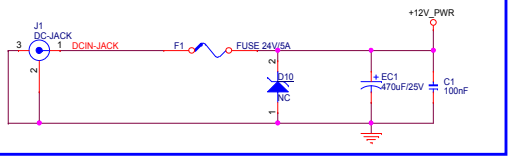
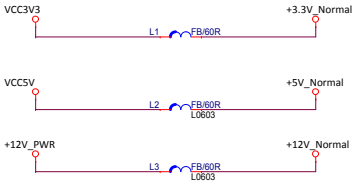
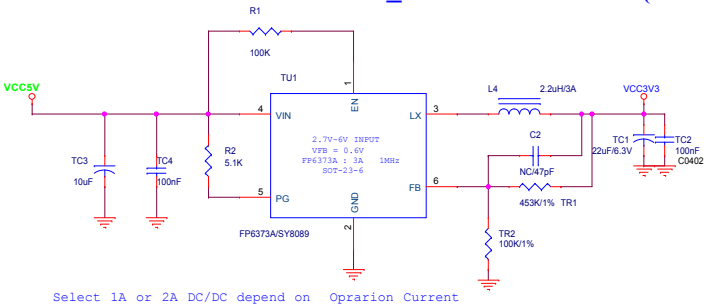
+12V DC-POWER Input



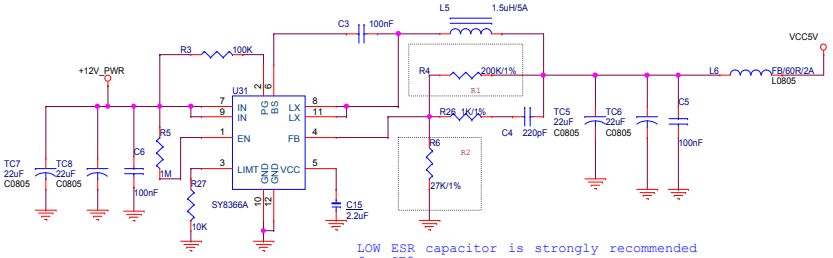


+3.3V_Power Vout=0.6 x(1+R1/R2)



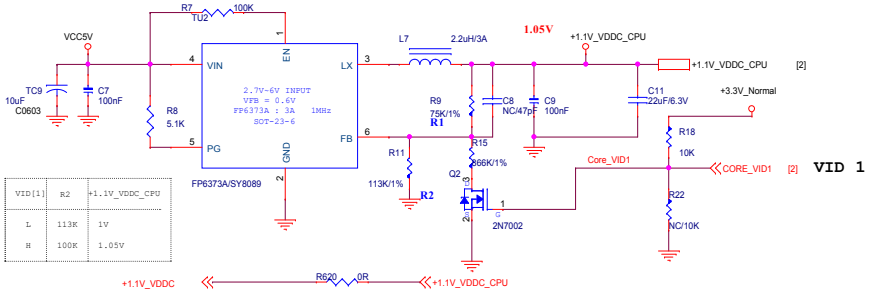
Select 1A or 2A DC/DC depend on Oprarion Current

+5V Power 5V DC-DC Vout=0.6 x(1+R1/R2)



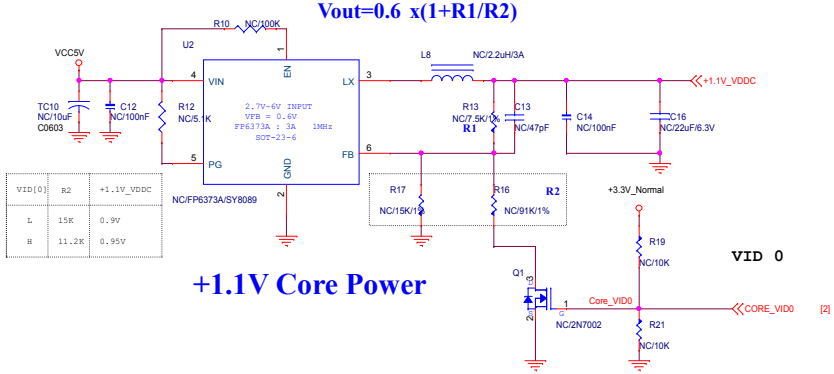
LOW ESR capacitor is strongly recommended for CE2

+1.1V CPU Power and Core Power Vout=0.6 x(1+R1/R2)



VID[1]	R2	+1.1V_VDDC_CPU
L	113K	1V
H	100K	1.05V

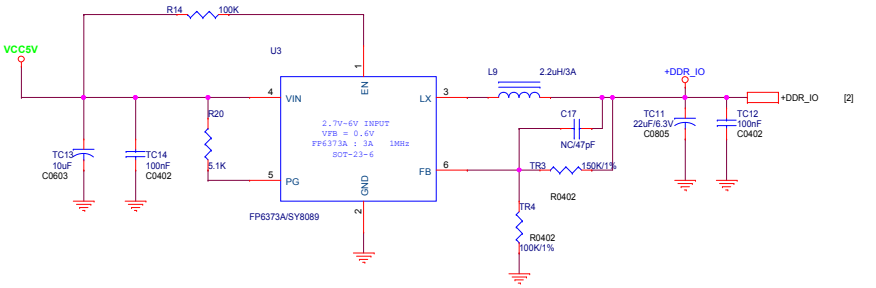
Vout=0.6 x(1+R1/R2)



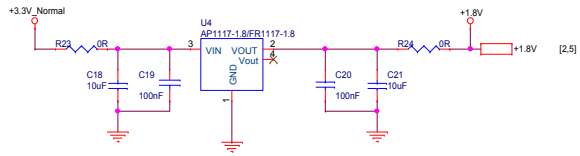
VID[0]	R2	+1.1V_VDDC
L	15K	0.9V
H	11.2K	0.95V

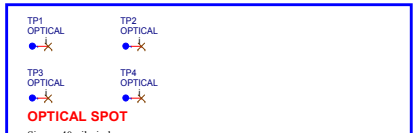
+1.1V Core Power

+1.5V DDR3 Power Vout=0.6 x(1+R1/R2)



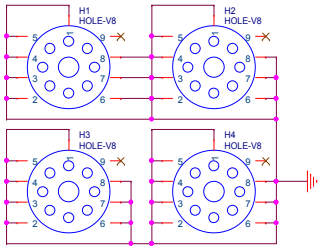
1.8V Normal Power





OPTICAL SPOT

Size = 40mil circle
Can not put any component, text, trace or polygon into 40mil area.



