
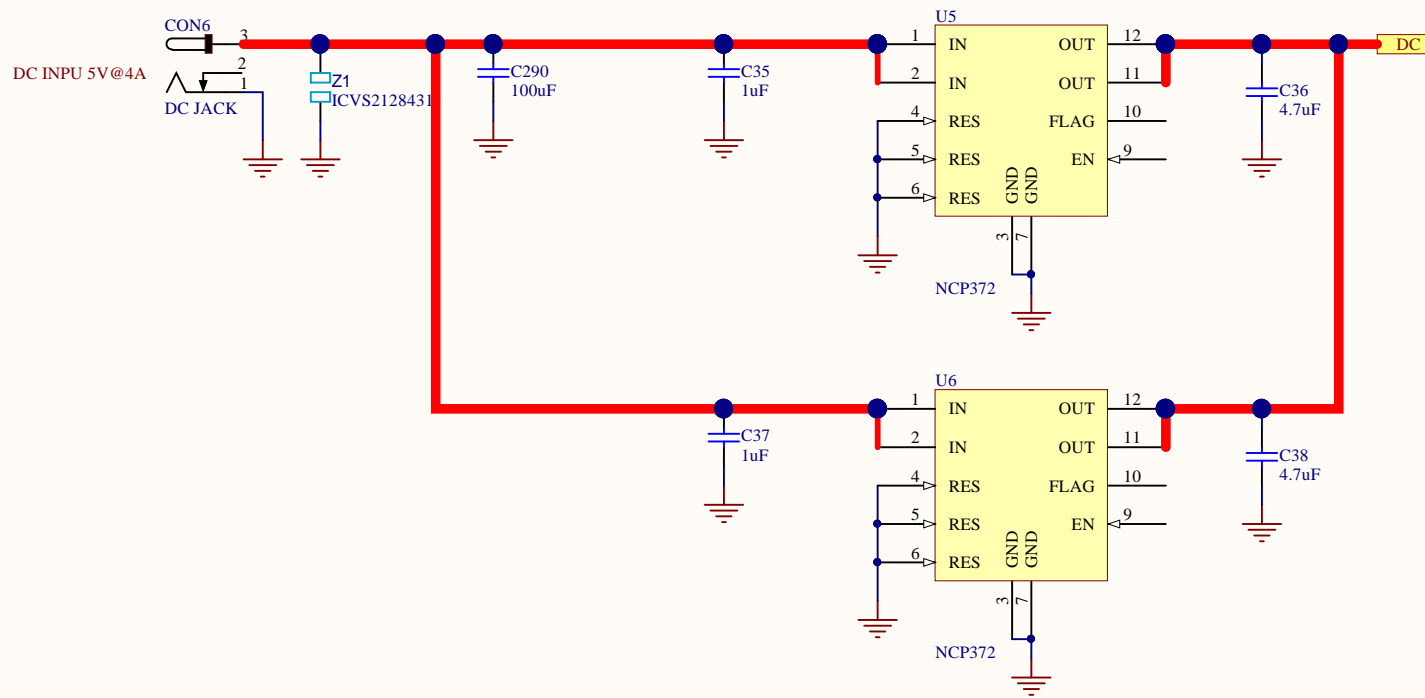
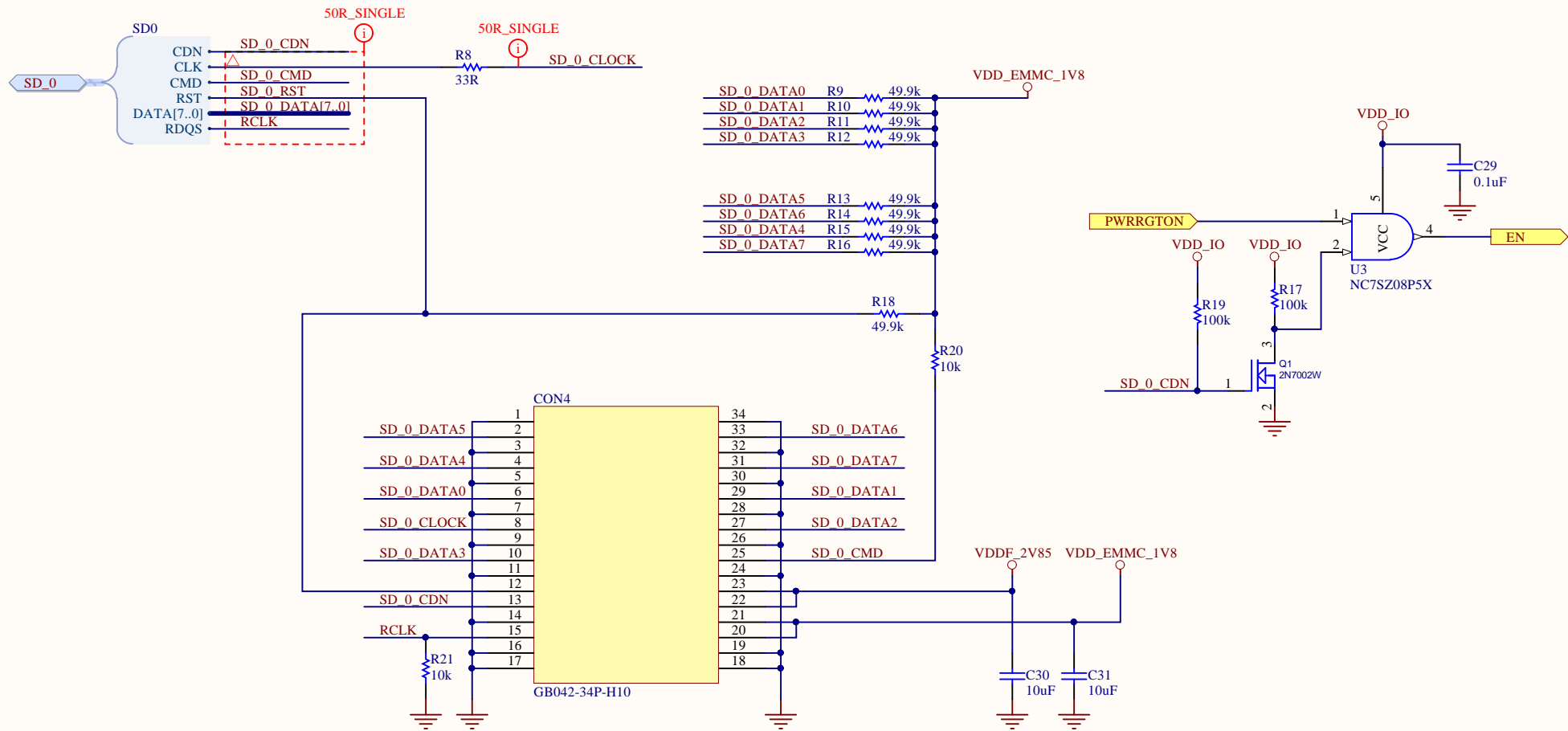


Title CLK			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:30.	Revision0.1		
Date: 2016-07-04	Time: 오후 6:48:21	Sheet 1 of 33	Designed by: ruppi.kim@hardkernel.com	
File: CLK.SchDoc				



Title DC Jack and Protection IC			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:22.	Revision:0.1	Designed by: ruppi.kim@hardkernel.com	
Date: 2016-07-04	Time: 오후 6:48:21	Sheet 2 of 33		
File: CON_DCJACK.SchDoc				



Title eMMC Connector			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:29.	Revision:0.1		
Date: 2016-07-04	Time: 오후 6:48:22	Sheet 3 of 33	Designed by: ruppi.kim@hardkernel.com	
File: CON_EMMC.SchDoc				

1

2

3

4

A

A

B

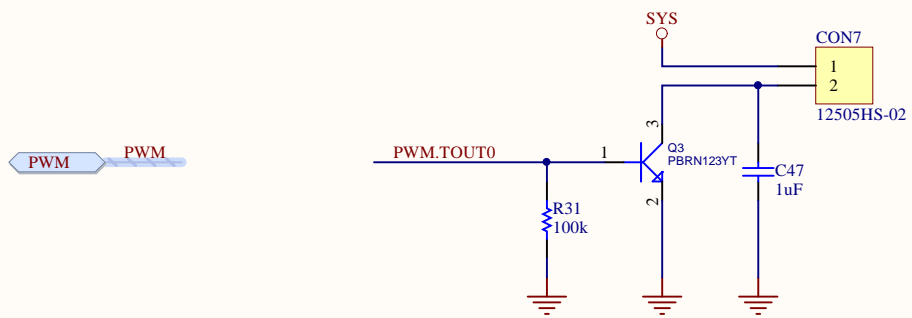
B


C

C

D

D



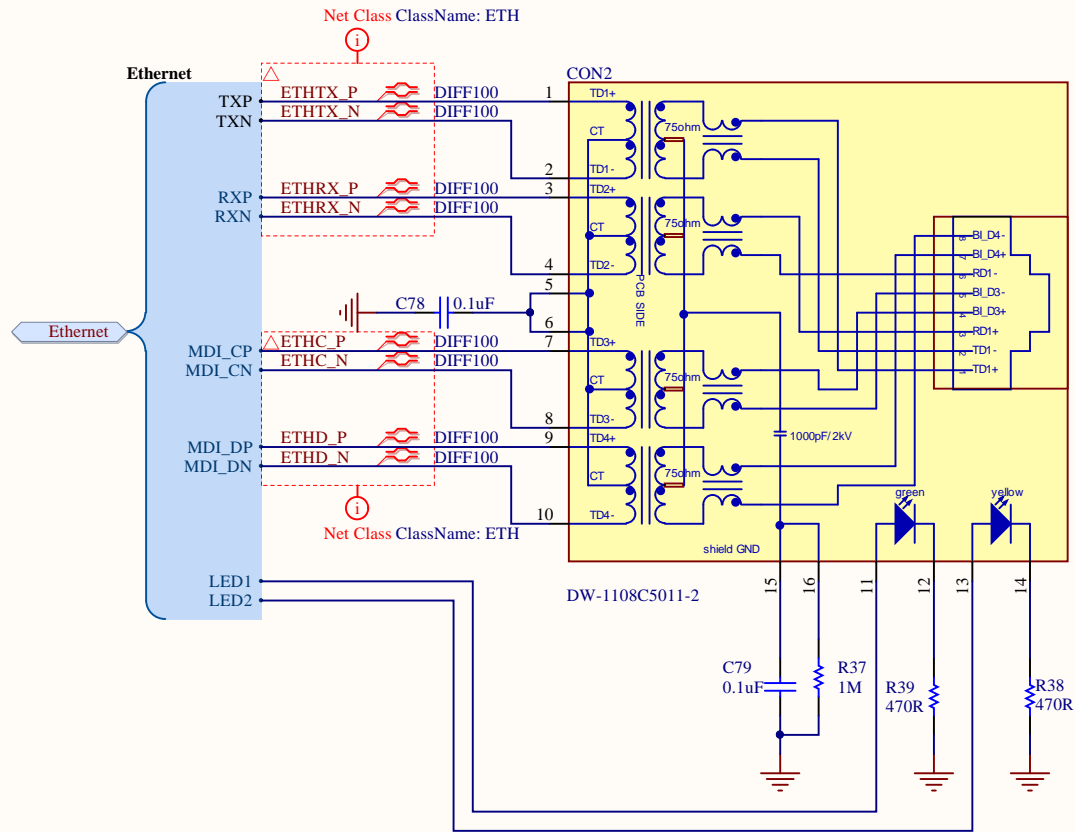
Title FAN Connector			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea Designed by: ruppi.kim@hardkernel.com	
Size: A4	Number:27.	Revision0.1		
Date: 2016-07-04	Time: 오후 6:48:22	Sheet4 of 33		
File: CON_FAN.SchDoc				

1

2

3

4



Title **Giga Ethernet Connector**

Size: A4

Number: 13.

