

ARTIK710 INTERPOSER BOARD REV1.0

Revision	Date	Description
0.0	2016.05.13	First Version
0.1	2016.06.03	
0.2	2016.06.08	
1.0		

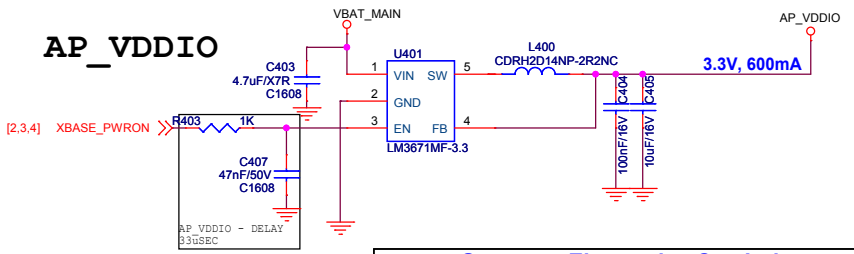
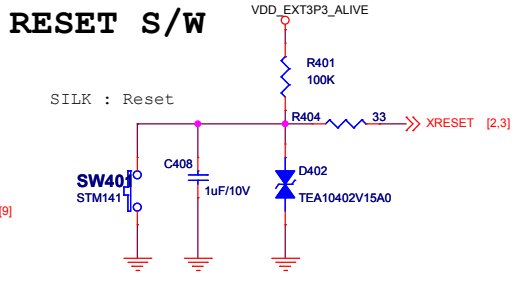
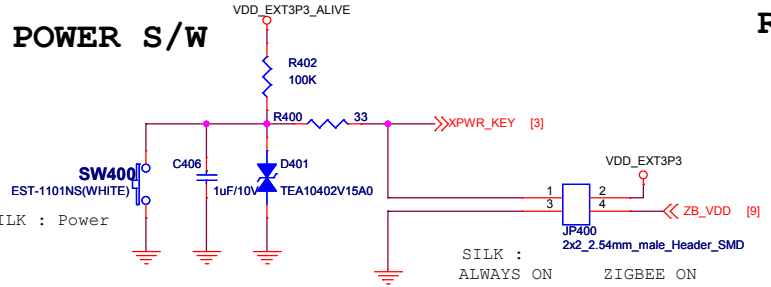
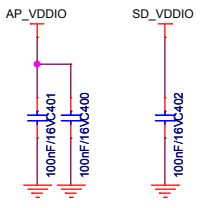