ORG	MStar Semiconductor(SZ),Inc.		
Title	MStar NVR Demo		
Size C	Document Number 01.System Power		Rev 1.1
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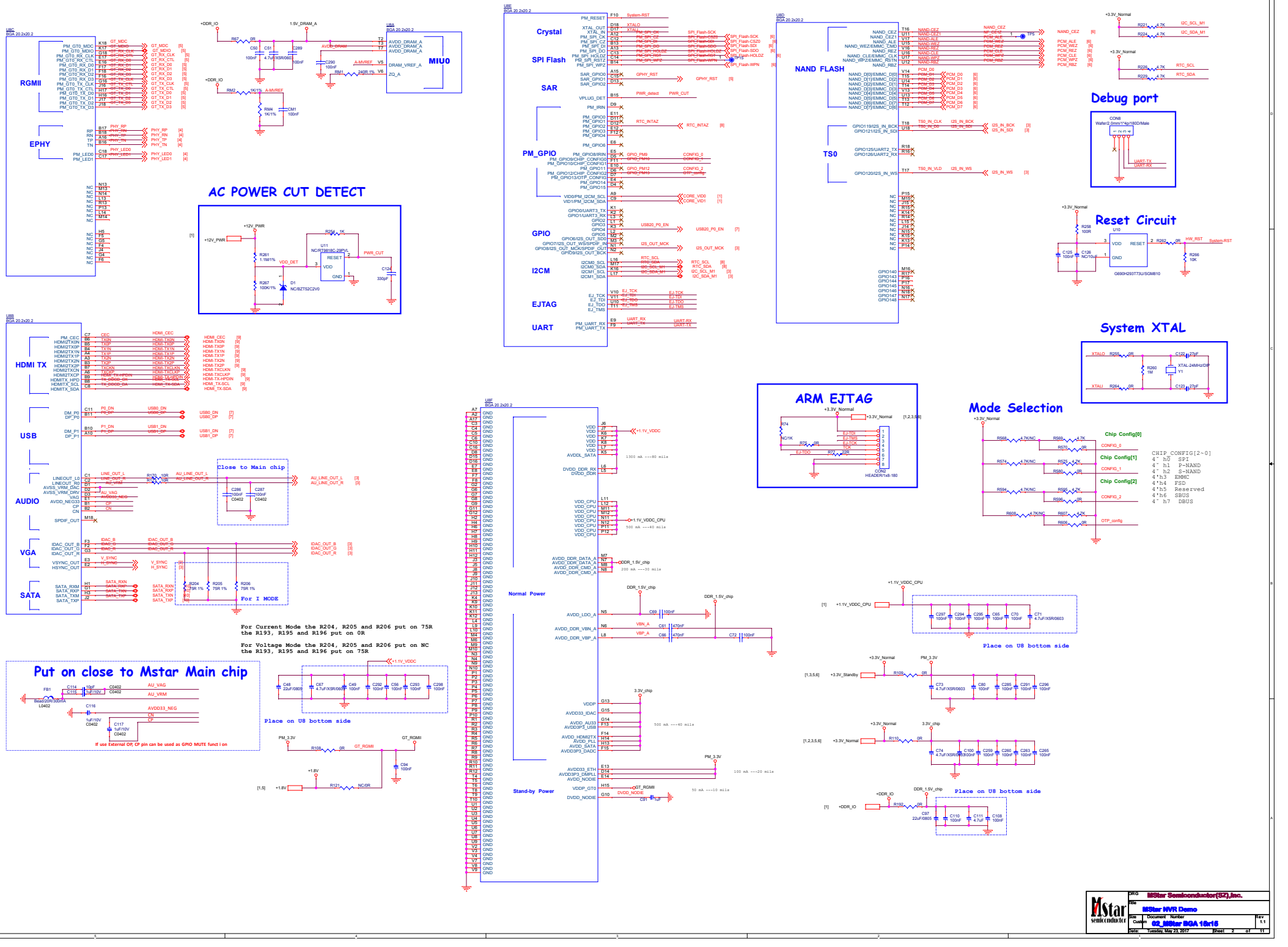
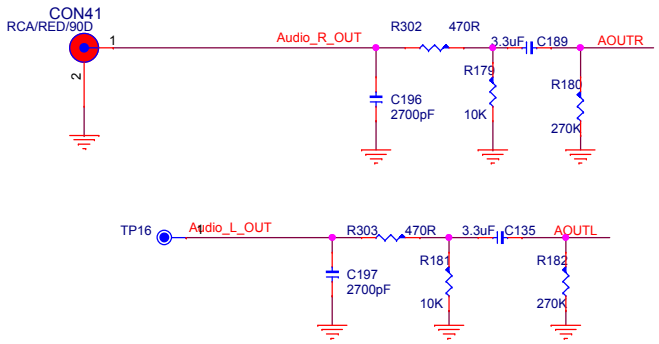
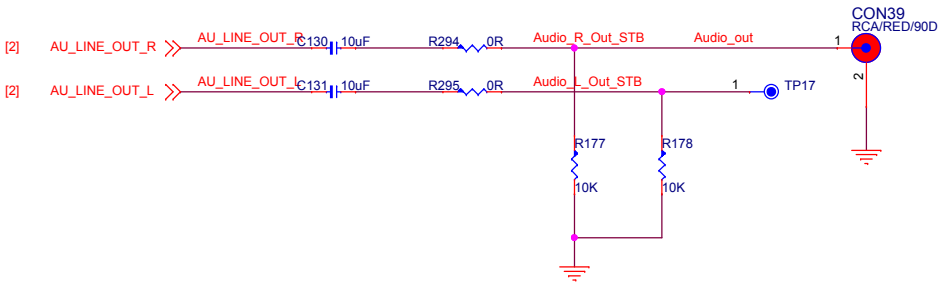
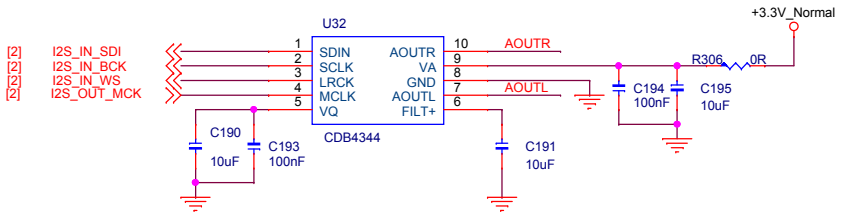
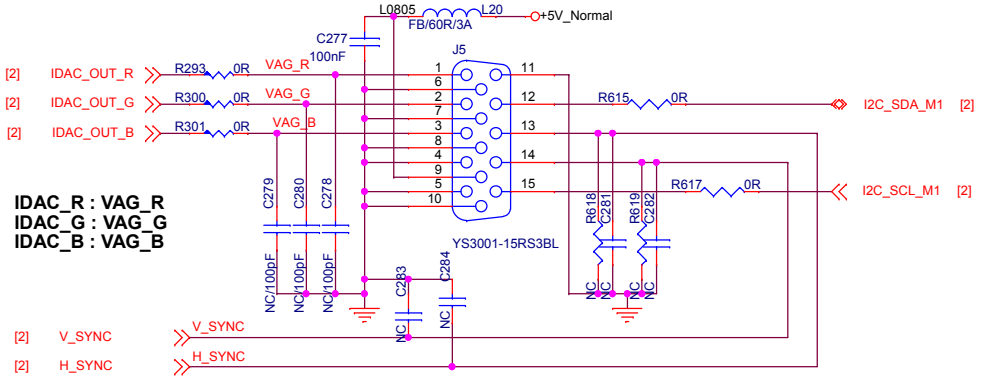
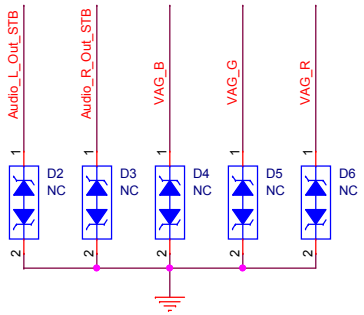