Revision: 0.1

Date: 2016-07-04

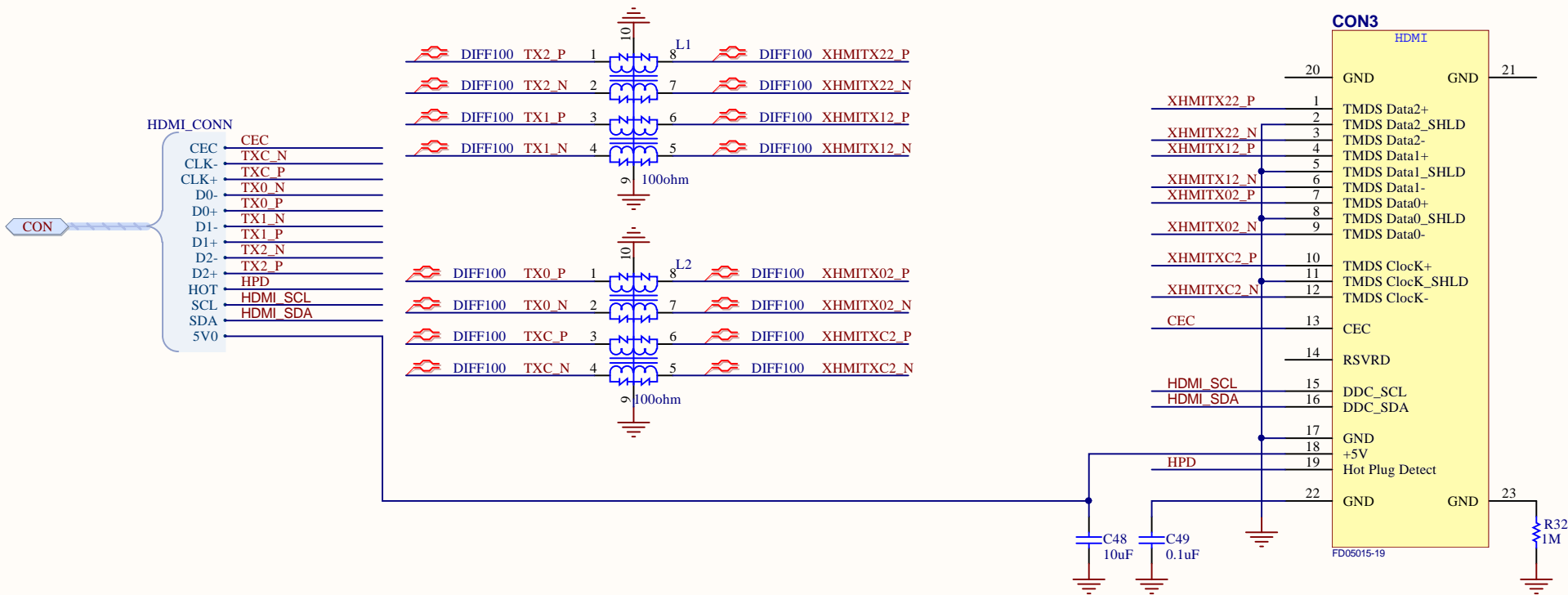
Time: 오후 6:48:22 Sheet 5 of 33

File: CON_GIGA_ETH.SchDoc

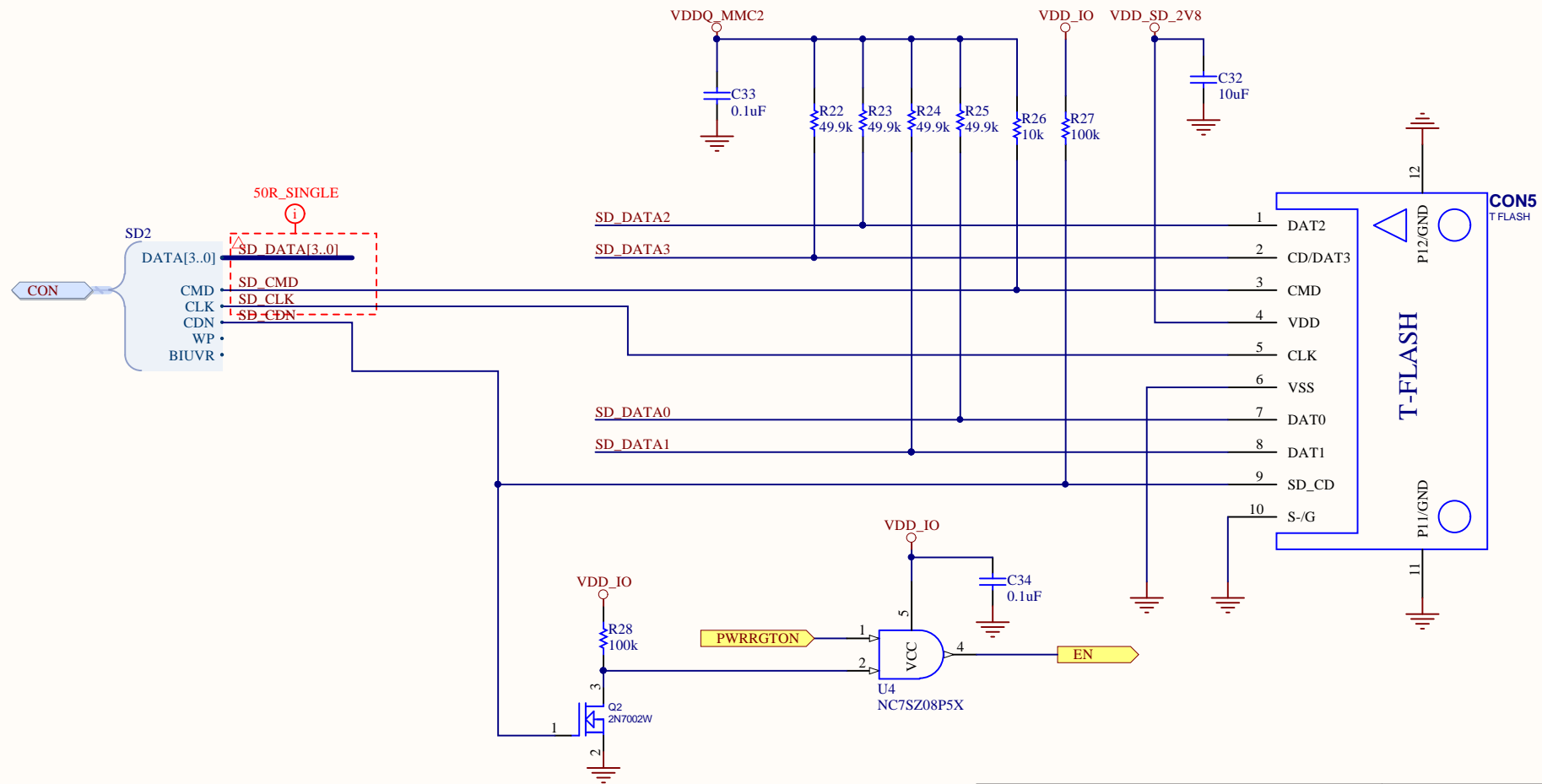
Hardkernel Co.,LTD.
475-1 Mananro
Manangu, Anyang City
Gyeonggido
South Korea

Designed by: ruppi.kim@hardkernel.com





Title HDMI Type A Connector			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:18.	Revision:0.1		
Date: 2016-07-04	Time: 오후 6:48:22	Sheet:6 of 33	Designed by: ruppi.kim@hardkernel.com	
File: CON_HDMI.SchDoc				



Title Micro SD Socket			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:24.	Revision:0.1		
Date: 2016-07-04	Time: 오후 6:48:22	Sheet 7 of 33		
File: CON_MICROSD_HD08-AL00335.SchDoc			Designed by: ruppi kim@hardkernel.com	

1

2

3

4

A

A

B

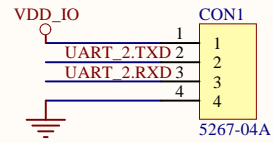
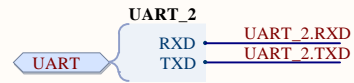
B


C

C

D

D



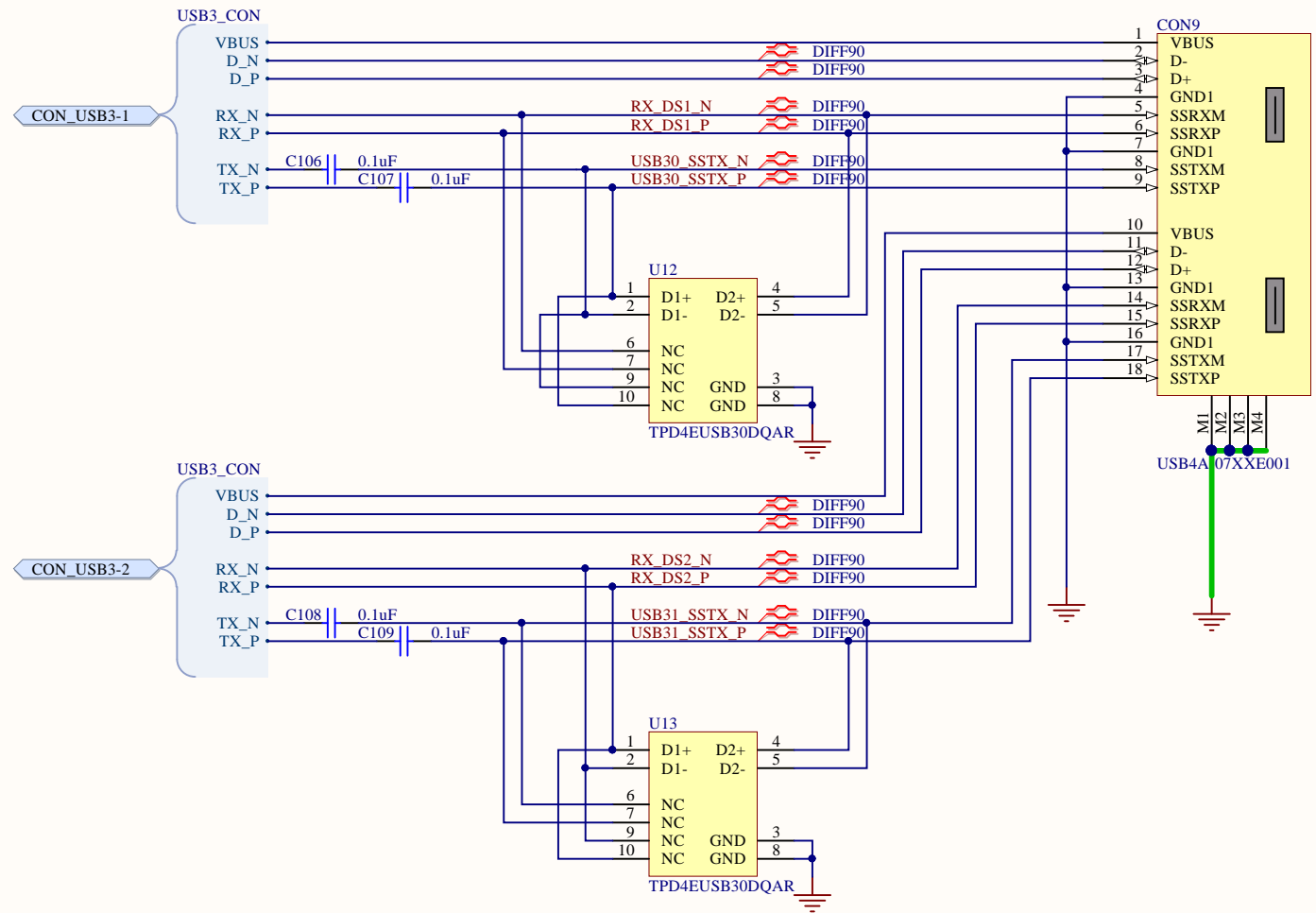
Title UART Connector			<i>Hardkernel Co.,LTD.</i> 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea 
Size: A4	Number:23.	Revision:0.1	
Date: 2016-07-04	Time: 오후 6:48:22	Sheet 8 of 33	
File: CON_UART.SchDoc			
Designed by: ruppi.kim@hardkernel.com			

