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MS-7719

Version: 0A

Lenovo

CPU: Intel Tunnel_Creek

System Chipset:

Intel Top Cilff

On Board Device:

Clock Gen - ICS/ICS9LPRS436 & 9DB403

Super I/O - SMSC SCH5147

CPLD - Altera EPM570

LAN - REALTEK/RTL8111E

HD Audio Codec -- REALTEK/ALC887

SVDO to DVI Interface

SVDO to VGA Interface(Reserve)

LVDS Scalar

Main Memory:

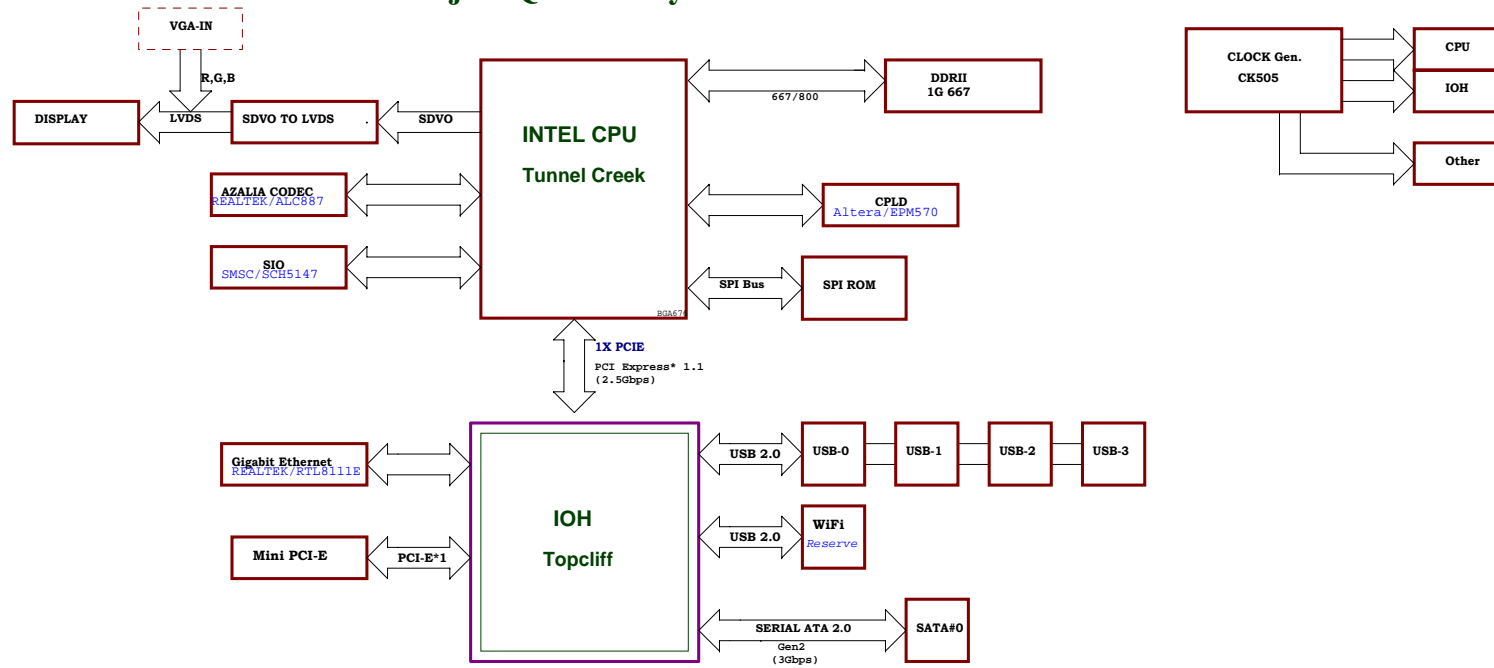
DDR2 1GB 667MHz

PWM: ON Semi/ADP3211

SLOT: Mini PCIE SLOT

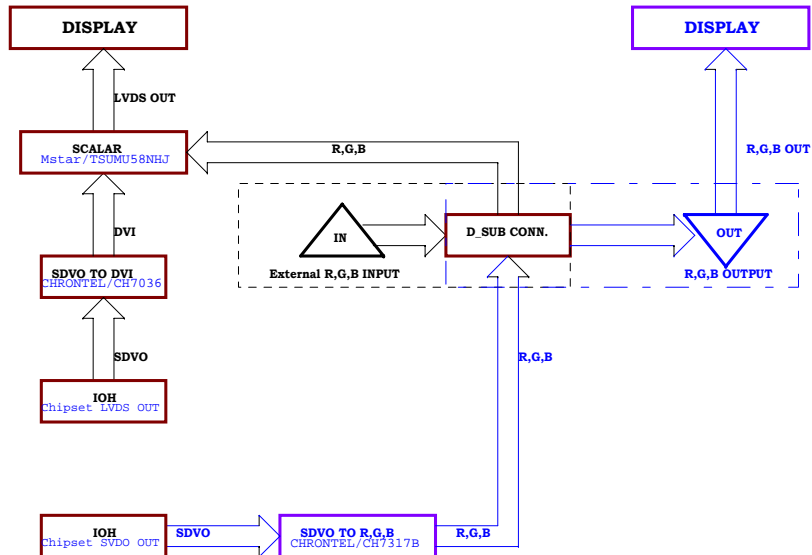
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MS-7719		
Size Custom	Document Description Cover Sheet	Rev 0A
Date: Tuesday, September 21, 2010 Sheet 1 of 40		

Project Queens Bay BLOCK DIAGRAM



DISPALY BLOCK DIAGRAM

21.5"



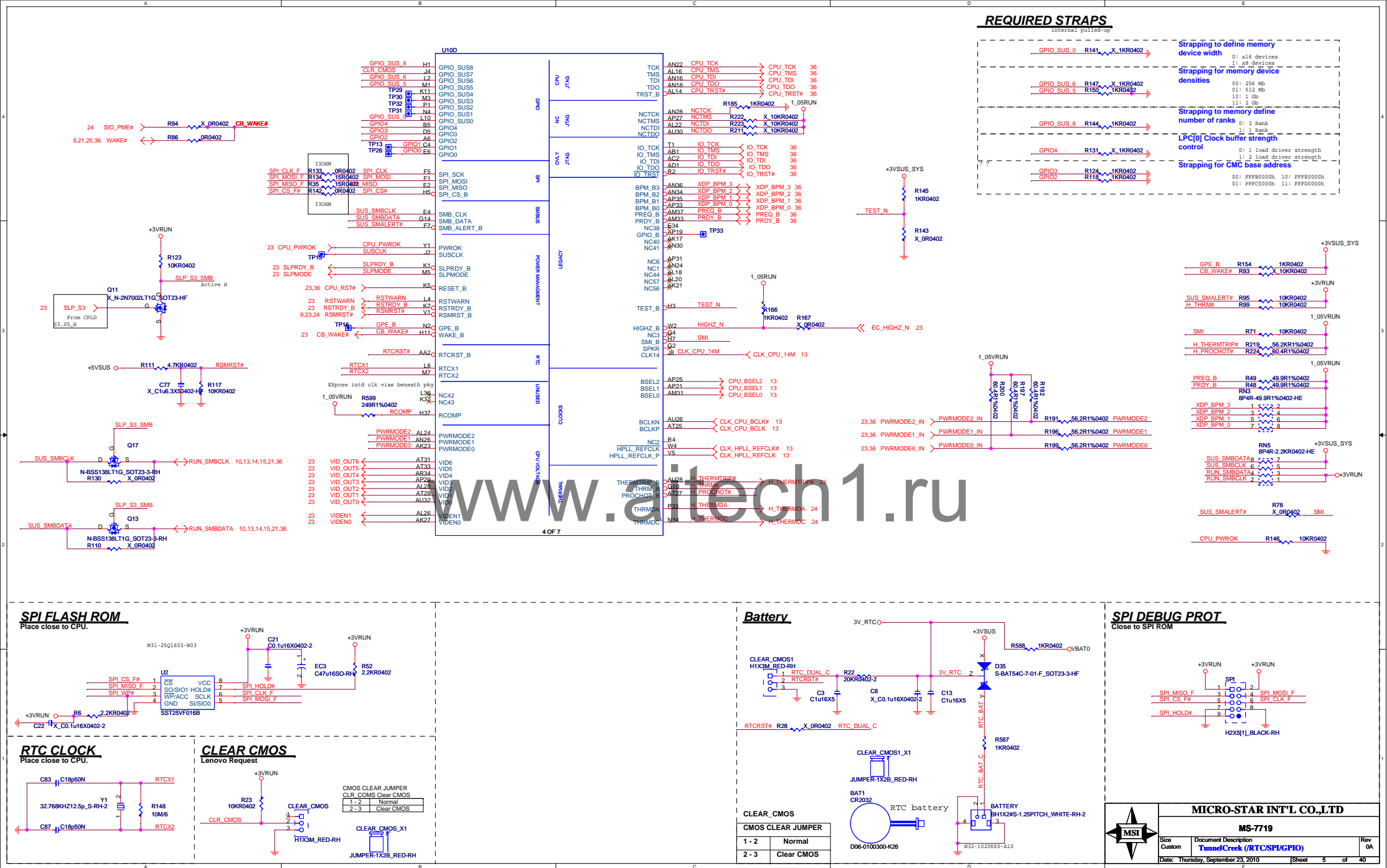
40"

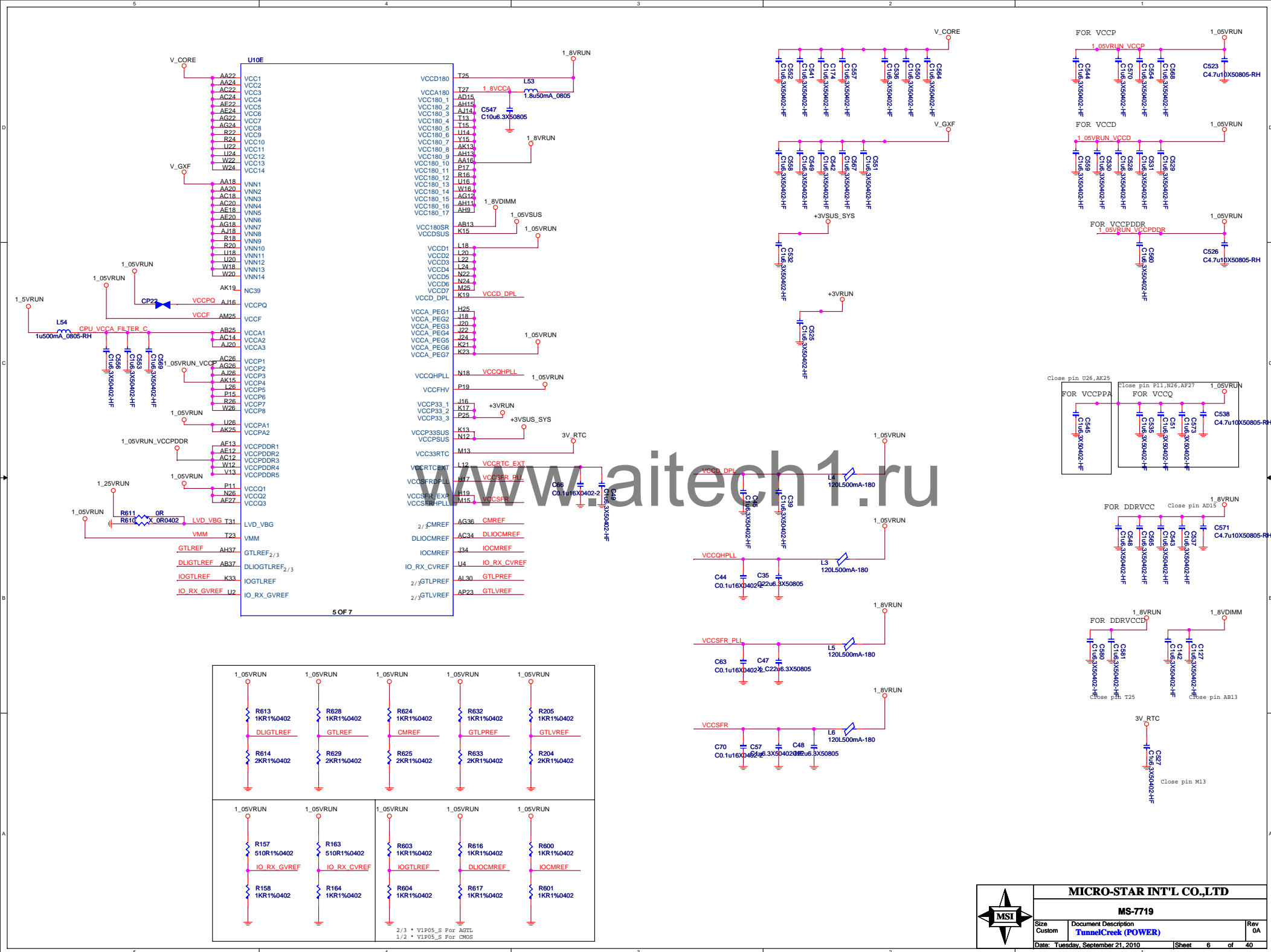


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Size Custom	Document Description BLOCK DIAGRAM	Rev 0A
Date: Tuesday, September 21, 2010	Sheet 2 of 40	





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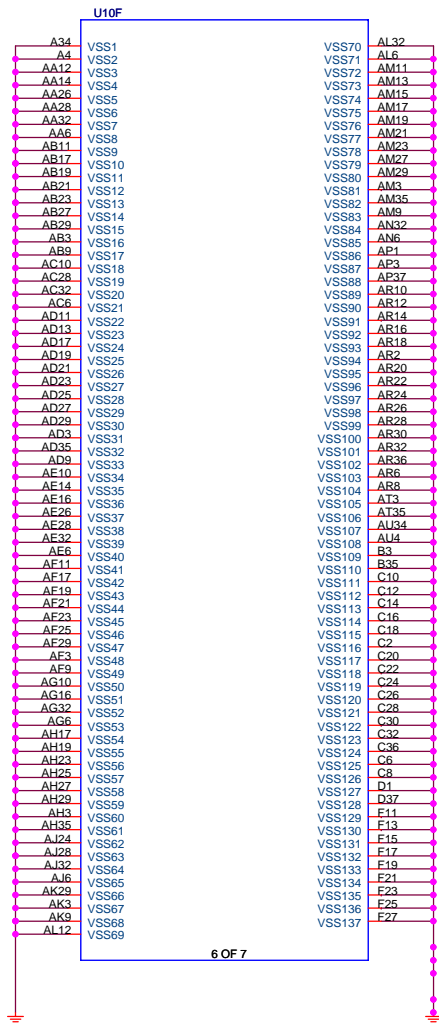
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Size	Custom
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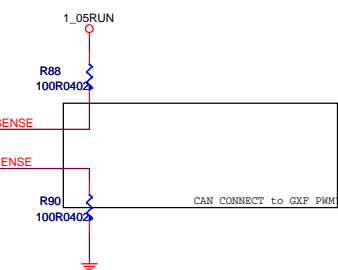
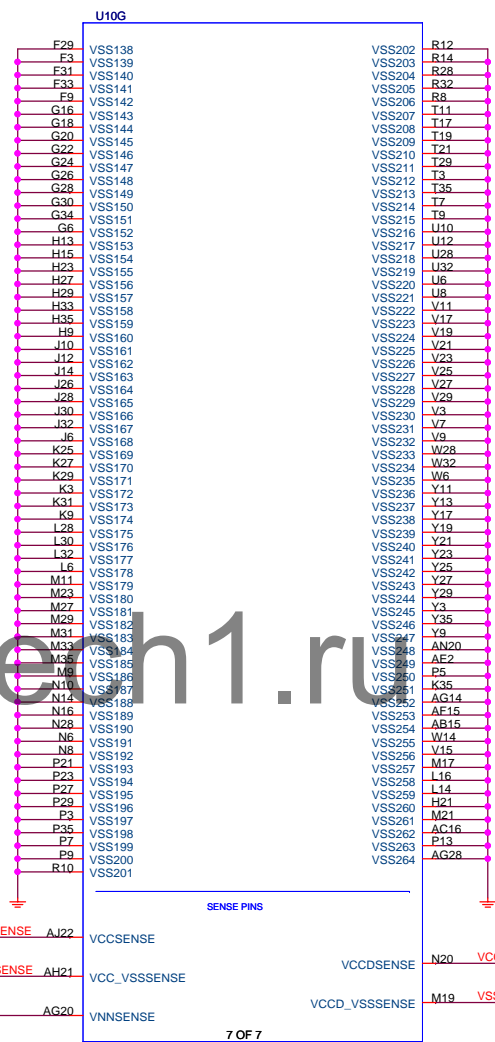
Size Custom	Document Description TunnelCreek (POWER
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Rev	0A
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31 VCC_SENSE ← VCC_SENSE AJ22
31 VSS_SENSE ← VSS_SENSE AH21
32 VNN_SENSE ← AG20