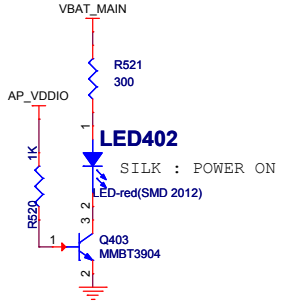
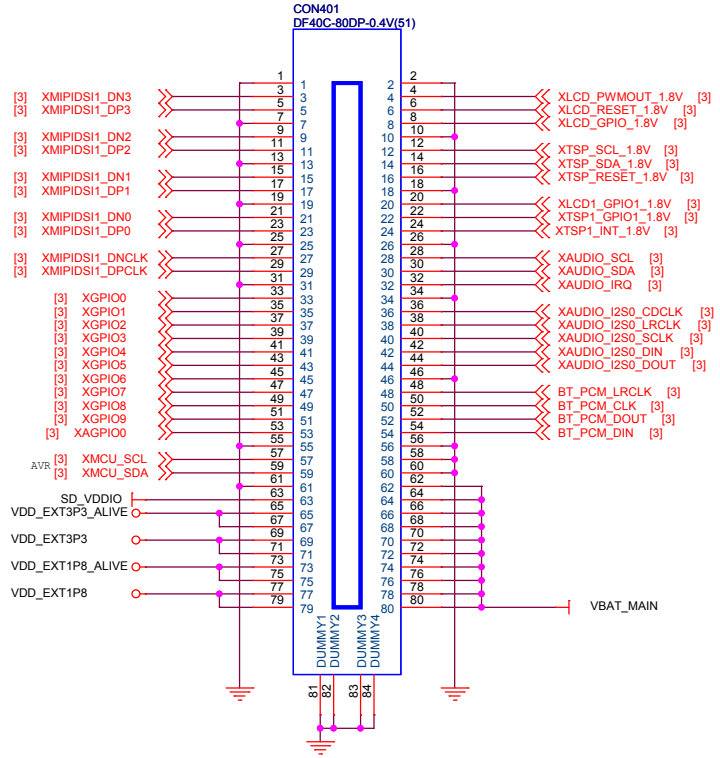
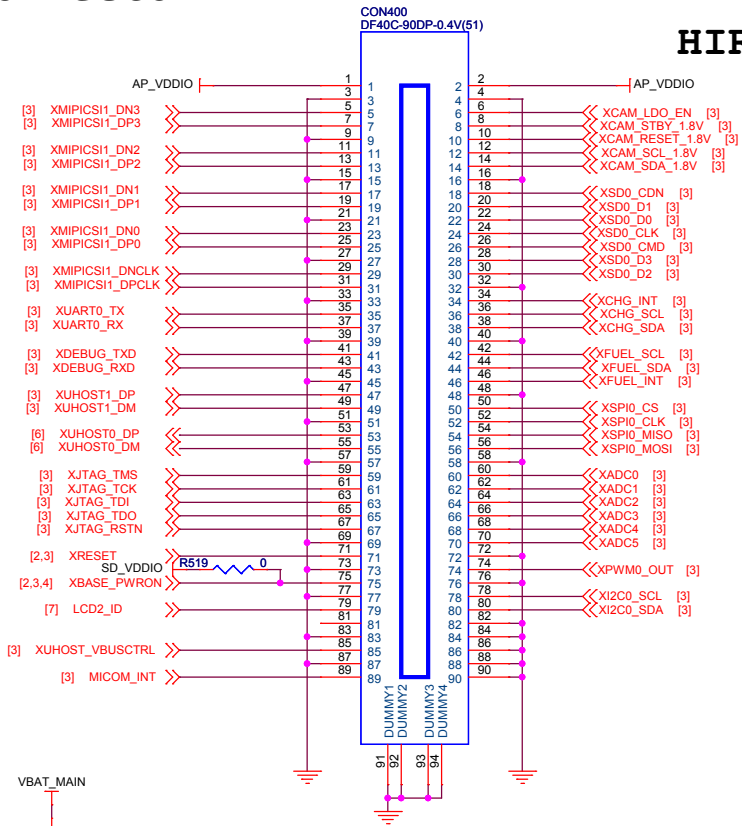
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05:	USB OTG		
06:	HSIC		
07:	LCD LVDS DISPLAY		
08:	HDMI		
09:	BM, RTC, ANT, ZIGBEE		
10:	Revision History		

