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BOSTON

HAWK-M UHD 6K
BOARD SCHEMATIC
(SDP1406 : 1204-003587)

<LOCATION SUFFIX>

- _6K : JU5900,6000 MODEL
- _N6K : JU6400 ~ 6700 MODEL
- _7K : JU7000 MODEL

- _HN : HALF NIM TUNER
- _FN : FULL NIM TUNER
- _DS : SATELLITE TUNER

- _HM : HEADPHONE & MO LR OUT
- _HP : HEADPHONE
- _MO : MONITOR LR OUT
- _WF : WOOFER OPTION

- _RS : RS-232 OPTION
- _NRS : NON RS-232 OPTION

- _Z** : DELETE OPTION
- _DOG : 3G DONGLE MODEL
- _NDOG : NON DONGLE MODEL

- _LAN : LAN BLOCK
- _MHL : MHL OPTION
- _NMHL : NON MHL OPTION

- _DB : DEBUG OPTION
- _RST : RESET BLOCK
- _SPI : SPI BLOCK

- _CI : CI OPTION
- _NCI : NON CI OPTION

- _KR : KOREA OPTION
- _TU : TUNER OPTION
- _BR : ISDB-T OPTION

- _UFT : HAWK-UFT MODEL
- _NUFT : NON UFT MODEL

- _OCM : OCM MODEL
- _BOSTON : BOSTON MODEL

SCHEMATICS INDEX

01_COVER SHEET
02_HAWK-M POWER 1
03_HAWK-M POWER 2
04_CPU/GPU/CORE POWER
05_SOUND AMP / SPDIF
06_AUDIO / COMPONENT / CVBS
07_HDMI STB / DVI / ARC / MHL
08_TUNER / LNB
09_HAWK-M VIDEO / TS / BOOT STRAP
10_HAWK-M PLL / LAN
11_HAWK-M GPIO / I2C / FUNCTION / EEPROM
12_HAWK-M POWER / GND
13_HAWK-M MICOM / UART / DEBUG / HEADPHONE
14_SUB MICOM (DELETED)
15_HAWK-M DDR A
16_HAWK-M DDR BC
17_HAWK-M EMMC / JTAG
18_HAWK-M USB
19_IR BLASTER (DELETED)
20_VX1
21_CI
22_BOSTON

PCB LAYOUT STACKUP

(PCB SIZE : 192 * 214 * 1.2T)

LAYER 1 -------- TOP (SIGNAL1)
LAVER 2 -------- INNER1 (GND)
LAVER 3 -------- INNER2 (POWER)
LAYER 4 -------- BOTTOM (SIGNAL2)

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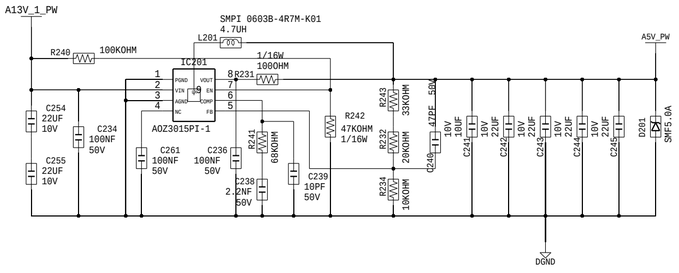
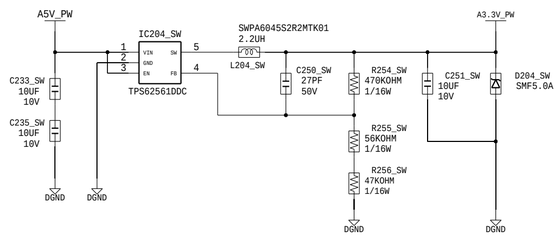
02_STANDBY / MAIN POWER

A5V (3A)



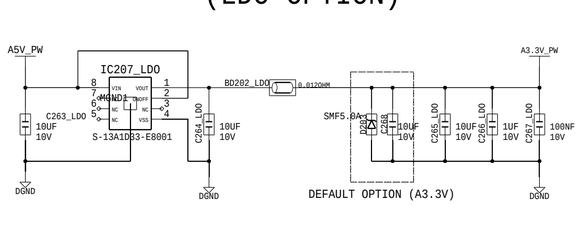
A3.3V (0.6A)

(SWITCH OPTION)

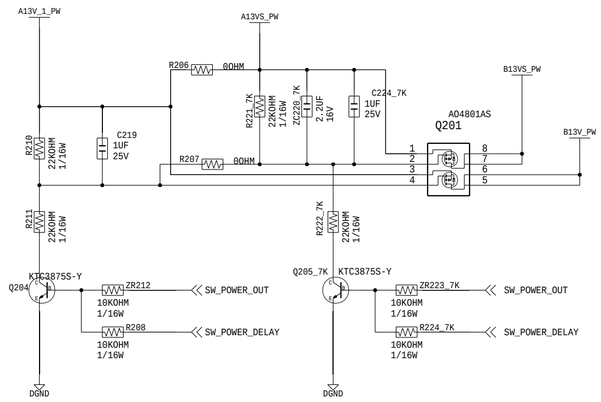


A3.3V (1A)

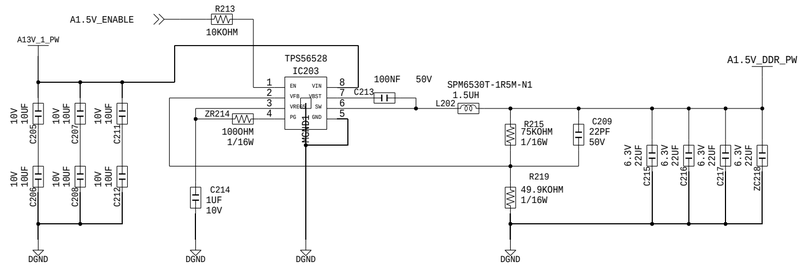
(LDO OPTION)



SW:B13VS_PW/B13V_PW (5A)

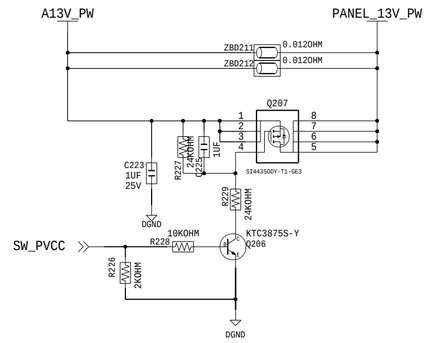


DDR A1.5V (5A)

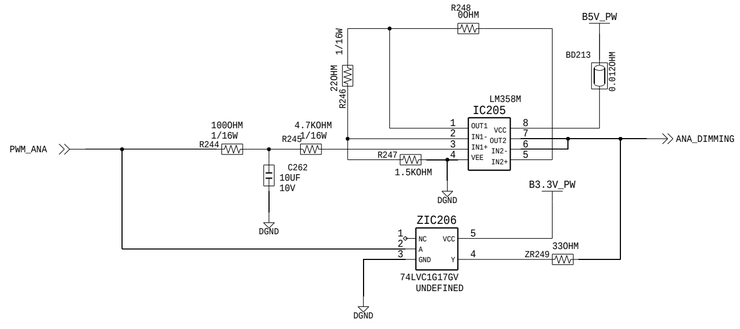


PANEL 13V

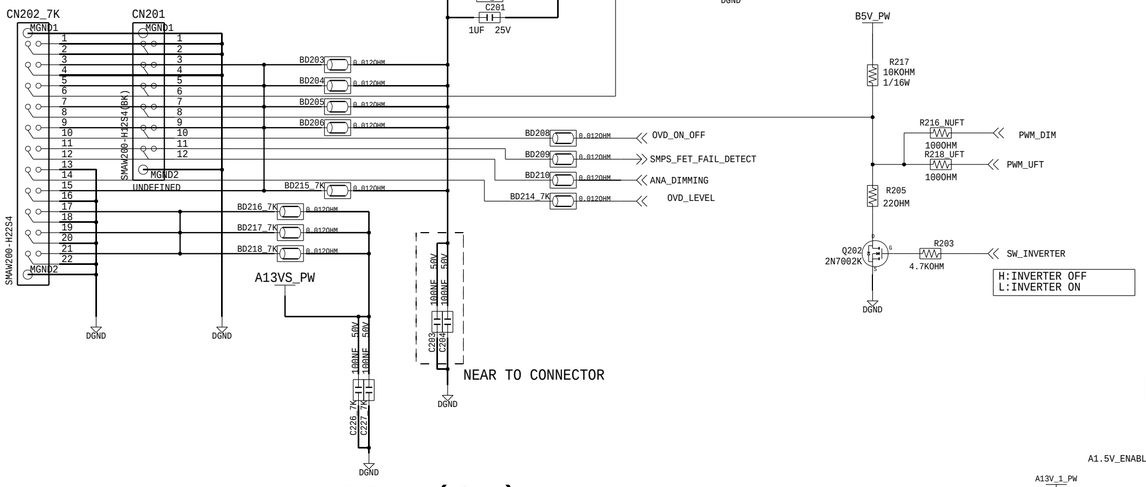
HAWK-UFT/UFP/ETC.



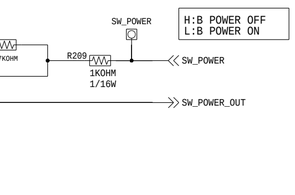
ANA DIMMING



BEAD : 3301-002039 (6A)



SW_POWER



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		CHECKED BY: Unknown	
SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
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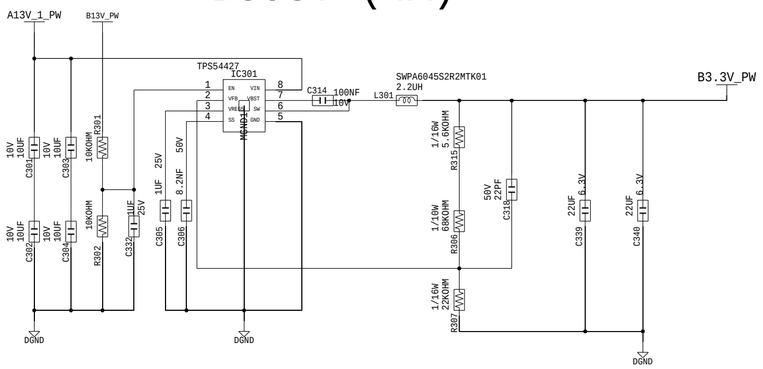
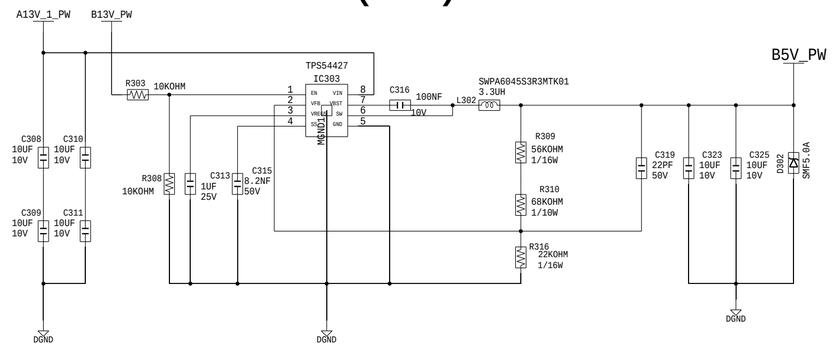
03_STANDBY / MAIN POWER

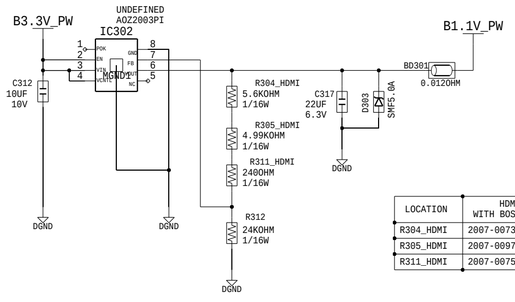
B3.3V (4A)



B5V (4A)

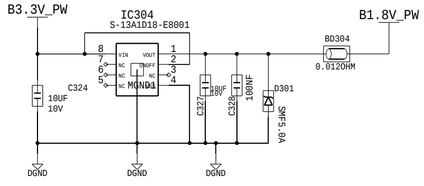


B1.1V (3A)



LOCATION	HDMI 1.15V WITH BOSTON(~3.75G)	HDMI 1.1V W/O BOSTON(~3.0G)
R304_HDMI	2007-007314 (5.6KOHM)	2007-007314 (5.6KOHM)
R305_HDMI	2007-009777 (4.99KOHM)	2007-007766 (2KOHM)
R311_HDMI	2007-007517 (240OHM)	2007-007766 (2KOHM)

B1.8V (1A)



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		CHECKED BY: Unknown	
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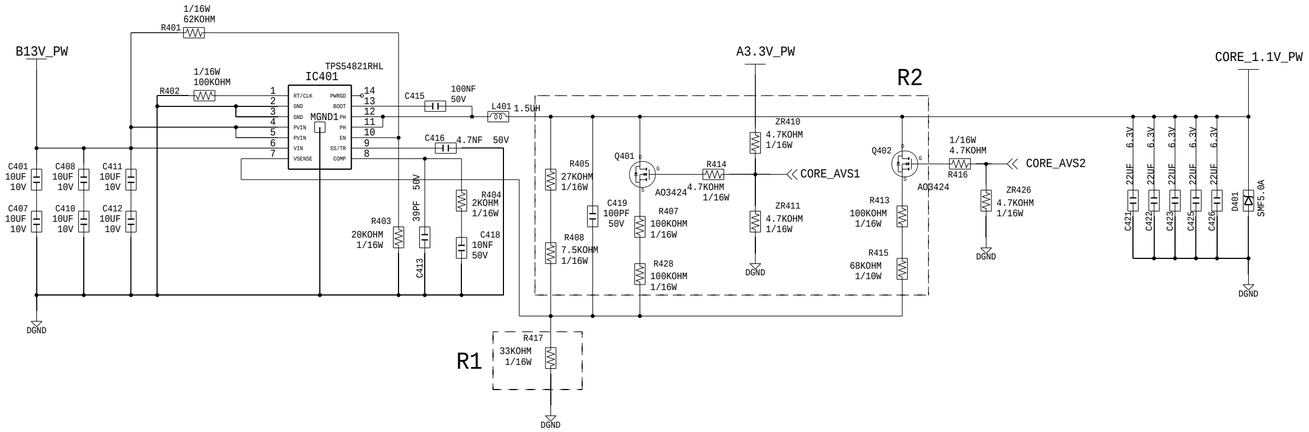
04_CPU/GPU/CORE POWER

CORE_1.1V_PW (8A)