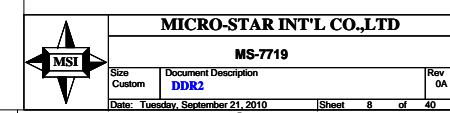


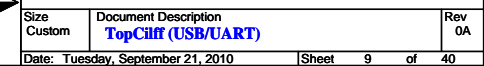
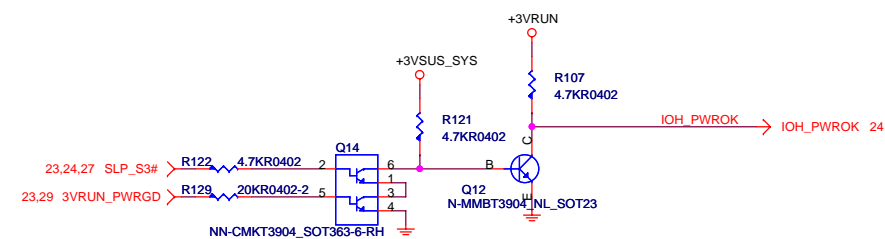
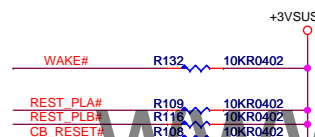
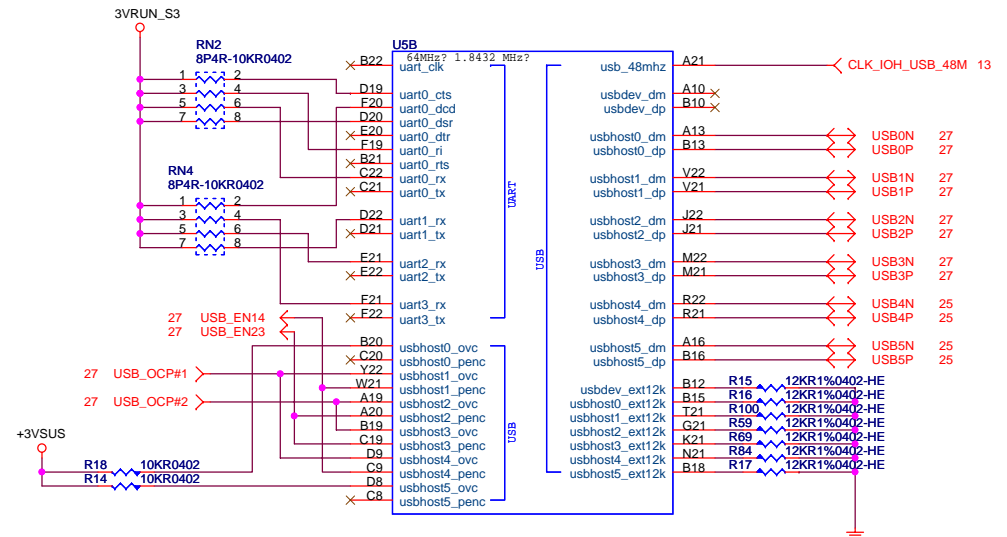
1G/667

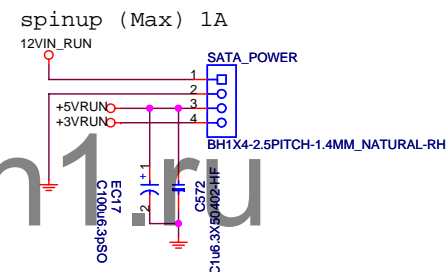
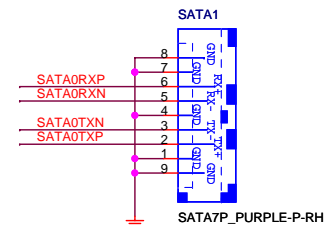
1G/667

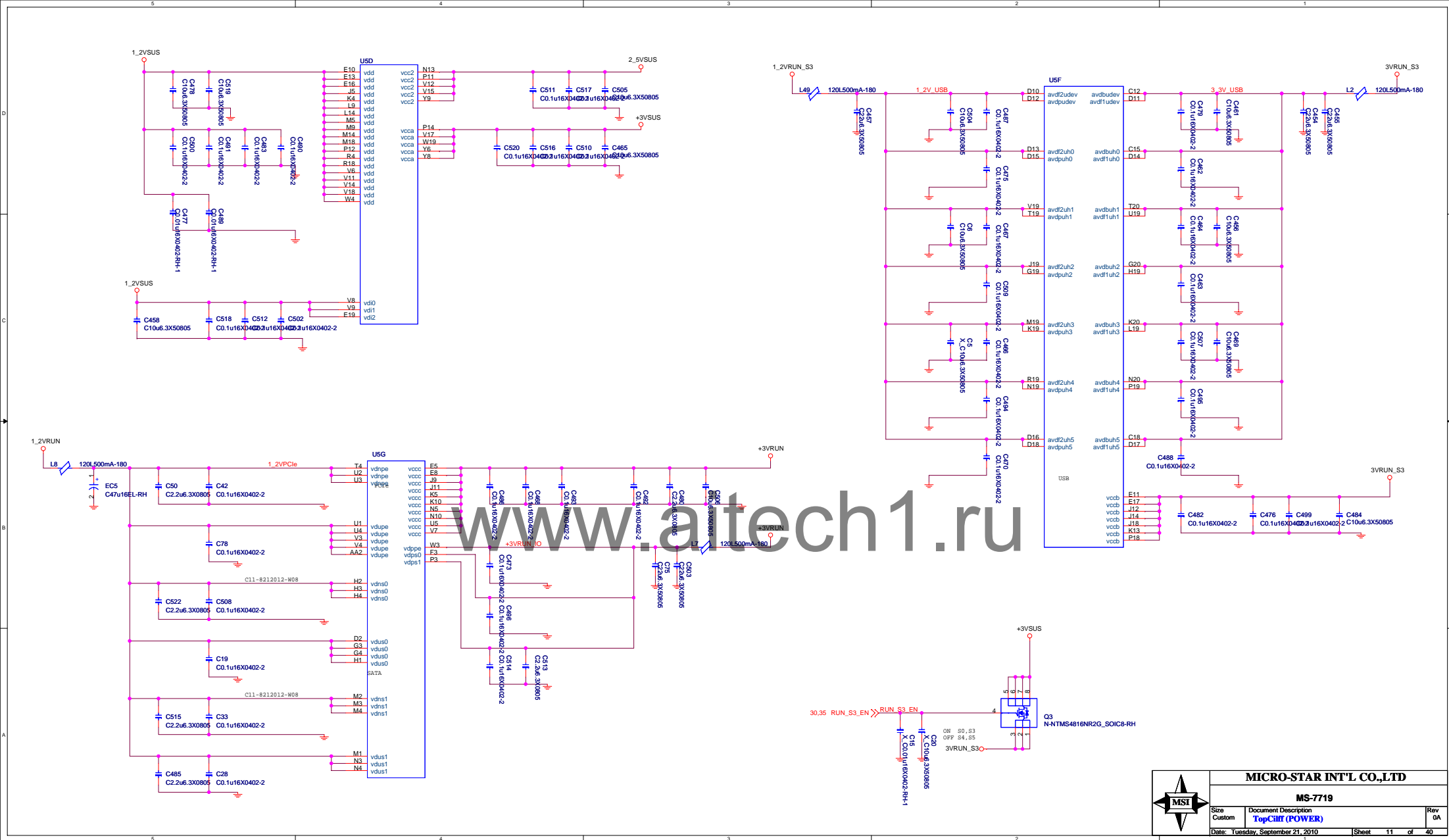


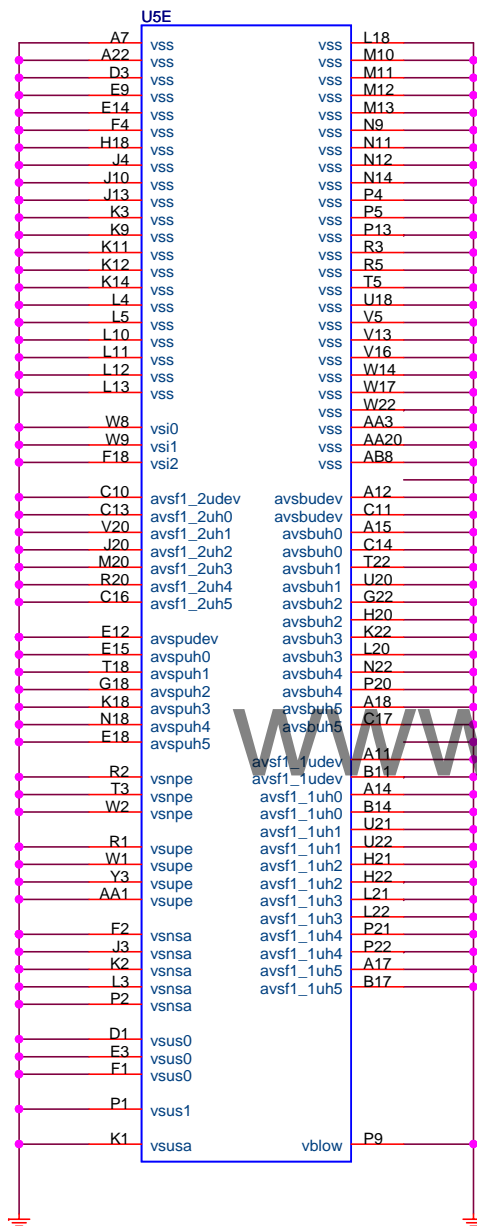
DDR2 TREMINATION











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Size
Custom

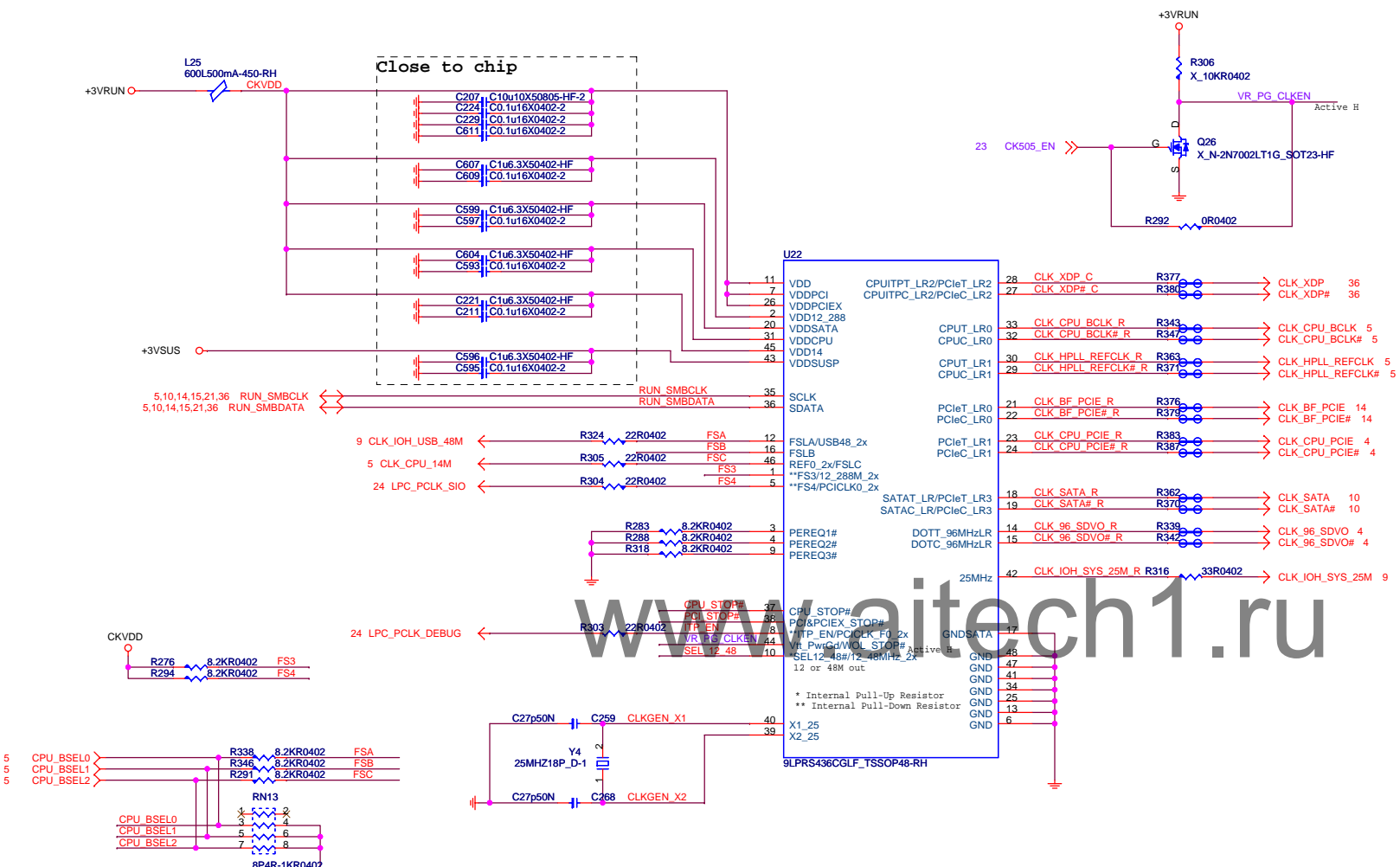
Document Description
TopCliff (GND)

Rev
0A

Date: Tuesday, September 21, 2010

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CLK Gen ICS9LPRS436



CLOCK GEN STRAPING

Stops CPU0 clock when enabled.



Stops all PCICLKs at logic 0 level, when low. Free running PCICLKs are not effected by this input.