RGMII
EPHY
AC POWER CUT DETECT
Crystal
SPI Flash
SAR
PM_GPIO
GPIO
I2CM
EJTAG
UART
NAND FLASH
TS0
Debug port
Reset Circuit
System XTAL
ARM EJTAG
Mode Selection
HDMI TX
USB
AUDIO
VGA
SATA
Close to Main chip
For I MODE
Normal Power
Stand-by Power
Put on close to Mstar Main chip
Place on U8 bottom side
For Current Mode the R204, R205 and R206 put on 75R the R193, R195 and R196 put on 0R
For Voltage Mode the R204, R205 and R206 put on NC the R193, R195 and R196 put on 75R
If use External OP, CP pin can be used as GPIO MUTE funct i on
MIU0
MStar Semiconductor(SZ),Inc.
MStar NVR Demo
02_MStar BGA 18x18
Tuesday, May 23, 2017











ORG	MStar Semiconductor(SZ),Inc.	
Title	MStar NVR Demo	
Size B	Document Number 03_Video/Audio Output-Input	Rev 1.1
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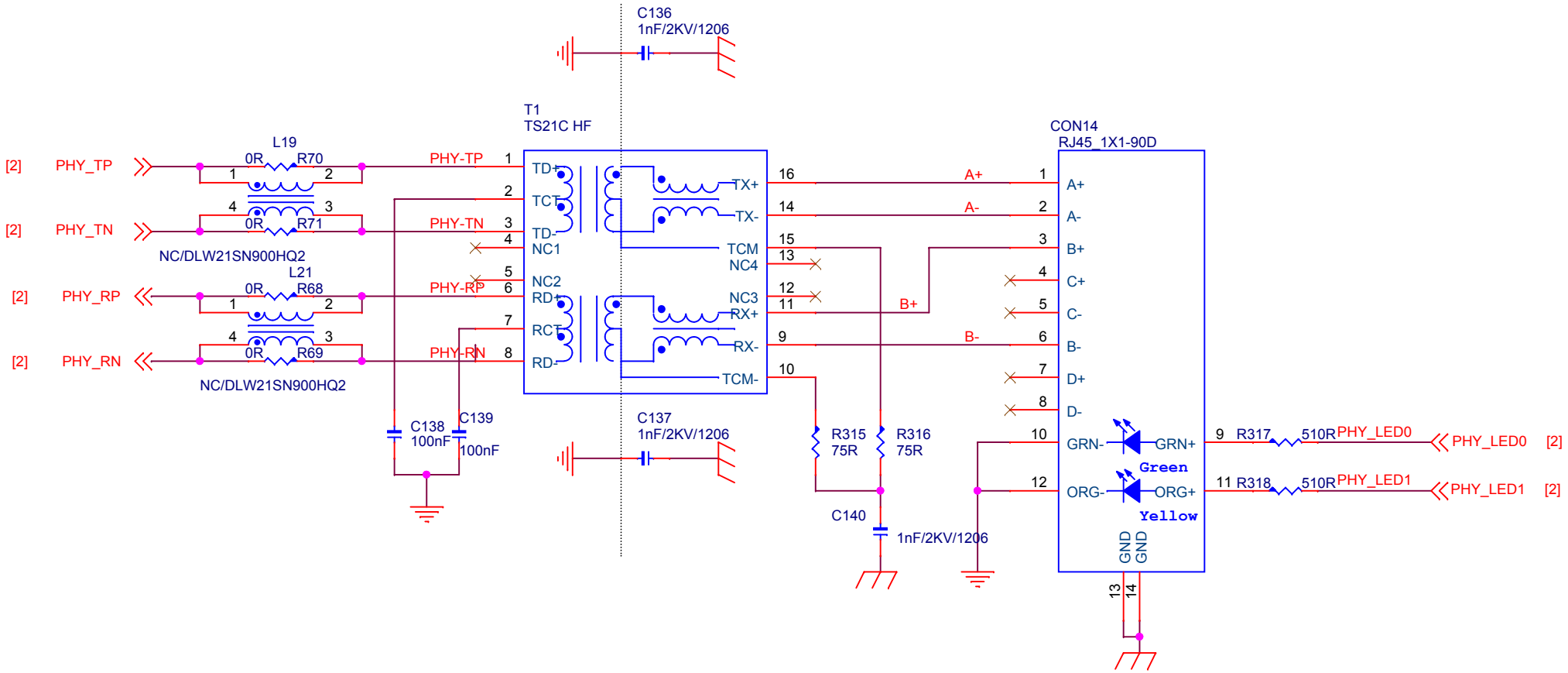

PAD_LED_PM[1] Active when linked in 100Base-TX and blinking when transmitting or receiving
PAD_LED_PM[0] Active when linked.