AVS0 OFF / AVS1 OFF : 1.22V
AVS0 ON / AVS1 OFF : 1.13V (DEFAULT)
AVS0 OFF / AVS1 ON : 1.12V
AVS0 ON / AVS1 ON : 1.05V



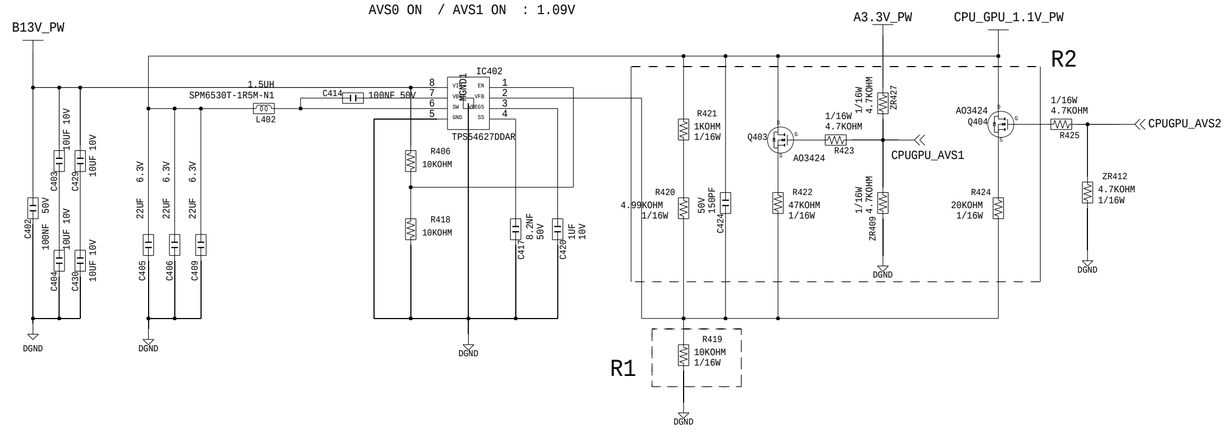
TPS54821 FB	0.6			
	State0	State1	State2	State3
CORE_AVS1	0	1	0	1
CORE_AVS2	0	0	1	1
Output Voltage	1.227273	1.134987	1.120404	1.055252
R417	33K			
R405	27K			
R408	7.5K			
R407	100K			
R428	100K			
R413	100K			
R415	68K			

OUTPUT VOLTAGE = 0.6 * (1+ R2/R1)

R2	
R405 + R408	State0
(R405+R408) | | (R407 + R428)	State1
(R405+R408) | | (R413 + R415)	State2
(R405+R408) | | (R407+R428) | | (R413 + R415)	State3

CPU_GPU_1.1V_PW (6A)

AVS0 OFF / AVS1 OFF : 1.22V
AVS0 ON / AVS1 OFF : 1.17V (DEFAULT)
AVS0 OFF / AVS1 ON : 1.12V
AVS0 ON / AVS1 ON : 1.09V



TPS54627 FB	0.765			
	State0	State1	State2	State3
CPUGPU_AVS1	0	1	0	1
CPUGPU_AVS2	0	0	1	1
Output Voltage	1.223235	1.171436	1.117624	1.086130
R419	10K			
R420	4.99K			
R421	1K			
R422	47K			
R424	20K			

OUTPUT VOLTAGE = 0.765 * (1+ R2/R1)

R2	
(R420 + R421)	State0
(R420 + R421) | | (R422)	State1
(R420 + R421) | | (R424)	State2
(R420 + R421) | | (R422) | | (R424)	State3

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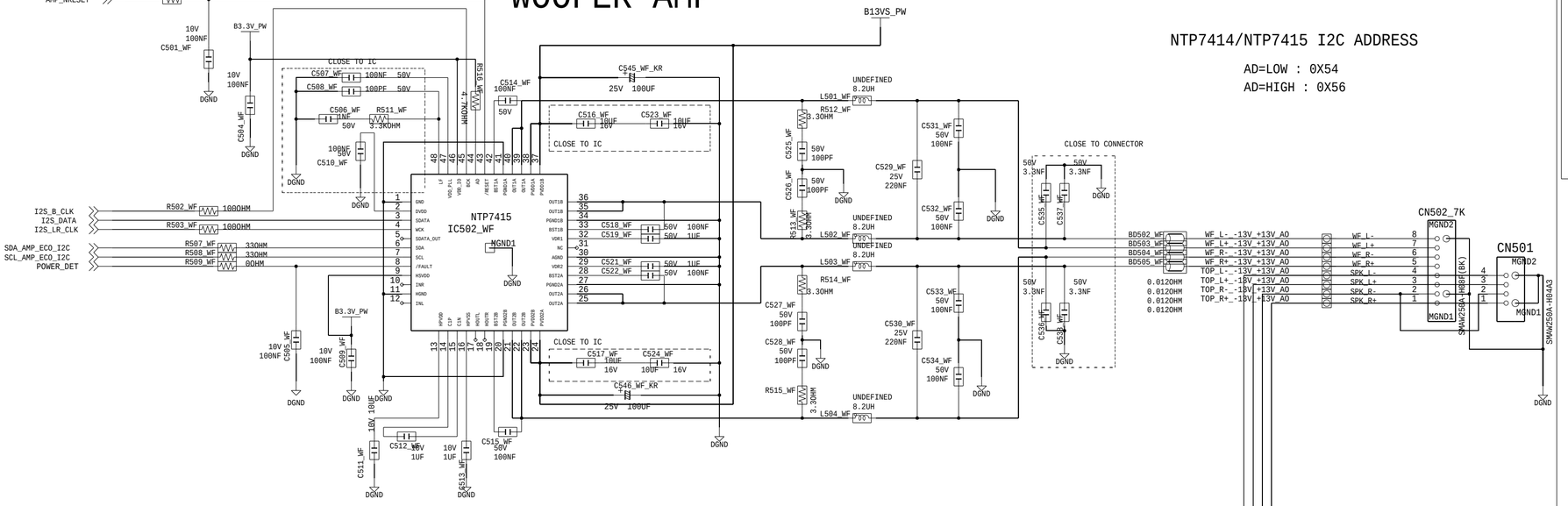
05.AUDIO

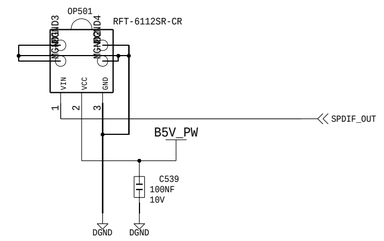
WOOFER AMP



NTP7414/NTP7415 I2C ADDRESS

AD=LOW : 0X54
AD=HIGH : 0X56

OPTICAL



MAIN SOUND AMP

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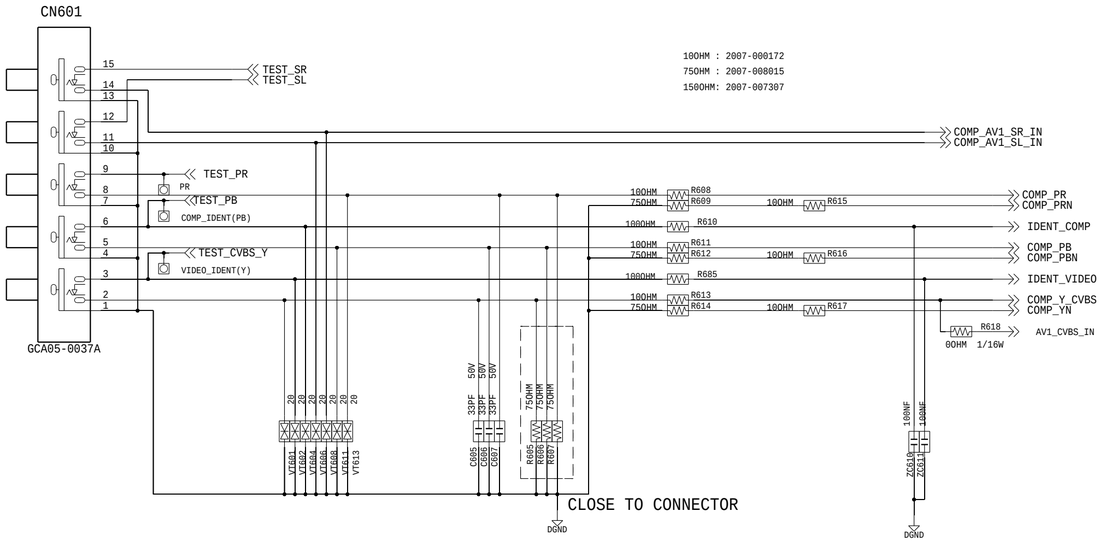
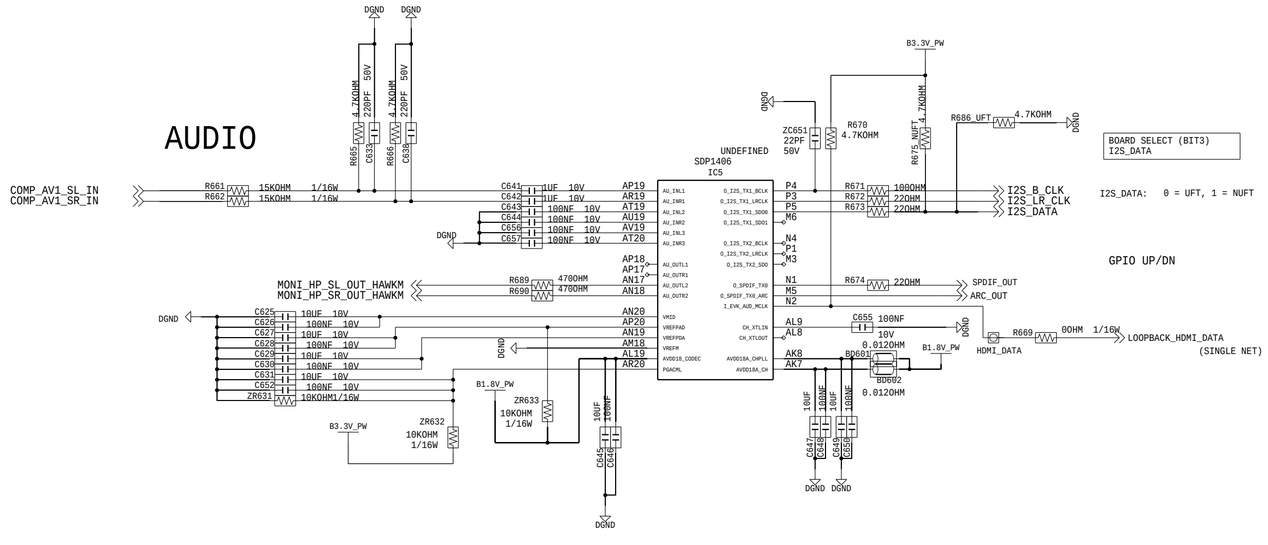
06_COMPONENT / AUDIO





BIT	Function	GPIO	DTV config.
Bit0	b_SCDATA	P7.0	CAM1_GPIO
Bit1	o_UART2_TX	P14.4	IRB_UART_TXD
Bit2	i_SCDETECTN	P6.7	CAM2_GPIO
Bit3	o_I2S_TX1_SDO0	P19.3	I2S_DATA

* Output으로 사용되며, Booting시 과도가 없는 signal

I2S_DATA	CAM2_GPIO	IRB_UART_TXD	CAM1_GPIO	Board Info	Board Config
0	0	0	0	[FRC] TBD	0
0	0	0	1	[FRC] FHD, DDR 1.5G (J6300)	1
0	0	1	0	[FRC] TBD	2
0	**0**	**1**	**1**	**[FRC] UHD, DDR 2.0G (JU6000)**	**3**
0	**1**	**0**	**0**	**[FRC] UHD, DDR 2.5G (JU6400,6700)**	**4**
0	1	0	1	[FRC] FHD, DDR 1.25G (J6300)	5
0	1	1	0	[FRC] UHD, DDR 2.5G (JU7000,7500)	6
0	1	1	1	[FRC] UHD, DDR 1.5G (JU6000)	7
1	0	0	0	[Non FRC] TBD	8
1	0	0	1	[Non FRC] FHD, DDR 1.5G (J5500)	9
1	0	1	0	[Non FRC] TBD	10
1	**0**	**1**	**1**	**[Non FRC] UHD, DDR 2.0G (JU5900,6000)**	**11**
1	1	0	0	[Non FRC] TBD	12
1	1	0	1	[Non FRC] FHD, DDR 1.25G (J5500)	13
1	1	1	0	[Non FRC] UHD, DDR 1.5G (JU5900)	14
1	1	1	1	[Non FRC] FHD, DDR 1.5G (MTV)	15

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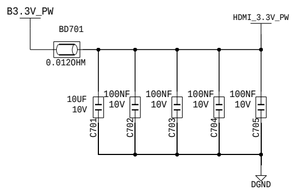
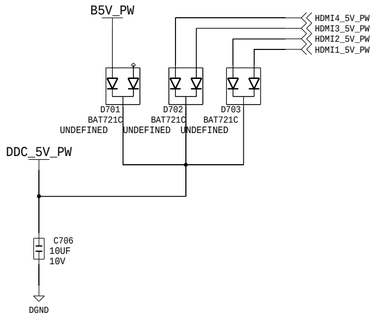
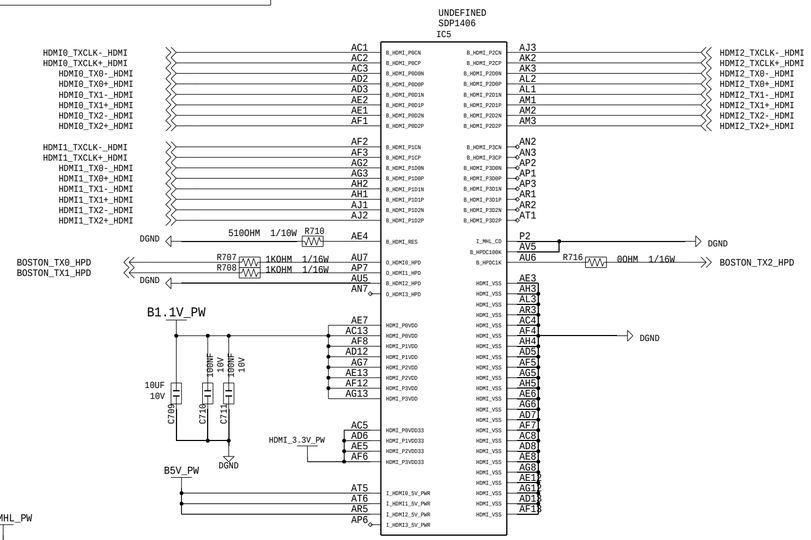
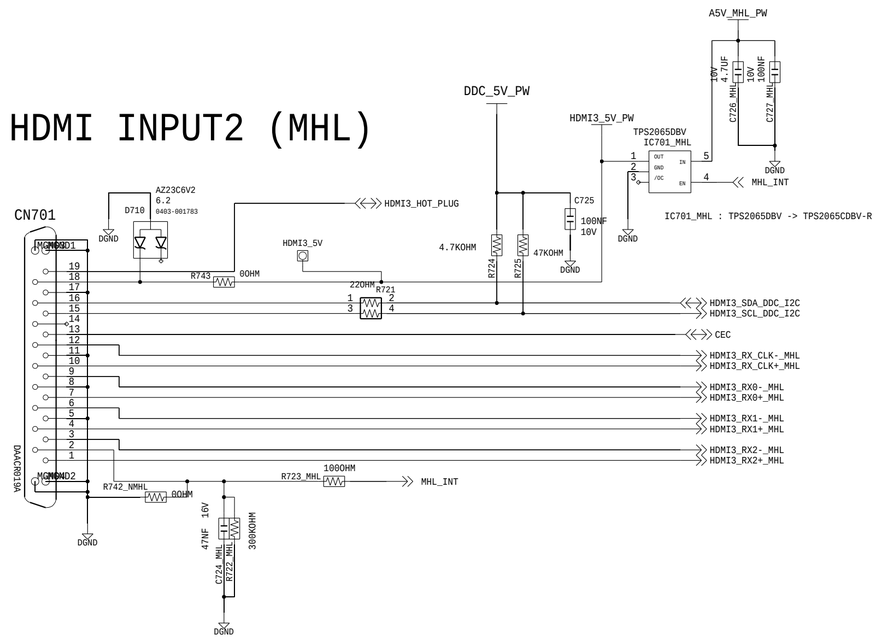
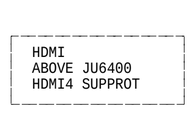
07_HDMI STB/DVI/ARC/MHL