This schematic was designed using standard symbol.

B2B Connector

Stacking height - 4mm

HIROSE Header

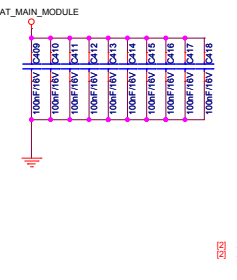


Samsung Electronics Co., Ltd.		
ARTIK 710 INTERPOSER BOARD REV1.0		
Size A3	Document Number 02: B2B Connector	Rev 0.3
Date: Friday, October 28, 2016	Sheet 2	of 10

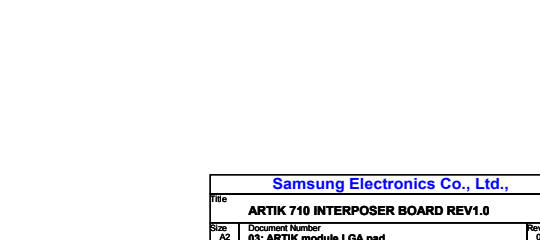
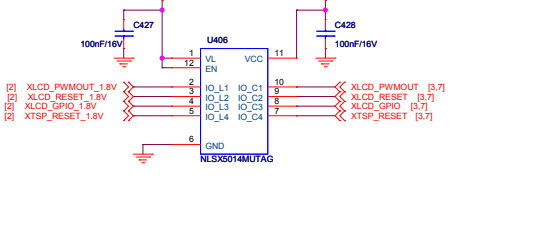
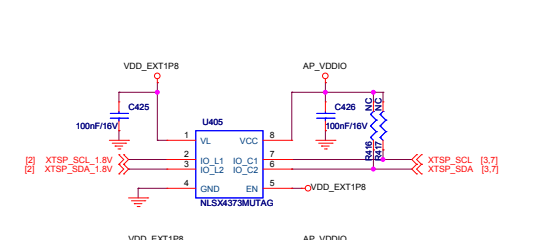
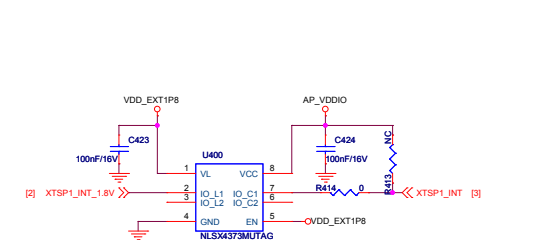
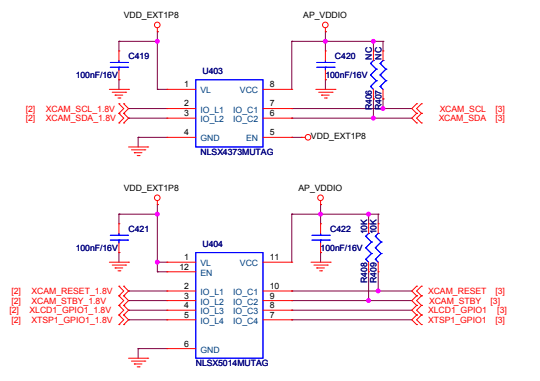
ARTIK_LGA_PAD