ITP Enable Latched Input/Free Running PCI clock output. ITP_Enable Selects the functionality of the CPU_ITP/SRC output as follows:
1 = CPU_ITP output
0 = SRC output




Latched select input for 12/48MHz output.
1=12MHz
0=48MHz
12/48MHz Output



CPU Table			
FSC	FSB	FSA	BCLK
(Only for Tunnel Creek A0)	(Only for Tunnel Creek A0)	(Only for Tunnel Creek A0)	83.33MHZ
L	H	L	83.33MHZ
H	L	L	100MHZ
L	L	L	100 MHz

CLK Gen			
BSEL[0]	BSEL[1]	BSEL[2]	BCLK
L	H	L	83.33MHZ
H	H	L	83.33MHZ
L	L	L	100 MHz
H	L	L	100 MHz



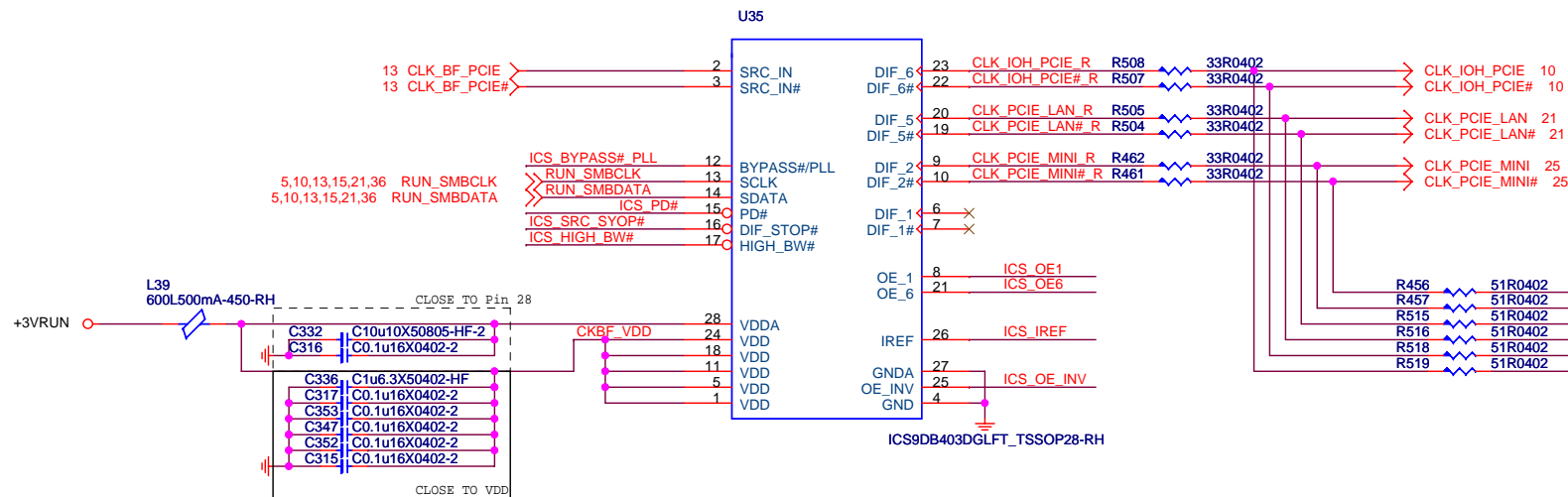
MICRO-STAR INT'L CO.,LTD

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Size Custom Document Description **CLK GEN - ICS9LPRS436** Rev 0A

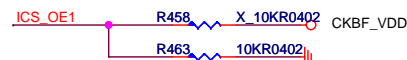
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CLK Buffer ICS9DB403DG



STRAPPING

Active high input for enabling output 1.
0 = tri-state outputs, 1= enable outputs



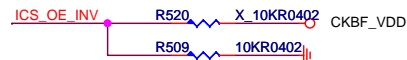
Input to select Bypass (fan-out) or PLL (ZDB) mode
0 = Bypass mode, 1= PLL mode



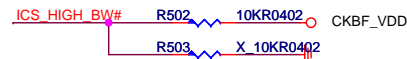
Active high input for enabling output 6.
0 = tri-state outputs, 1= enable outputs



This latched input selects the polarity of the OE pins.
0 = OE pins active high, 1 = OE pins active low (OE#)



3.3V input for selecting PLL Band Width
0 = High, 1= Low



Active low input to stop differential output clocks.



This pin establishes the reference current for the differential current-mode output pairs. This pin requires a fixed precision resistor tied to ground in order to establish the appropriate current. 475 ohms is the standard value.



Asynchronous active low input pin used to power down the device. The internal clocks are disabled and the VCO and the crystal osc. (if any) are stopped.



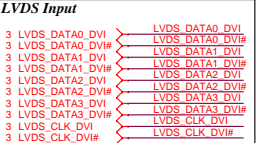
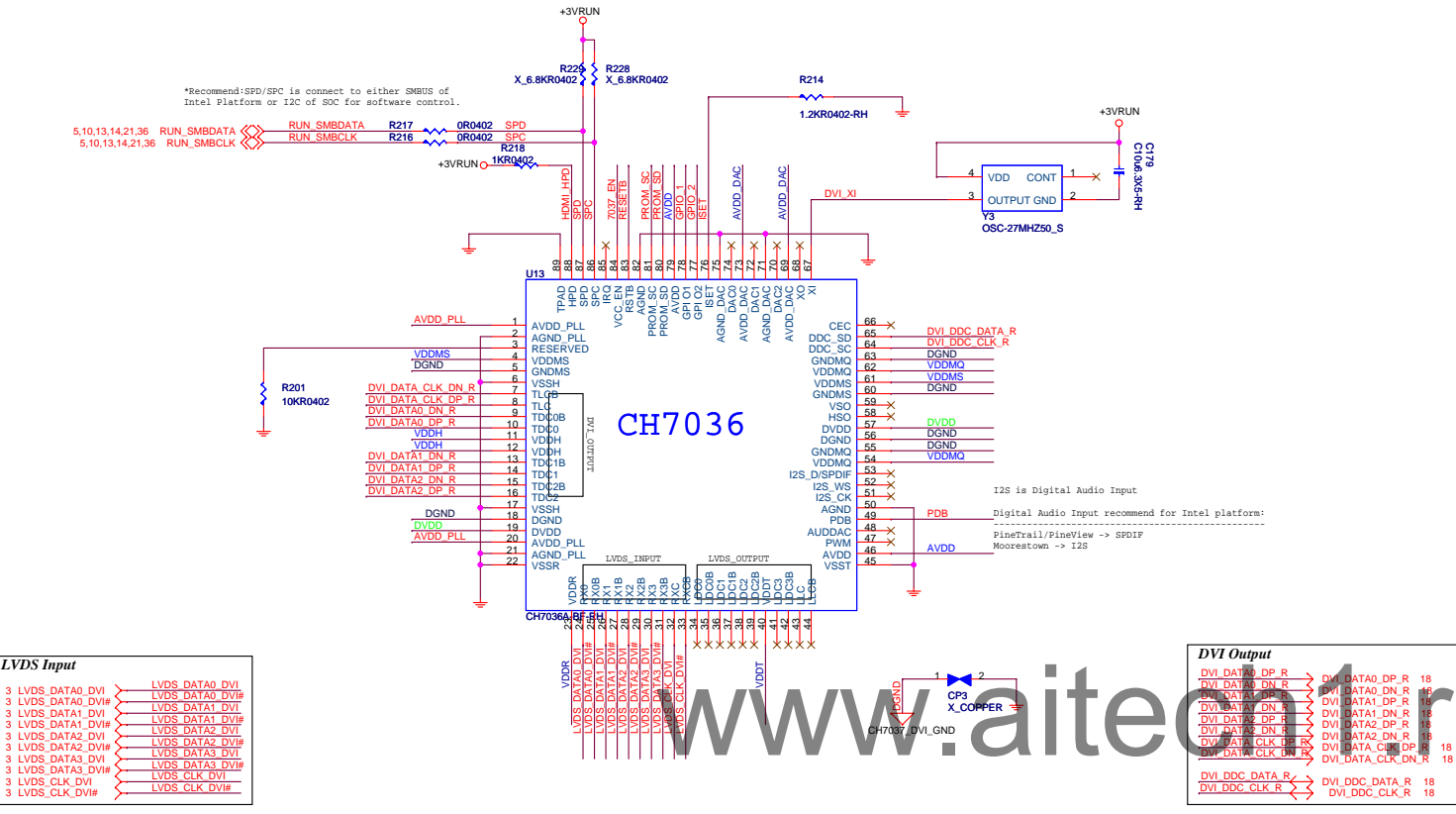
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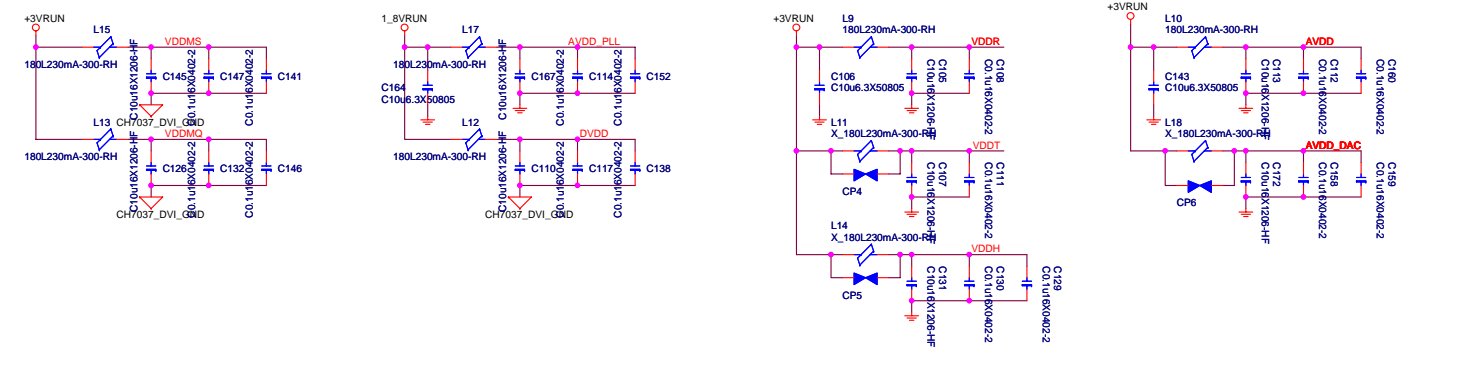
Size	Document Description	Rev
Custom	CLK BUFFER - ICS9DB403	0A

Date: Tuesday, September 21, 2010 Sheet 14 of 40

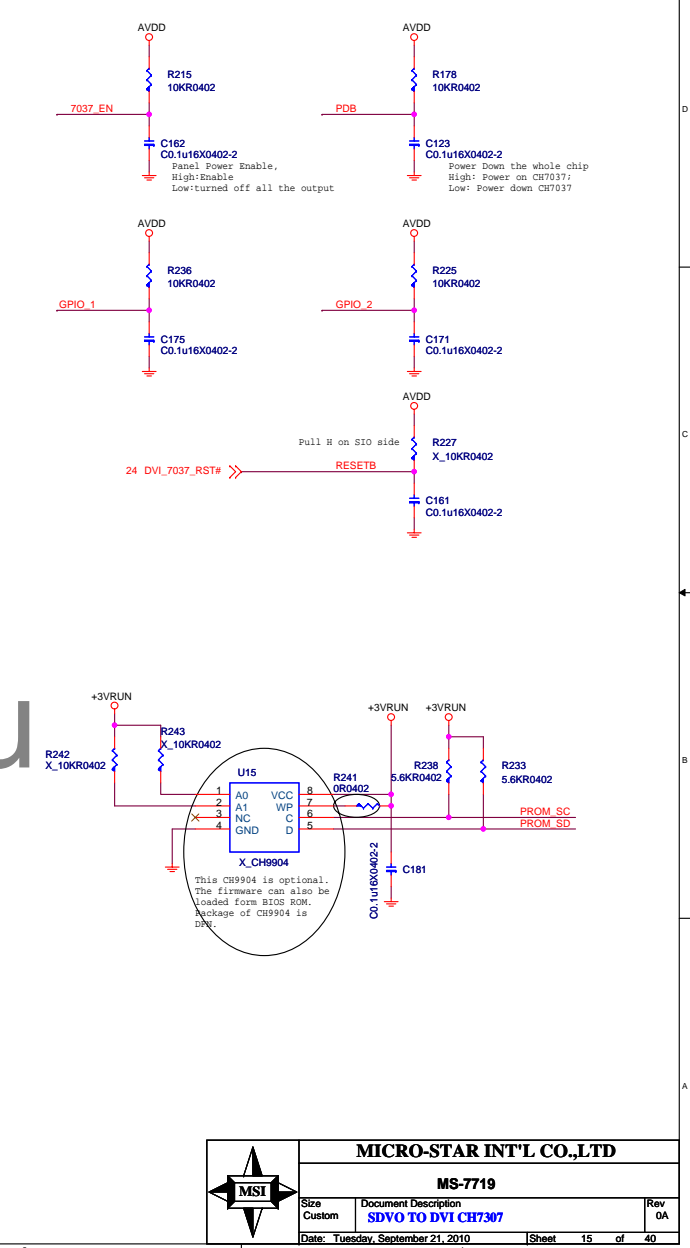
LVDS To DVI ENCODER



POWER



STRAPS



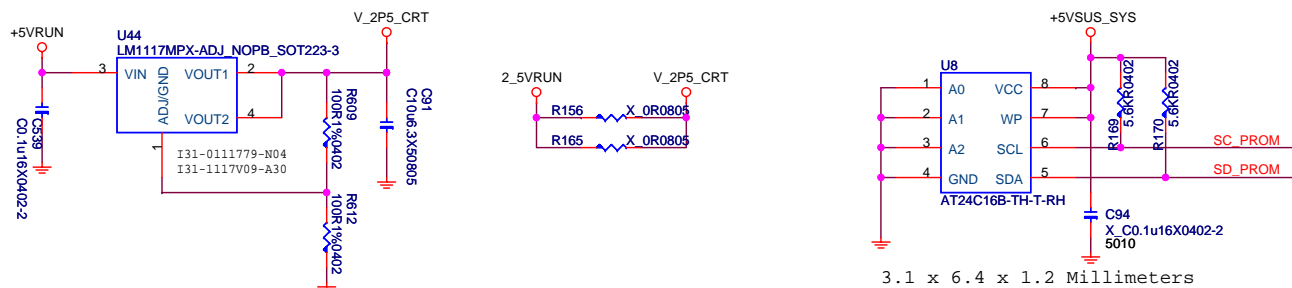
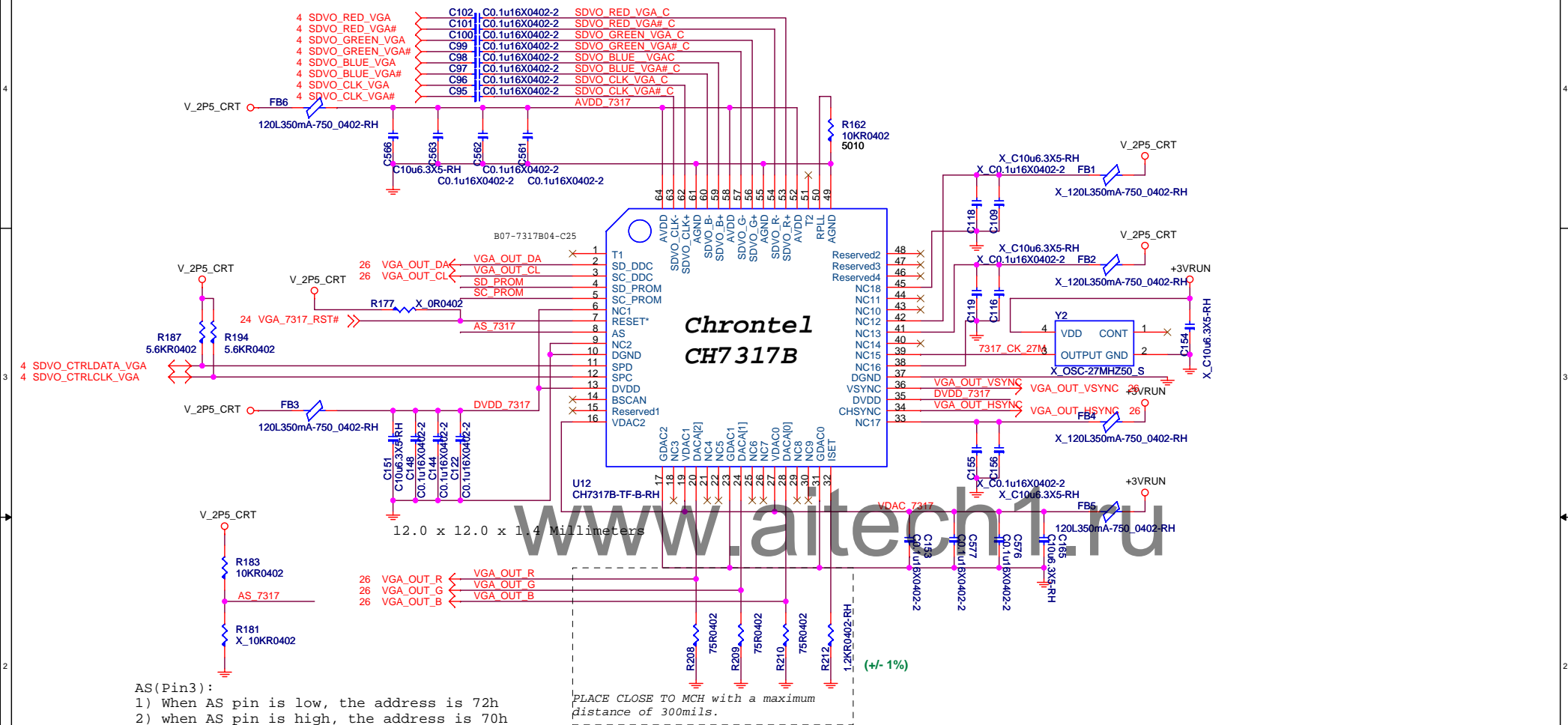
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Size: Custom Document Description: **SDVO TO DVI CH7307** Rev: 0A