ORG	MStar Semiconductor(SZ),Inc.	
Title	MStar NVR Demo	
Size: Custom	Document Number: 04_EPHY	Rev: 1.1
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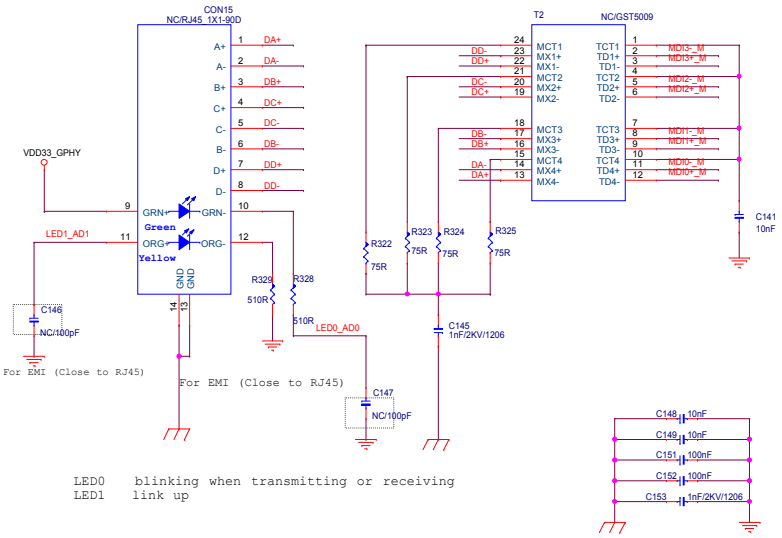
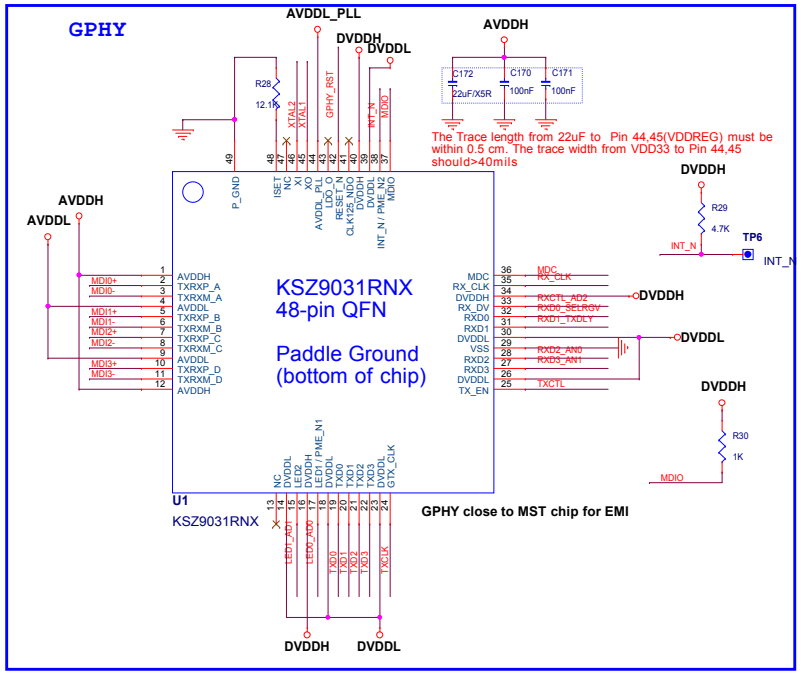
RJ45 & Transformer & CMC

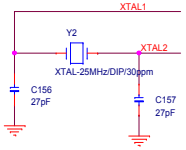


LED0 blinking when transmitting or receiving
LED1 link up

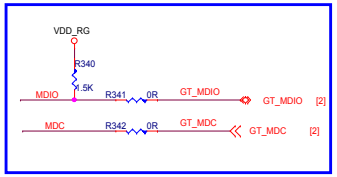
GPHY



XTAL



If use external clock then the XTAL2 need connect to GND for RTL8211E.

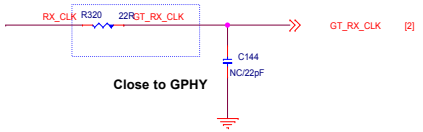


MDC/MDIO

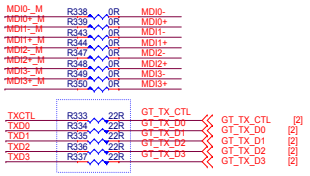
RGMII Rx (PHY to MAC)

Equal length within 100mil for RX group

Close to GPHY



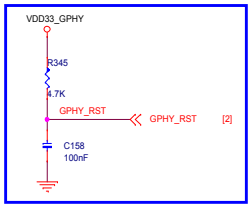
Close to GPHY



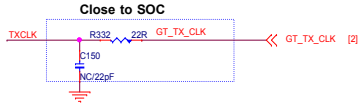
Close to SOC

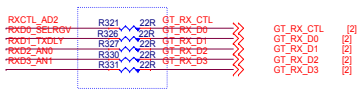
Equal length within 100mil for TX group

PHY Reset

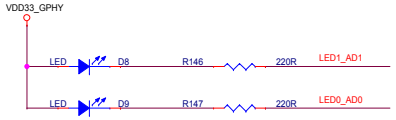


Close to SOC

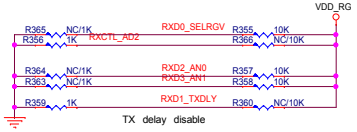




RGMII Tx (MAC to PHY)