[9] XBOOT_CONF00	PAK32	AP_GP813_SDC_BOOT
[9] XBOOT_CONF01	PAK33	AP_GP815_SDI_BOOT
[9] XBOOT_CONF02	PAK34	AP_DIS06_BOOT
[9] XBOOT_CONF03	PAK31	AP_GPB4_VID1_3_BOOT
[2] XADC0	PY1	
[2] XADC1	PY2	
[2] XADC2	PAK1	
[2] XADC3	PAK2	
[2] XADC4	PW1	
[2] XADC5	PW2	
[2] XMPICSH1_DP0	PB11	AP_MIPICSH_DP0
[2] XMPICSH1_DN0	PB12	AP_MIPICSH_DN0
[2] XMPICSH1_DP1	PA13	AP_MIPICSH_DP1
[2] XMPICSH1_DN1	PA14	AP_MIPICSH_DN1
[2] XMPICSH1_DP2	PA13	AP_MIPICSH_DP2
[2] XMPICSH1_DN2	PB14	AP_MIPICSH_DN2
[2] XMPICSH1_DP3	PA14	AP_MIPICSH_DP3
[2] XMPICSH1_DN3	PB15	AP_MIPICSH_DN3
[2] XMPICSH1_DPCLK	PB10	AP_MIPICSH_DPCLK
[2] XMPICSH1_DNCLK	PA10	AP_MIPICSH_DNCLK
[2] XCAM_LDO_EN	PAK48	AP_GPA6
[2] XCAM_RESE	PAK41	AP_GPA17
[2] XCAM_SCL	PAK10	AP_GPD2_SCL0
[2] XCAM_SDA	PAK10	AP_GPD3_SDA0
[2] XCAM_STBY	PAK42	AP_GPA5
[2] XSD0_CMD	PAK37	AP_GP816
[2] XSD0_CLK	PAK30	AP_SDO_CLK
[2] XSD0_CMD	PAK30	AP_SDO_CMD
[2] XSD0_D0	PAK29	AP_SDO_D0
[2] XSD0_D1	PAK29	AP_SDO_D1
[2] XSD0_D2	PAK28	AP_SDO_D2
[2] XSD0_D3	PAK28	AP_SDO_D3
[2] XCHG_INT	PAK41	AP_GPA10
[2] XCHG_SCL	PAK38	AP_GPA20
[2] XCHG_SDA	PAK40	AP_GPA19
[2] XFUEL_INT	PAK19	AP_NBATTF
[2] XFUEL_SCL	PAK9	AP_GPA9
[2] XFUEL_SDA	PAK9	AP_GPA13
[2] XICD_SCL	PAK9	AP_GPD4_SCL1
[2] XICD_SDA	PAK9	AP_GPD5_SDA1
[9] XRTC_INT	PAE5	AP_AGF2_RTC_INT_N
[9] XRTC_SCL	PAE5	AP_GPE3
[9] XRTC_SDA	PAE5	AP_GPE31
[2] XDEBUG_RXD	PAK22	AP_UARTRX3
[2] XDEBUG_TXD	PAK22	AP_UARTTX3
[2] XUART0_RX	PAK23	AP_UARTRX4
[2] XUART0_TX	PAK23	AP_UARTTX4
[2] XSPI0_CLK	PAK4	AP_GPC9_SPI2_CLK
[2] XSPI0_CS	PAK3	AP_GPC10_SPI2_CS
[2] XSPI0_MISO	PAK3	AP_GPC11_SPI2_MISO
[2] XSPI0_MOSI	PAK3	AP_GPC12_SPI2_MOSI
[2] MICOM_INT	PAK6	AP_SPI0_CLK
	PAK5	AP_SPI0_CS
	PAK5	AP_SPI0_MSD0
	PAK5	AP_SPI0_MOSI
[6] XHSIC_STROBE	PA38	AP_HSIC_STROBE
[6] XHSIC_DATA	PA38	AP_HSIC_DATA
[6] XHSIC_HUB_CONNECT	PAK39	AP_GPA18
[6] XHSIC_HUB_INT	PAK38	AP_GPE2
[6] XHSIC_HUB_RST	PAK24	AP_GPA22
[6] XHSIC_HUB_SCL	PAK24	AP_UARTTX5
[6] XHSIC_HUB_SDA	PAK24	AP_UARTRX5
[2] XUHOST1_DM	PA36	AP_USBH_DM
[2] XUHOST1_DP	PB36	AP_USBH_DP
[2] XUHOST_VBUSCTRL	PB41	AP_GPA16
[5] XUSB3_DM	PA35	AP_OTG_DM
[5] XUSB3_DP	PB35	AP_OTG_DP
[5] XUSB3_ID	PB37	AP_OTG_ID
[5] XUSB3_VBUS	PAK43	VCCSP0_OTGVBUS1
[5] XUSB3_VBUSCTRL	PA41	VCCSP0_OTGVBUS2
	PA41	AP_GPA15
[2] XJTAG_RSTN	PAE1	AP_NTRST
[2] XJTAG_TCK	PAE2	AP_TCK
[2] XJTAG_TDI	PAE1	AP_TDI
[2] XJTAG_TDO	PAE2	AP_TDO
[2] XJTAG_TMS	PAE2	AP_TMS
[2,4] XBASE_PWRON	PAK19	AP_VDDPWRON
[2] XPWR_KEY	PAE1	AP_PWRKEY (Low active)
[2] XRESET	PAG1	AP_NRESET
[2] XPWM0_OUT	PAK7	AP_GPC14_PWM2
[9] XLED1_OUT	PAK29	AP_GPA28_I2SMCLK1
[9] XLED1_IN	PAK29	AP_GPA30_VID1_0_I2SBCLK1
[9] XLED2_IN	PAK25	AP_GPB0_VID1_1_I2SLRCK1
[9] XLED2_OUT	PAK27	AP_GPB0_VID1_C_I2SDOUT1