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SDVO To VGA CONTROLLER

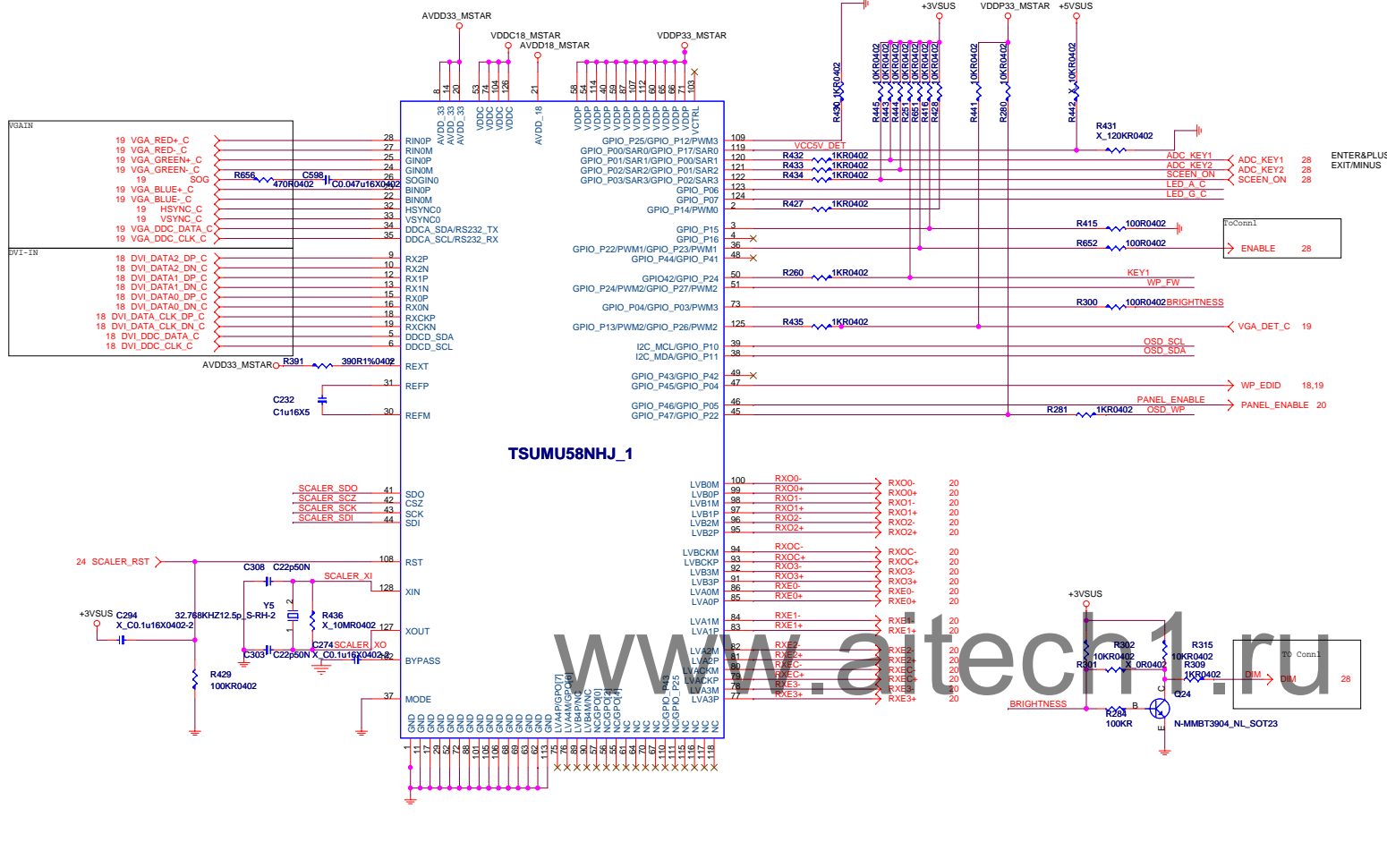


MICRO-STAR INT'L CO.,LTD

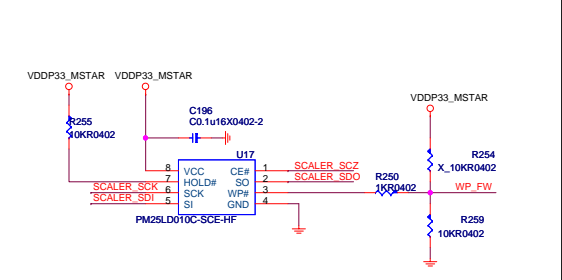
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Size Custom	Document Description SDVO TO VGA CH7317B	Rev 0A
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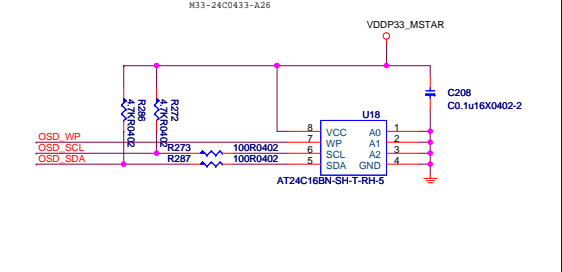
SCALER



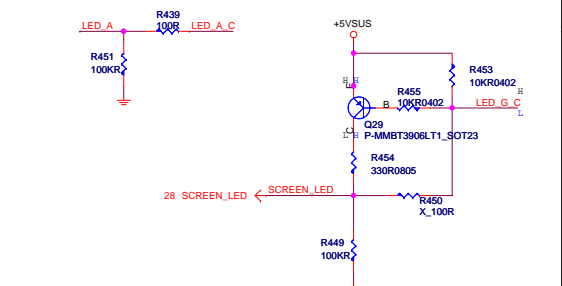
SPI



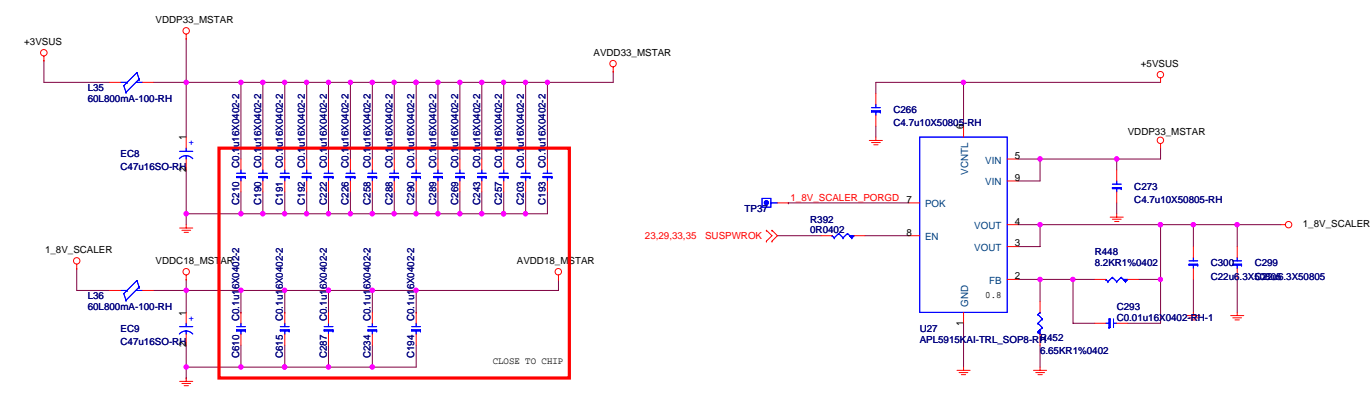
OSD



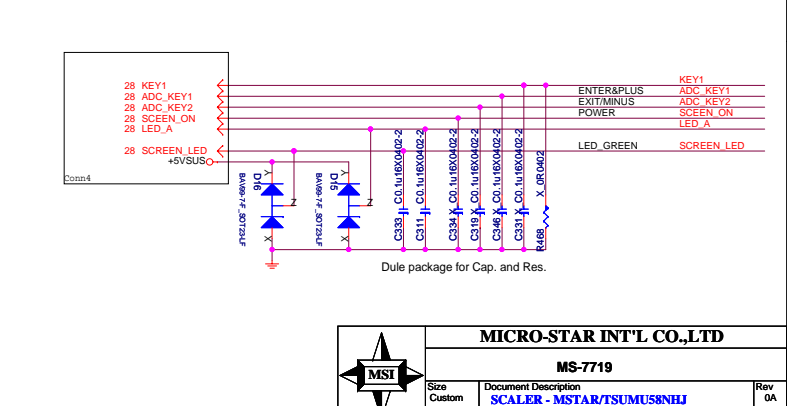
LED



POWER

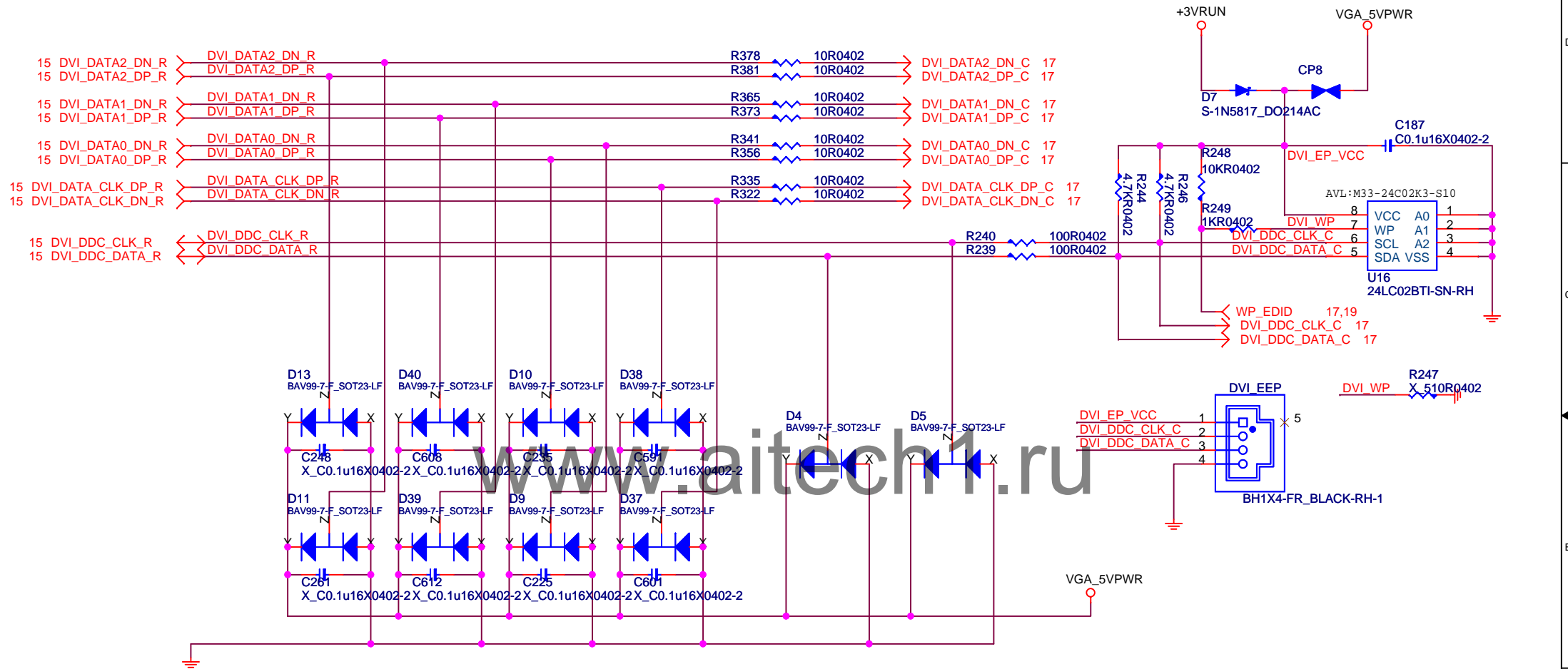



To Keypad



DVI INPUT

From CH7307



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	MS-7719	
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From D-SUB Conn

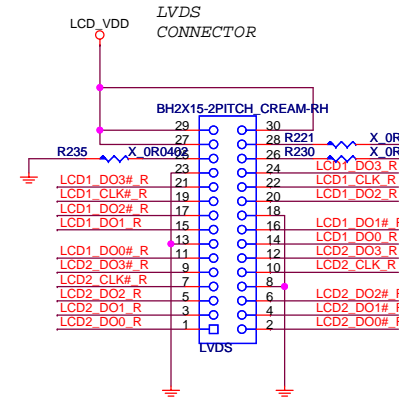
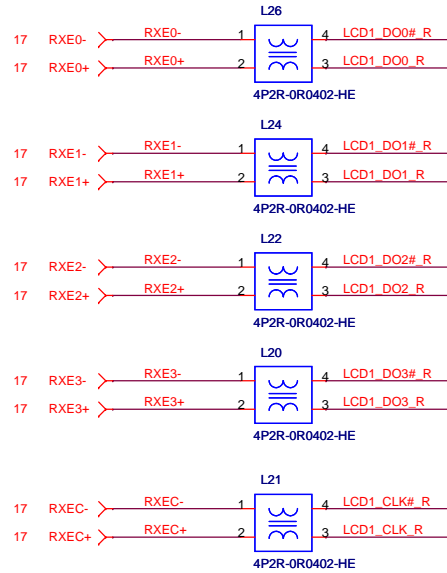
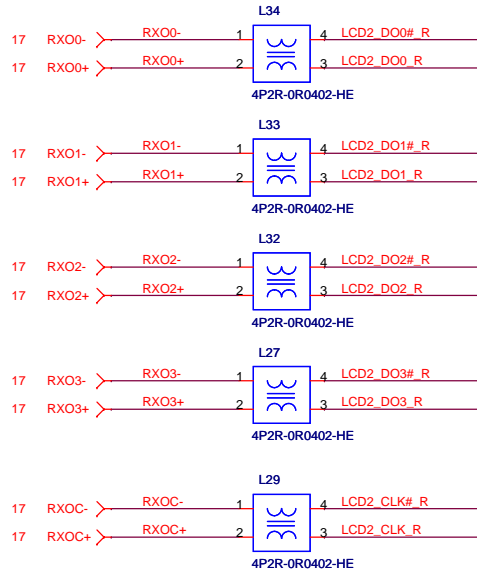


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Size Custom	Document Description SCALER - VGA INPUT	Rev 0A
Date: Tuesday, September 21, 2010		Sheet 19 of 40