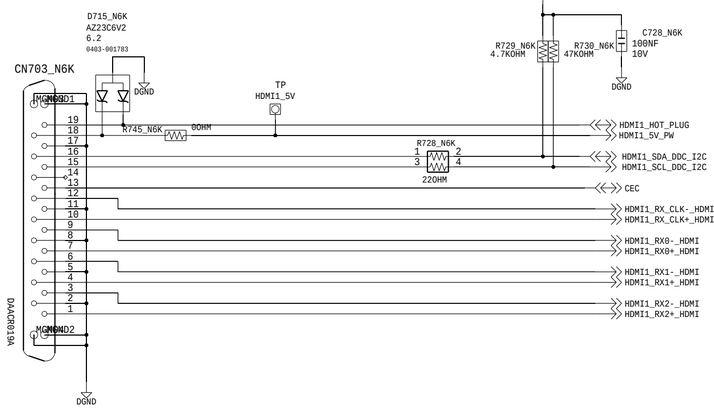


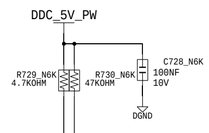


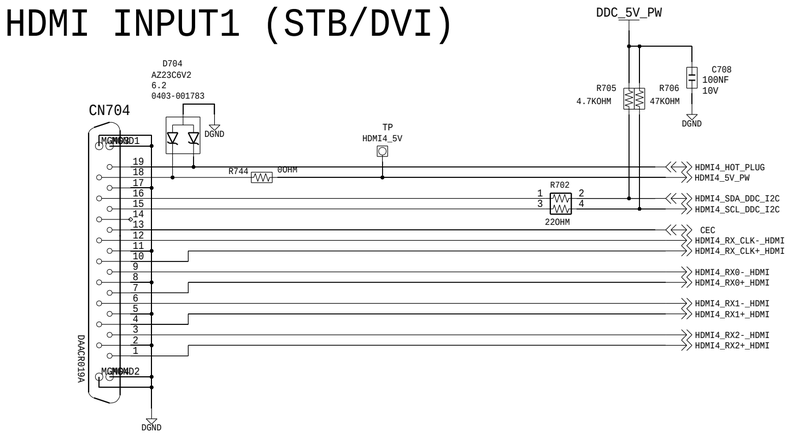


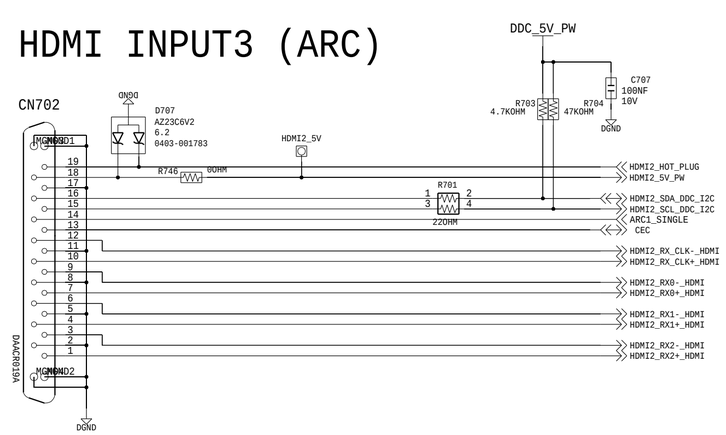












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SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
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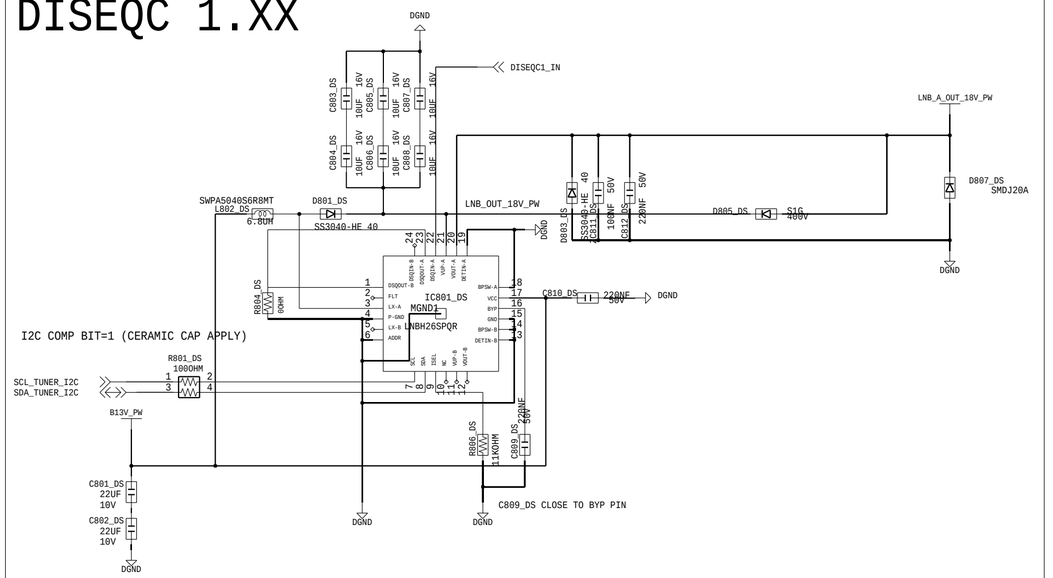
BLOCK NAME: hawk_m_uhd_6k_boston | BLK PAGE NO.: 8 OF 22

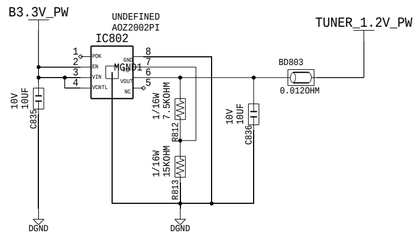
08_TUNER

DISEQC 1.XX

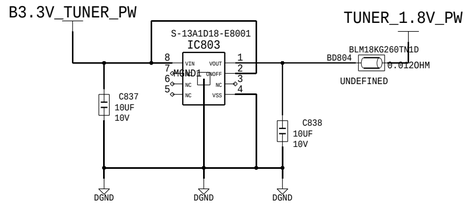


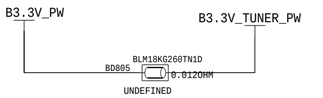
LNB CONTROL PART(DVB-S2 OPTION)

TUNER 1.2V (2A)

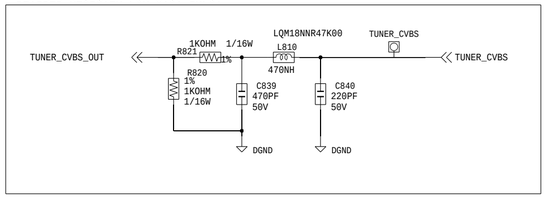


TUNER 1.8V (1A)

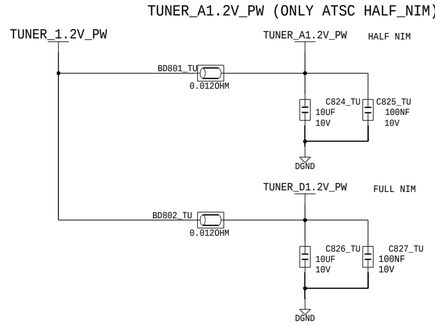




DEVIDED RESISTER FOR 0.5V INPUT



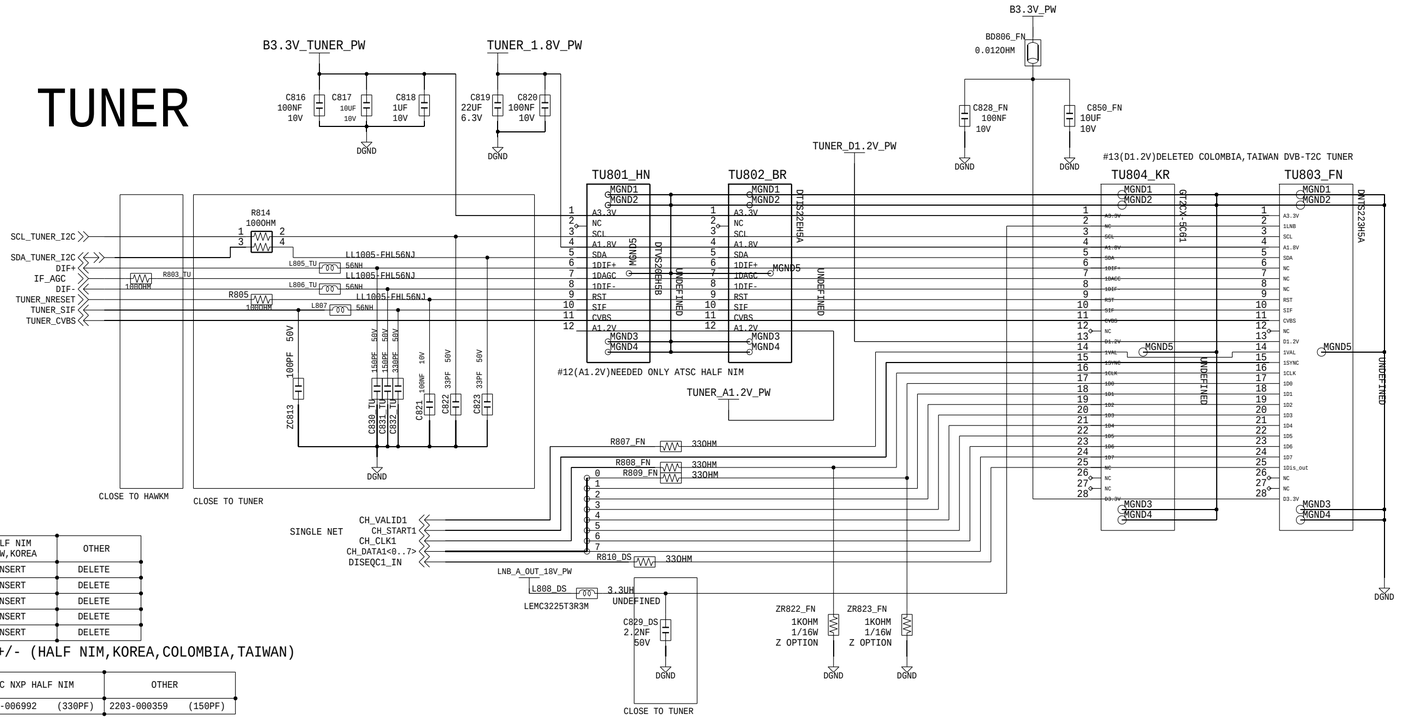
TUNER_A1.2V_PW (ONLY ATSC HALF_NIM)



TUNER_D1.2V_PW (DELETE COLOMBIA,TAIWAN)

LOCATION	VSB HALF NIM (ZC/ZA/ZX/ZP)	HALF NIM (ISDB-T,DVB-TC)	FULL NIM	FULL NIM (ZL/ZW)
BD801_TU	INSERT	DELETE	DELETE	DELETE
C824_TU	INSERT	DELETE	DELETE	DELETE
C825_TU	INSERT	DELETE	DELETE	DELETE
BD802_TU	DELETE	DELETE	INSERT	DELETE
C826_TU	DELETE	DELETE	INSERT	DELETE
C827_TU	DELETE	DELETE	INSERT	DELETE

TUNER



LOCATION	HALF NIM ZL,ZW,KOREA	OTHER
R803_TU	INSERT	DELETE
L805_TU	INSERT	DELETE
L806_TU	INSERT	DELETE
C830_TU	INSERT	DELETE
C831_TU	INSERT	DELETE

IF_AGC, DIF+/- (HALF NIM,KOREA,COLOMBIA,TAIWAN)

LOCATION	ATSC NXP HALF NIM	OTHER
C832_TU	2203-006992 (330PF)	2203-000359 (150PF)

TUNER_SIF OPTION

Y15 TUNER CODE

BN40-00312B	CNXG	NXP US HALF-NIM(ATSC)
BN40-00313A	CNXG	ASIA HALF-NIM(DVB-T/C,READY)
BN40-00314B	CNXG	BRAZIL HALF-NIM(ISDB-T/DVB-T)
BN40-00315A	SEM	COLOMBIA/TAIWAN NIM(DVB-T2/C)
BN40-00316B	CNXG	EU SINGLE FULL NIM(DVB-T2/C)
BN40-00317B	CNXG	ASIA SINGLE FULL NIM(DVB-T2/C)
BN40-00318B	CNXG	EU SINGLE FULL NIM(DVB-T2/C/S2)
BN40-00319A	SEM	CHINA/HONGKONG FULL NIM(DTMB)
BN40-00320A	CNXG	KOREA SINGLE FULL NIM(DVB-T2/C)

PROJECT NAME: hawk_m_uhd_6k_boston	A2	DRAWN BY: sanghoon.hyun	
		CHECKED BY: Unknown	
SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
LAST EDITED TIME: Wed Jan 14 15:50:16 2015			TOTAL PAGE NO.: 8 OF 22