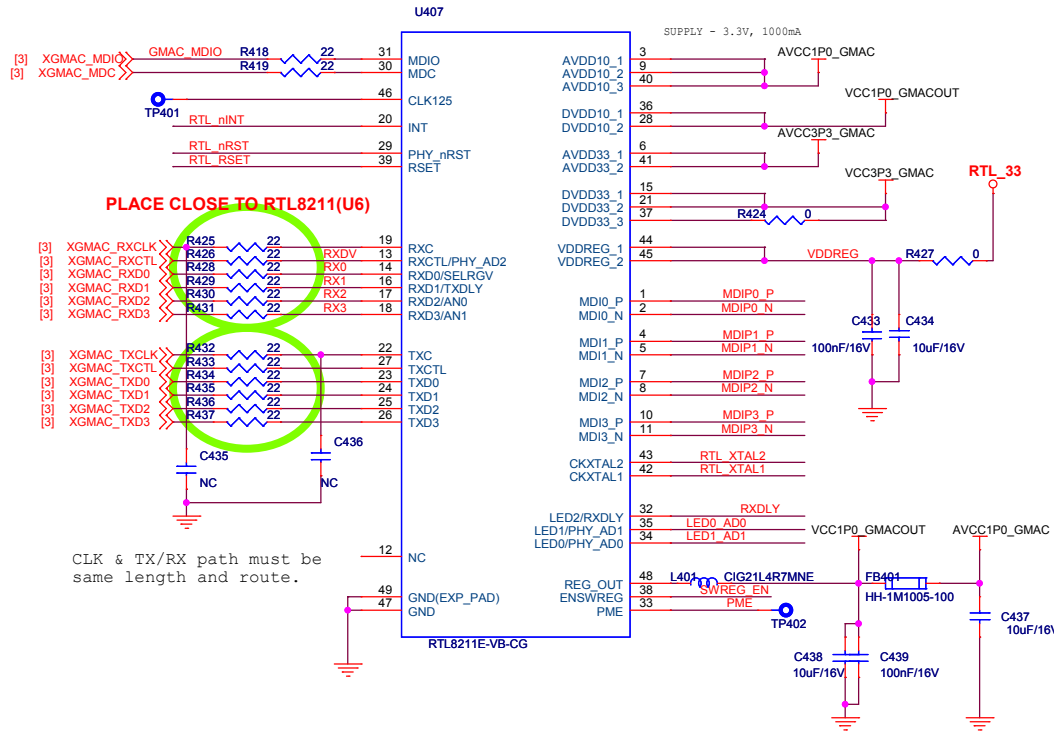
AP_GP808	PAK33	XAUDIO_IRG [2]
AP_GPA4	PB40	XAUDIO_SDA [2]
AP_GPA4	PB39	XAUDIO_SCL [2]
AP_I2S0_MCLK	PA2	XAUDIO_I2S0_CDCLK [2]
AP_I2S0_LRCLK	PA1	XAUDIO_I2S0_LRCLK [2]
AP_I2S0_BCLK	PA1	XAUDIO_I2S0_SCLK [2]
AP_I2S0_DIN	PAK1	XAUDIO_I2S0_DIN [2]
AP_I2S0_DOUT	PAK1	XAUDIO_I2S0_DOUT [2]
BT_PCM_LRCK	PAK3	BT_PCM_LRCLK [2]
BT_PCM_CLK	PAK3	BT_PCM_CLK [2]
BT_PCM_D_OUT	PAK2	BT_PCM_DOUT [2]
BT_PCM_D_IN	PAK3	BT_PCM_DIN [2]
GMAC_RXCLK	PB5	XGMAC_RXCLK [4]
GMAC_RXD0	PB5	XGMAC_RXD0 [4]
GMAC_RXD1	PB7	XGMAC_RXD1 [4]
GMAC_RXD2	PA7	XGMAC_RXD2 [4]
GMAC_RXD3	PB6	XGMAC_RXD3 [4]
GMAC_TXCLK	PA5	XGMAC_TXCLK [4]
GMAC_TXEN	PB2	XGMAC_TXEN [4]
GMAC_TXD0	PA2	XGMAC_TXD0 [4]
GMAC_TXD1	PB3	XGMAC_TXD1 [4]
GMAC_TXD2	PA3	XGMAC_TXD2 [4]
GMAC_TXD3	PA3	XGMAC_TXD3 [4]
GMAC_MDIO	PB4	XGMAC_MDIO [4]
GMAC_MDC	PA4	XGMAC_MDC [4]
AP_GPA12	PA42	XETHPHY_RST [4]
AP_GPA11	PA42	XETHPHY_INT [4]
AP_HDMI_TX0P	PA32	XHDMI_TX0P [8]
AP_HDMI_TX0N	PB31	XHDMI_TX0N [8]
AP_HDMI_TX1P	PA31	XHDMI_TX1P [8]
AP_HDMI_TX1N	PB30	XHDMI_TX1N [8]
AP_HDMI_TX2P	PA30	XHDMI_TX2P [8]
AP_HDMI_TX2N	PB29	XHDMI_TX2N [8]
AP_HDMI_TX3P	PA33	XHDMI_TX3P [8]
AP_HDMI_TX3N	PB33	XHDMI_TX3N [8]
AP_GPA24_HDMI_I2C_SDA	PAK11	XHDMI_SDA [8]
AP_GPA23_HDMI_I2C_SCL	PAK11	XHDMI_SCL [8]
AP_HDMI_HPD	PB29	XHDMI_HPD [8]
AP_GPA21	PAK40	XHDMI_LS_OE [8]
AP_HDMI_CEC	PAK9	XHDMI_CEC [8]
AP_LVDS_TP0	PB22	XLVDS_DP0 [7]
AP_LVDS_TN0	PA22	XLVDS_DN0 [7]
AP_LVDS_TP1	PB23	XLVDS_DP1 [7]
AP_LVDS_TN1	PA23	XLVDS_DN1 [7]
AP_LVDS_TP2	PB24	XLVDS_DP2 [7]
AP_LVDS_TN2	PA24	XLVDS_DN2 [7]