LVDS OUT CONNECTOR

From Scaler output



Conn4-2

CMI

1. POWER

2. POWER

3. POWER

4. GND (R NC)

5. GND (R NC)

6. GND (R NC)

7. GND

8. 9. RXE3+-

10. 11. RXEC+-

12. 13. RXE2+-

14. GND

15. 16. RXE1+-

17. GND

18. 19. RXE0+-

20. 21. RXO3+-

22. 23. RXOC+-

24. GND

25. 26. RXO2+-

27. 28. RXO1+-

29. 30. RXO0+-

MSI

1. 2. 29. 30. RXO0+-

3. 4. 27. 28. RXO1+-

5. 6. 25. 26. RXO2+-

7. 24. GND

8. 9. 22. 23. RXOC+-

10. 11. 20. 21. RXO3+-

12. 13. 18. 19. RXE0+-

14. 17. GND

15. 16. 15. 16. RXE1+-

17. 14. GND

18. 19. 12. 13. RXE2+-

20. 21. 10. 11. RXEC+-

22. 23. 8. 9. RXE3+-

24. 7. GND

25. 6. GND (R NC)

26. 5. GND (R NC)

27. 4. GND (R NC)

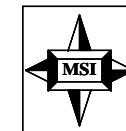
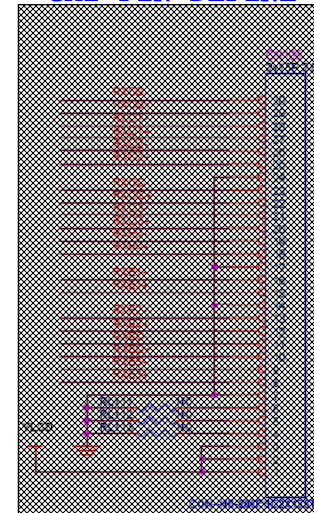
28. 3. POWER

29. 2. POWER

30. 1. POWER



CMI PIN DEFINE

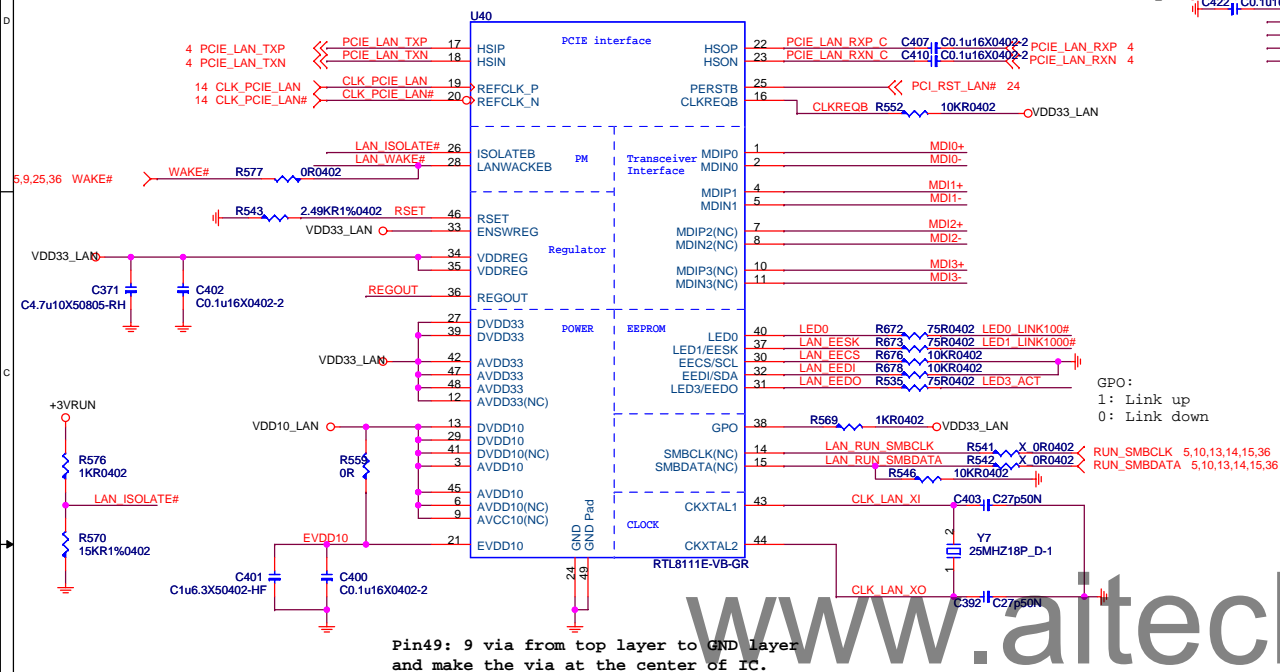


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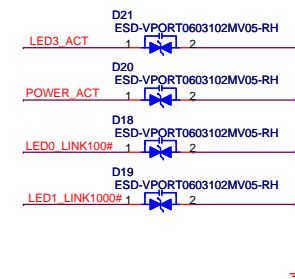
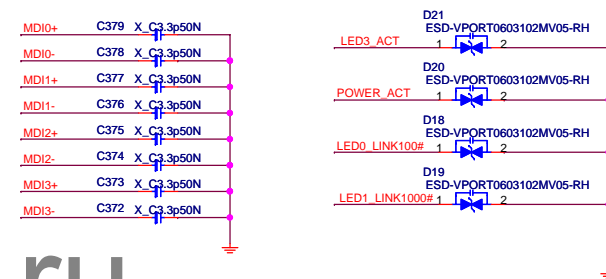
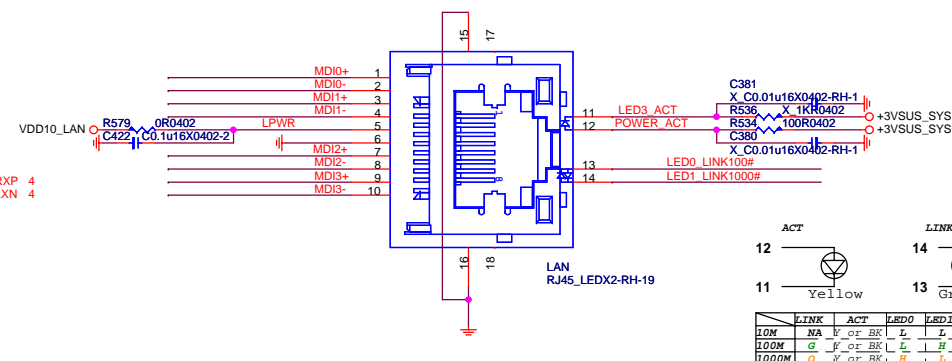
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Size Custom Document Description SCALER - LVDS OUTPUT Rev 0A

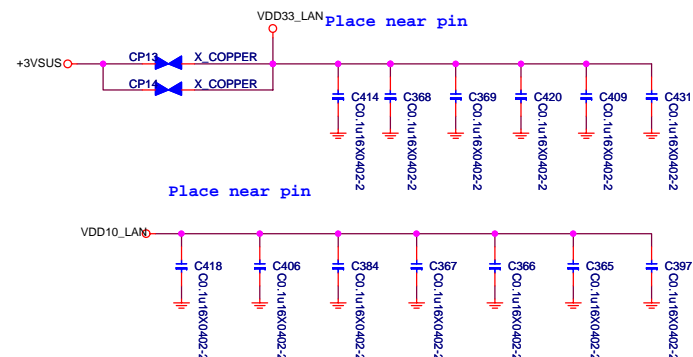
Date: Tuesday, September 21, 2010 Sheet 20 of 40

RTL8111E

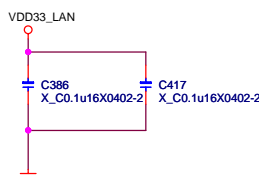
to GND layer
er of IC



3.3v Power on rise time : 1~100ms.



For EMI
(C73,C74,C75)



POWER Comparison

	3.3V	mW
10 M Idle/TxRx	87/172	287/568
100 M Idle/TxRx	112/165	370/545
ALDPS	60	198
D3 cold with link10M /without link	32/18	106/59.4

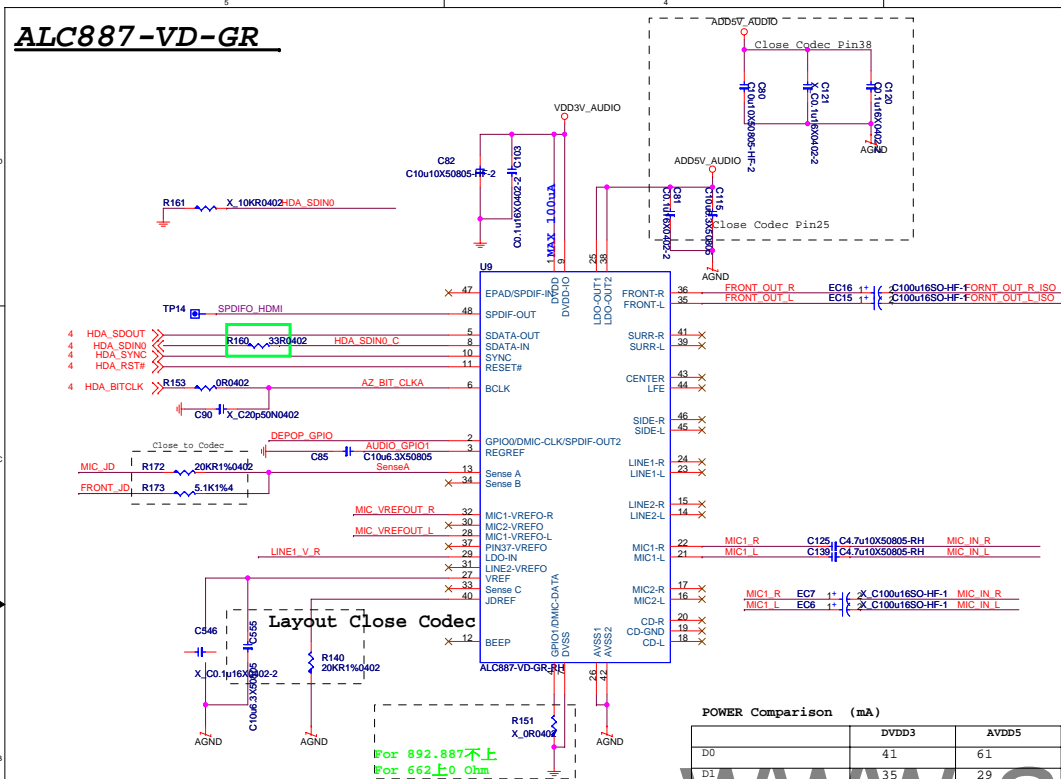


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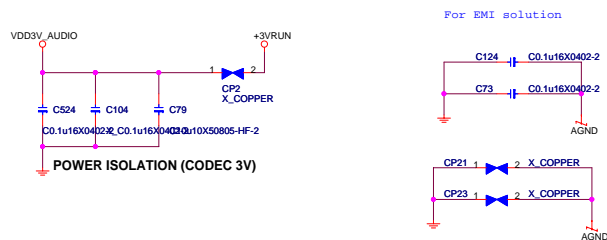
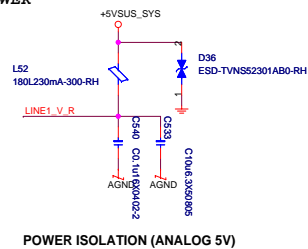
Size Custom	Document Description LAN - RTL8111E	Rev 0A
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ALC887-VD-GR

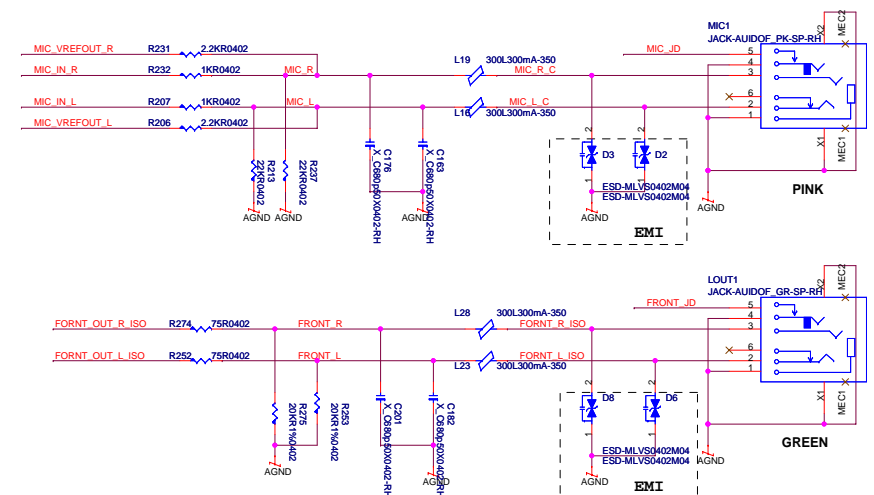


	DVDD3	AVDD5
D0	41	61
D1	35	29
D2	4.1	<1
D3	4.1	4
LINK Reset	3.1	14.31

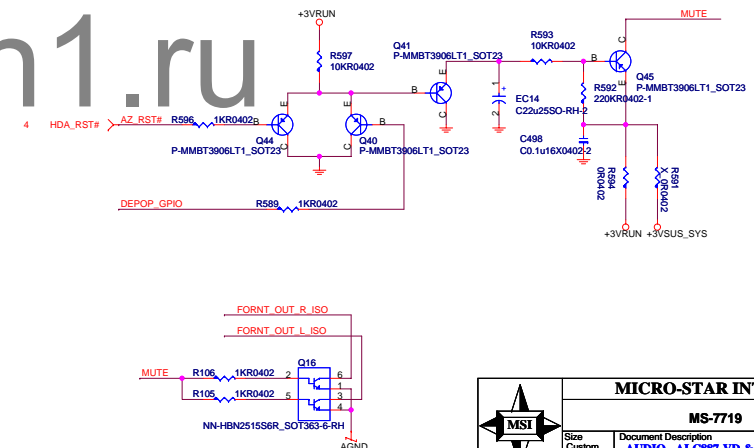
POWER



AUDIO JACKS



ANTIPOP CIRCUIT



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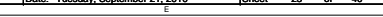
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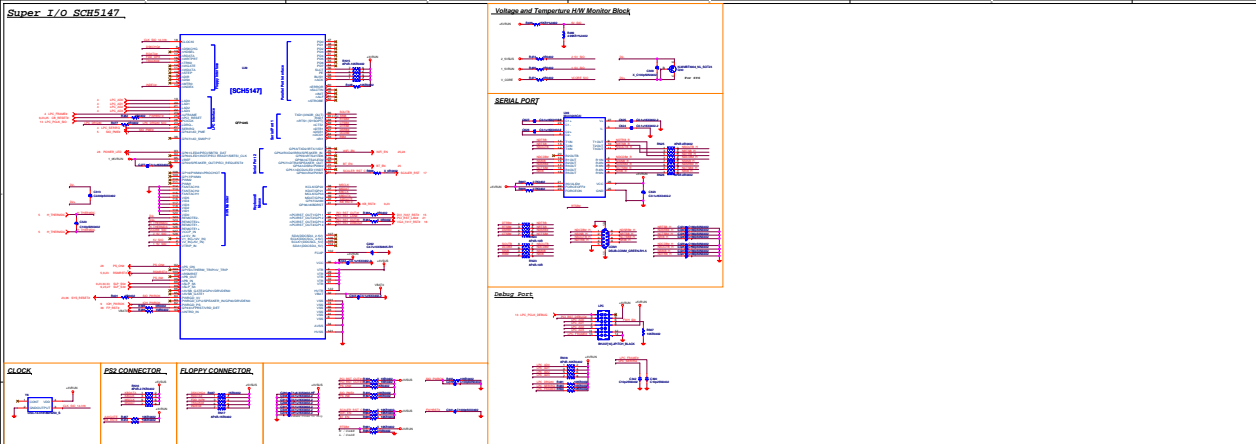
Size Custom	Document Description AUDIO - ALC887-VD & AMP
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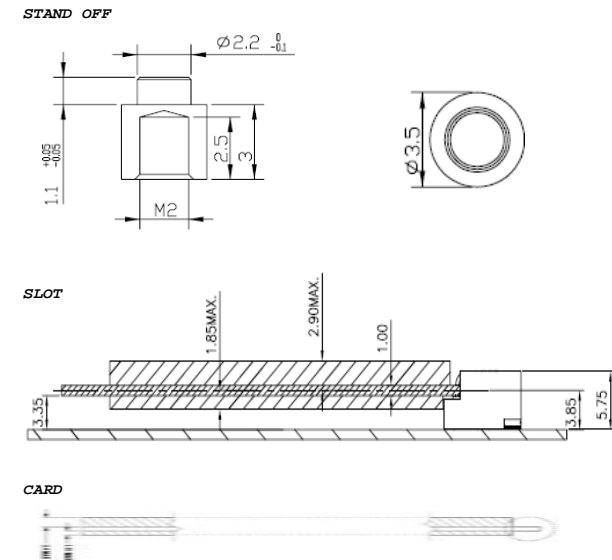