1

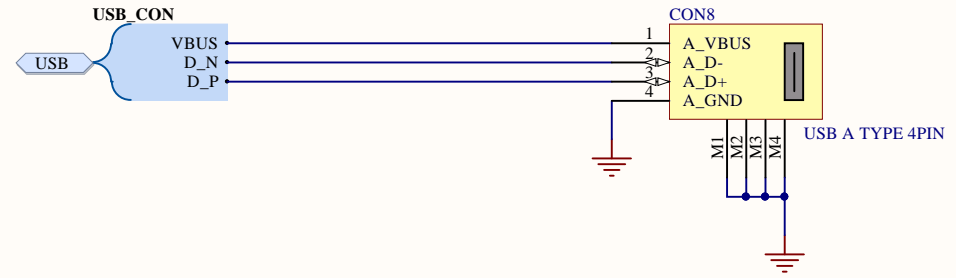
2


3

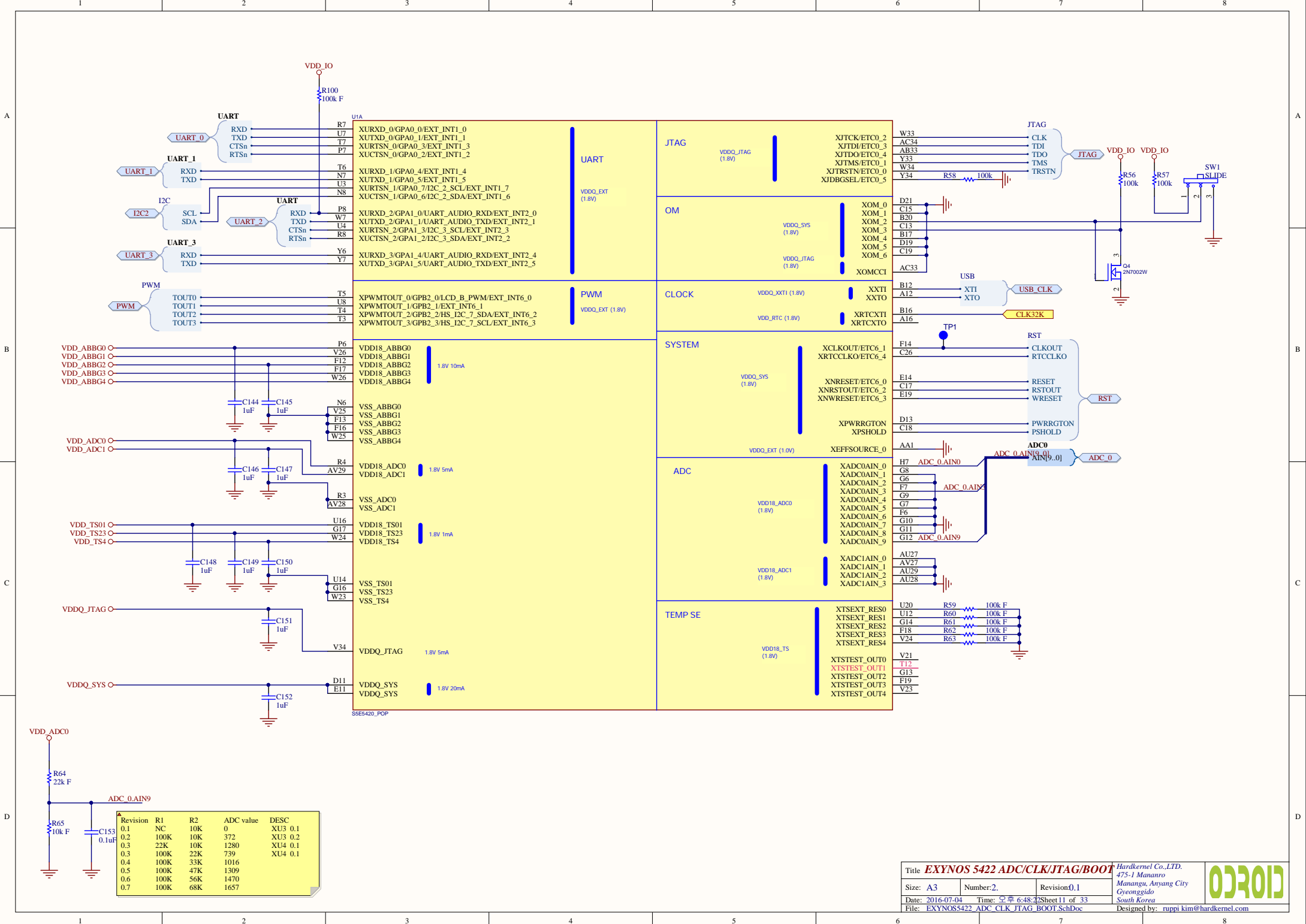
4



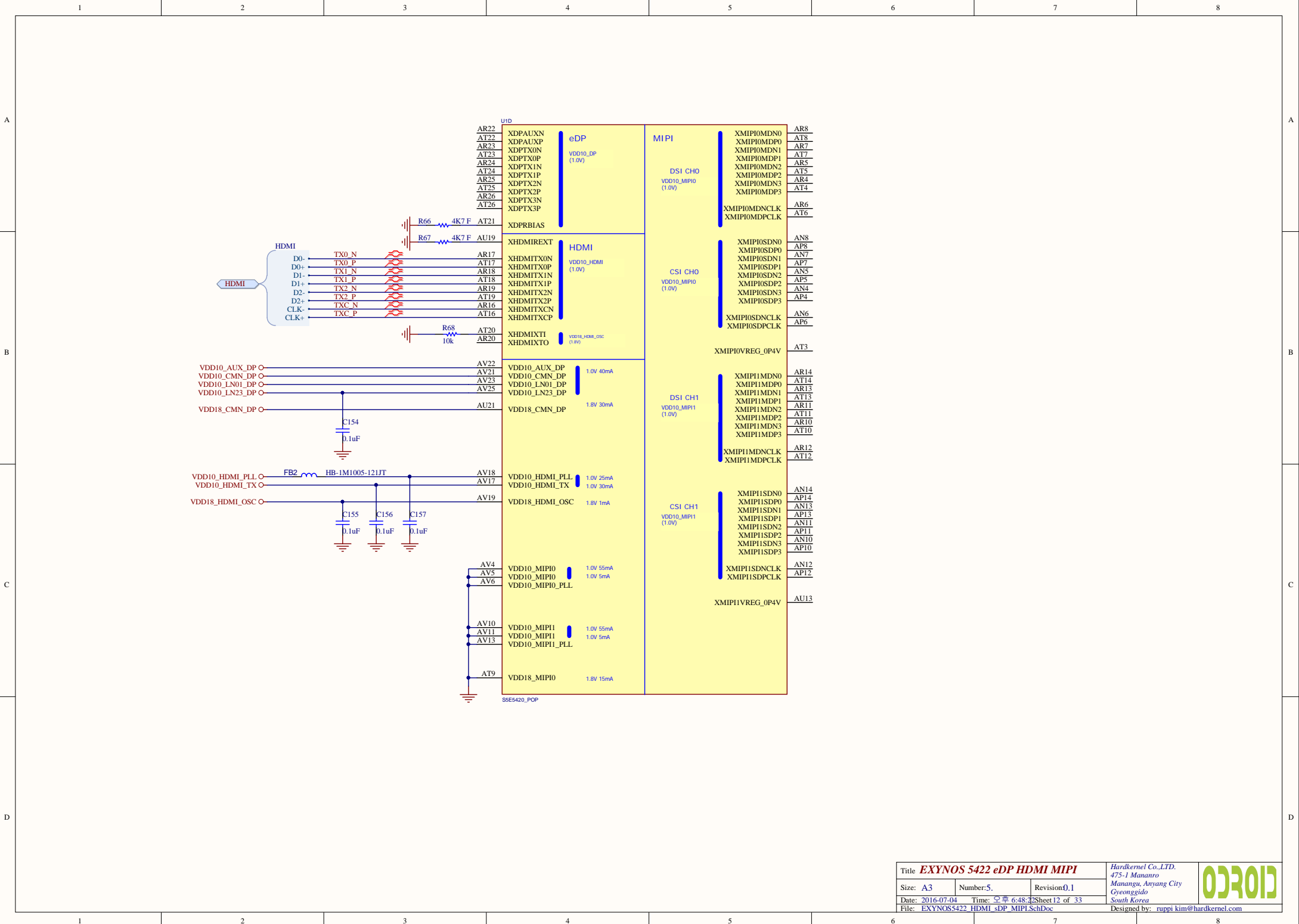
Title USB 3.0 Type A Connector			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:15.	Revision:0.1		
Date: 2016-07-04	Time: 오후 6:48:22	Sheet9 of 33		
File: CON_USB3_DUAL_RA.SchDoc			Designed by: ruppi kim@hardkernel.com	