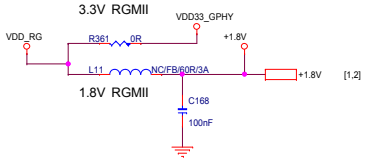


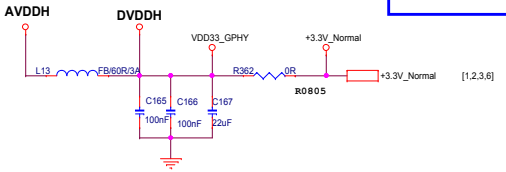
Configuration Setting

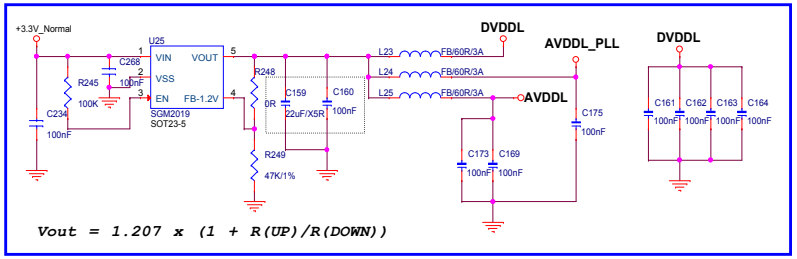


TX delay disable

RGMII Power







MStar semiconductor	ORG	MStar Semiconductor(SZ),Inc.	
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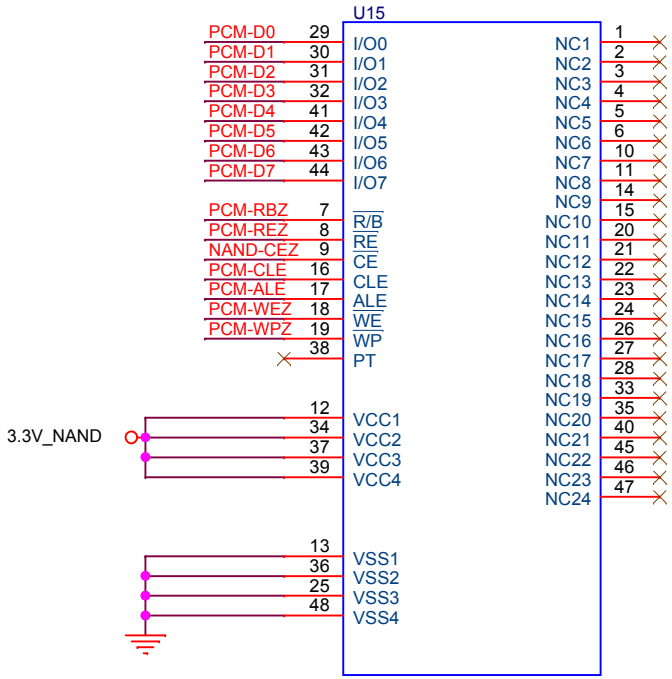
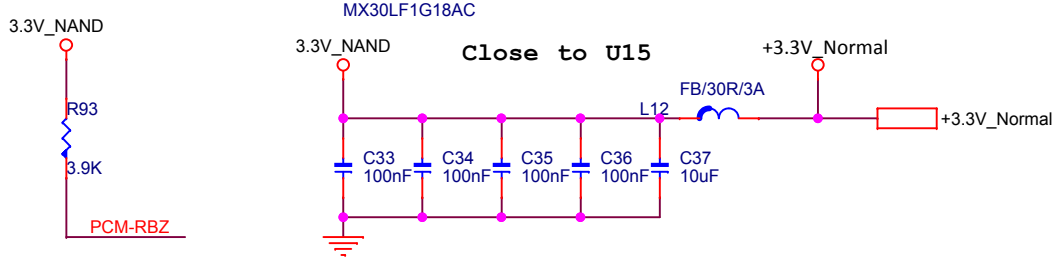
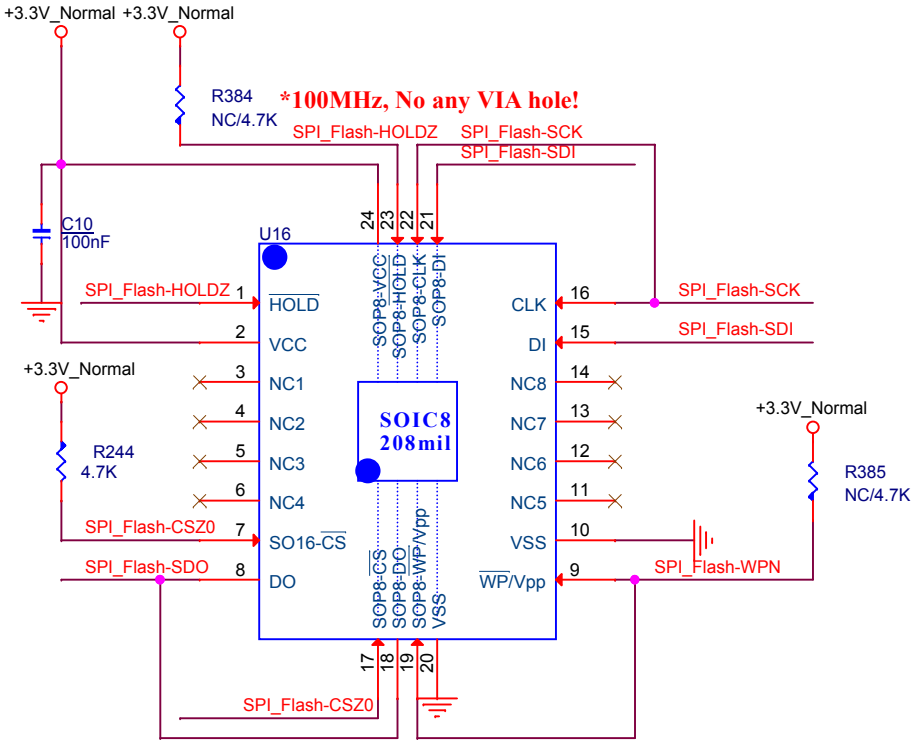
Nand Flash