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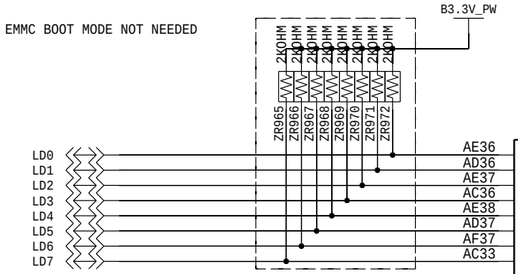
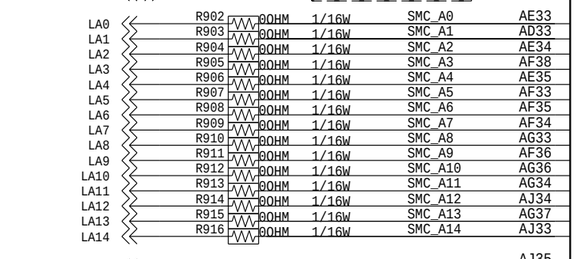
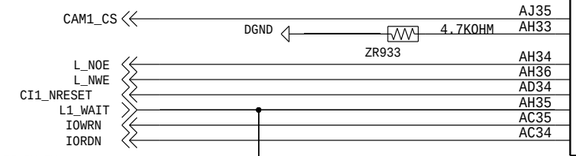
BLOCK NAME: hawk_m_uhd_6k_boston | BLK PAGE NO.: 9 OF 22

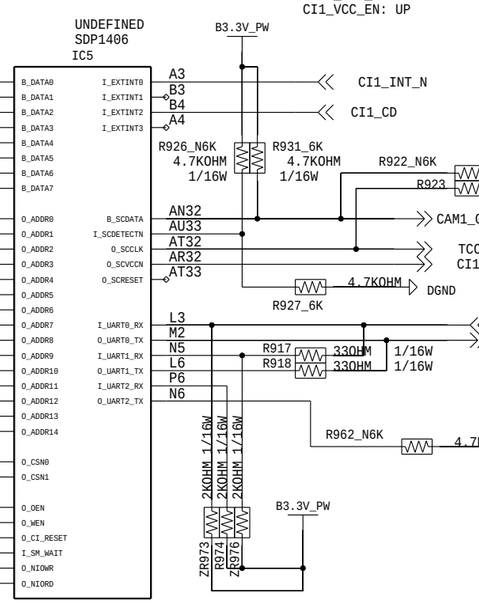
09_VIDEO / TS / BOOTSTRAP

EMMC BOOT MODE NOT NEEDED









GPIO UP/DN

CI1_INT_N: UP

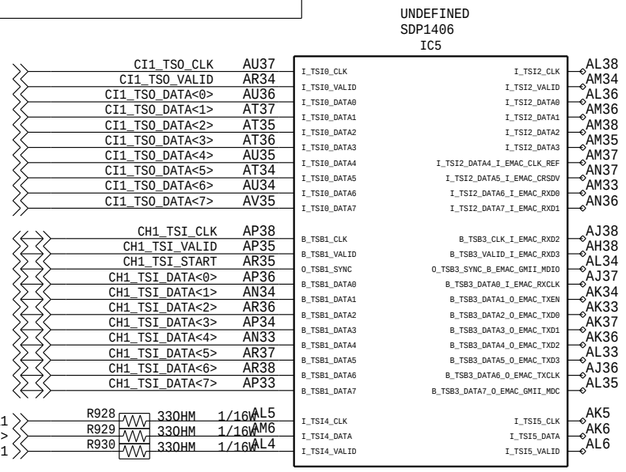
CI1_CD: UP
CAM1_GPIO: 0 = JU6400,6700, 1 = JU5900,6000
CAM2_GPIO: 0 = JU5900,6000, 1 = JU6400,6700
IRB_UART_TXD: 0 = JU6400,6700, 1 = JU5900,6000
TCON_I2C_EN: DN
CI1_VCC_EN: UP

BOARD SELECT (BIT0)
CAM1_GPIO

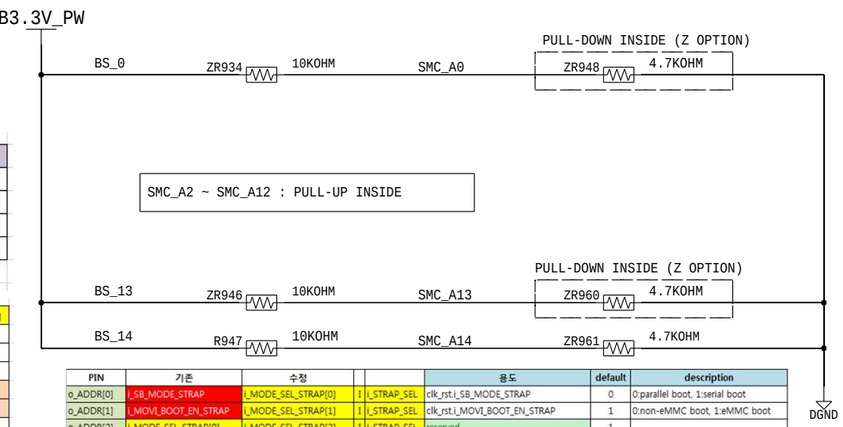
BOARD SELECT (BIT2)
CAM2_GPIO (DELETE)

BOARD SELECT (BIT1)
IRB_UART_TXD (DELETE)

MAINCPU_RX : PULL-UP INSIDE (Z OPTION)



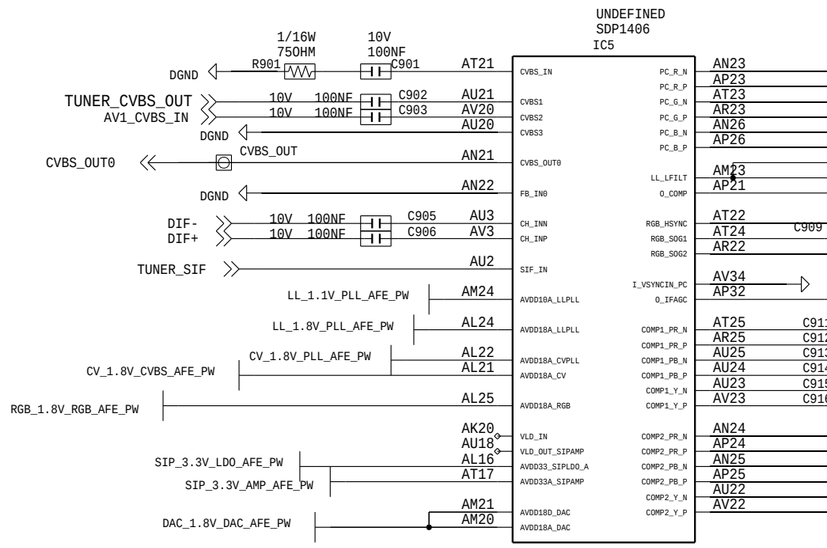
BOOTSTRAP



BIT	Function	GPIO	DTV config.
Bit0	b_SCDATA	P7.0	CAM1_GPIO
Bit1	o_UART2_TX	P14.4	IRB_UART_TXD
Bit2	i_SCDETECTN	P6.7	CAM2_GPIO
Bit3	o_I2S_TX1_SDO0	P19.3	I2S_DATA

* Output으로 사용되며, Booting시 과도가 없는 signal

I2S_DATA	CAM2_GPIO	IRB_UART_TXD	CAM1_GPIO	Board Info	Board Config
0	0	0	0	[FRC] TBD	0
0	0	0	1	[FRC] FHD, DDR 1.5G (J6300)	1
0	0	1	0	[FRC] TBD	2
0	**0**	**1**	**1**	**[FRC] UHD, DDR 2.0G (JU6000)**	**3**
0	**1**	**0**	**0**	**[FRC] UHD, DDR 2.5G (JU6400,6700)**	**4**
0	1	0	1	[FRC] FHD, DDR 1.25G (J6300)	5
0	1	1	0	[FRC] UHD, DDR 2.5G (JU7000,7500)	6
0	1	1	1	[FRC] UHD, DDR 1.5G (JU6000)	7
1	0	0	0	[Non FRC] TBD	8
1	0	0	1	[Non FRC] FHD, DDR 1.5G (J5500)	9
1	0	1	0	[Non FRC] TBD	10
1	**0**	**1**	**1**	**[Non FRC] UHD, DDR 2.0G (JU5900,6000)**	**11**
1	1	0	0	[Non FRC] TBD	12
1	1	0	1	[Non FRC] FHD, DDR 1.25G (J5500)	13
1	1	1	0	[Non FRC] UHD, DDR 1.5G (JU5900)	14
1	1	1	1	[Non FRC] FHD, DDR 1.5G (MTV)	15



PIN	기존	수정			용도	default	description
o_ADDR[0]	i_SB_MODE_STRAP	i_MODE_SEL_STRAP[0]	I	i_STRAP_SEL	clk_rst.i_SB_MODE_STRAP	0	0:parallel boot, 1:serial boot
o_ADDR[1]	i_MOVI_BOOT_EN_STRAP	i_MODE_SEL_STRAP[1]	I	i_STRAP_SEL	clk_rst.i_MOVI_BOOT_EN_STRAP	1	0:non-eMMC boot, 1:eMMC boot
o_ADDR[2]	i_MODE_SEL_STRAP[0]	i_MODE_SEL_STRAP[2]	I	i_STRAP_SEL	reserved	1	
o_ADDR[3]	i_MODE_SEL_STRAP[1]	i_MODE_SEL_STRAP[3]	I	i_STRAP_SEL	reserved	1	
o_ADDR[4]	i_MODE_SEL_STRAP[2]	i_MODE_SEL_STRAP[4]	I	i_STRAP_SEL	reserved	1	
o_ADDR[5]	i_MODE_SEL_STRAP[3]	i_MODE_SEL_STRAP[5]	I	i_STRAP_SEL	reserved	1	
o_ADDR[6]	i_MODE_SEL_STRAP[4]	i_MODE_SEL_STRAP[6]	I	i_STRAP_SEL	reserved	1	
o_ADDR[7]	i_MODE_SEL_STRAP[5]	i_MODE_SEL_STRAP[7]	I	i_STRAP_SEL	reserved	1	
o_ADDR[8]	i_MODE_SEL_STRAP[6]	i_MODE_SEL_STRAP[8]	I	i_STRAP_SEL	reserved	1	
o_ADDR[9]	i_MODE_SEL_STRAP[7]	i_MODE_SEL_STRAP[9]	I	i_STRAP_SEL	reserved	1	
o_ADDR[10]	i_MODE_SEL_STRAP[8]	i_MODE_SEL_STRAP[10]	I	i_STRAP_SEL	reserved	1	
o_ADDR[11]	i_MODE_SEL_STRAP[9]	i_MODE_SEL_STRAP[11]	I	i_STRAP_SEL	reserved	1	
o_ADDR[12]	i_MODE_SEL_STRAP[10]	i_MODE_SEL_STRAP[12]	I	i_STRAP_SEL	reserved	1	
o_ADDR[13]	i_MODE_SEL_STRAP[11]	i_MODE_SEL_STRAP[13]	I	i_STRAP_SEL	sysio_peri.i_boot_emmc_sam_clk_inv	0	0:clock non-inverter, 1:invter
o_ADDR[14]	i_MODE_SEL_STRAP[12]	i_MODE_SEL_STRAP[14]	I	i_STRAP_SEL	iso_gpu.i_gpu_isolation_en	1	0:isolation on, 1:off

[Hawk M]

PIN	용도	default	description
o_ADDR[0]	clk_rst.i_SB_MODE_STRAP	0	0:parallel boot, 1:serial boot
o_ADDR[1]	clk_rst.i_MOVI_BOOT_EN_STRAP	1	0:non-eMMC boot (강통) 1:eMMC boot (OTP)
i_ADATA[5]	clk_rst.i_sboot	1	0:secure boot (양산) 1:non-secure boot (개발)
o_ADDR[13]	sysio_peri.i_boot_emmc_sam_clk_inv	0	0:clock non-inverter, 1:invter
o_ADDR[14]	iso_gpu.i_gpu_isolation_en	1	0:isolation on, 1:off

PROJECT NAME		DRAWN BY
hawk_m_uhd_6k_boston	A3	sanghoon.hyun
		CHECKED BY: Unknown
SAMSUNG	DEV.STEP: @pre_dev@ / REV.: 1.0	APPROVED BY: Unknown
LAST EDITED TIME: Wed Jan 14 17:35:44 2015		TOTAL PAGE NO.: 9 OF 22

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BLOCK NAME: hawk_m_uhd_6k_boston
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10_PLL / LAN

CLOSE TO IC3131

CORE_1.1V_PW — BD1003 0.012OHM — LL_1.1V_PLL_AFE_PW
C1001 10UF 10V, C1006 100NF 10V → DGND

B1.8V_PW — BD1004 0.012OHM — LL_1.8V_PLL_AFE_PW
C1002 10UF 10V, C1007 100NF 10V, C1014 100NF 10V, C1017 100NF 10V → DGND

B1.8V_PW — BD1005 0.012OHM — CV_1.8V_PLL_AFE_PW
C1003 10UF 10V, C1008 100NF 10V, C1013 100NF 10V, C1018 100NF 10V → DGND

CLOSE TO IC3131

B3.3V_PW — BD1006 0.012OHM — SIP_3.3V_AMP_AFE_PW
C1004 10UF 10V, C1009 100NF 10V → DGND

CLOSE TO IC3131

A3.3V_PW — BD1007 0.012OHM — SIP_3.3V_LDO_AFE_PW
C1005 10UF 10V, C1010 100NF 10V → DGND

CLOSE TO IC3131

B1.8V_PW — BD1010 0.012OHM — RGB_1.8V_RGB_AFE_PW
C1049 10UF 10V, C1050 100NF 10V → DGND

B1.8V_PW — BD1011 0.012OHM — CV_1.8V_CVBS_AFE_PW
C1051 10UF 10V, C1052 100NF 10V → DGND

B1.8V_PW — BD1012 0.012OHM — DAC_1.8V_DAC_AFE_PW
C1053 10UF 10V, C1054 100NF 10V → DGND

DECAP CLOSE TO HAWK-M

B1.8V_PW
C1011 22UF 6.3V, C1015 100NF 10V, C1019 22UF 6.3V, C1021 100NF 10V, C1022 100NF 10V, C1045 1UF 10V, C1046 1UF 10V, C1047 100NF 10V, C1048 100NF 10V, C1023 22UF 6.3V, C1024 100NF 10V, C1025 1UF 10V, C1026 1UF 10V → DGND

BOTTOM PLACE : C1019,C1045,C1015

PLL 1.8V MERGE B1.8V

UNDEFINED
SDP1406
IC5

H30 AVDD18_DDR0PLL
J31 AVDD18_DDR1PLL
T8 AVDD18_CPUPLL
AD26 AVDD18_USBPLL
AE27 AVDD18_VIDPLL
AE26 AVDD18_VX1PLL
H7 AVDD18_ABG1
H10 AVDD18_ABG2
AJ6 AVDD18_OTP
AH7 B_VPP

AVDD18_LDO_A: AL15, AM15, AM16
VOUT_LDO_A: AL12, AM12
VDD_DDR0PLL: R24
VDD_DDR1PLL: P24
VDD_CPUPLL: AA15

A1.8V_PW — BD1008 0.012OHM — AVDD18_LDO_A
CLOSE TO IC3131
C1027 1UF 10V, C1028 100NF 10V, C1029 1UF 10V, C1030 100NF 10V, C1031 1UF 10V, C1032 100NF 10V → DGND
C1033 2.2UF 6.3V, C1034 100NF 10V → DGND
INT_A1.8V_PW