AP_LVDS_TP3	PB26	XLVDS_DP3 [7]
AP_LVDS_TN3	PA26	XLVDS_DN3 [7]
AP_LVDS_TP4	PB27	XLVDS_DP4 [7]
AP_LVDS_TN4	PA27	XLVDS_DN4 [7]
AP_LVDS_TPCLK	PB25	XLVDS_DPCLK [7]
AP_LVDS_TNCLK	PA25	XLVDS_DNCLK [7]
AP_GPC17	PAK33	XLCD2_GPI01 [7]
AP_GPC28	PAK36	XTSP2_GPI01 [7]
AP_GPB6	PAK36	XTSP2_INT [7]
AP_GPD1_PWM0	PAK7	XLCD_PWMOUT [3,7]
AP_GPE30	PAK34	XLCD_RESET [3,7]
AP_GPC0	PAK6	XLCD_GPI0 [3,7]
AP_GPD8_SCL	PAK8	XTSP_SCL [3,7]
AP_GPC7_SDA	PAH2	XTSP_SDA [3,7]
AP_GPC25	PAH2	XTSP_RESET [3,7]
AP_MIPIDSI_DPCLK	PB16	XMIPIDSI_DPCLK [2]
AP_MIPIDSI_DNCLK	PA16	XMIPIDSI_DNCLK [2]
AP_MIPIDSI_DP0	PB17	XMIPIDSI_DP0 [2]
AP_MIPIDSI_DN0	PA17	XMIPIDSI_DN0 [2]
AP_MIPIDSI_DP1	PB18	XMIPIDSI_DP1 [2]
AP_MIPIDSI_DN1	PA18	XMIPIDSI_DN1 [2]
AP_MIPIDSI_DP2	PA19	XMIPIDSI_DP2 [2]
AP_MIPIDSI_DN2	PB20	XMIPIDSI_DN2 [2]
AP_MIPIDSI_DP3	PA20	XMIPIDSI_DP3 [2]
AP_MIPIDSI_DN3	PB20	XMIPIDSI_DN3 [2]
AP_GPE31	PAH43	XLCD1_GPI01 [3]
AP_OTG_DM	PAK36	XTSP1_INT [3]
AP_GPC27	PAK35	XTSP1_GPI01 [3]
ZB_PC0	PAK14	ZB_PC0 [9]
ZB_JTAG	PAK12	ZB_JTAG [9]
ZB_PA4	PAK15	ZB_PA4 [9]
ZB_JTDO	PAK13	ZB_JTDO [9]
ZB_JTCK	PAK12	ZB_JTCK [9]
ZB_JTCK	PAK13	ZB_JTCK [9]
ZB_RSTN	PAK14	ZB_RSTN [9]
ZB_PA5	PAK15	ZB_PA5 [9]
AP_AGP1_HOMEKEY	PAF2	XAGPI00 [2]
AP_GPE0	PAK21	XGPI00 [2]
AP_GPE1	PAK20	XGPI01 [2]
AP_GPE2	PAK37	XGPI02 [2]
AP_GPB14	PAK9	XGPI03 [2]
AP_GPB14	PAK9	XGPI04 [2]
AP_GPB14	PAK9	XGPI05 [2]
AP_GPB14	PAK9	XGPI06 [2]
AP_GPB14	PAK9	XGPI07 [2]
AP_GPB14	PAK9	XGPI08 [2]
AP_GPB14	PAK9	XGPI09 [2]
AP_GPB14	PAK9	XGPI10 [2]
AP_GPB14	PAK9	XMCU_SCL [2]
AP_GPB14	PAK9	XMCU_SDA [2]