1.TCK
2.GND
3.TDO
4.VCC
5.TMS
9.TDI
10.GEN





For WiFi



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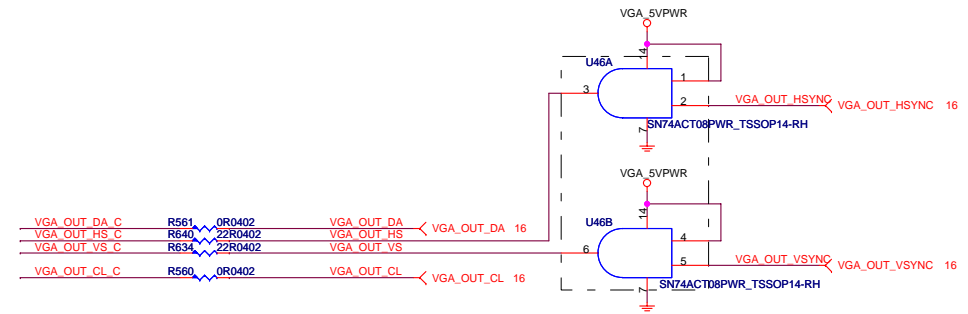
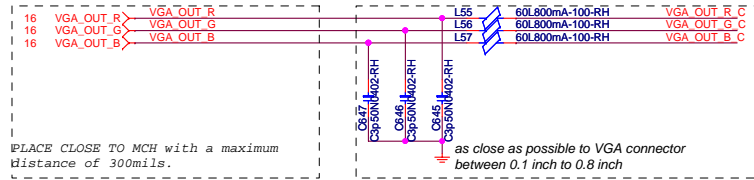


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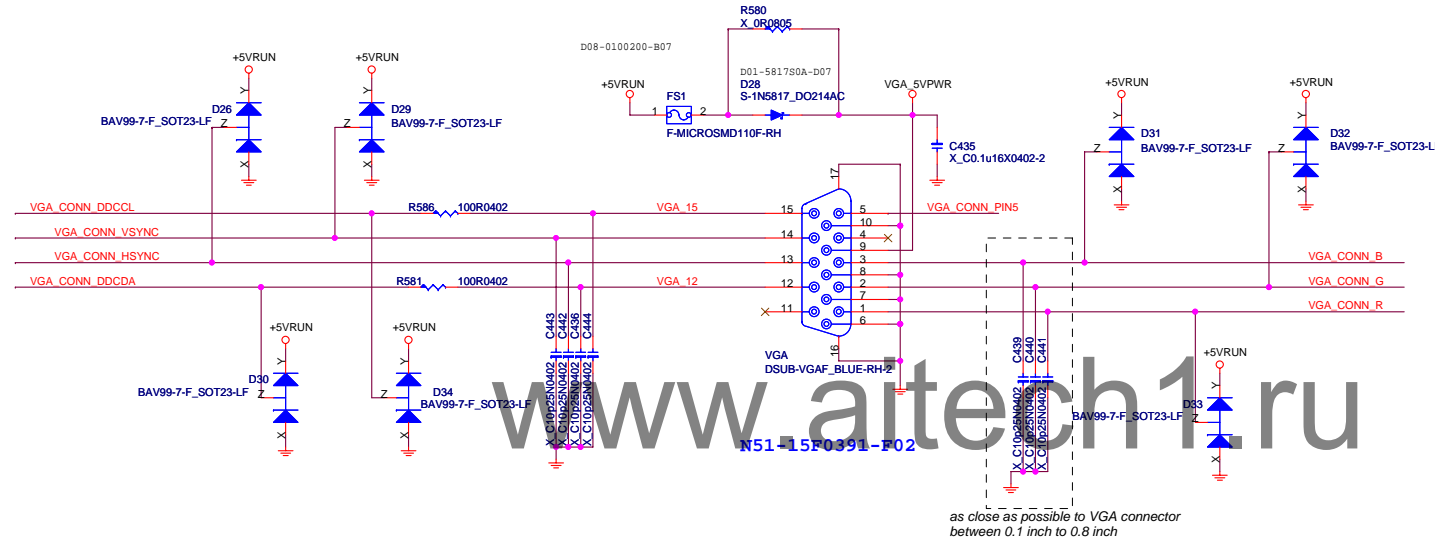
Size Custom	Document Description FAN& LED, TP	Rev 0A
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VGA CONNECT

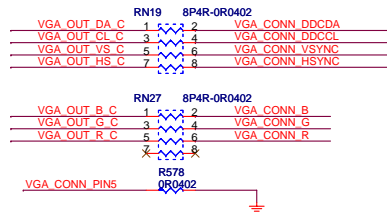
21.5" For Input
40" For Output



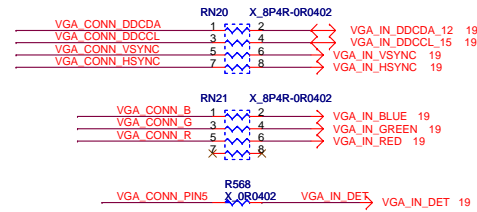
5.0 x 6.4 x 1.2 Millimeters



FOR SDVO TO RGB_OUT



FOR RGB_IN TO LVDS

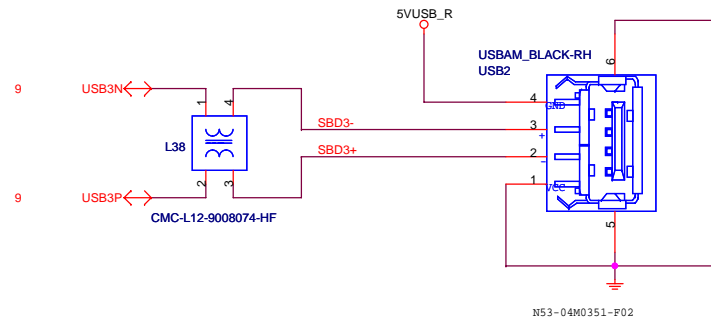
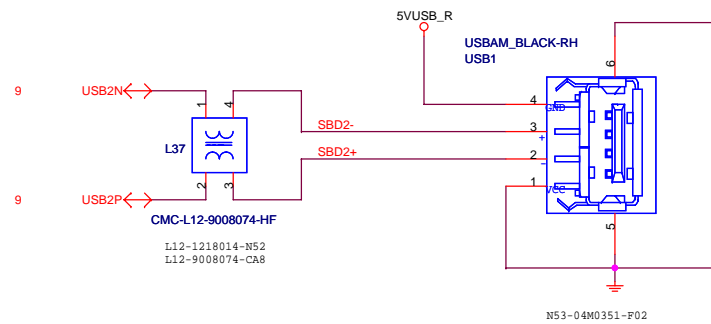
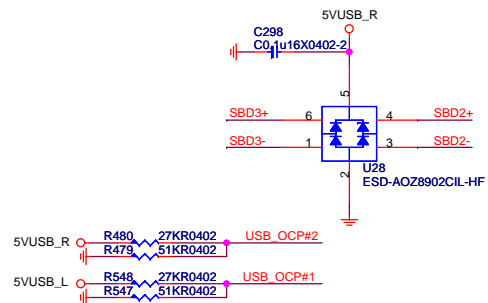
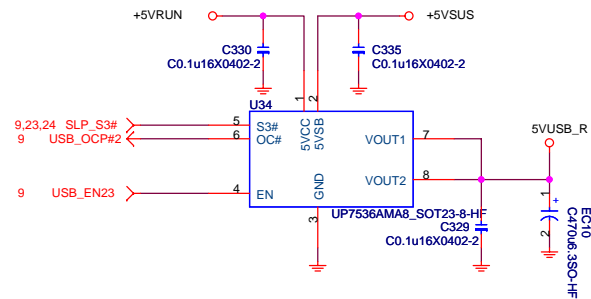


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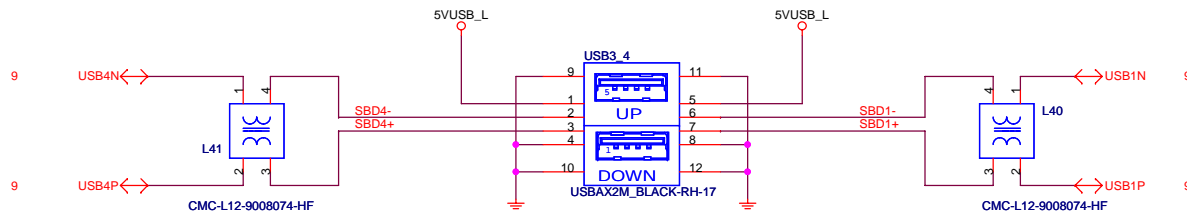
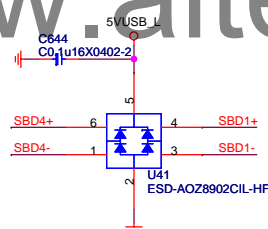
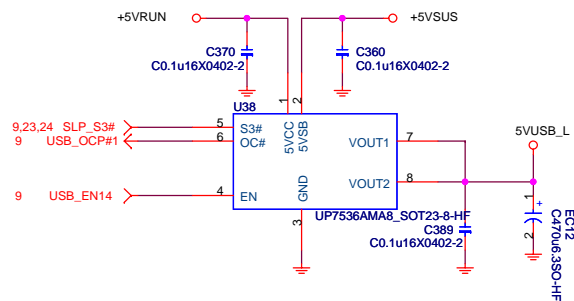
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USB CONNECT



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N53-08M0561-F02



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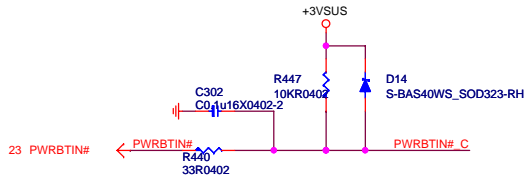
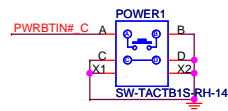
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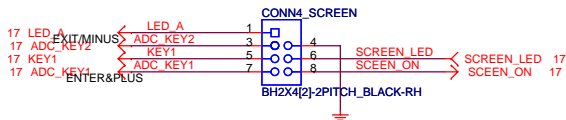
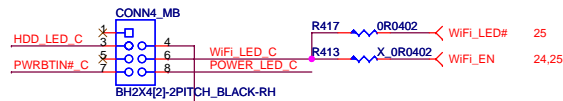
CONNECTOR HEADER

KEYPAD



Conn4-1

CMI	MSI
1. POWER_BTN	1_7. NC
2. POWER_LED	2_8. X
3. NC	3_5. HDD_LED
4. WIFI_LED	4_6. GND
5. HDD_LED	5_3. NC
6. GND	6_4. WIFI_LED
7. NC	7_1. POWER_BTN
8. X	8_2. POWER_LED



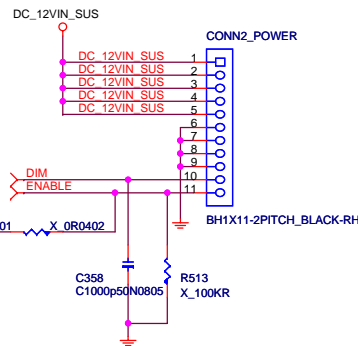
Conn4-2

CMI	MSI
1. ADC_KEY1	1_7. LED_A(Reserve)
2. SCREEN ON/OFF	2_8. X
3. KEY1(Reserve)	3_5. ADC_KEY2
4. SCREEN_LED	4_6. GND
5. ADC_KEY2	5_3. KEY1(Reserve)
6. GND	6_4. SCREEN_LED
7. LED_A(Reserve)	7_1. ADC_KEY1
8. X	8_2. SCREEN ON/OFF

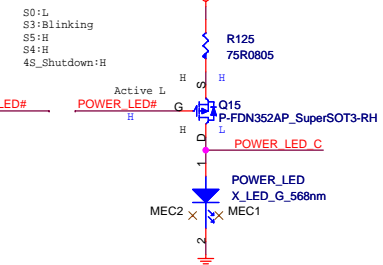
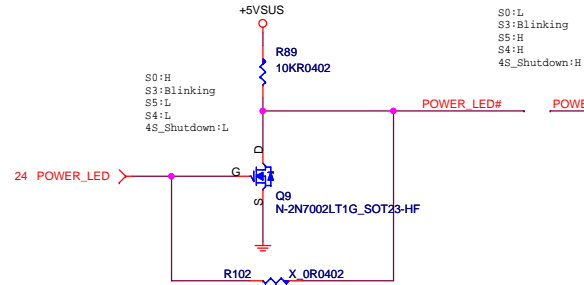


For EMI

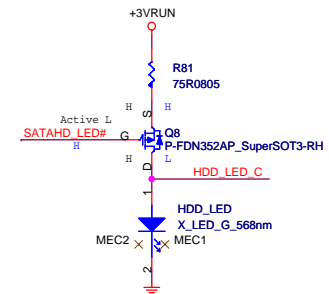
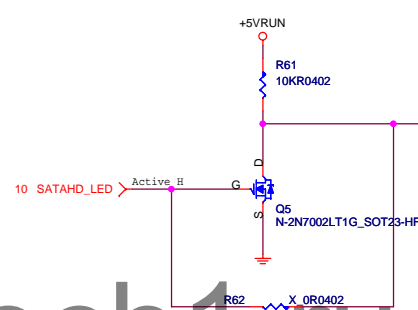
HDD_LED C	C281	C0.1u16X0402-2
WIFI_LED C	C84	C0.1u16X0402-2
POWER_LED C	C291	C0.1u16X0402-2
SCREEN_LED	C295	C0.1u16X0402-2
PWRBTN# C	C307	C0.1u16X0402-2
SCREEN ON	C337	C0.1u16X0402-2
LED_A	C310	X C0.1u16X0402-2
ADC_KEY2	C318	C0.1u16X0402-2
KEY1	C188	X C0.1u16X0402-2
ADC_KEY1	C340	C0.1u16X0402-2



