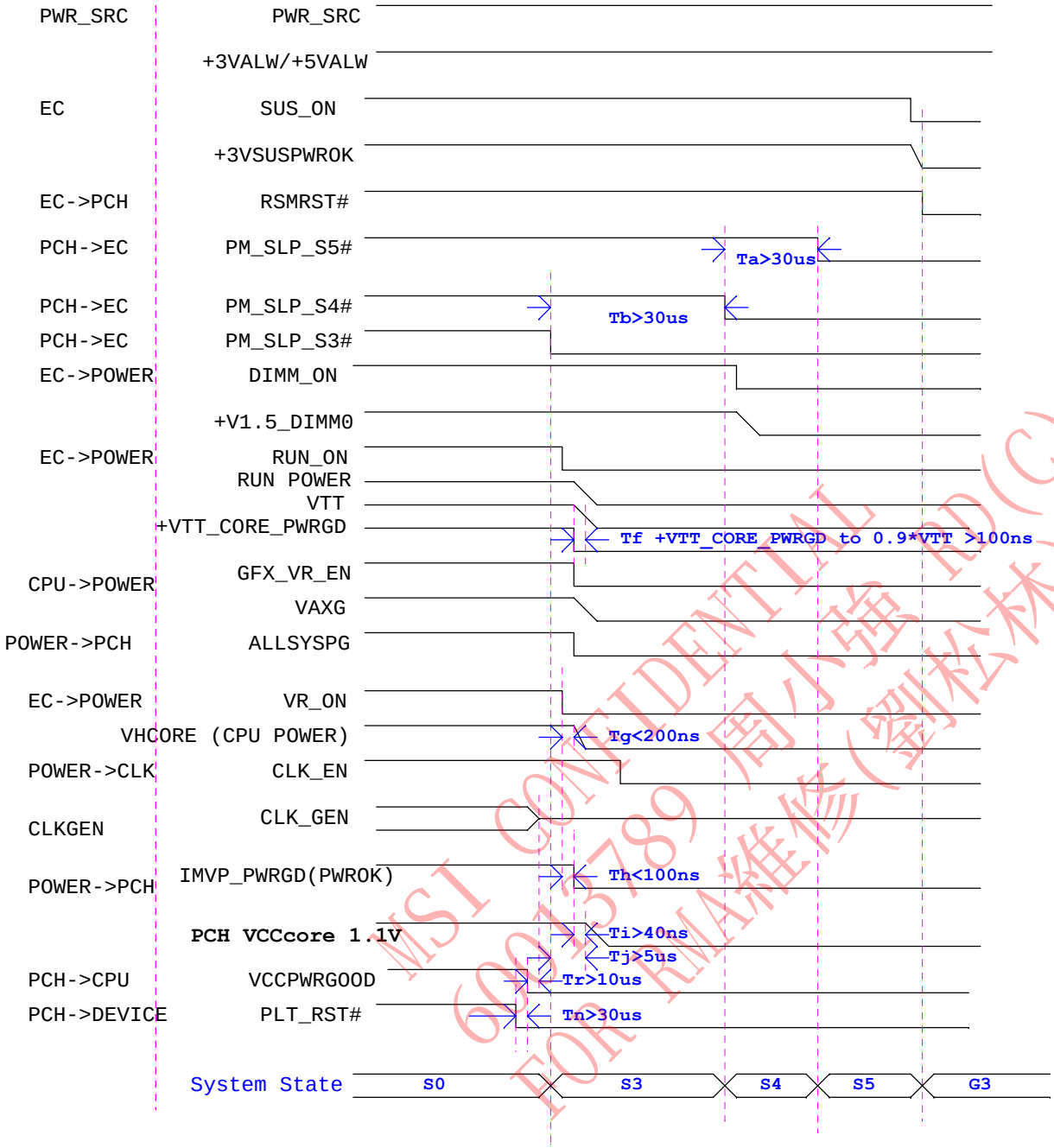
Power down Sequence DC mode S0 to G3



MSI	MICRO-STAR INT'L CO.,LTD.	
Title: Power on Sequency		
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