DECAP CLOSE TO HAWK-M

CORE_1.1V_PW
C1012 22UF 6.3V, C1016 100NF 10V, C1020 100NF 10V, C1041 1UF 10V, C1042 1UF 10V, C1043 100NF 10V, C1044 100NF 10V → DGND

PLL 1.1V MERGE CORE_1.1V_PW

[IMPORTANT PLL PIN]
AVDD18_DDR0PLL / AVDD18_DDR1PLL
VDD_DDR0PLL / VDD_DDR1PLL / VDD_CPUPLL

EMI SMD GASKET

(NEW : 6302-001376)

X1001 X1002 X1003 X1004 X1005 X1006 X1007 X1008
UNDEFINED IDSMT-W-4.5-6-2.5-H → DGND

LAN

B1.8V_PW — D1002_LAN BAT721C UNDEFINED

R1008_LAN R1009_LAN R1010_LAN R1011_LAN 49.9OHM

UNDEFINED AOZ8804ADI D1001_LAN

LAN_RXD-_LAN — R1003_LAN 80HM — RX-_LAN
LAN_RXD+_LAN — R1004_LAN 80HM — RX+_LAN
LAN_TXD-_LAN — R1005_LAN 80HM — TX-_LAN
LAN_TXD+_LAN — R1006_LAN 80HM — TX+_LAN

CN1001_LAN: MGND2, MGND1 — 9813-8812-S0T1-J-T → LAN_GND

C1039_LAN 10UF 10V, C1040_LAN 100NF 10V → DGND
ZV71001_LAN ADUC2850210, ZV71002_LAN ADUC2850210 20 → DGND

UNDEFINED
SDP1406
IC5

LAN_RXD-_LAN — AV16
LAN_RXD+_LAN — AU16
LAN_TXD-_LAN — AU15
LAN_TXD+_LAN — AT15
R1012_LAN 2.2KOHM, R1013_LAN 4.3KOHM → AP15, AN15
AT14, AT16 → DGND

LAN_GND
C1035_LAN 10UF 10V, C1036_LAN 10UF 10V, C1037_LAN 100NF 10V, C1038_LAN 100NF 10V → DGND

LAN_GND

PROJECT NAME: hawk_m_uhd_6k_boston	A2	DRAWN BY: sanghoon.hyun	
		CHECKED BY: Unknown	
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LAST EDITED TIME: Wed Jan 14 15:50:14 2015			TOTAL PAGE NO.: 10 OF 22

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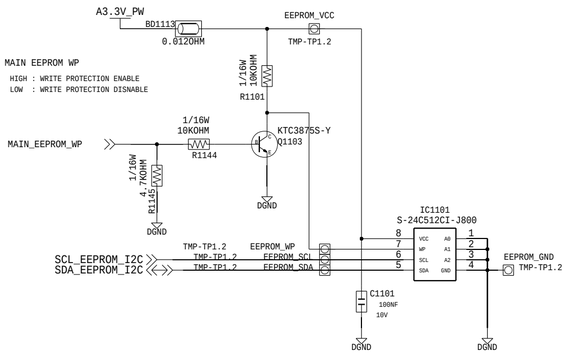
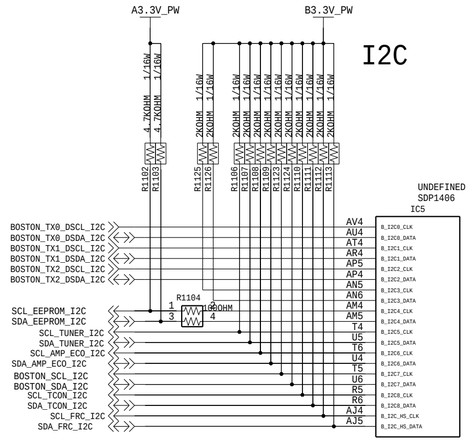
BLOCK NAME: hawk_m_uhd_6k_boston
BLK PAGE NO.: 11 OF 22

11_GPIO / I2C / FUNCTION / MAIN EEPROM

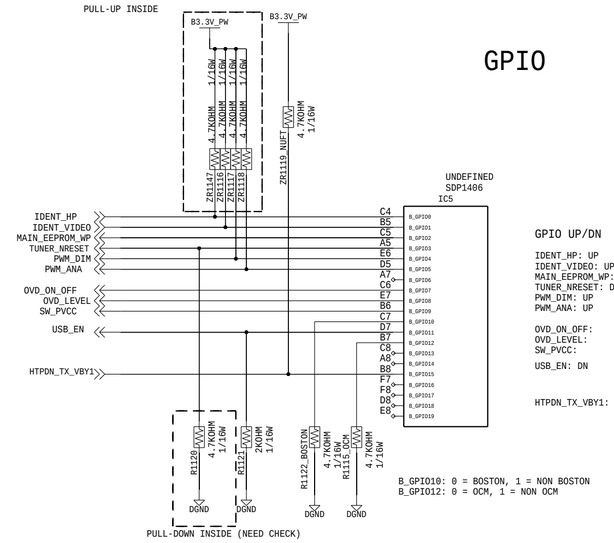
MAIN EEPROM
<512KBIT>



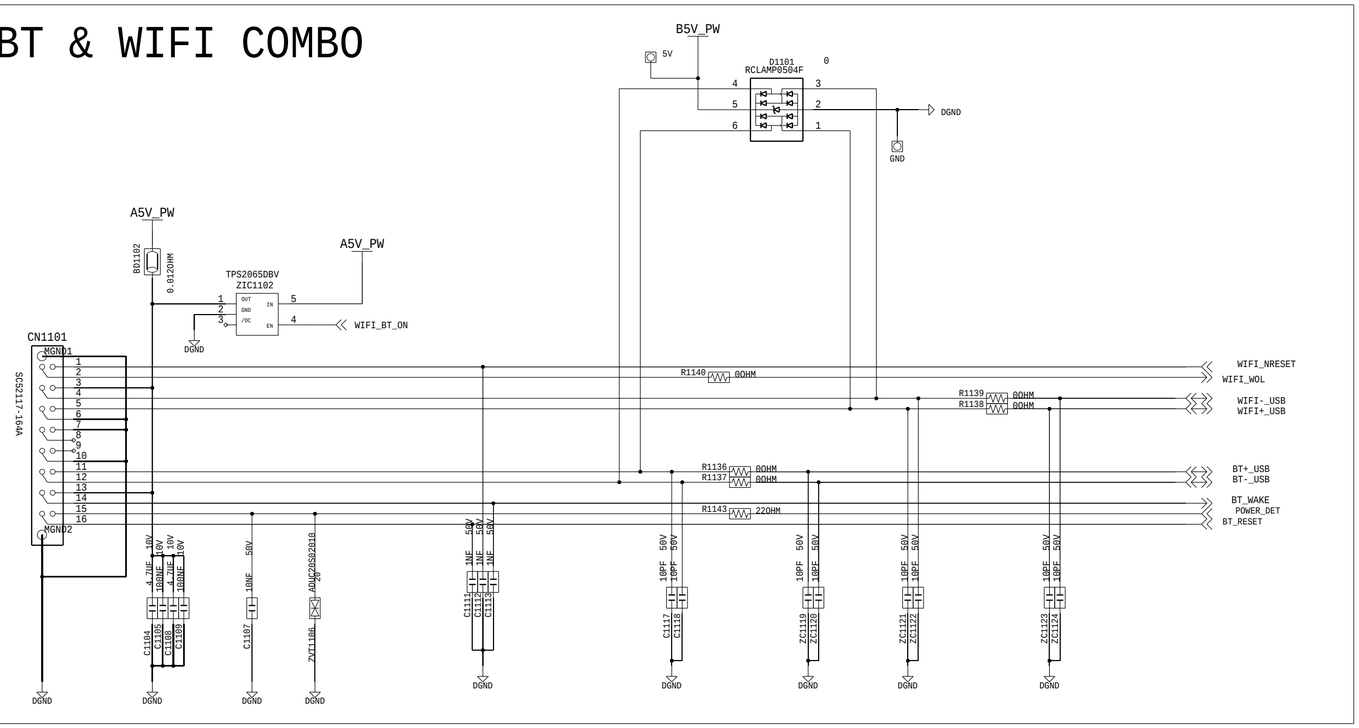
I2C



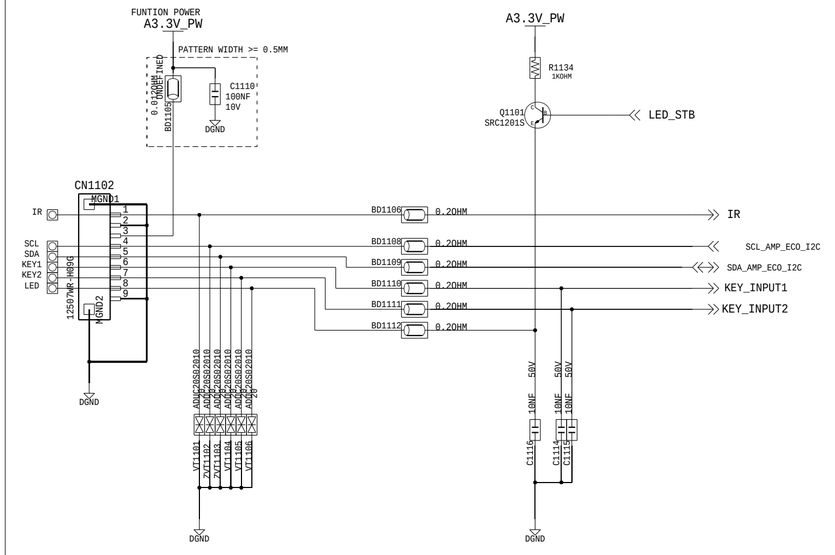
GPIO



BT & WIFI COMBO



KEY FUNCTION & IR



PROJECT NAME: hawk_m_uhd_6k_boston	A2	DRAWN BY: sanghoon.hyun	
		CHECKED BY: Unknown	
SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
LAST EDITED TIME: Wed Jan 14 15:50:28 2015			TOTAL PAGE NO.: 11 OF 22

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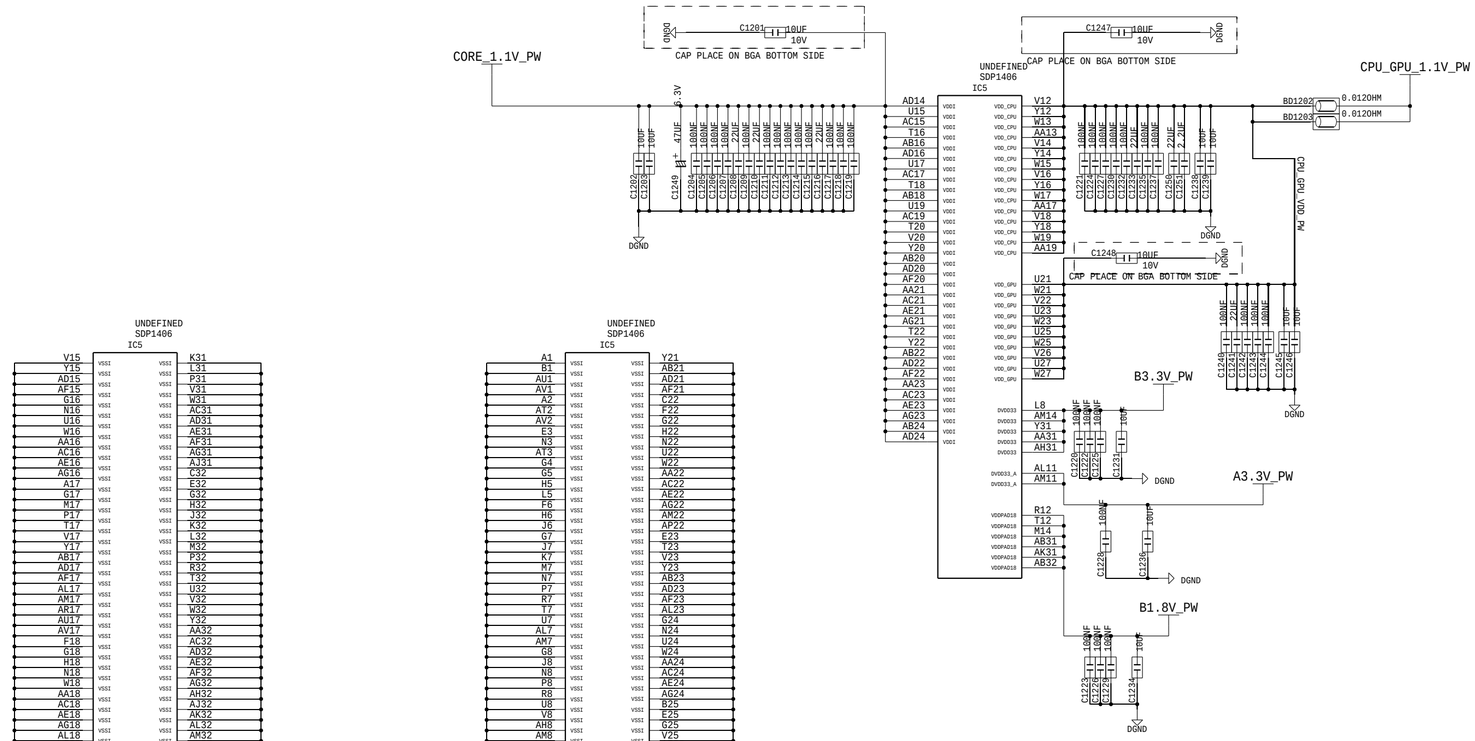
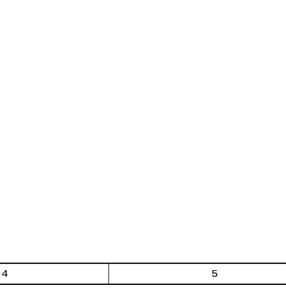
BLOCK NAME: hawk_m_uhd_6k_boston
BLK PAGE NO.: 12 OF 22

12_POWER / GND





PROJECT NAME: hawk_m_uhd_6k_boston	A2	DRAWN BY: sanghoon.hyun	
		CHECKED BY: Unknown	
SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
LAST EDITED TIME: Wed Jan 14 15:50:36 2015			TOTAL PAGE NO.: 12 OF 22