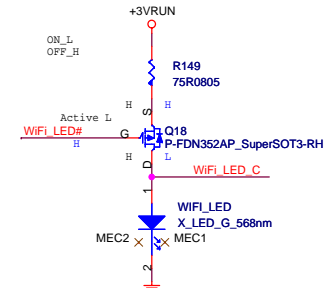
POWER_LED



HDD_LED



WiFi_LED

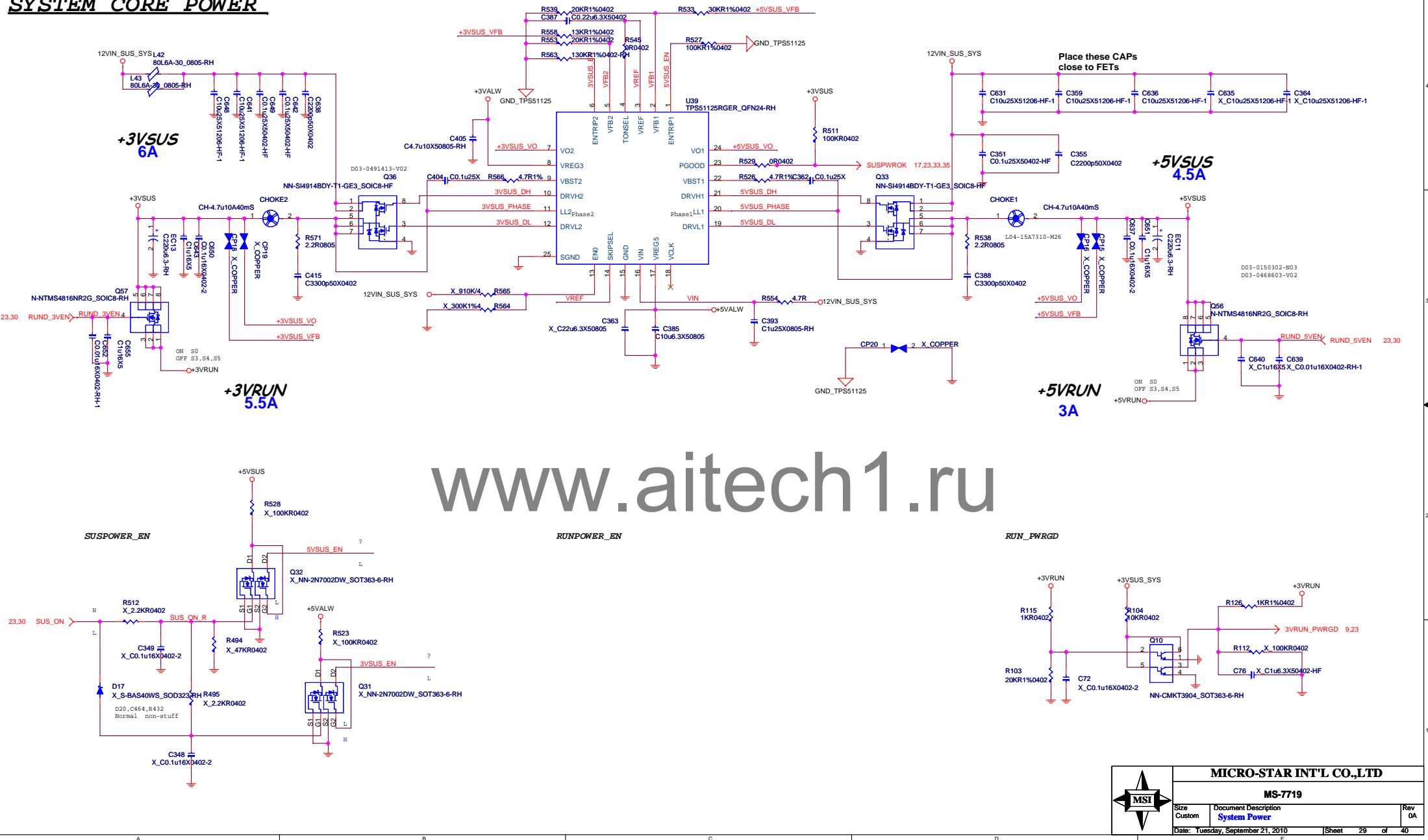


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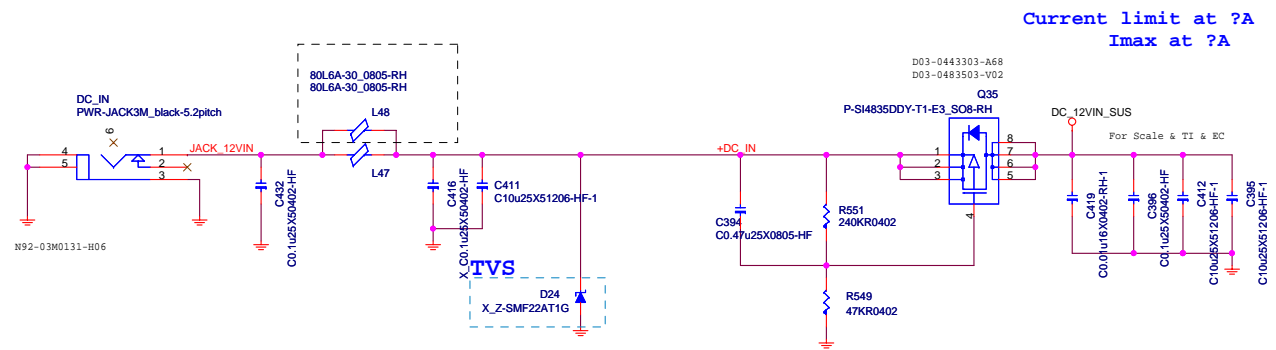
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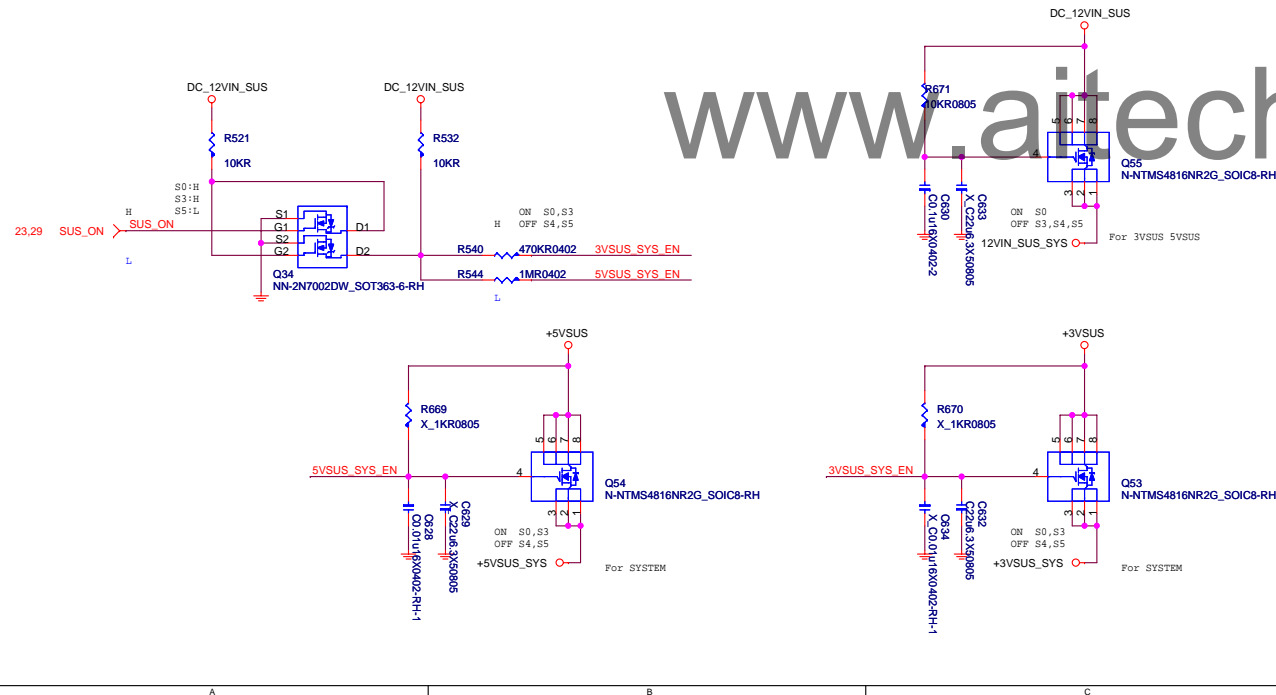
SYSTEM CORE POWER