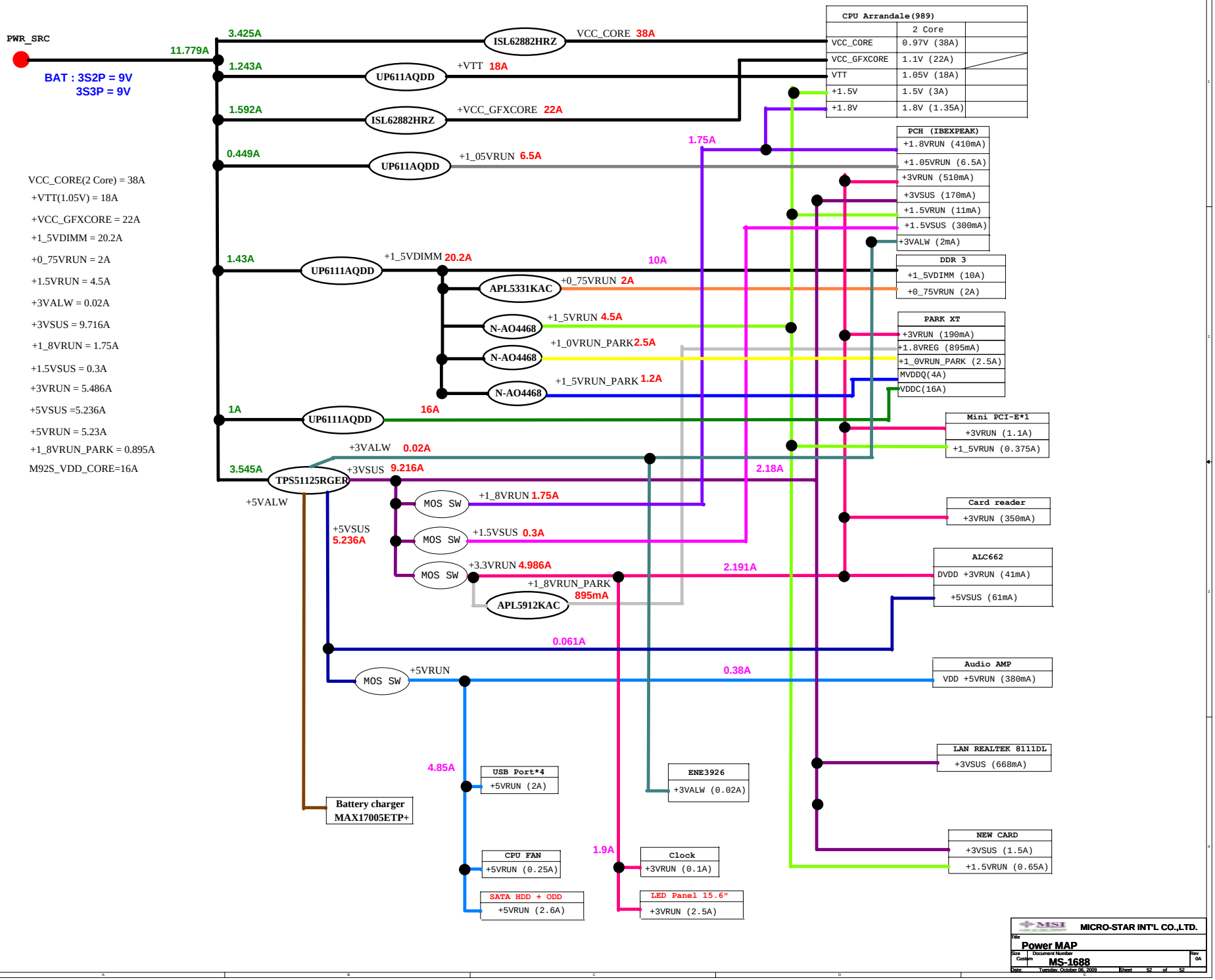

MICRO-STAR INT'L CO.,LTD.

Title: Power MAP

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