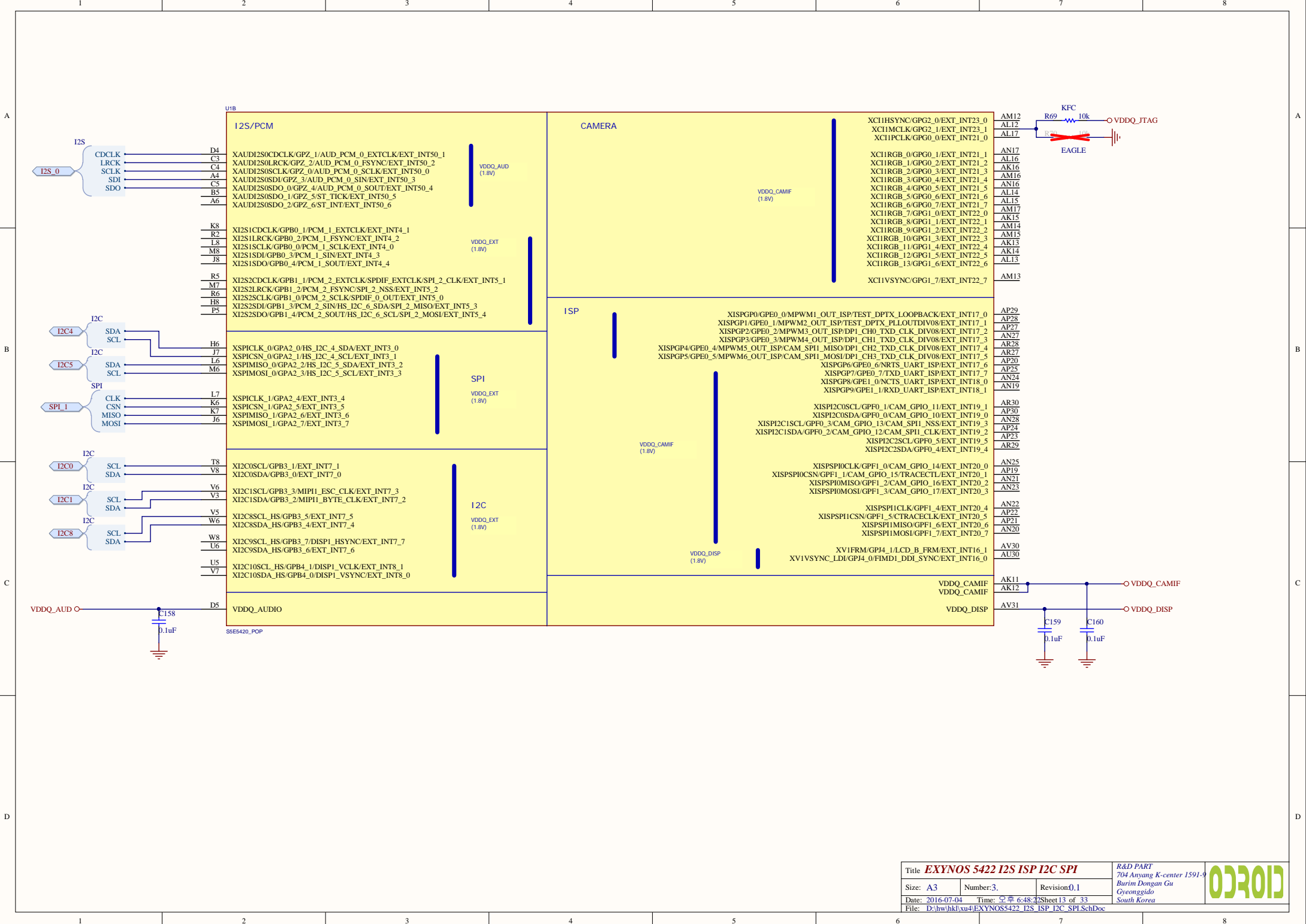


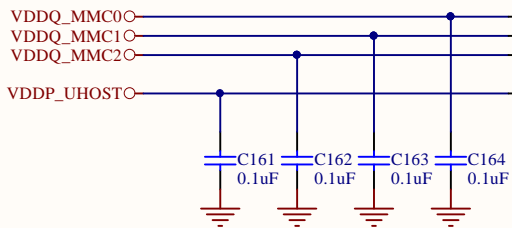
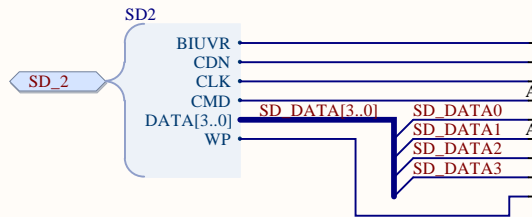
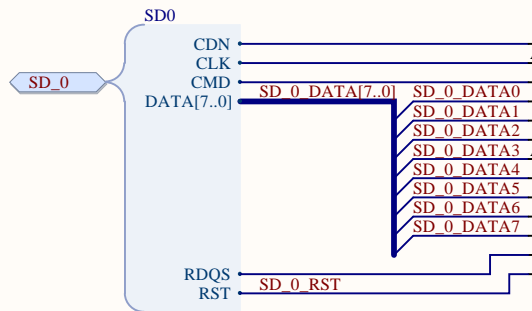
Title USB 2.0 Type A Connector			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea Designed by: ruppi.kim@hardkernel.com	
Size: A4	Number:21.	Revision:0.1		
Date: 2016-07-04	Time: 오후 6:48:22	Sheet 10 of 33		
File: CON_USB_RA.SchDoc				



Revision	R1	R2	ADC value	DESC
0.1	NC	10K	0	XU3 0.1
0.2	100K	10K	372	XU3 0.2
0.3	22K	10K	1280	XU4 0.1
0.4	100K	22K	739	XU4 0.1
0.5	100K	33K	1016	
0.6	100K	47K	1309	
0.7	100K	56K	1470	
0.8	100K	68K	1657	







U1F

AK6 XMMC0CDN/GPC0_2/EXT_INT9_2
 AL10 XMMC0CLK/GPC0_0/EXT_INT9_0
 AM9 XMMC0CMD/GPC0_1/EXT_INT9_1
 AG2 XMMC0DATA_0/GPC0_3/EXT_INT9_3
 SD_0_DATA0 AG1 XMMC0DATA_1/GPC0_4/EXT_INT9_4
 SD_0_DATA1 AG1 XMMC0DATA_2/GPC0_5/EXT_INT9_5
 SD_0_DATA2 AJ8 XMMC0DATA_3/GPC0_6/EXT_INT9_6
 SD_0_DATA3 AL11 XMMC0DATA_4/GPC3_0/EXT_INT12_0
 SD_0_DATA4 AG3 XMMC0DATA_5/GPC3_1/EXT_INT12_1
 SD_0_DATA5 AF3 XMMC0DATA_6/GPC3_2/EXT_INT12_2
 SD_0_DATA6 AK7 XMMC0DATA_7/GPC3_3/EXT_INT12_3
 SD_0_DATA7 AJ9 XMMC0RDQS/GPC0_7/EXT_INT9_7
 AK9 XMMC0RESETOUT/GPD1_0/EXT_INT14_0
 AE3

~~AC3~~ XMMC1BEPW/GPD1_2/EXT_INT14_2
~~AK10~~ XMMC1CDN/GPC1_2/EXT_INT10_2
~~AD2~~ XMMC1CLK/GPC1_0/EXT_INT10_0
~~AD1~~ XMMC1CMD/GPC1_1/EXT_INT10_1
~~AJ10~~ XMMC1DATA_0/GPC1_3/EXT_INT10_3
~~AH8~~ XMMC1DATA_1/GPC1_4/EXT_INT10_4
~~AJ5~~ XMMC1DATA_2/GPC1_5/EXT_INT10_5
~~AJ6~~ XMMC1DATA_3/GPC1_6/EXT_INT10_6
~~AC2~~ XMMC1DATA_4/GPD1_4/EXT_INT14_4
~~AC1~~ XMMC1DATA_5/GPD1_5/EXT_INT14_5
~~AB2~~ XMMC1DATA_6/GPD1_6/EXT_INT14_6
~~AH5~~ XMMC1DATA_7/GPD1_7/EXT_INT14_7
~~AH6~~ XMMC1INTN/GPD1_1/EXT_INT14_1
~~AD3~~ XMMC1RDQS/GPC1_7/EXT_INT10_7
~~AB3~~ XMMC1WP/GPD1_3/EXT_INT14_3

AM6 XMMC2BIUVR/GPC4_1/EXT_INT13_1
 AL6 XMMC2CDN/GPC2_2/EXT_INT11_2
 AM7 XMMC2CLK/GPC2_0/EXT_INT11_0
 AM11 XMMC2CMD/GPC2_1/EXT_INT11_1
 AM5 XMMC2DATA_0/GPC2_3/EXT_INT11_3
 SD_DATA0 AM10 XMMC2DATA_1/GPC2_4/EXT_INT11_4
 SD_DATA1 AM10 XMMC2DATA_2/GPC2_5/EXT_INT11_5
 SD_DATA2 AN9 XMMC2DATA_3/GPC2_6/EXT_INT11_6
 SD_DATA3 AL5 XMMC2WP/GPC4_0/EXT_INT13_0
 AK5

VDDQ_MMC0 1.8V 150mA
 VDDQ_MMC1 1.8V 150mA
 VDDQ_MMC2 2.8V 250mA
 VDDP_MMC 1.8V 50mA

SSE5420_POP

MMC

CH0

VDDQ_MMC0 (1.8V)

CH1

VDDQ_MMC1 (1.8V)

CH2

VDDQ_MMC2 (1.8V/2.8V)

UFS

VDDQ_EXT (1.8V)

VDD_RX_UFS (1.0V)

VDD_TX_UFS (1.0V)

VDD_UFS_OSC (1.8V)

VDD_CMN_UFS (1.0V)