Serial Flash

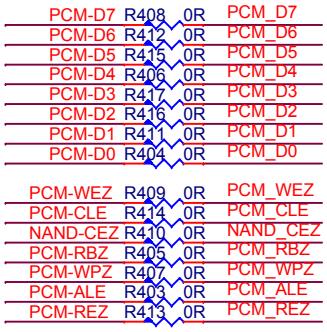
Co-layout

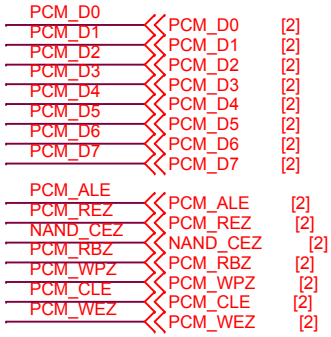


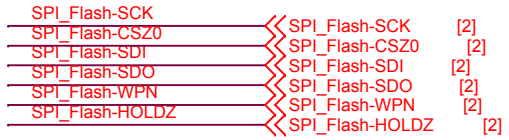




Main Chip To NAND Flash







MStar semiconductor

ORG	MStar Semiconductor(SZ),Inc.	
Title	MStar NVR Demo	
Size: Custom	Document Number: 06_NorFlash_NandFlash	Rev: 1.1
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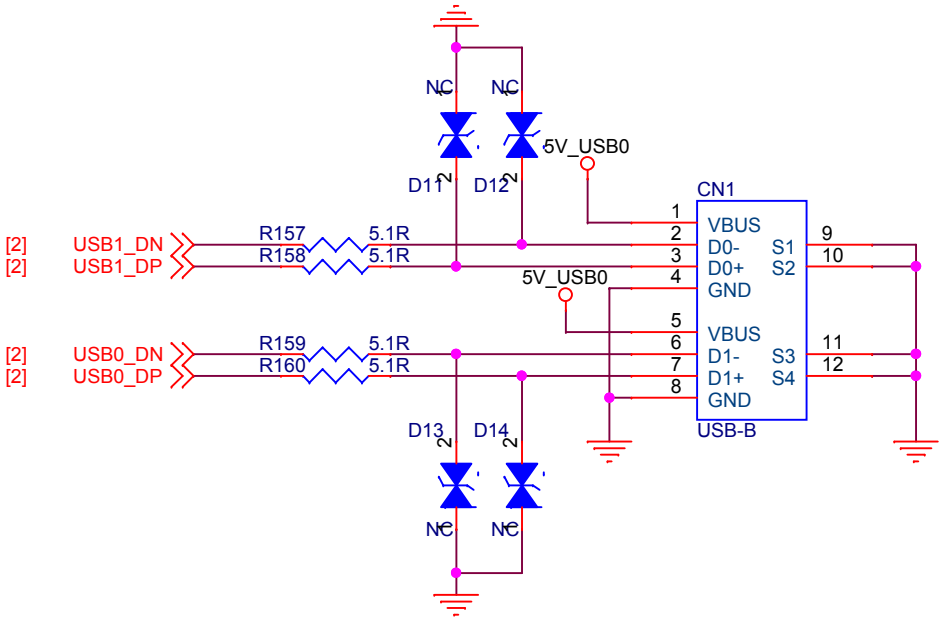
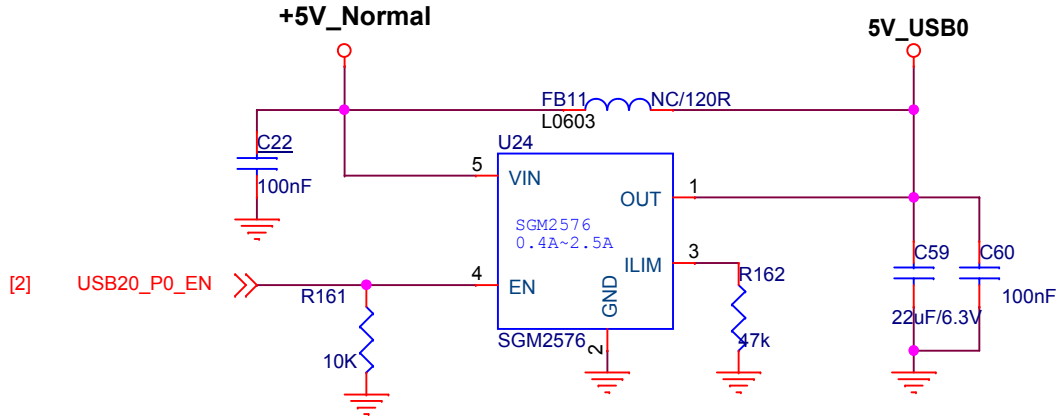
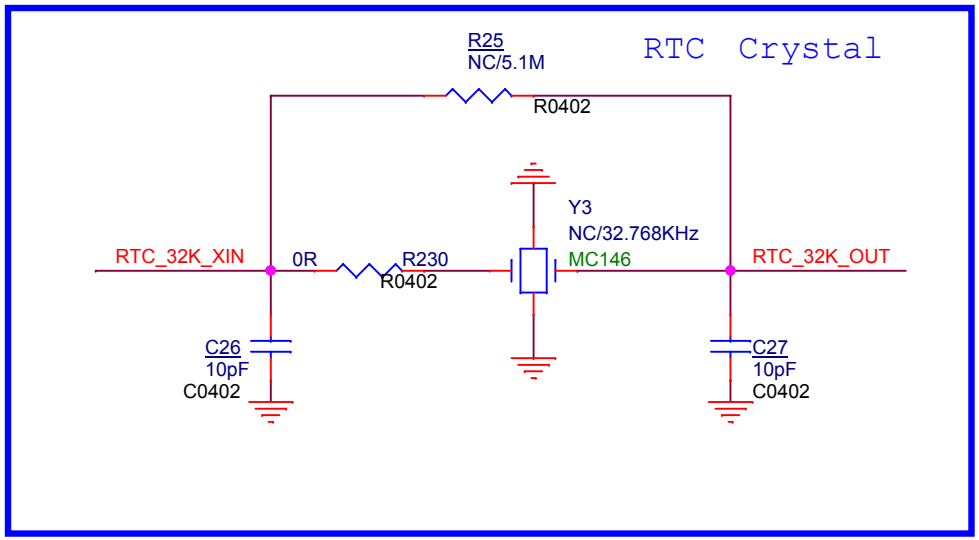
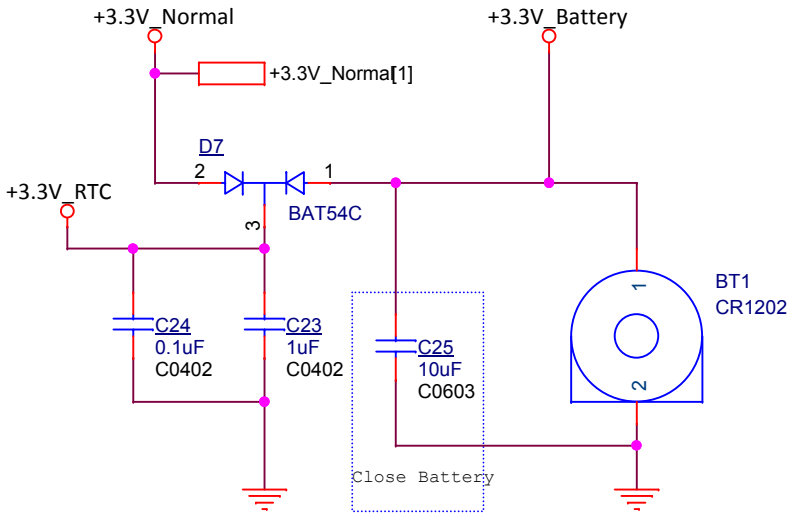
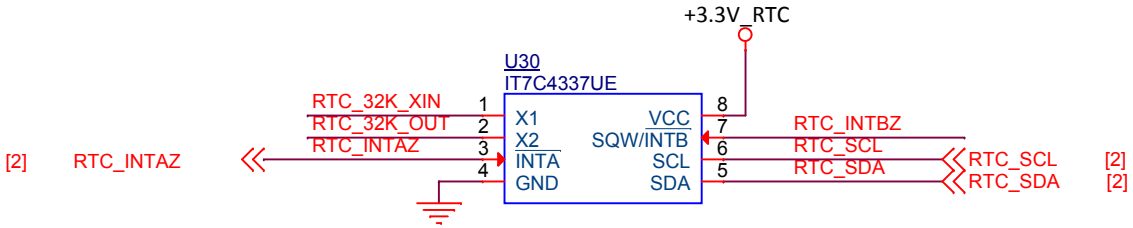