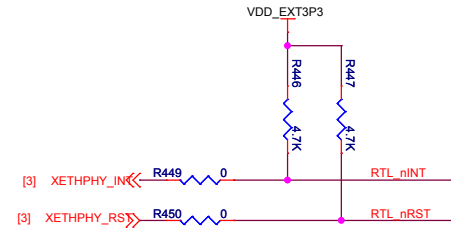
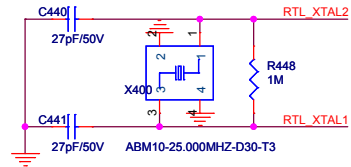
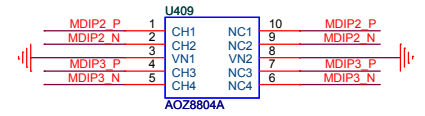
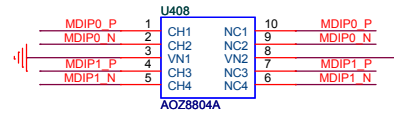
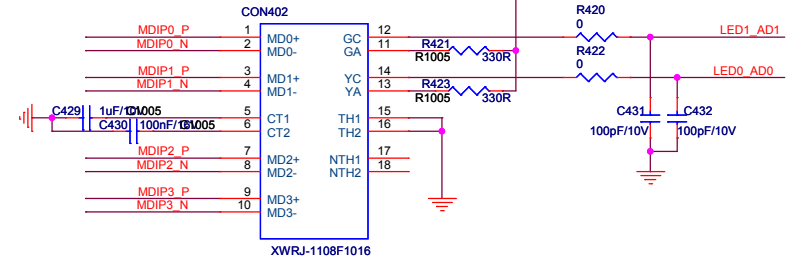
LEVEL TRANSLATOR