1.0V 60mA

1.0V 60mA

1.0V 60mA

1.8V 5mA

1.8V 1mA

XUFSNRESET/ETC6_7

XUFSRXDN0

XUFSRXDP0

XUFSRXDN1

XUFSRXDP1

XUFSTXDN0

XUFSTXDP0

XUFSTXDN1

XUFSTXDP1

XUFSXTI

XUFSXTO

XUFSREFCLK

XUFSREFCLK_OUT

XUFSREXT

VDD_CMN_UFS

VDD_RX_UFS

VDD_TX_UFS

VDD_UFS_OSC

VDDH_CMN_UFS

Y3

AJ4

AJ3

AH4

AH3

AL4

AL3

AM4

AM3

AP1

AN1

AK4

AK3

AH2

AK1

AL1

AJ1

AN2

AK2

VDD_UFS_OSC

Title EXYNOS 5422 MMC UFS

Size: A4 Number:7. Revision:0.1

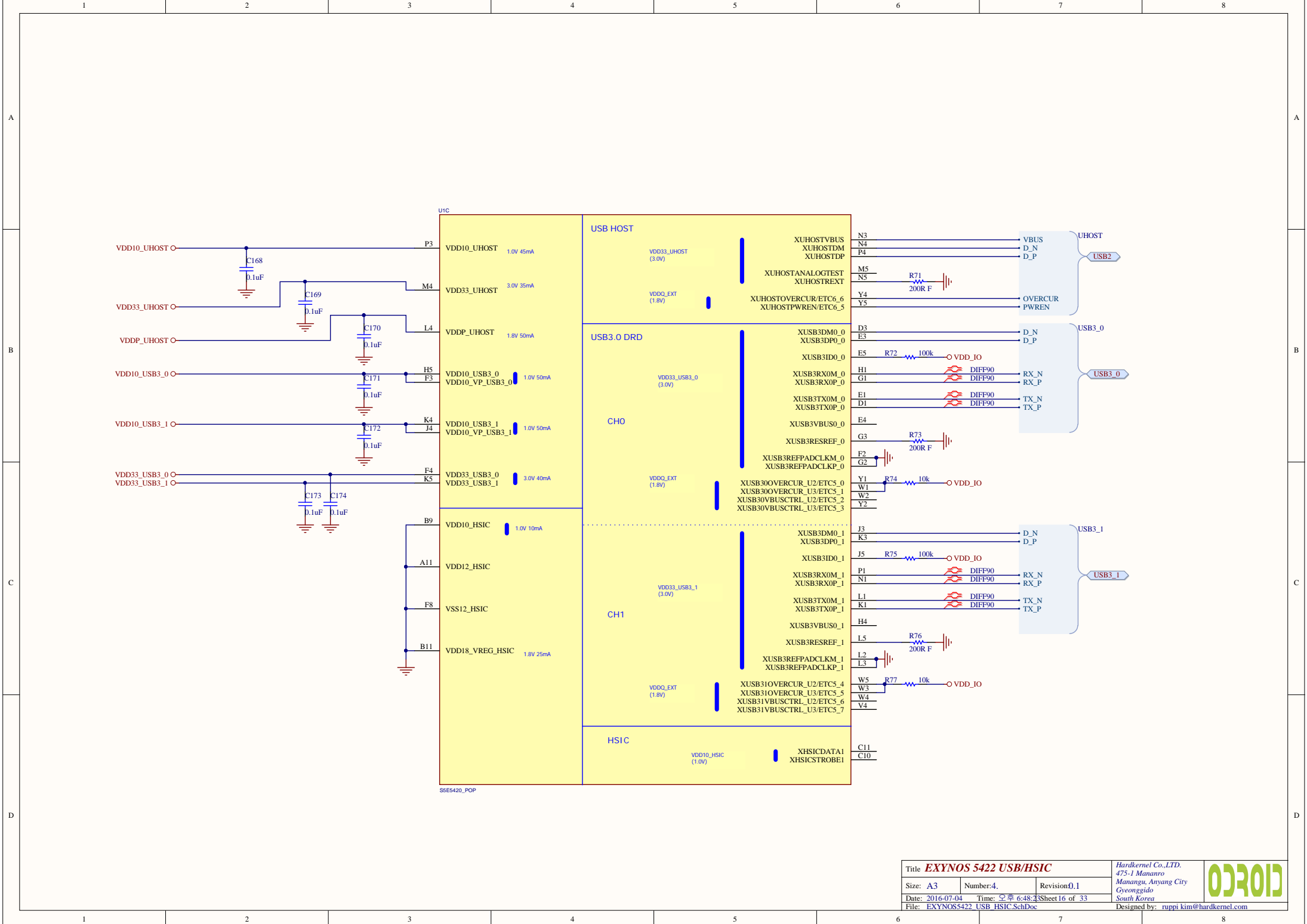
Date: 2016-07-04 Time: 오후 6:48:22 Sheet 14 of 33

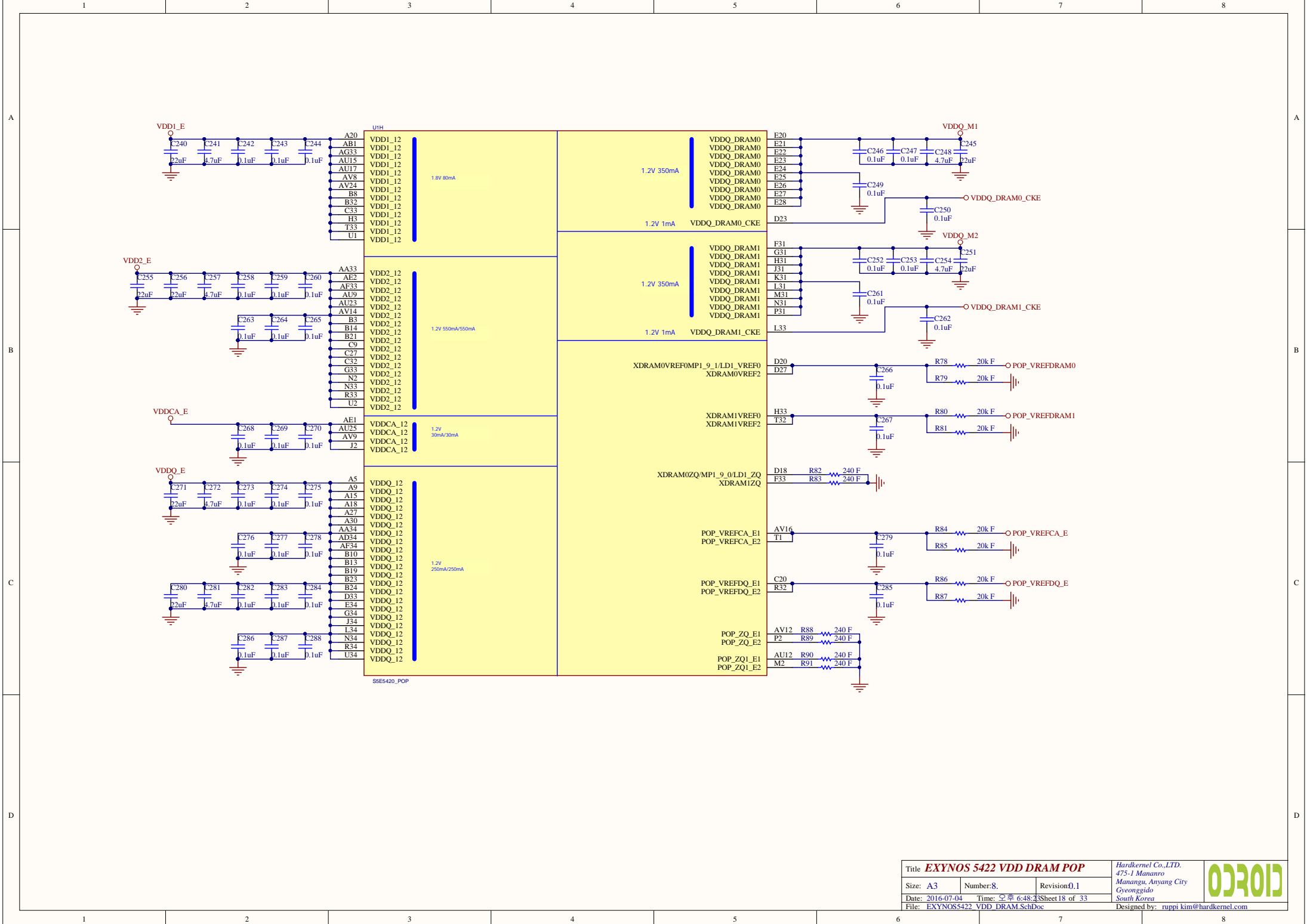
File: EXYNOS5422_MMC_UFS.SchDoc

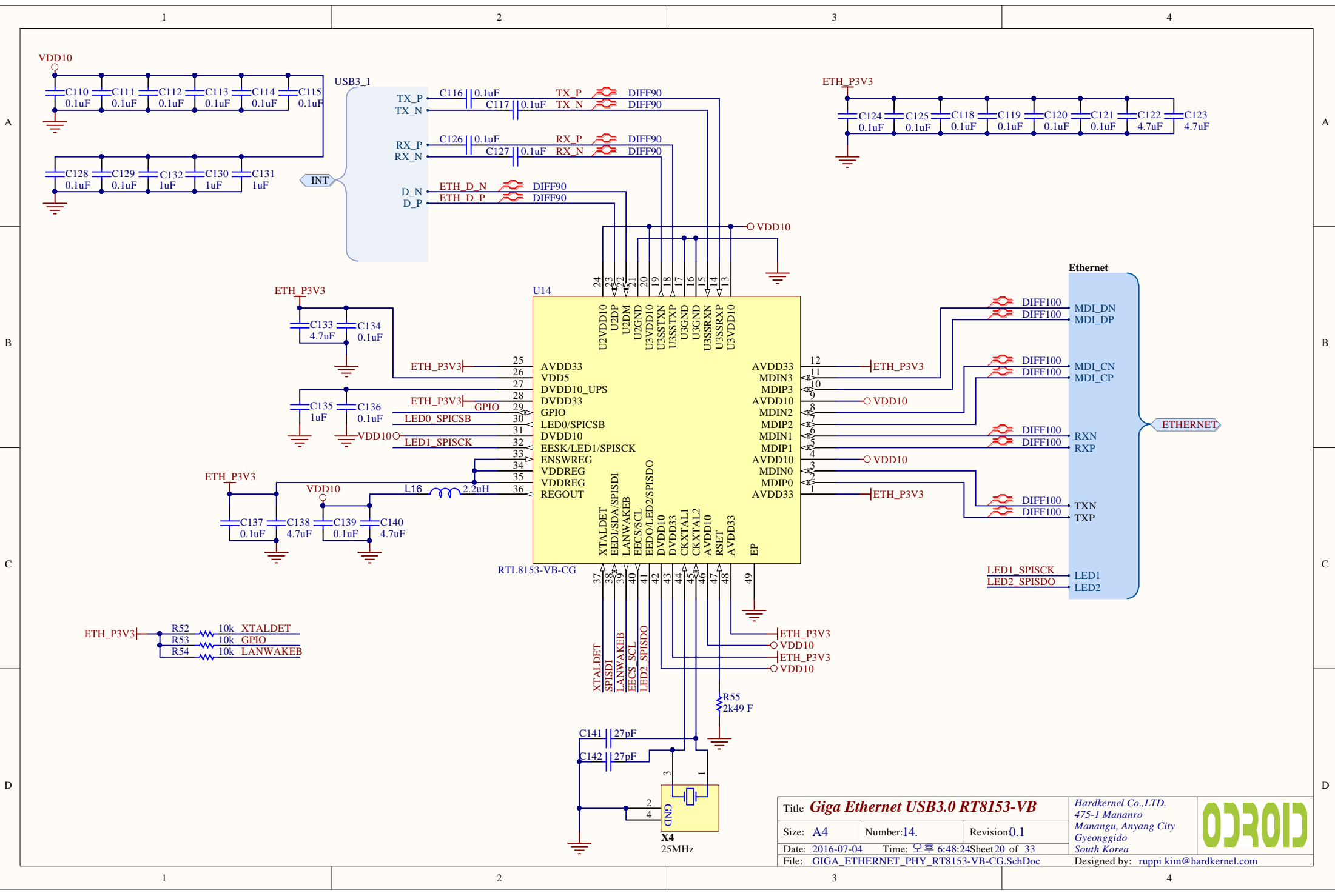
Hardkernel Co.,LTD.
475-1 Mananro
Manangu, Anyang City
Gyeonggido
South Korea