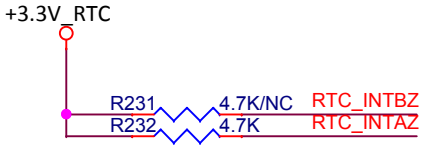


ORG	MStar Semiconductor(SZ),Inc.		
Title	MStar NVR Demo		
Size A	Document Number 07_USB		Rev 1.1
Date: Tuesday, May 23, 2017	Sheet 7 of 11		









MStar semiconductor	ORG	MStar Semiconductor(SZ),Inc.
	Title	MStar NVR Demo
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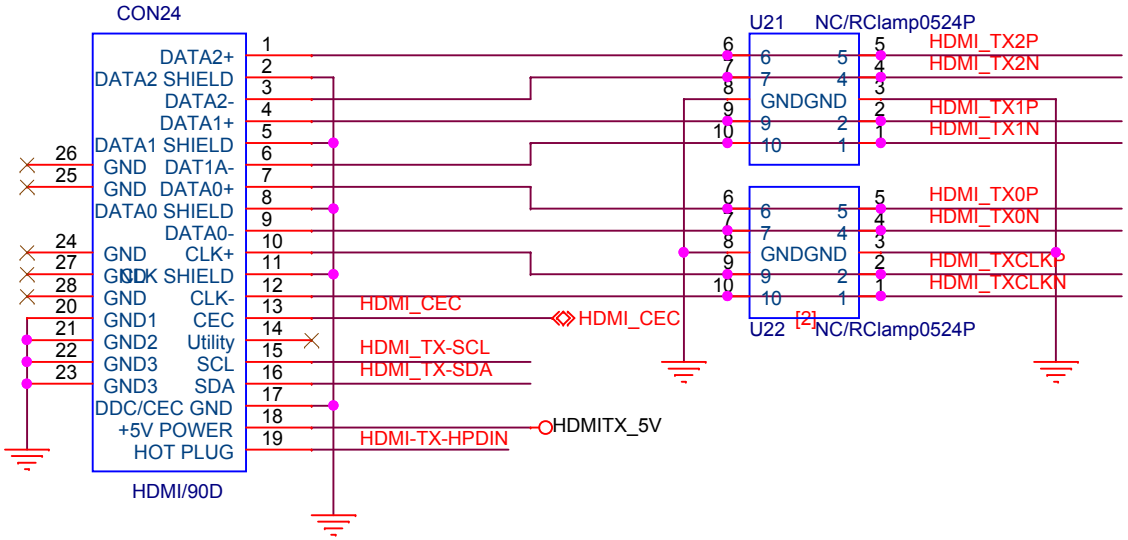
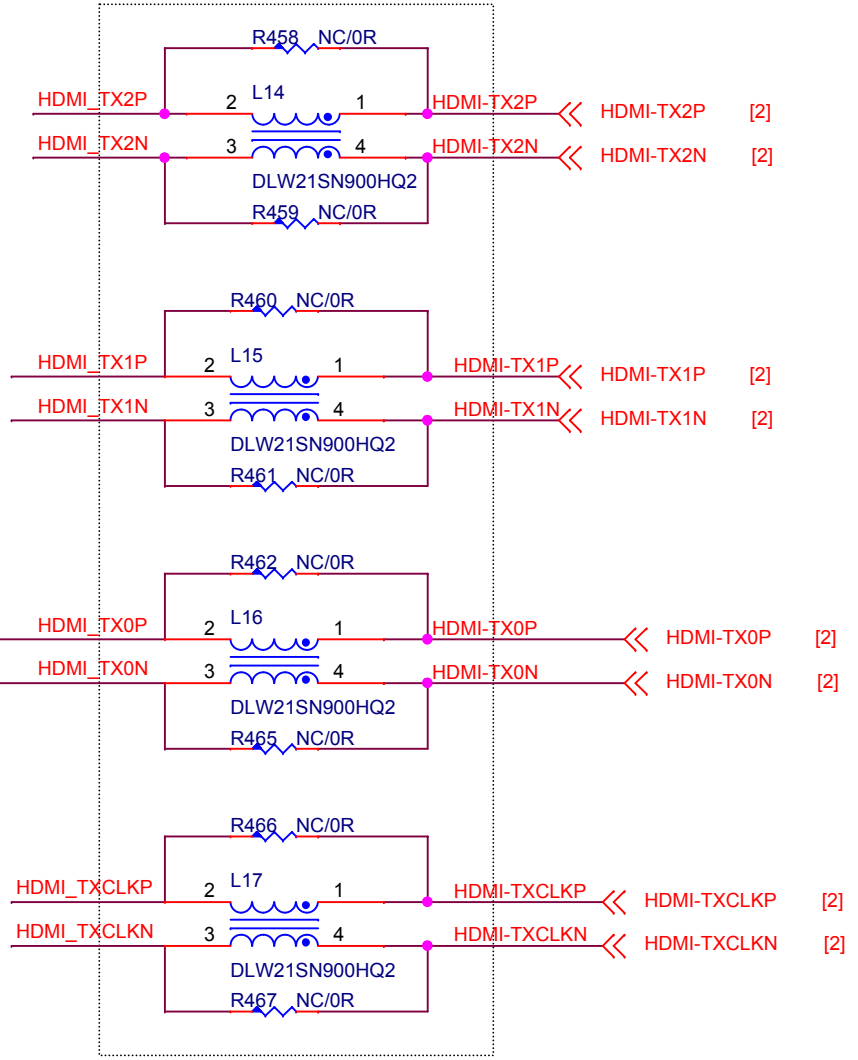
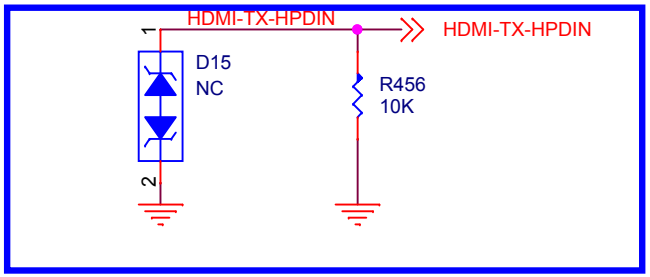
close to connector