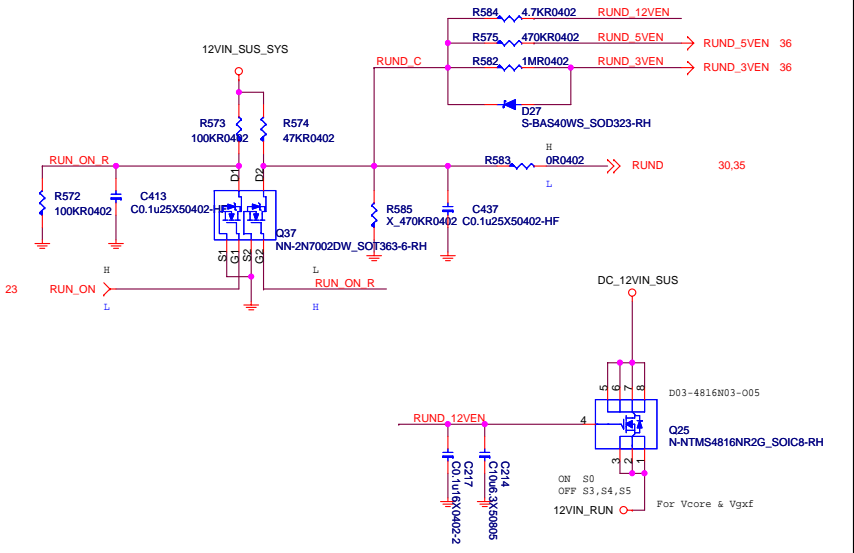
ADAPTER 12V DC IN



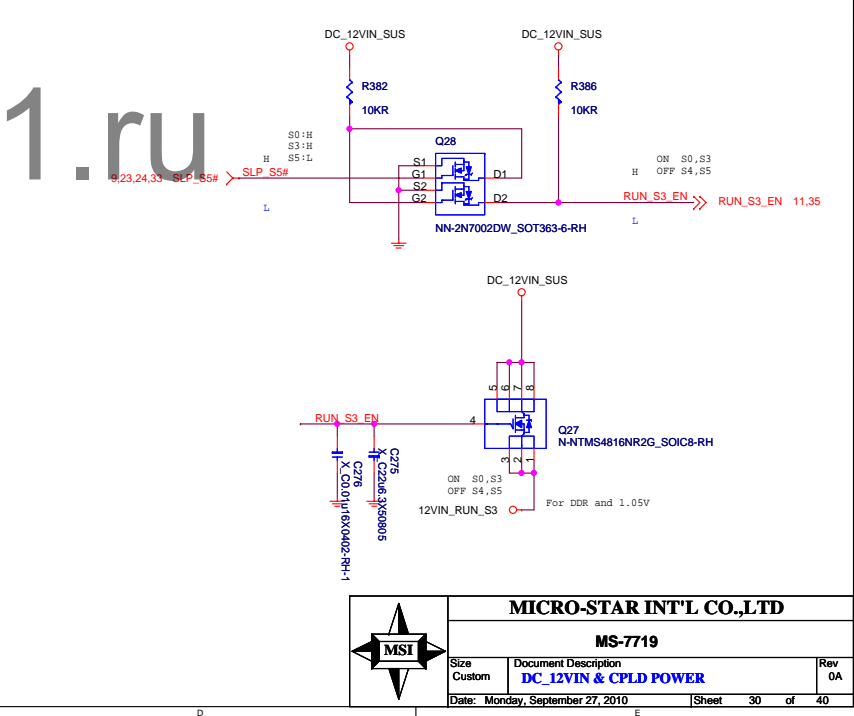
SUS POWER FOR SYSTEM



Contorl Power with S0

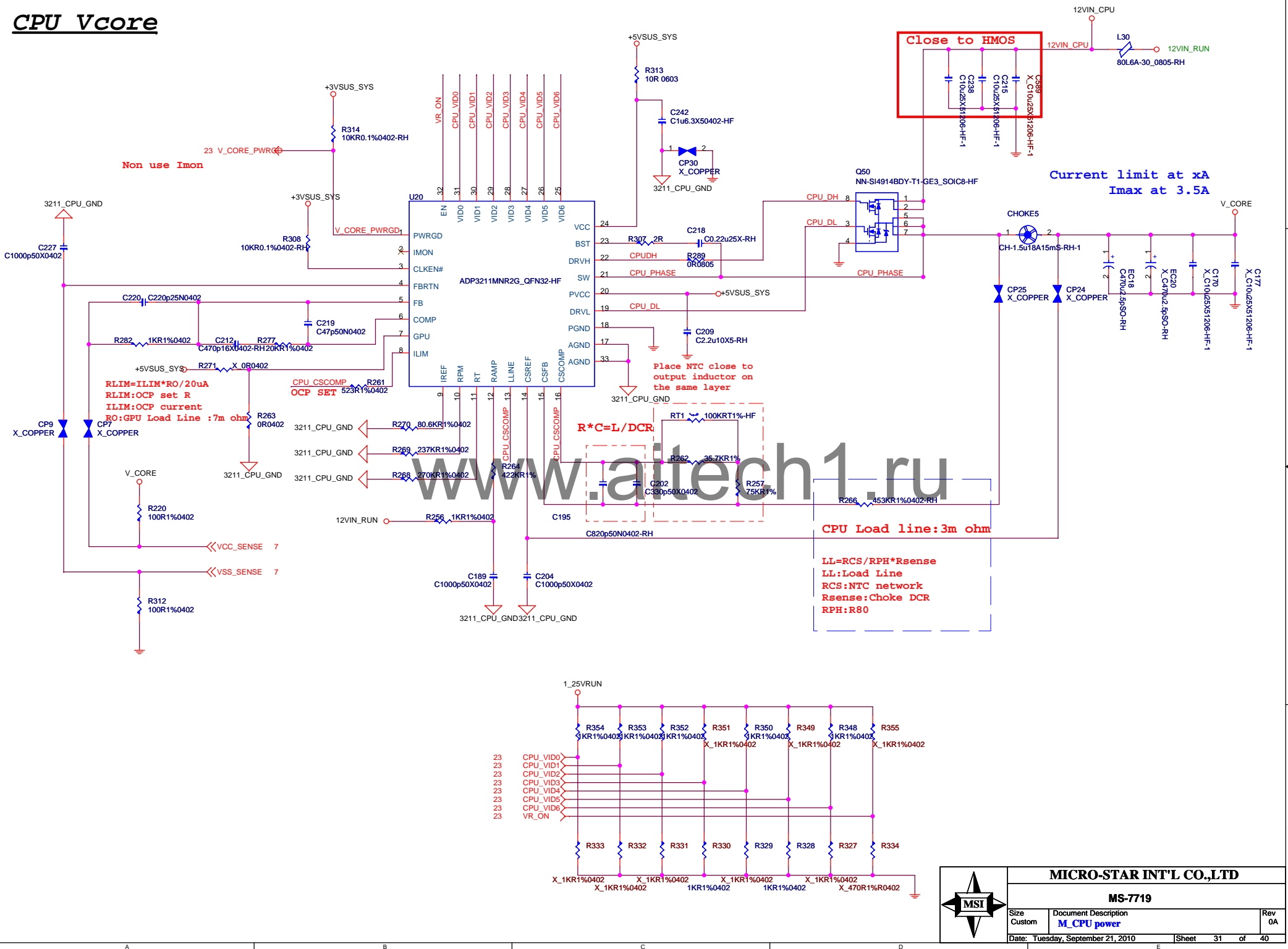


Contorl Power with S3,S0



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CPU Vcore

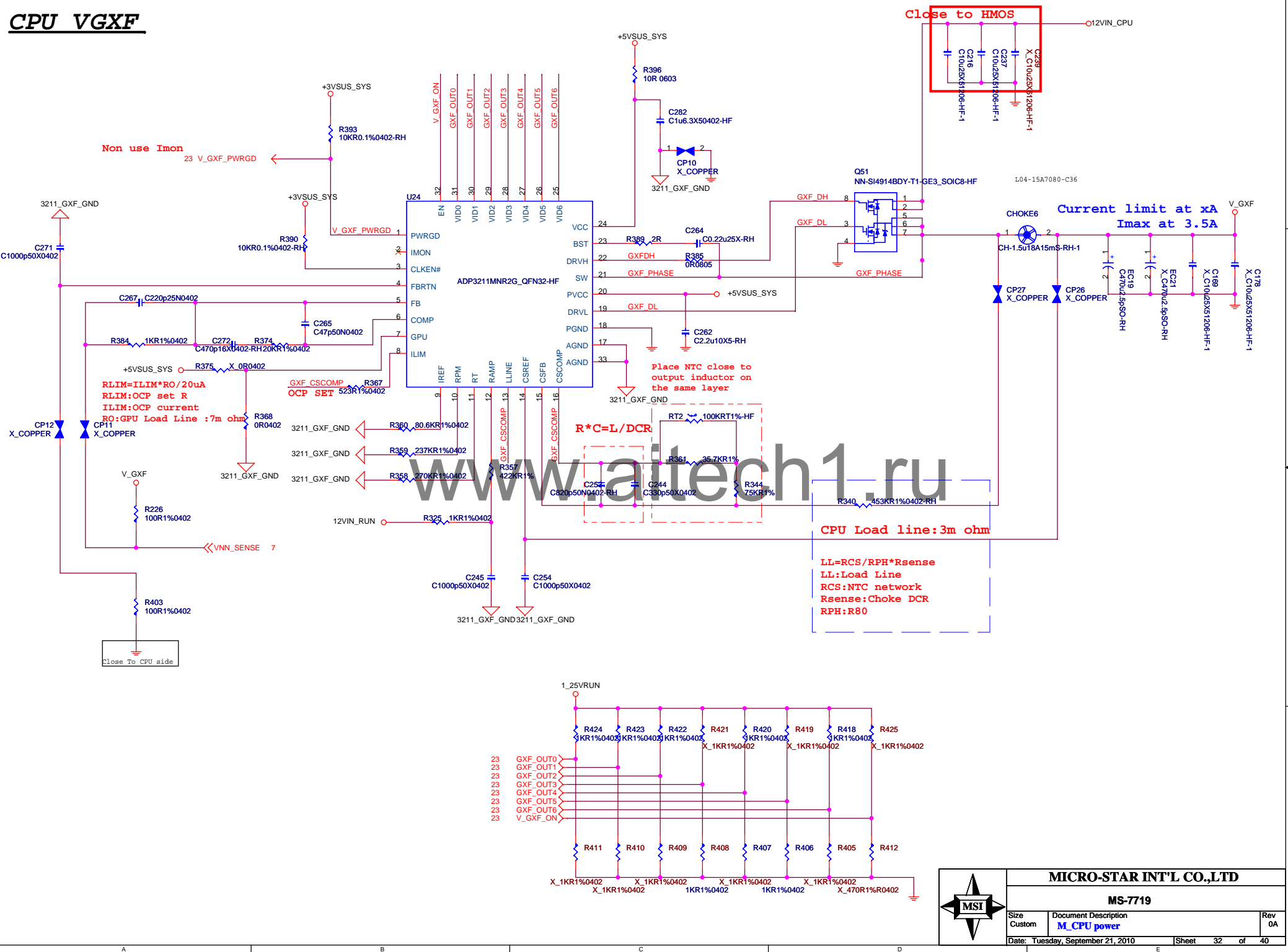


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CPU VGXF

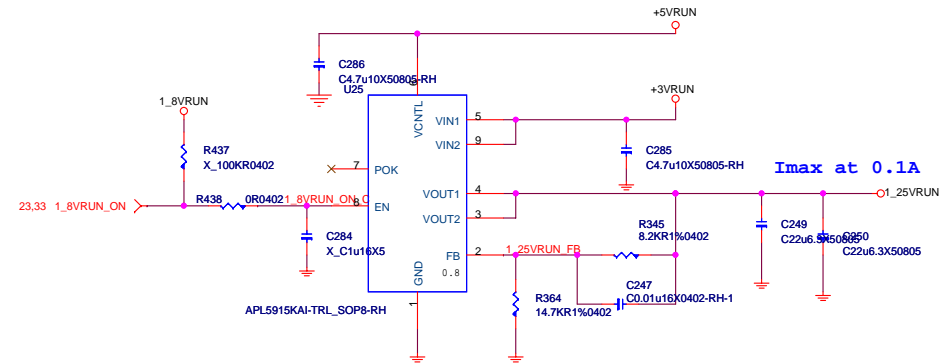
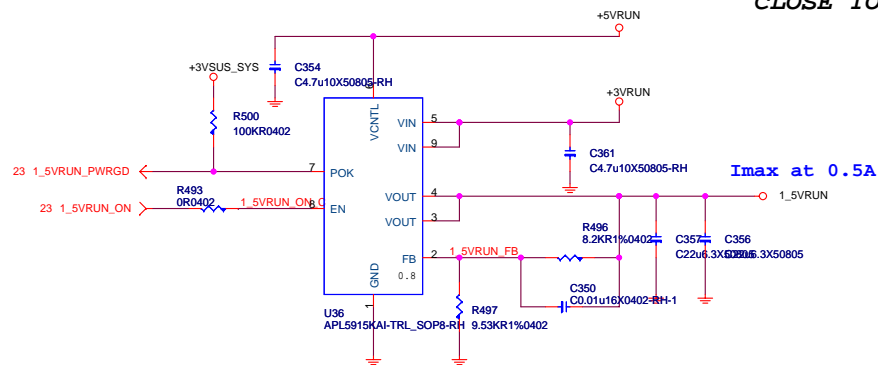


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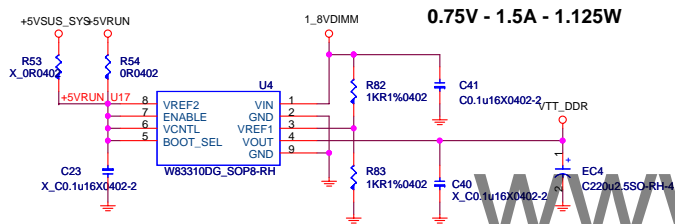
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Custom	M_CPU power	0A
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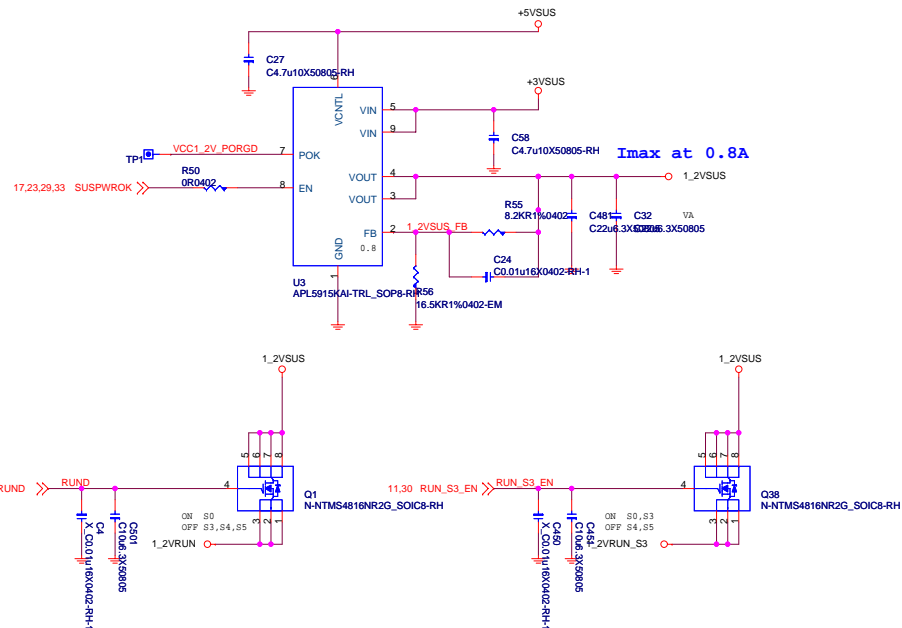
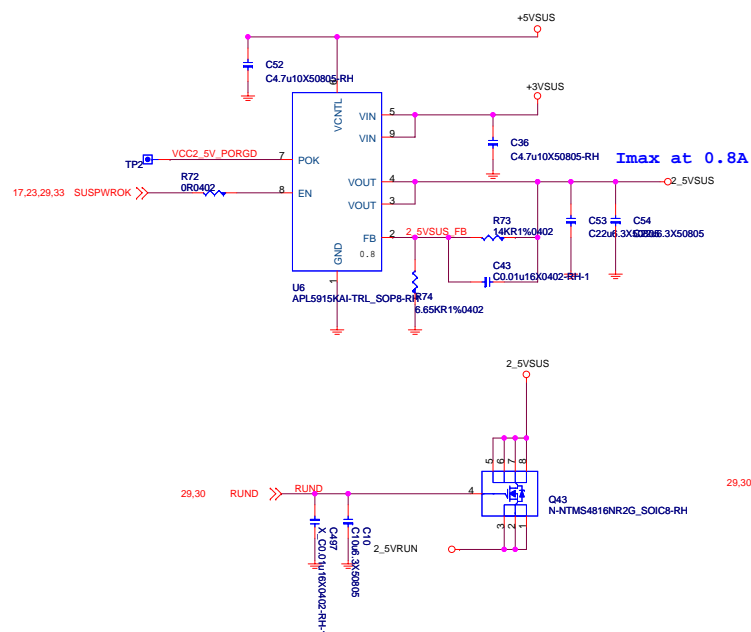
CLOSE TO CPU



DDRIII Termination Power



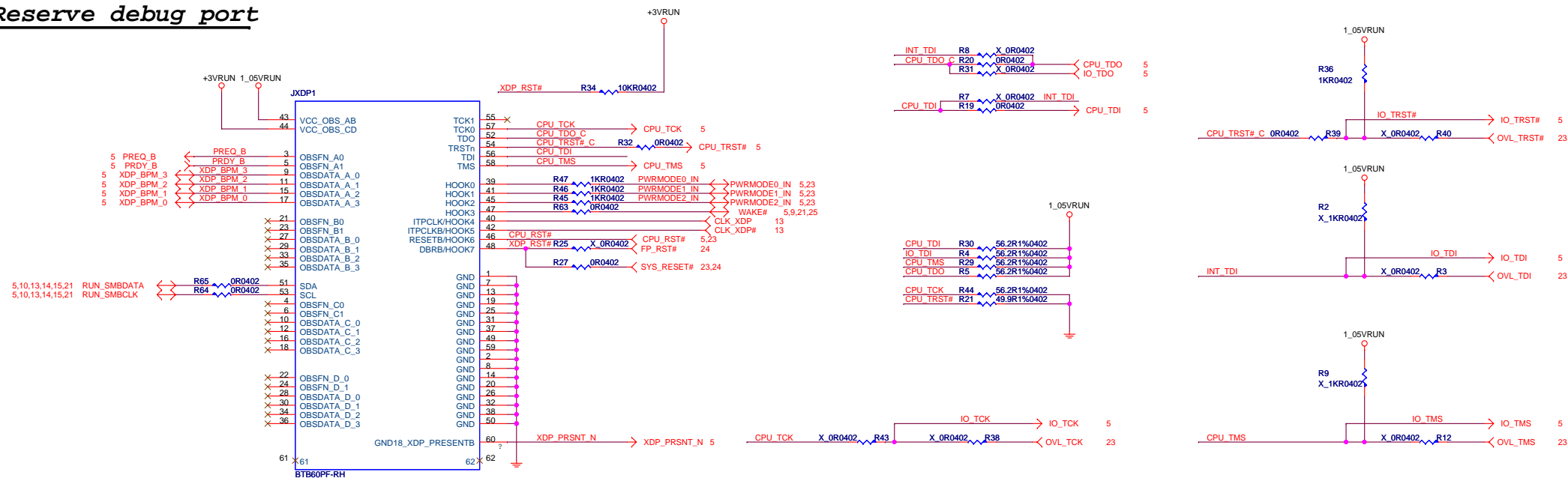
AVL: I31-0771102-U33 (UP7711)



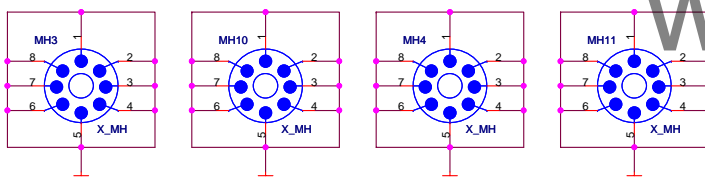
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Custom	IOH 1.2V, 2.5V	0A
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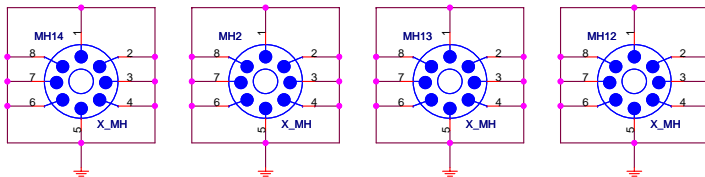
Reserve debug port



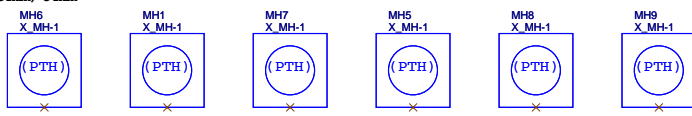
3.5mm/6mm



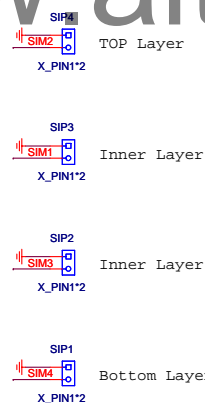
4.5mm/7mm



3mm/6mm



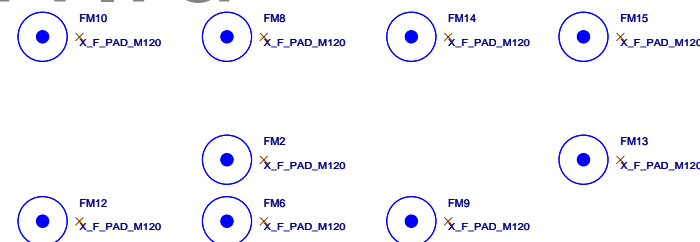
Simulation



50 ohm 4/4

Optics Orientation Holes

Optical Fiducial Marks-120



STAND OFF FOR MINI PCIE



Holes_R177D91

E2B-1634020-A89



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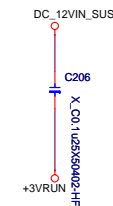
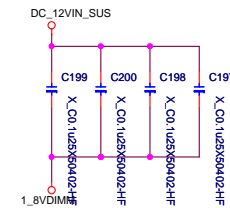
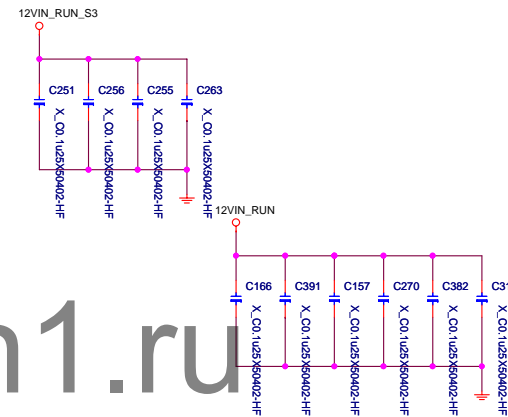
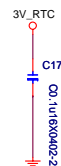
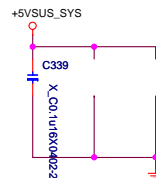
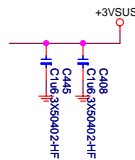
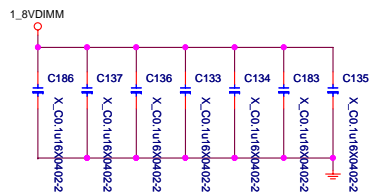
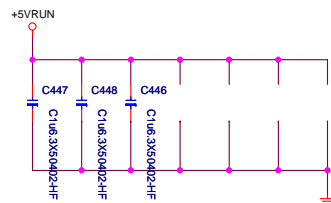
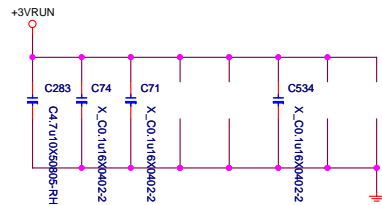
Size Custom	Document Description XDP/ ME part	Rev 00
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P80-077190A-T53

E2M-4112511-CA7

H: 3.7mm



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