Designed by: ruppi.kim@hardkernel.com









Title **Giga Ethernet USB3.0 RT8153-VB**

Size: A4 Number:14. Revision:0.1

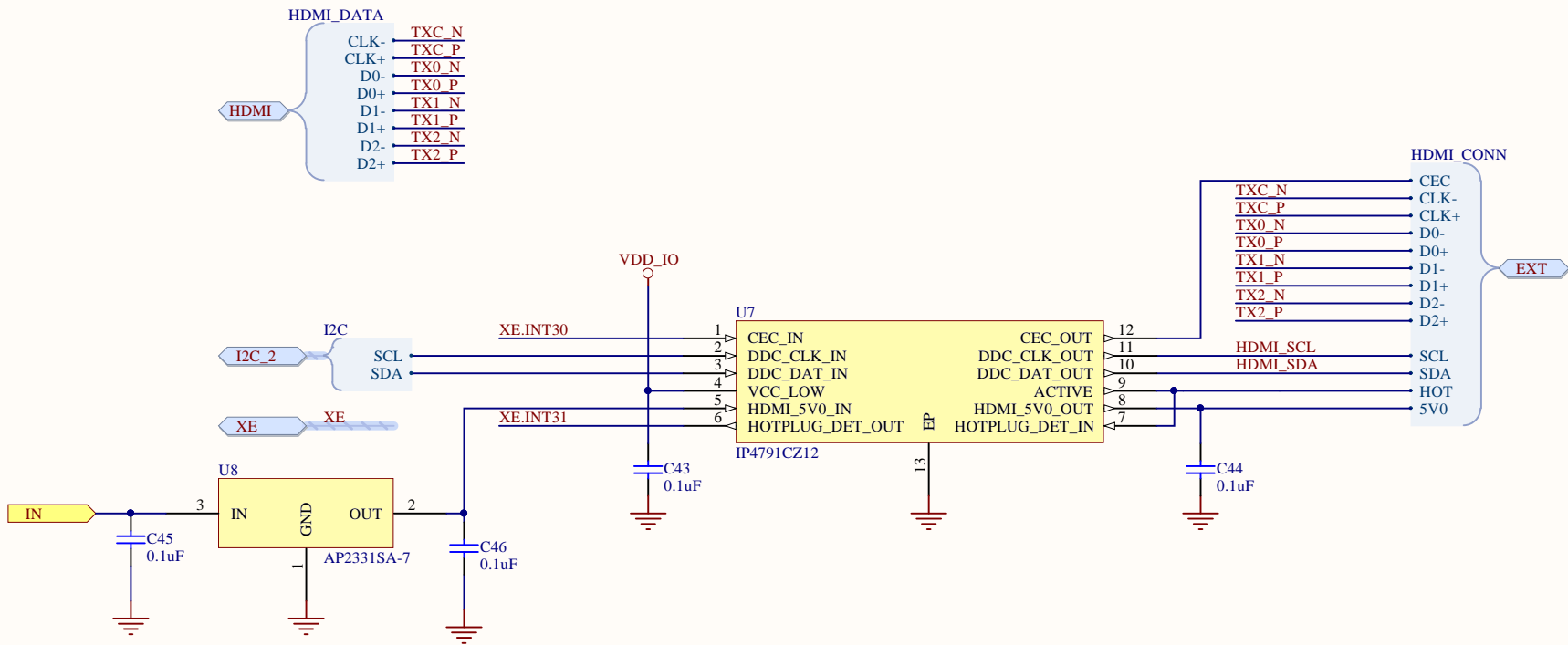
Date: 2016-07-04 Time: 오후 6:48:24 Sheet 20 of 33

File: GIGA_ETHERNET_PHY_RT8153-VB-CG.SchDoc

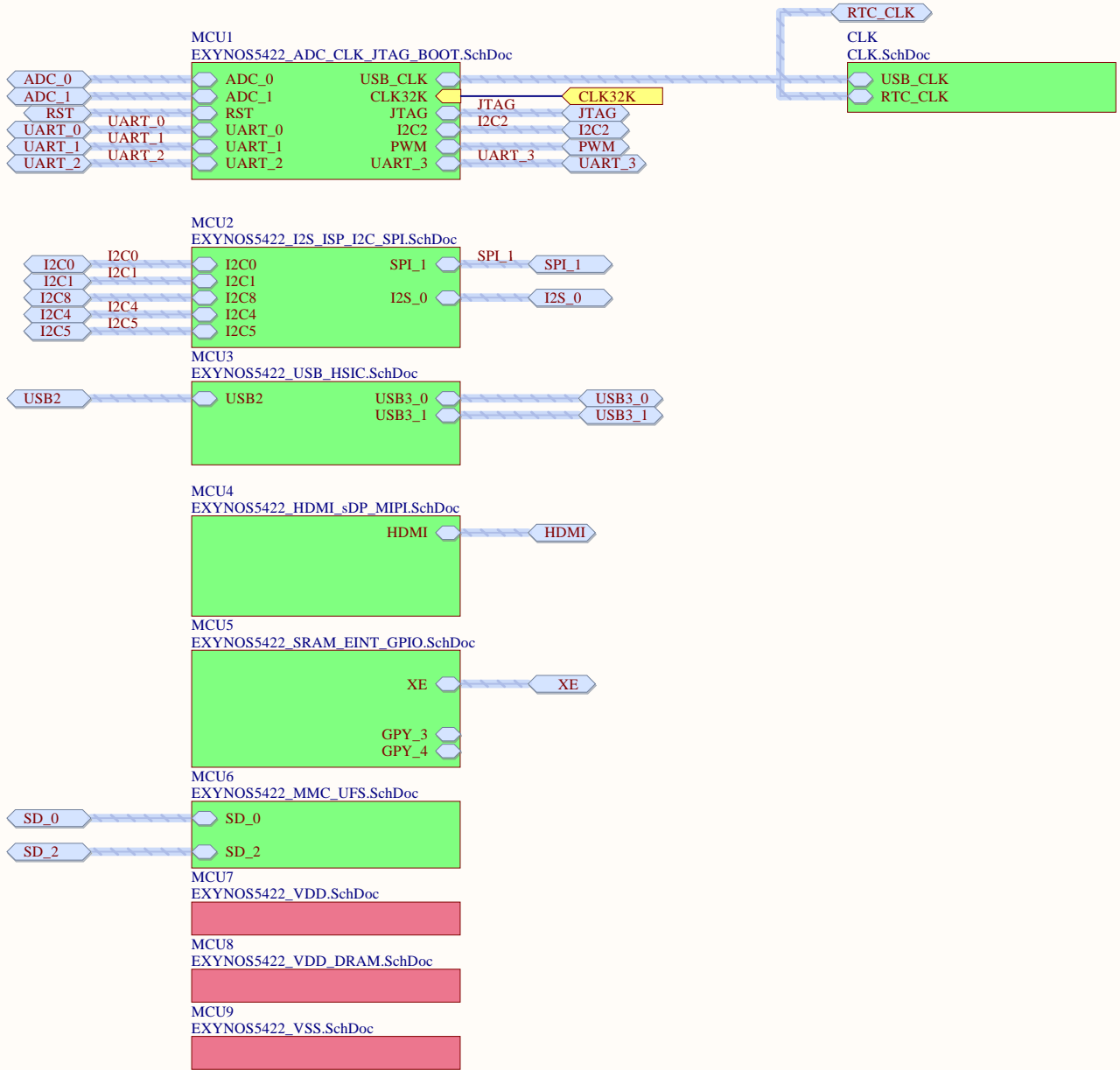
Hardkernel Co.,LTD.
475-1 Manangu
Manangu, Anyang City
Gyeonggido
South Korea



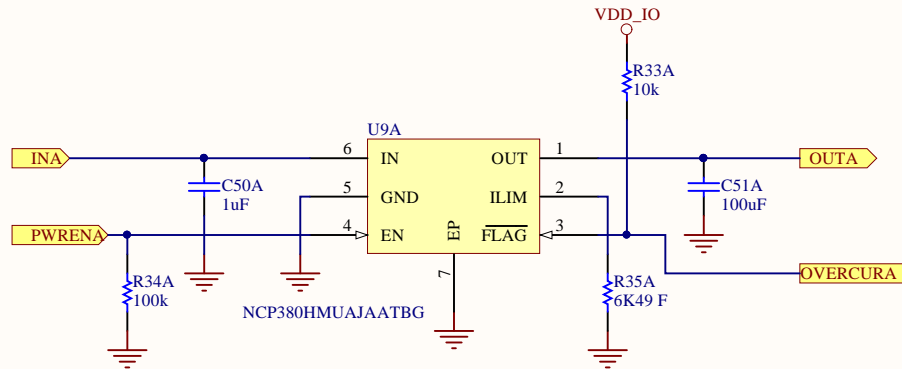
Designed by: ruppi.kim@hardkernel.com




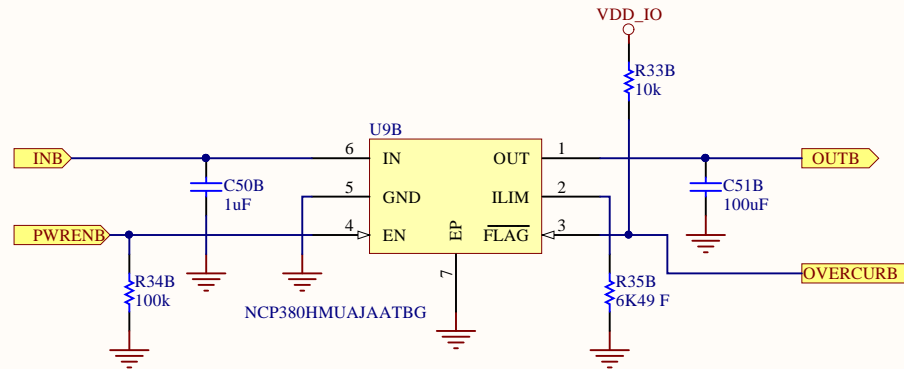
Title HDMI I2C			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:20.	Revision:0.1		
Date: 2016-07-04	Time: 오후 6:48:24	Sheet:21 of 33	Designed by: ruppi kim@hardkernel.com	
File: HDMI_I2C.SchDoc				




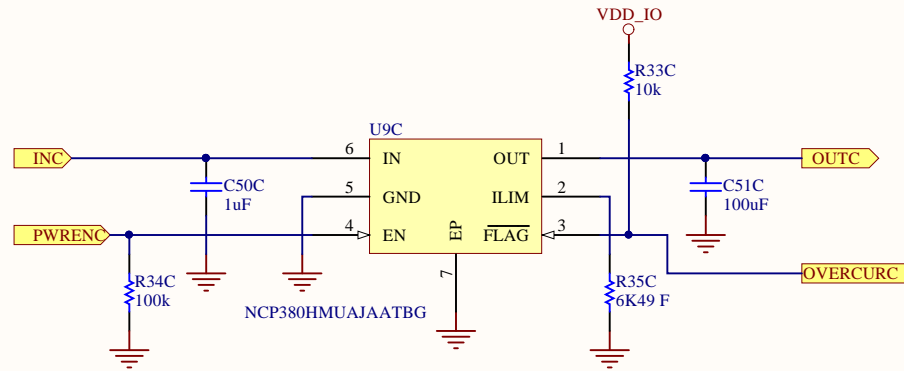
Title MCU EXYNOS5422			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number: 1.	Revision: 0.1		
Date: 2016-07-04	Time: 오후 6:48:24		Sheet 22 of 33	
File: MCU_EXYNOS5422.SchDoc			Designed by: ruppi kim@hardkernel.com	