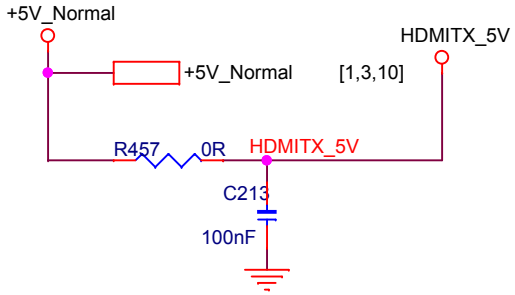


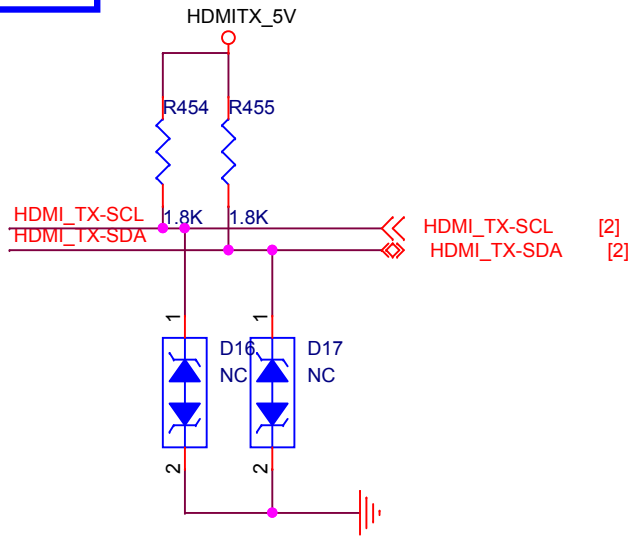
Co-lay and close to connector (For EMI)



HDMI TX Hot-Plug Control







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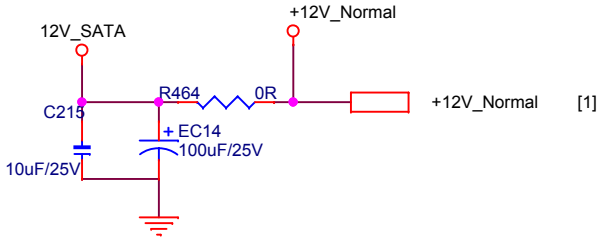

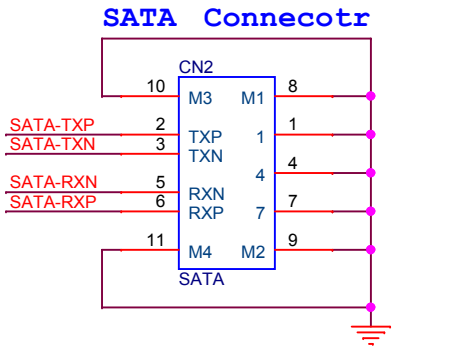

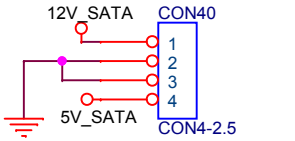

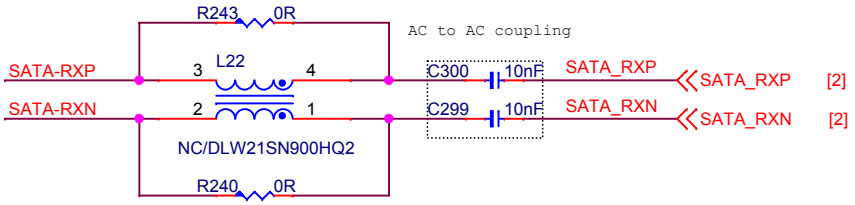

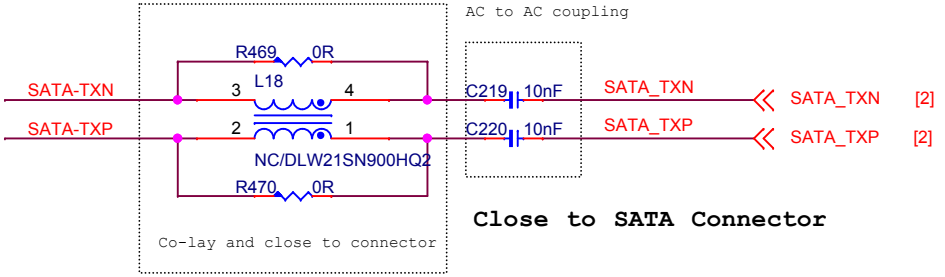

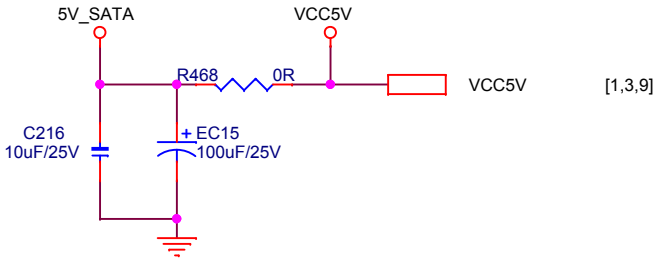

SATA Differential trace. Impedance is 100ohm.

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History

Version	Date	Description
V1.0	2016.06.14	First release
V1.1	2017.01.17	1.USB Power VCC5V --------> +5V_Normal 2.Add DDR MCP Power CAP C61 and C66 ---> 470nF Modify Pin Out and modify GPIO 119~148 net name 3.Add +1.1V_VDDC_CPU and +1.1V_VDDC by R620 connect

MStar semiconductor	ORG	MStar Semiconductor(SZ),Inc.
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