C:/atdm/PROJECTS/hawk_m_uhd_6k_boston\hawk_m_uhd_6k_boston.cpm

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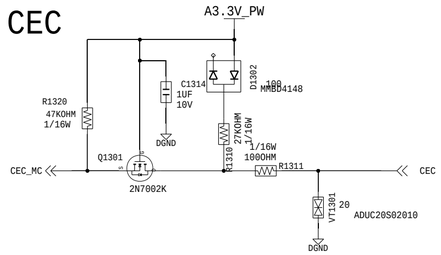
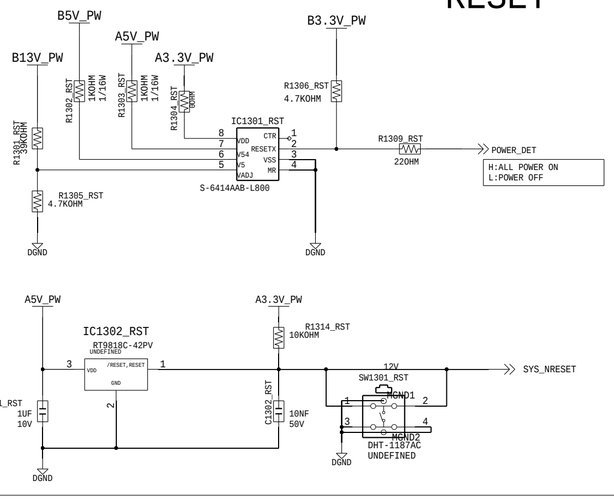
BLOCK NAME: hawk_m_uhd_6k_boston | BLK PAGE NO.: 13 OF 22

13_MICOM / SPI FLASH / UART / DEBUG / HEADPHONE

CEC



RESET

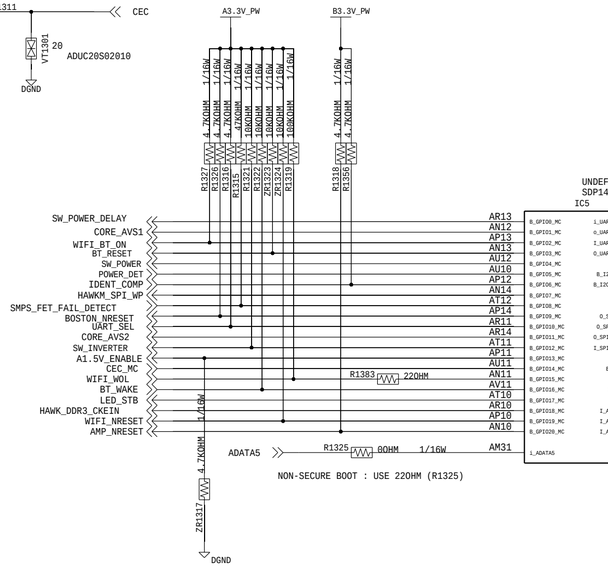


MICOM GPIO UP/DN

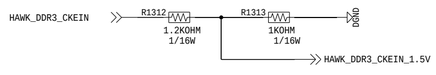
SW_POWER_DELAY
CORE_AVS1

BT_RESET: UP
SW_POWER: UP
POWER_DET: X
IDENT_COMP: UP
HAWKM_SPI_WP
SMPS_FET_FAIL_DETECT: UP

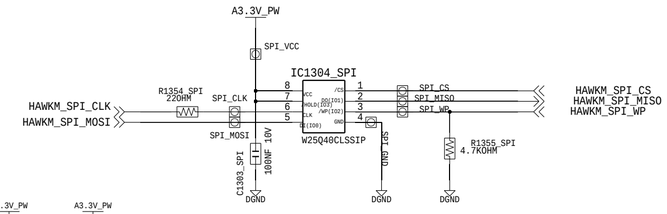
UART_SEL:
CORE_AVS2
SW_INVERTER: UP
A1.5V_ENABLE: DN
CEC_MC
WIFI_WOL
BT_WAKE: UP
LED_STB
HAWK_DDR3_CKEIN
WIFI_NRESET: UP
AMP_NRESET: UP



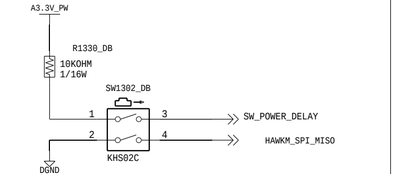
HAWK_DDR3_CKEIN



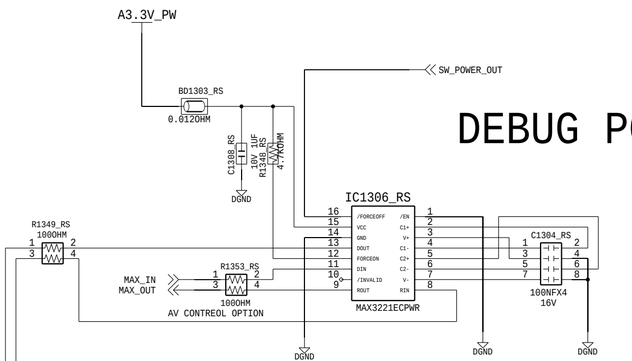
MICOM SPI FLASH



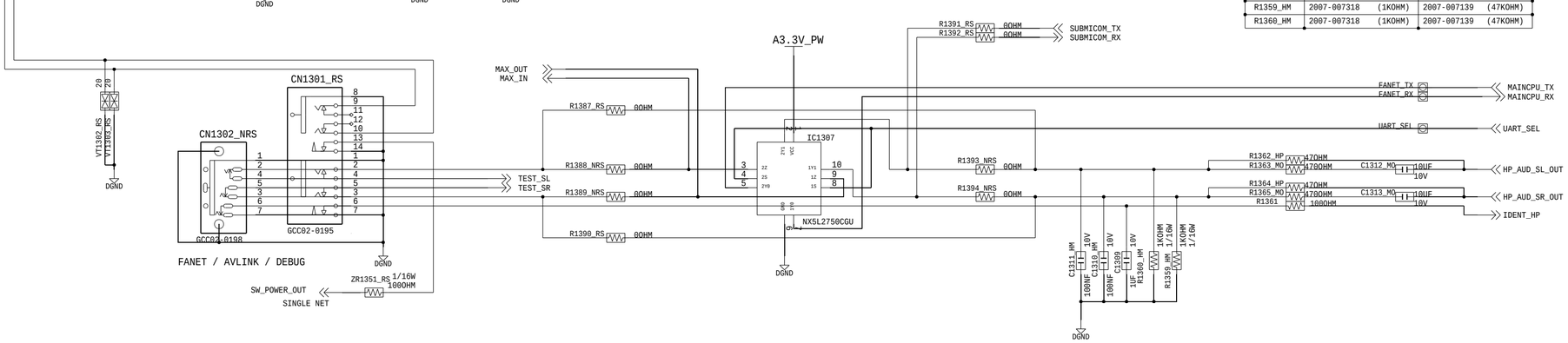
MICOM DEBUG SW



DEBUG PORT



HEADPHONE & LR OUT



1. UART_SEL에 따른 H/W 물리적 연결 구성

	UART_SEL	연결
EX link 적용 지역	0	Main UART to RS jack
	1	Sub UART to RS jack
EX link 미적용 지역	0	Main UART to Headphone jack
	1	Headphone signal to headphone jack

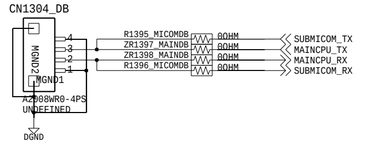
2. Factory 모드 / EX link(AV Control) 지원에 따른 상세 시나리오

Factory 모드	EX link 사양	동작 모드	UART_SEL	포트 설정 Main(UART0)	포트 설정 Sub(UART1)	동작사양 (RS : RS 잭 / NRS : Headphone 잭)
UART (양산/공정 사양)	O	Normal	0	FANET(9600)	AV Control	EX link
		Standby	1	unknown	AV Control	EX link
	X	Normal	1	FANET(9600)	Input	Headphone
		Standby	1	unknown	Input	N/A(Headphone)
Debug power on : 메인 debug standby : 서브 debug	O	Normal	0	debug(115200)	debug	Main debug
		Standby	1	unknown	debug	Sub debug
	X	Normal	0	debug(115200)	debug	Main debug
		Standby	1	unknown	debug	N/A(Headphone)
FANET (사양 없음 - 삭제 검토)	O	Normal	0	FANET(115200)	debug	FANET
		Standby	1	unknown	debug	N/A(Headphone)
	X	Normal	0	FANET(115200)	debug	FANET
		Standby	1	unknown	debug	N/A(Headphone)

※ Standby에서 Normal 모드 전환할 때 UART_SEL을 1 -> 0으로 바꾸는 경우(작업에 의한 Power on포함) POWER_DET High 확인 후 UART_SEL control
※ Standby 진입 시 UART_SEL의 이전 Status와 상관없이 SW_POWER High control 후 UART_SEL 1 설정

LOCATION	HEADPHONE OUT (EU/CIS/AFRICA)		MONITOR LR OUT (AMERICA,ASIA)	
C1310_HM	2203-006048	(100NF)	2203-000714	(3.3NF)
C1311_HM	2203-006048	(100NF)	2203-000714	(3.3NF)
R1359_HM	2007-007318	(1KOHM)	2007-007139	(47KOHM)
R1360_HM	2007-007318	(1KOHM)	2007-007139	(47KOHM)

DEBUG CONNECTOR



PROJECT NAME	hawk_m_uhd_6k_boston
A2	
DRAWN BY	sanghoon.hyun
CHECKED BY	Unknown
SAMSUNG	
DEV.STEP	@pre_dev@
REV.	1.0
APPROVED BY	Unknown
LAST EDITED TIME	Wed Jan 14 15:50:21 2015
TOTAL PAGE NO.	13 OF 22

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14_SUB MICOM

EXTERNAL SUBMICOM (DELETED)

PROJECT NAME: hawk_m_uhd_6k_boston
A2
DRAWN BY: sanghoon.hyun
CHECKED BY: Unknown
SAMSUNG
DEV.STEP: @pre_dev@
REV.: 1.0
APPROVED BY: Unknown
LAST EDITED TIME: Mon Sep 15 23:30:11 2014
TOTAL PAGE NO.: 14 OF 22

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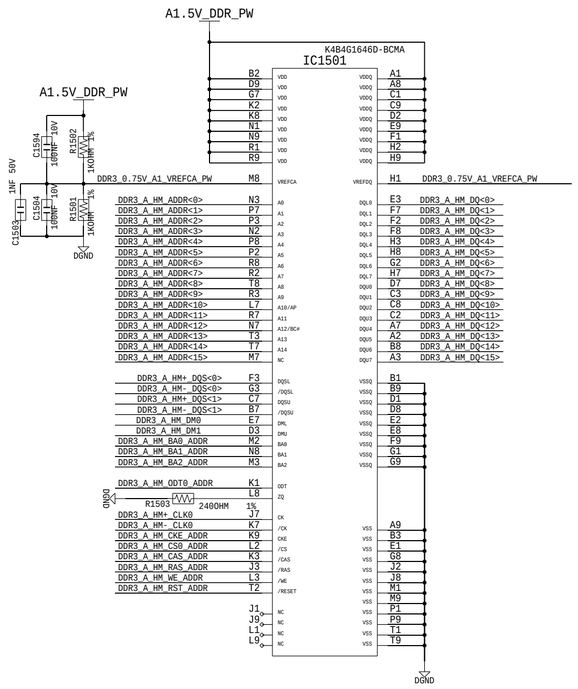
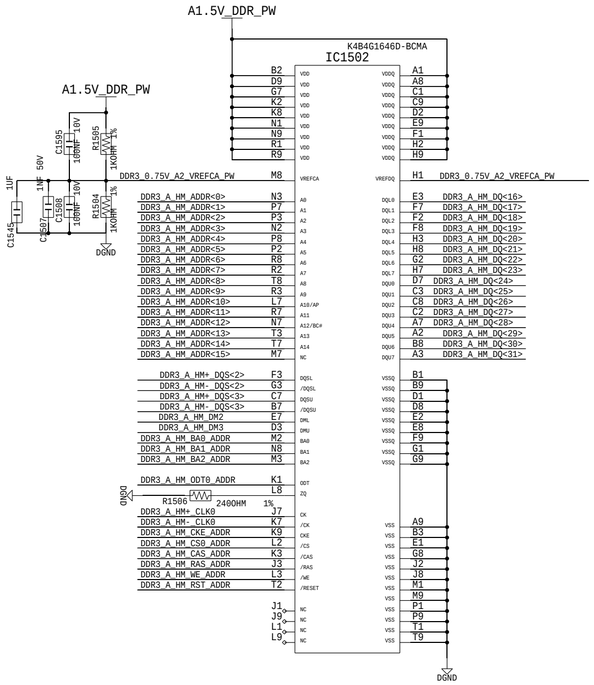
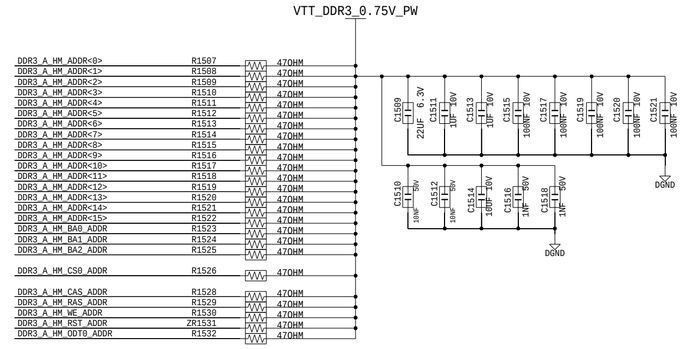
15_DDR A

DDR3_A_512M(1866MBPS)-1105-002528 CLK0/CS0/ODT0







UHD 호크엠 (6.3K↑) 총 2.5GB = 512MB 16bit 4EA + 256MB 16bit 2EA

Shared_Master 채널(B채널 32bit) : 256MB 16bit + 256MB 16bit (0x2000_0000 ~ 0x3FFF_FFFF)

Shared_Slave 채널(C채널 32bit) : 512MB 16bit + 512MB 16bit (0x4000_0000 ~ 0x7FFF_FFFF)

Single 채널(A채널 32bit) : 512MB 16bit + 512MB 16bit (0x8000_0000 ~ 0xBFFF_FFFF)

UHD 호크엠 (6K만) 총 1.5GB = 256MB 16bit 6EA

Shared_Master 채널(B채널 32bit) : 256MB 16bit + 256MB 16bit (0x2000_0000 ~ 0x3FFF_FFFF)