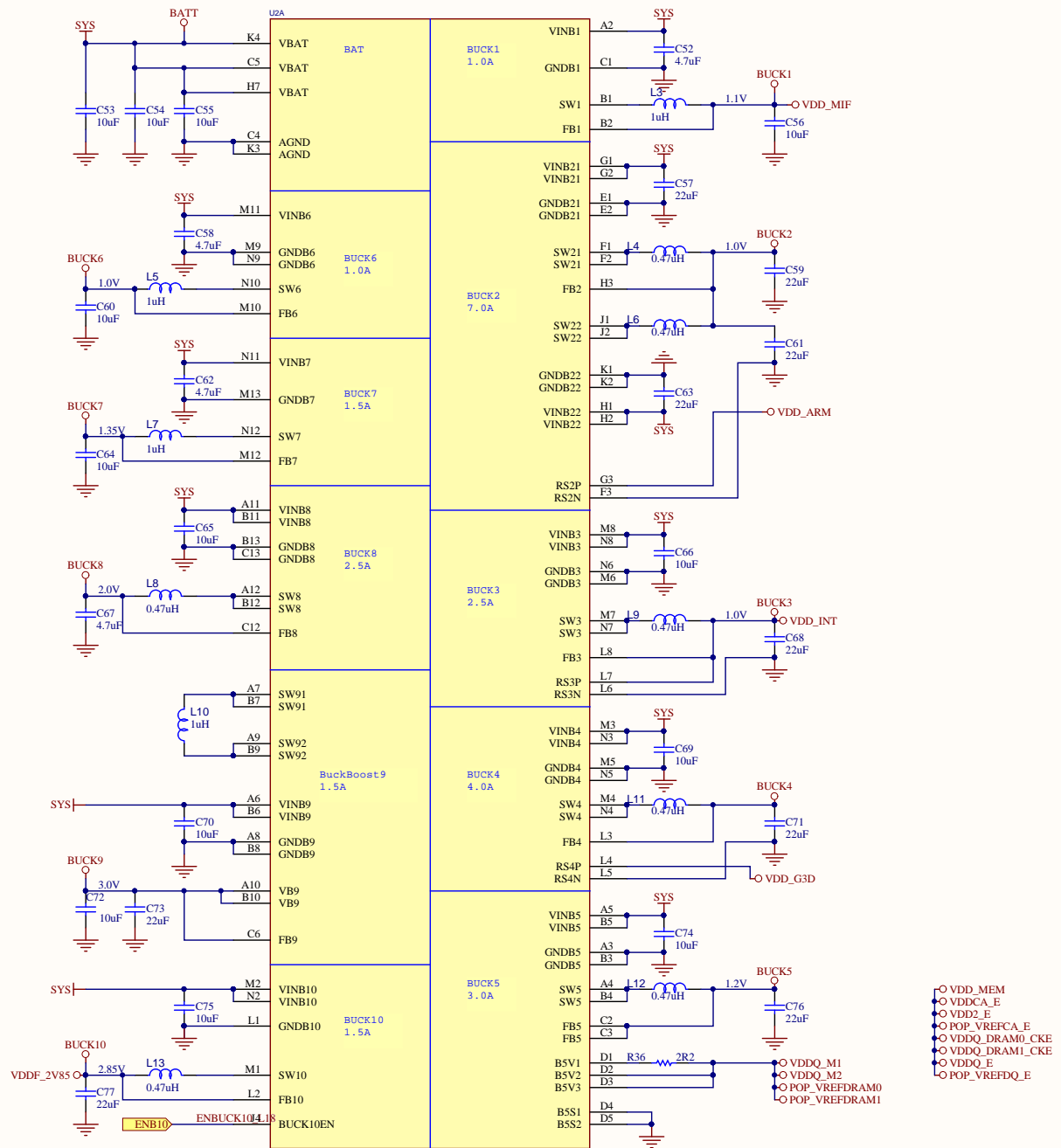
Title USB HOST Power Switch			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:16.	Revision:0.1		
Date: 2016-07-04	Time: 오후 6:48:24 Sheet 23 of 33		Designed by: ruppi.kim@hardkernel.com	
File: NCP380HM.SchDoc				



Title USB HOST Power Switch			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:16.1.1	Revision0.1		
Date: 2016-07-04	Time: 오후 6:48:24Sheet 24 of 33		Designed by: ruppi kim@hardkernel.com	
File: NCP380HM.SchDoc				

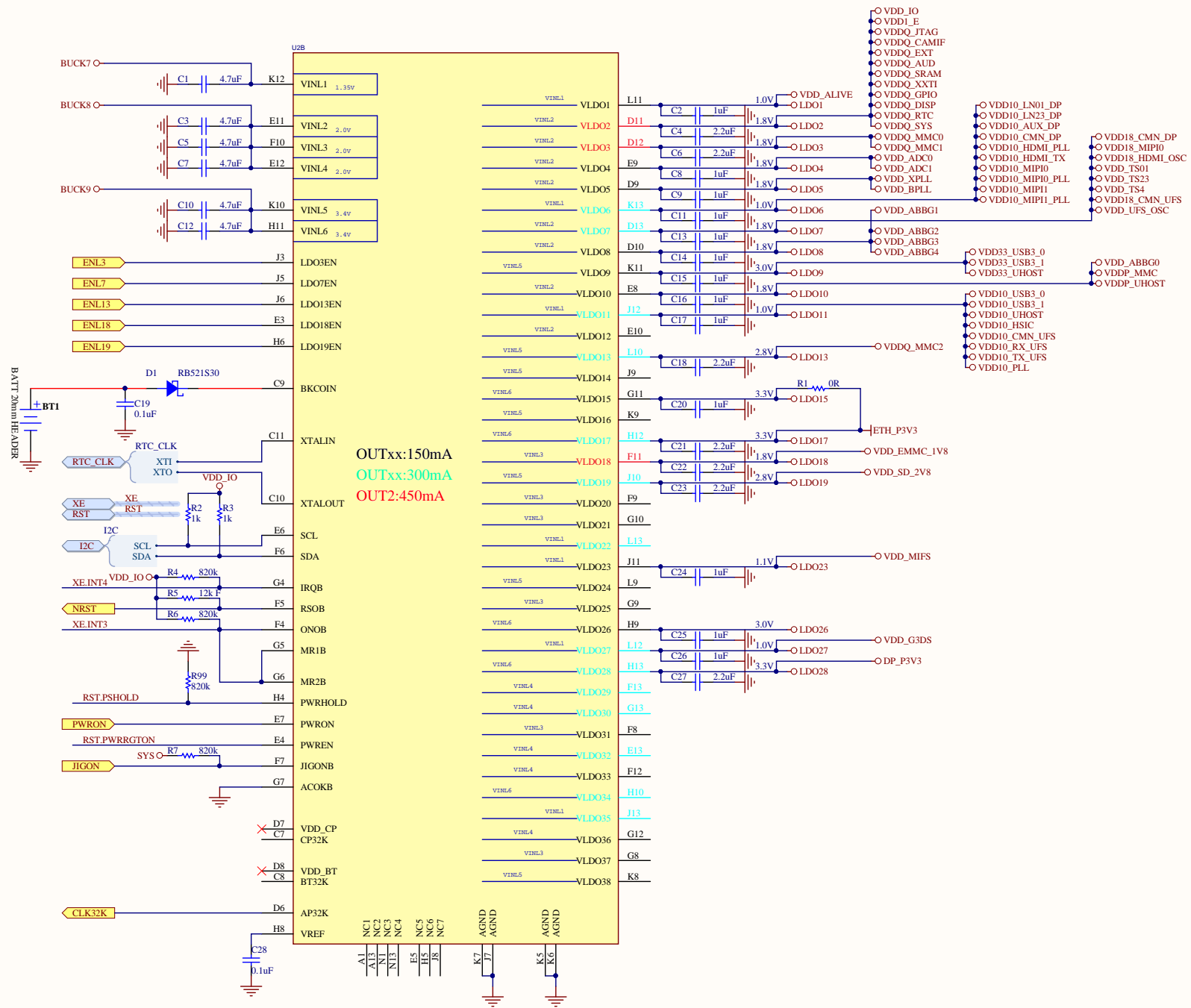


Title USB HOST Power Switch			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:16.2.1	Revision0.1		
Date: 2016-07-04	Time: 오후 6:48:24	Sheet25 of 33	Designed by: ruppi.kim@hardkernel.com	
File: NCP380HM.SchDoc				



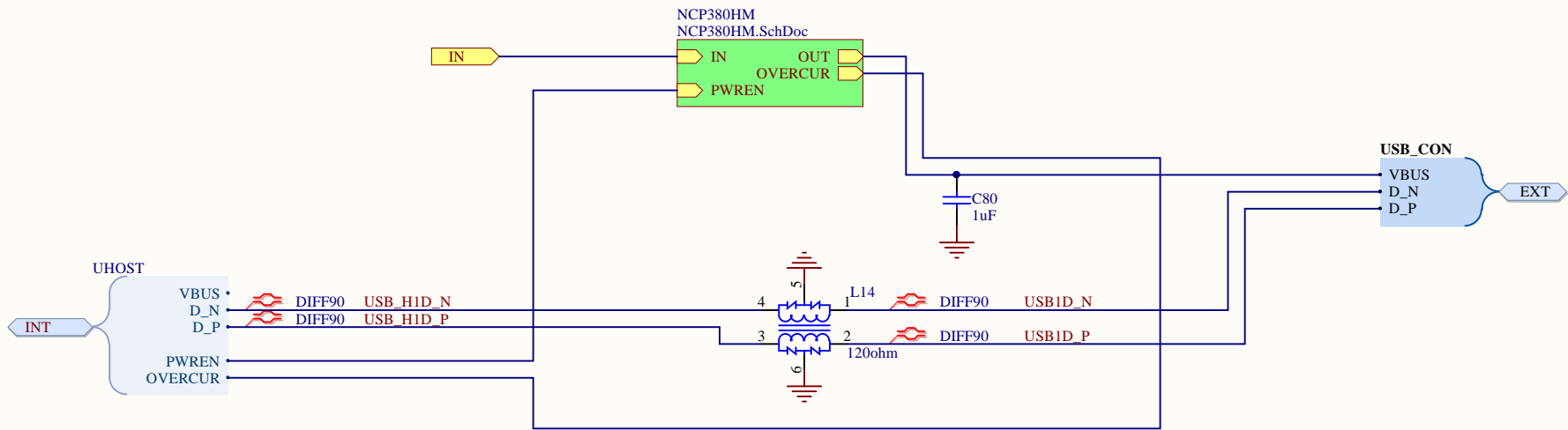
S2MPS11B_4TH
 I2C ADDR : 0xCC(P#) 0x0C(RTC)

- VDD_MEM
- VDDCA_E
- VDD2_E
- POP_VREFCA_E
- VDDQ_DRAM0_CKE
- VDDQ_DRAM1_CKE
- VDDQ_E
- POP_VREFDQ_E

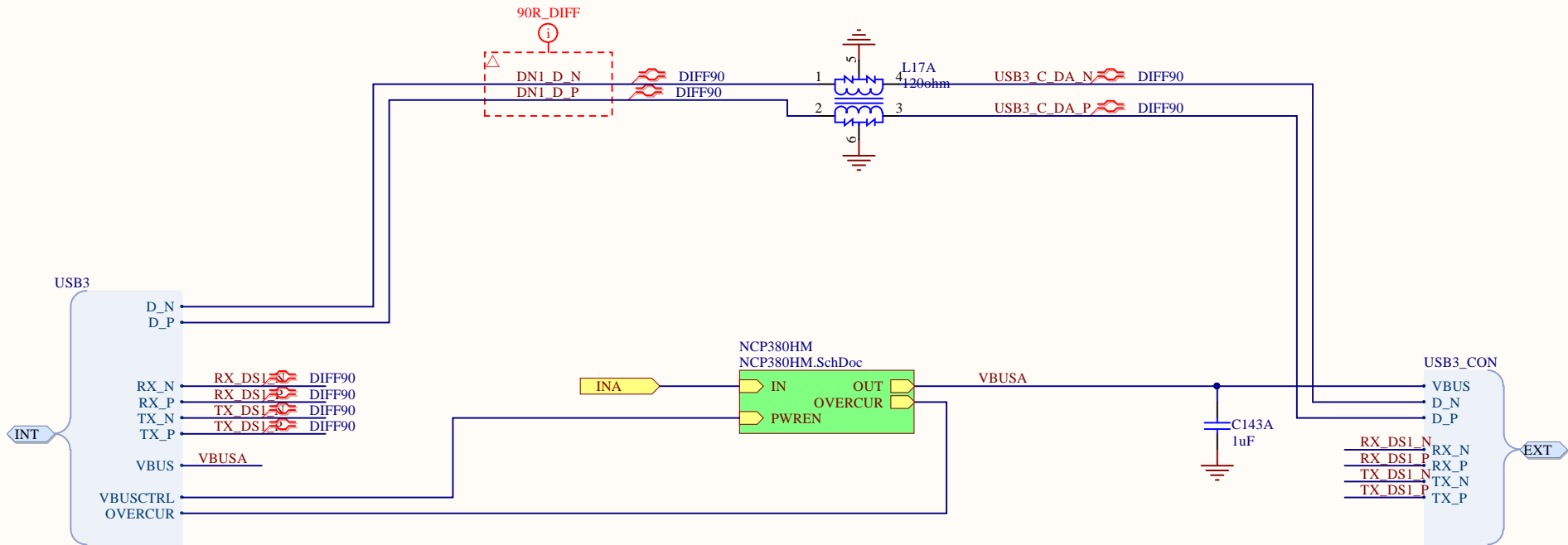


OUTxx:150mA
 OUTxx:300mA
 OUT2:450mA

S2MPS11X_8
 I2C ADDR : 0xCC(FM) 0x0C(RTC)