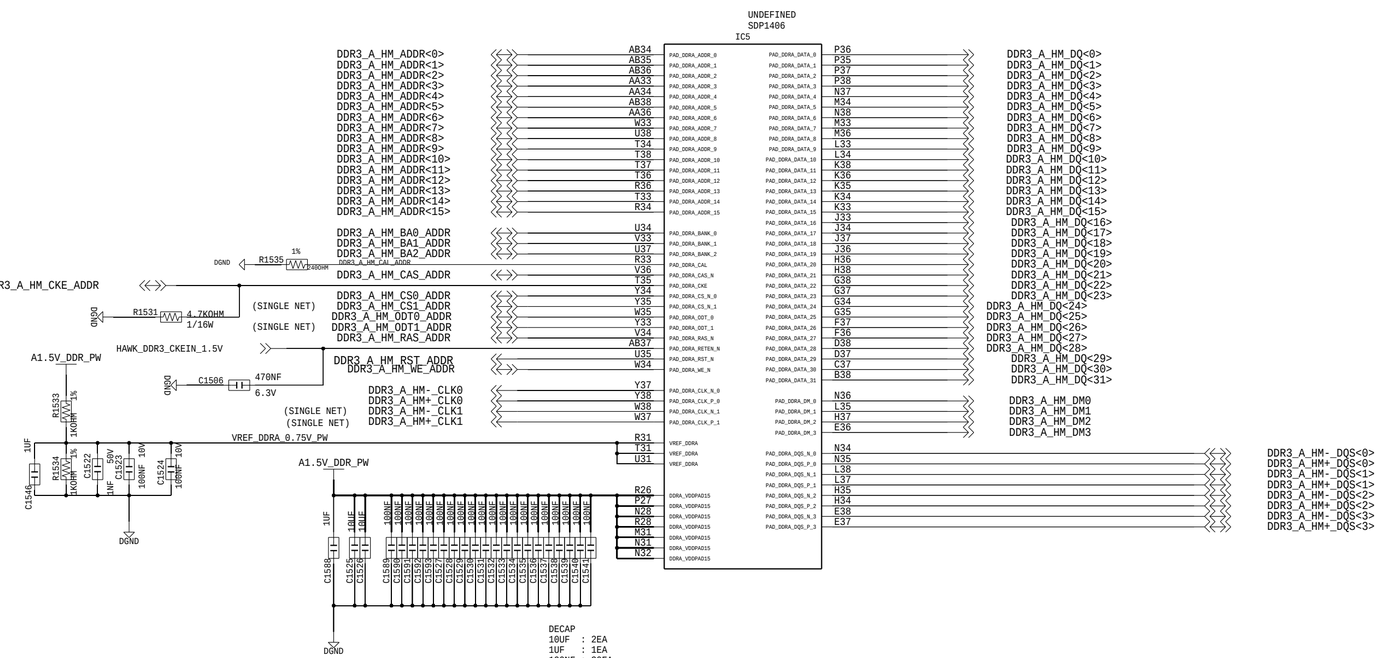
Shared_Slave 채널 (C채널 32bit) : 256MB 16bit + 256MB 16bit (0x4000_0000 ~ 0x7FFF_FFFF)

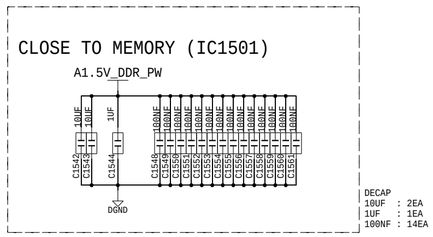
Single 채널(A채널 32bit) : 256MB 16bit + 256MB 16bit (0x8000_0000 ~ 0xBFFF_FFFF)

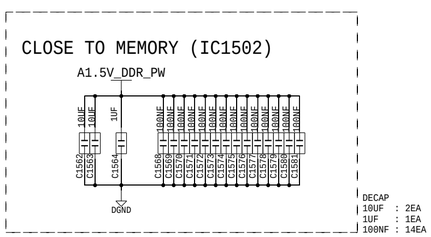
FHD 호크엠 총 1GB = 256MB 16bit 2EA + 512MB 16bit 1EA

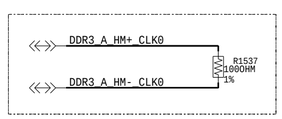
Shared_Master 채널(B채널 32bit) : 256MB 16bit + 256MB 16bit (0x2000_0000 ~ 0x3FFF_FFFF)

Shared_Slave 채널 (C채널 16bit) : 512MB 16bit (0x4000_0000 ~ 0x5FFF_FFFF)









R1537 CLOSE TO DDR(IC1502)

PROJECT NAME: hawk_m_uhd_6k_boston	A2	DRAWN BY: sanghoon.hyun	
		CHECKED BY: Unknown	
SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
LAST EDITED TIME: Wed Jan 14 15:50:22 2015			TOTAL PAGE NO.: 15 OF 22

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BLOCK NAME: hawk_m_uhd_6k_boston | BLK PAGE NO.: 16 OF 22

16_DDR BC

DDR3_B_256M(1866MBPS)-1105-002534 CLK0/CS0/ODT0

IC1601 DM0,1/DQS0,1/DQ0~15

IC1602 DM2,3/DQS2,3/DQ16~31

DDR3_C_512M(1866MBPS)-1105-002528 CLK0/CS0/ODT0

6K : USE 256MB

IC1603 DM4,5/DQS4,5/DQ32~47

IC1604 DM6,7/DQS6,7/DQ48~63

R1601 CLOSE TO DDR(IC1602)
R1602 CLOSE TO DDR(IC1604)

CLOSE TO MEMORY (IC1601)
CLOSE TO MEMORY (IC1602)
CLOSE TO MEMORY (IC1603)
CLOSE TO MEMORY (IC1604)

DECAP
10UF : 2EA
1UF : 1EA
100NF : 14EA

DECAP
10UF : 2EA
1UF : 1EA
100NF : 28EA

PROJECT NAME	hawk_m_uhd_6k_boston
A2	
DRAWN BY	sanghoon.hyun
CHECKED BY	Unknown
APPROVED BY	Unknown
DEV.STEP	@pre_dev@
REV.	1.0
LAST EDITED TIME	Wed Jan 14 15:50:18 2015
TOTAL PAGE NO.	16 OF 22

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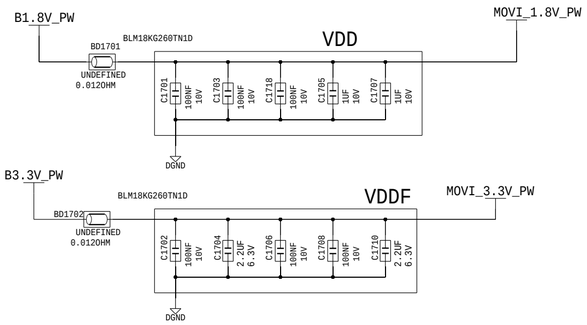
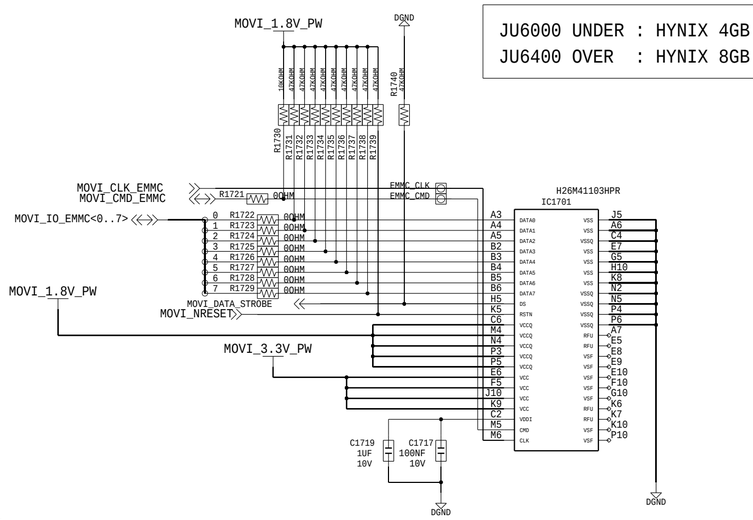
17_EMMC / JTAG

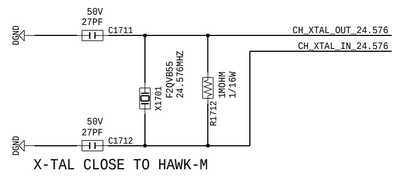
EMMC 5.0

JU6000 UNDER : HYNIX 4GB (1107-002361)
JU6400 OVER : HYNIX 8GB (1107-002357)

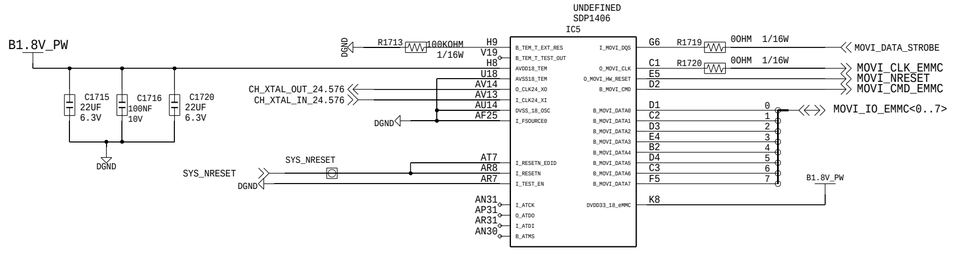




SYSTEM CLOCK 24.576MHZ



X-TAL CLOSE TO HAWK-M



JTAG (DELETED)

PROJECT NAME: hawk_m_uhd_6k_boston	A2	DRAWN BY: sanghoon.hyun	
		CHECKED BY: Unknown	
SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
LAST EDITED TIME: Wed Jan 14 15:50:13 2015			TOTAL PAGE NO.: 17 OF 22

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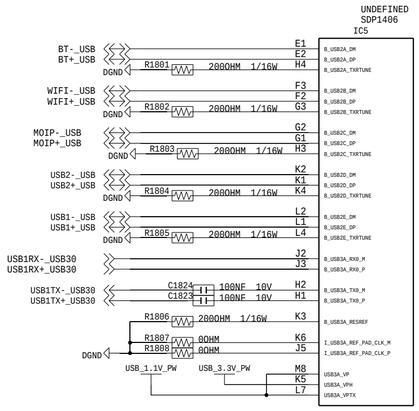
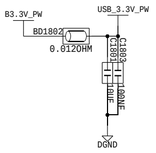
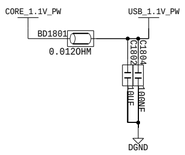
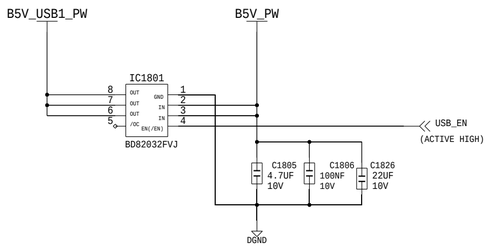
18_USB





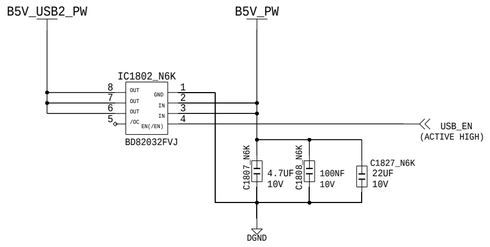


USB1(USB 3.0)



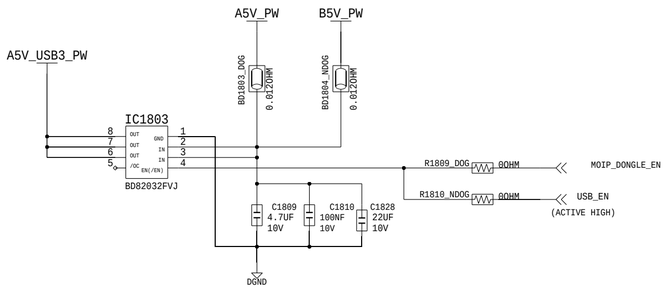
USB1 = 1.0A CURRENT LIMIT

USB2

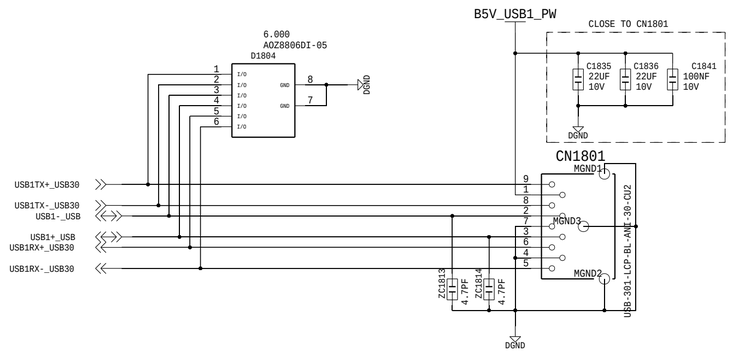


USB2 = 0.5A CURRENT LIMIT

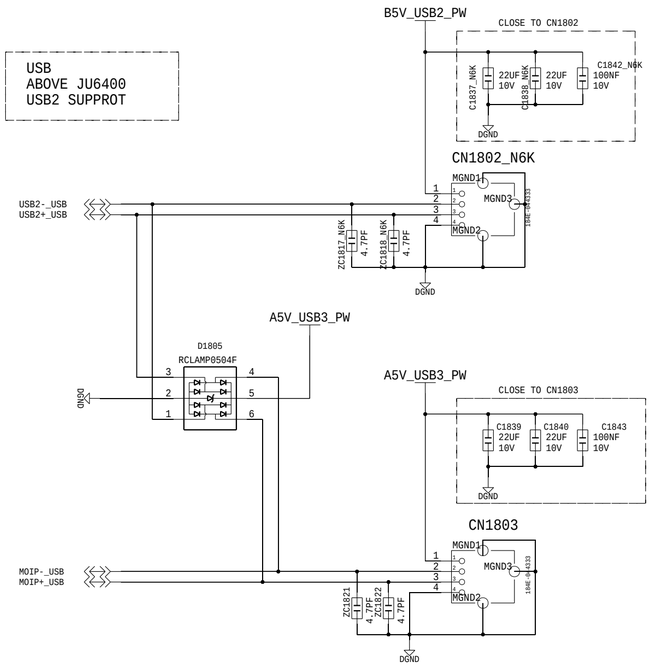
USB3(3G DONGLE)



USB3 = 0.5A CURRENT LIMIT



USB
ABOVE JU6400
USB2 SUPPROT



PROJECT NAME: hawk_m_uhd_6k_boston		A2	DRAWN BY: sanghoon.hyun
			CHECKED BY: Unknown
SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
LAST EDITED TIME: Wed Jan 14 15:50:25 2015			TOTAL PAGE NO.: 18 OF 22

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BLOCK NAME: hawk_m_uhd_6k_boston
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19_IR BLASTER

IR BLASTER BLOCK (DELETED)

PROJECT NAME: hawk_m_uhd_6k_boston
A2
DRAWN BY: sanghoon.hyun
CHECKED BY: Unknown
SAMSUNG
DEV.STEP: @pre_dev@
REV.: 1.0
APPROVED BY: Unknown
LAST EDITED TIME: Tue Nov 18 23:28:30 2014
TOTAL PAGE NO.: 19 OF 22

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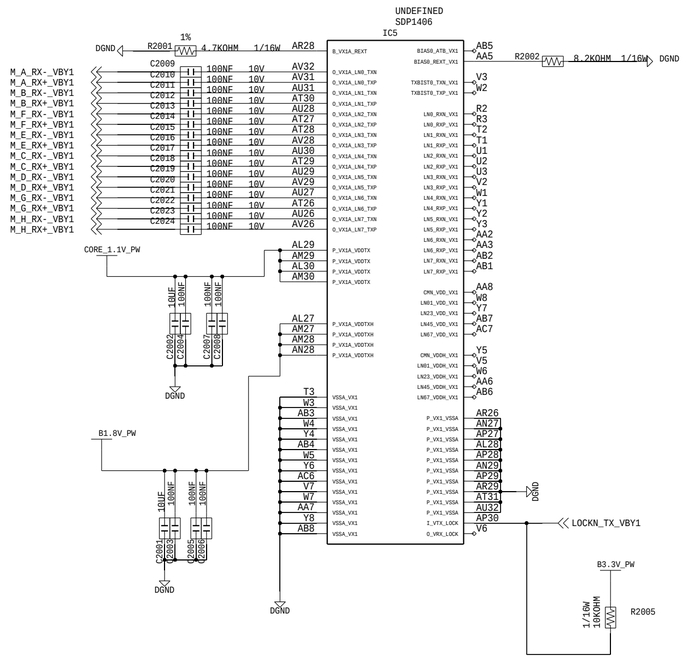
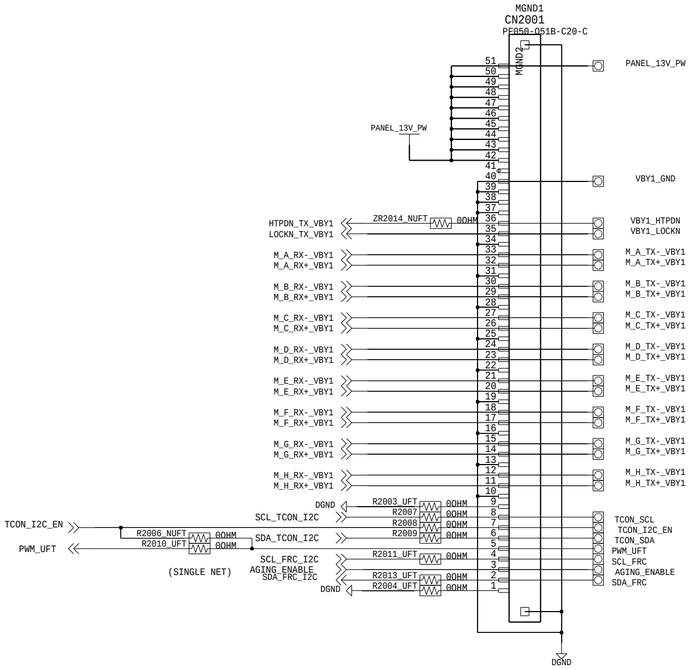
BLOCK NAME: hawk_m_uhd_6k_boston
BLK PAGE NO.: 20 OF 22

20_VBY1





PROJECT NAME: hawk_m_uhd_6k_boston	A2	DRAWN BY: sanghoon.hyun	
		CHECKED BY: Unknown	
SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
LAST EDITED TIME: Wed Jan 14 15:50:29 2015			TOTAL PAGE NO.: 20 OF 22

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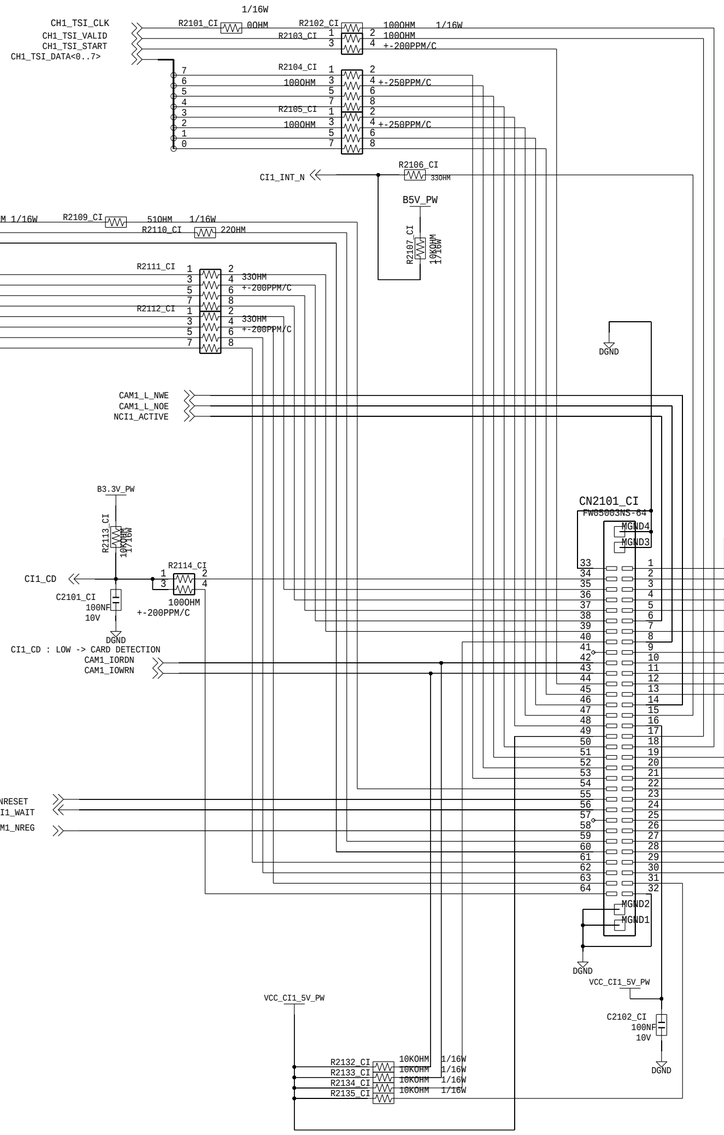
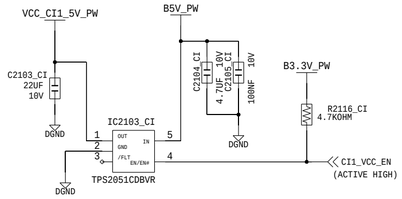
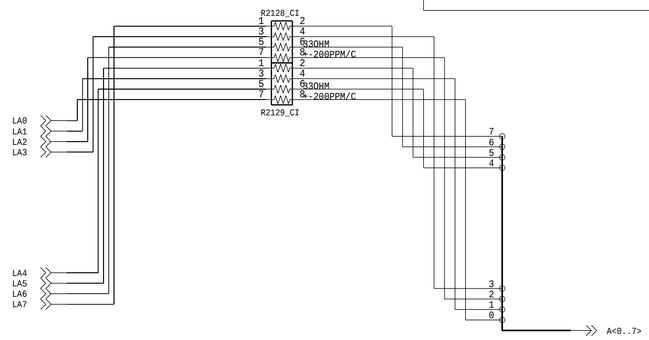
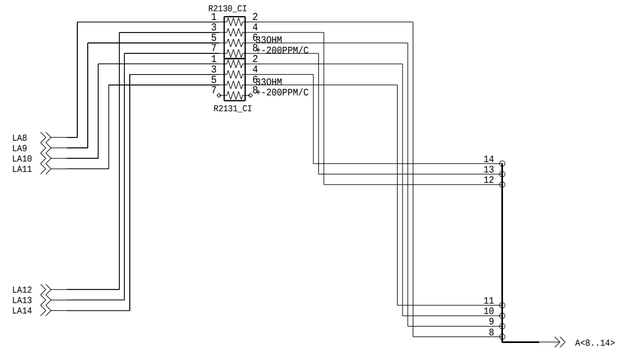
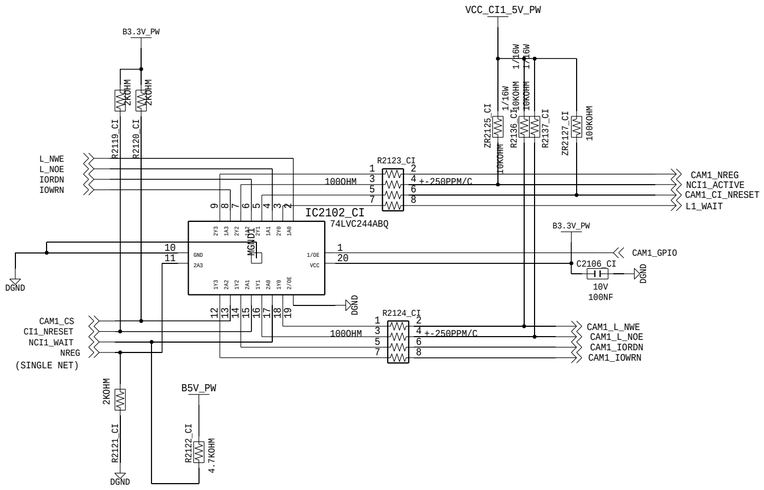
21.CI











PROJECT NAME: hawk_m_uhd_6k_boston	A2		DRAWN BY: sanghoon.hyun
			CHECKED BY: Unknown
SAMSUNG	DEV.STEP: @pre_dev@	REV.: 1.0	APPROVED BY: Unknown
LAST EDITED TIME: Wed Jan 14 15:50:32 2015			TOTAL PAGE NO.: 21 OF 22

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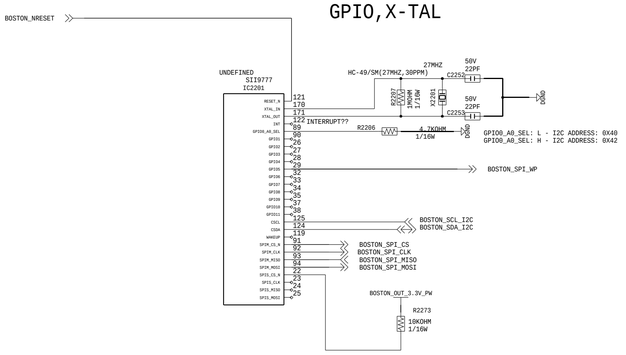
22.BOSTON

GPIO,X-TAL



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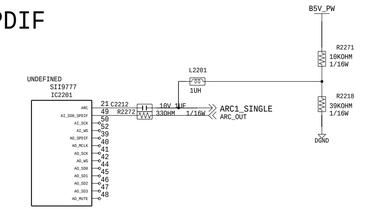

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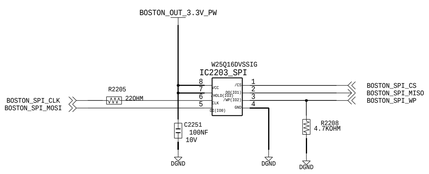

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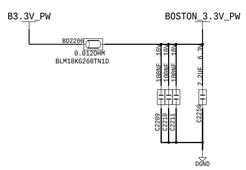
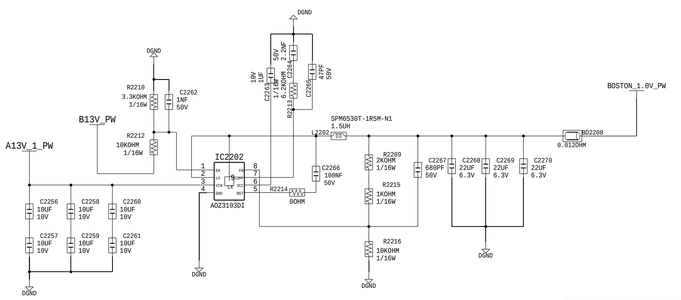
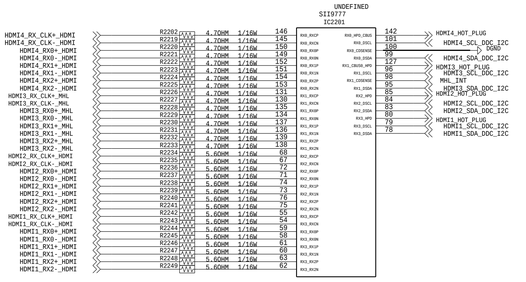
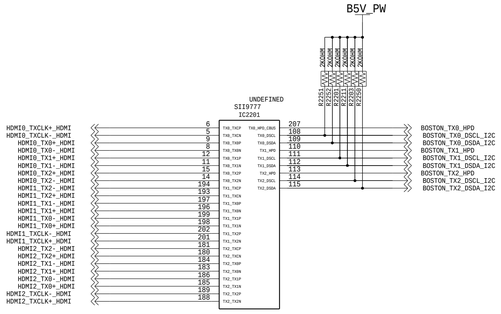
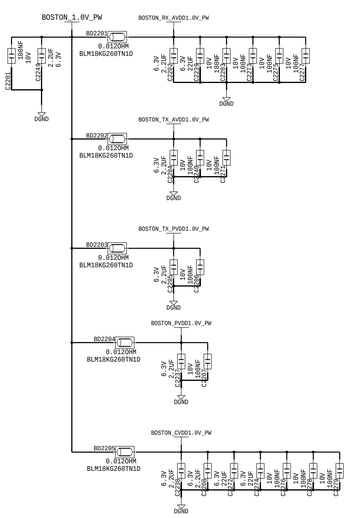


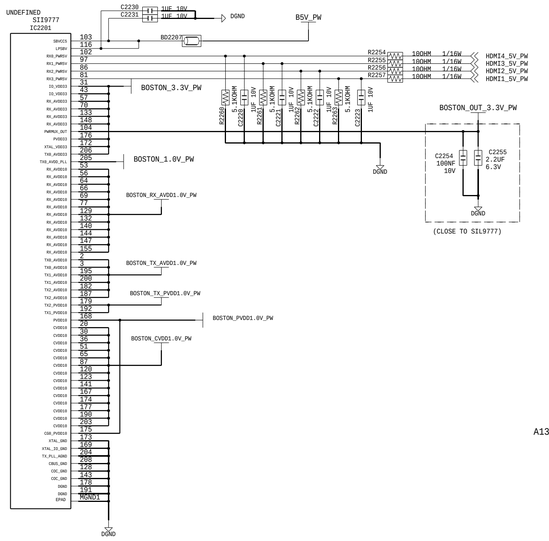
BOSTON 1.0V (3A)

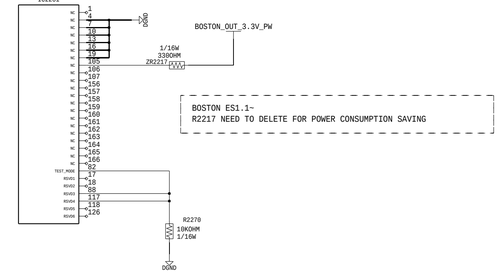












PROJECT NAME		A1	DRAWN BY
hawk_m_uhd_6k_boston			sanghoon.hyun
			CHECKED BY
			Unknown
SAMSUNG	DEV.STEP @pre_dev@	REV. 1.0	APPROVED BY Unknown
LAST EDITED TIME			TOTAL PAGE NO.
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