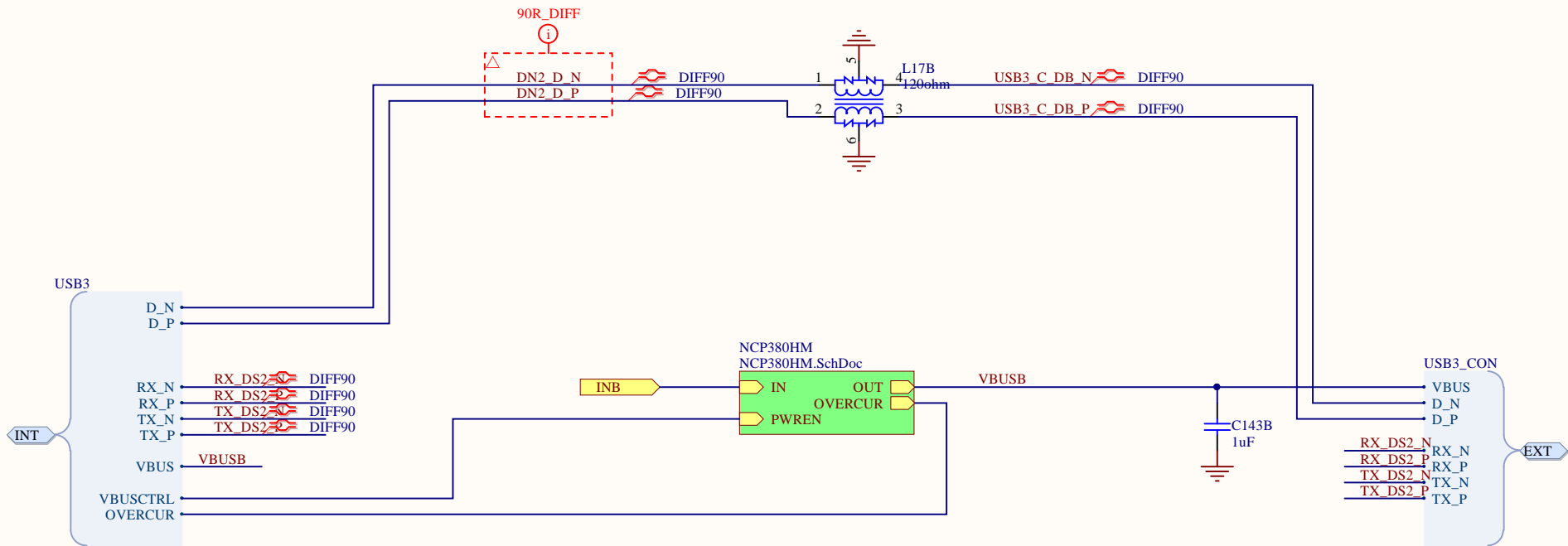


Title USB HOST PWR SW			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:28.	Revision:0.1		
Date: 2016-07-04	Time: 오후 6:48:24	Sheet:28 of 33		
File: USB2_HOST_PWR_SW.SchDoc			Designed by: ruppi kim@hardkernel.com	

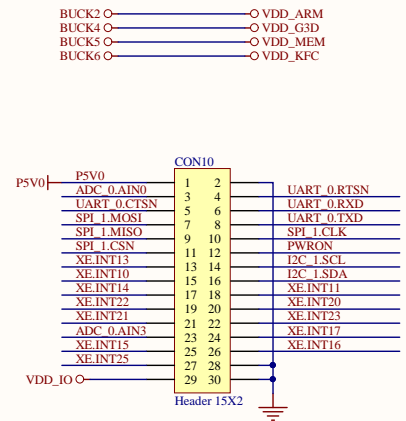
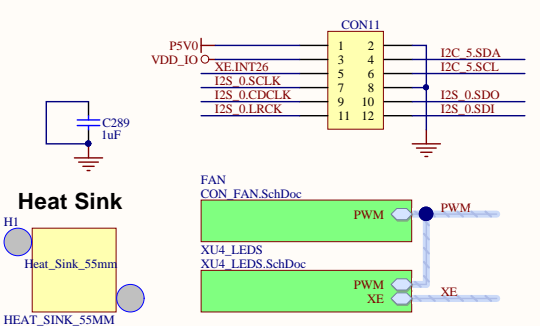
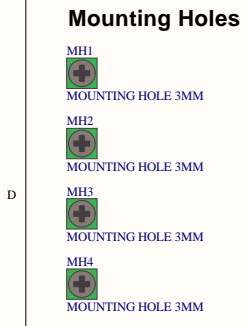
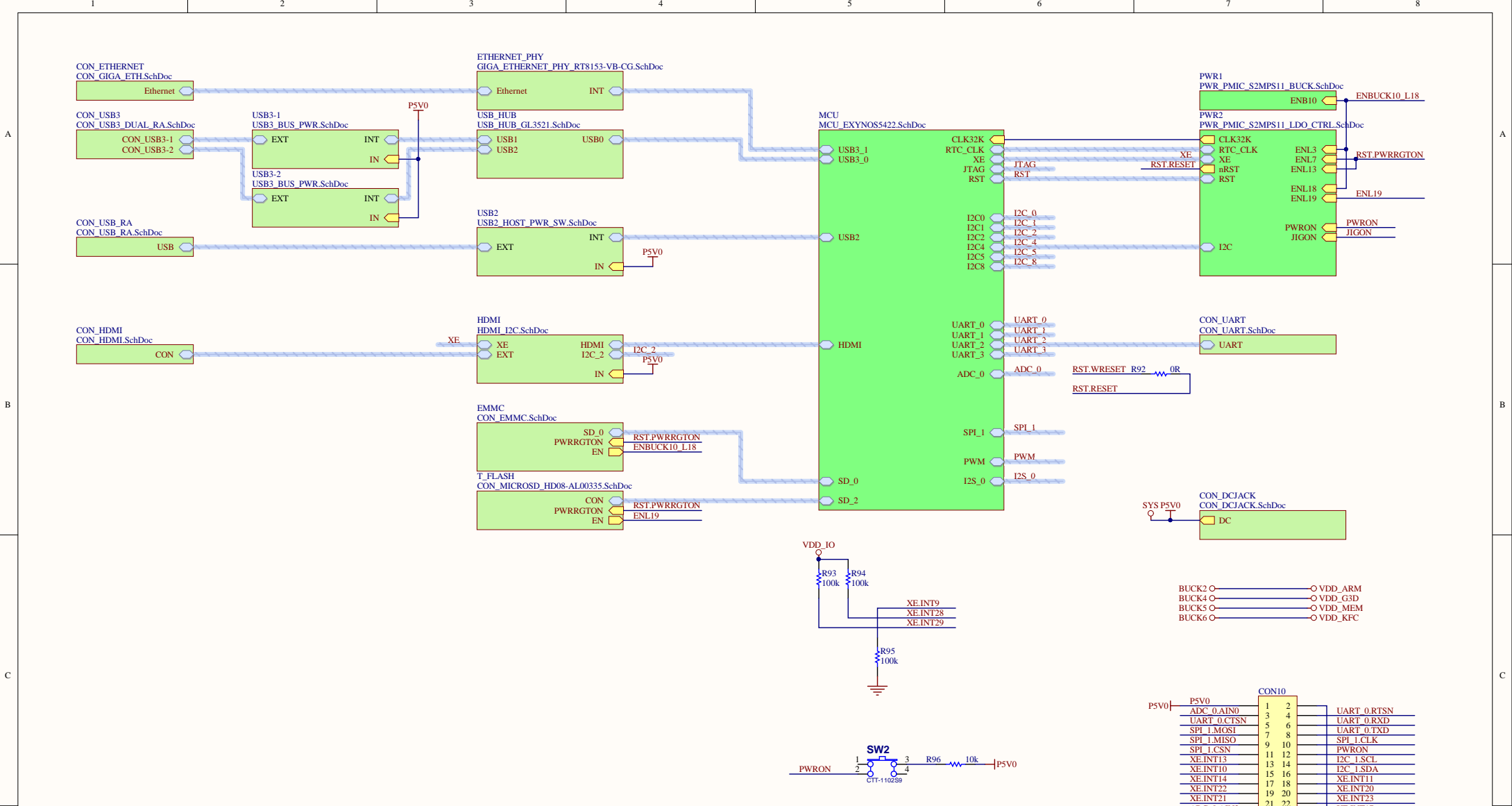


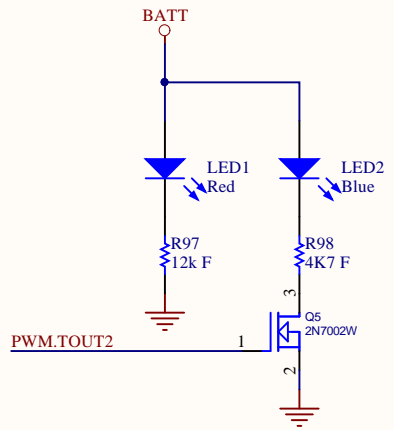
Title USB3 BUS POWER			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea Designed by: ruppi.kim@hardkernel.com
Size: A4	Number:19.1	Revision:0.1	
Date: 2016-07-04	Time: 오후 6:48:25	Sheet:29 of 33	
File: USB3_BUS_PWR.SchDoc			






Title USB3 BUS POWER			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:19.2	Revision:0.1		
Date: 2016-07-04	Time: 오후 6:48:25	Sheet:30 of 33		
File: USB3_BUS_PWR.SchDoc			Designed by: ruppi kim@hardkernel.com	





Title Indicator LEDs			Hardkernel Co.,LTD. 475-1 Mananro Manangu, Anyang City Gyeonggido South Korea	
Size: A4	Number:25.	Revision0.1		
Date: 2016-07-04	Time: 오후 6:48:25	Sheet33 of 33	Designed by: ruppi.kim@hardkernel.com	
File: XU4_LEDS.SchDoc				