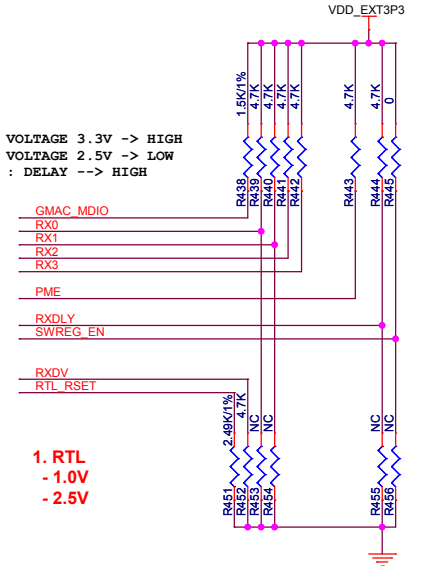
RGMII ETHERNET PHY



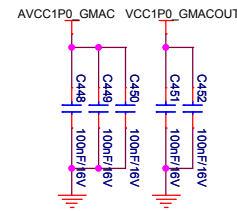
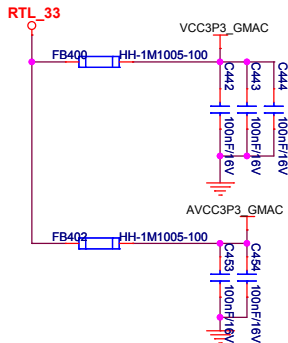
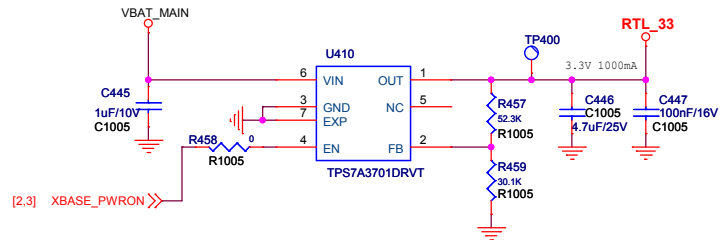
SILK [giga bit ETHERNET] RTL_33



RX0 : I/O VOLTAGE 3.3V -> HIGH
I/O VOLTAGE 2.5V -> LOW
RXDLY, RX1 : DELAY -> HIGH

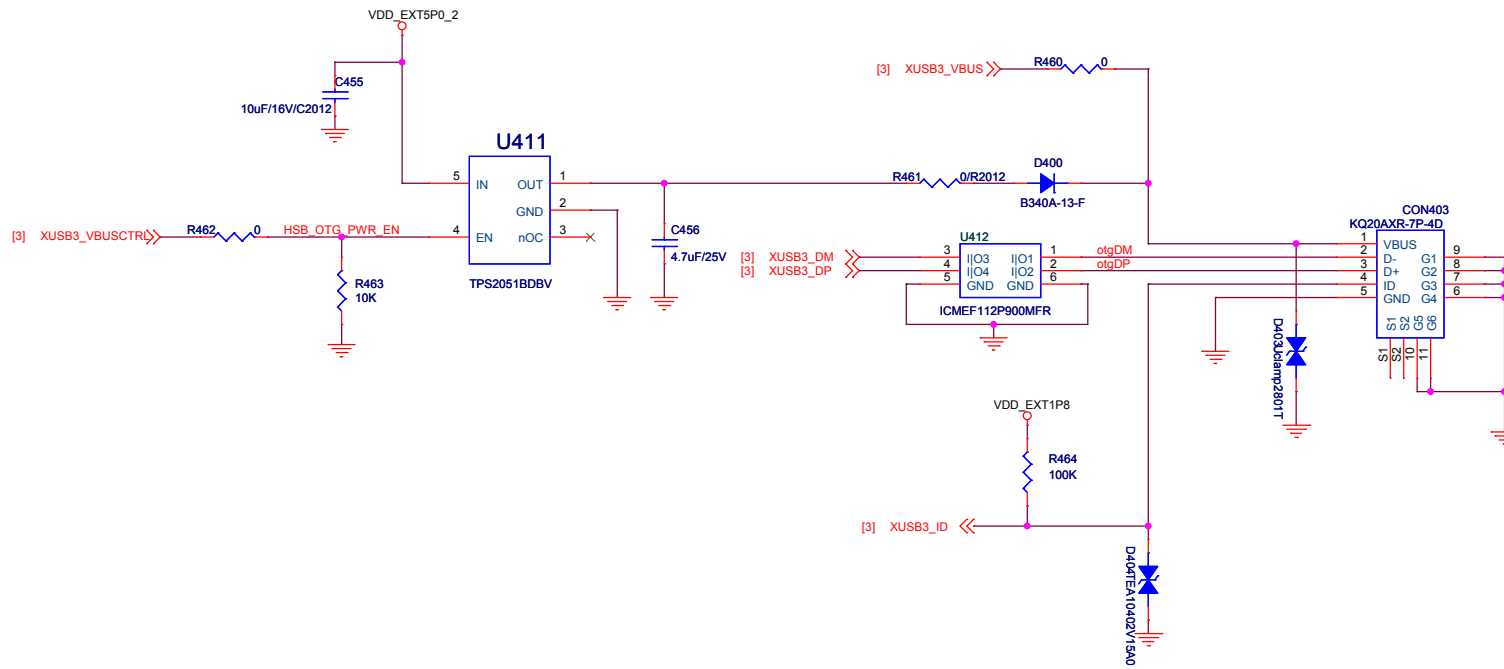


1. RTL
- 1.0V
- 2.5V

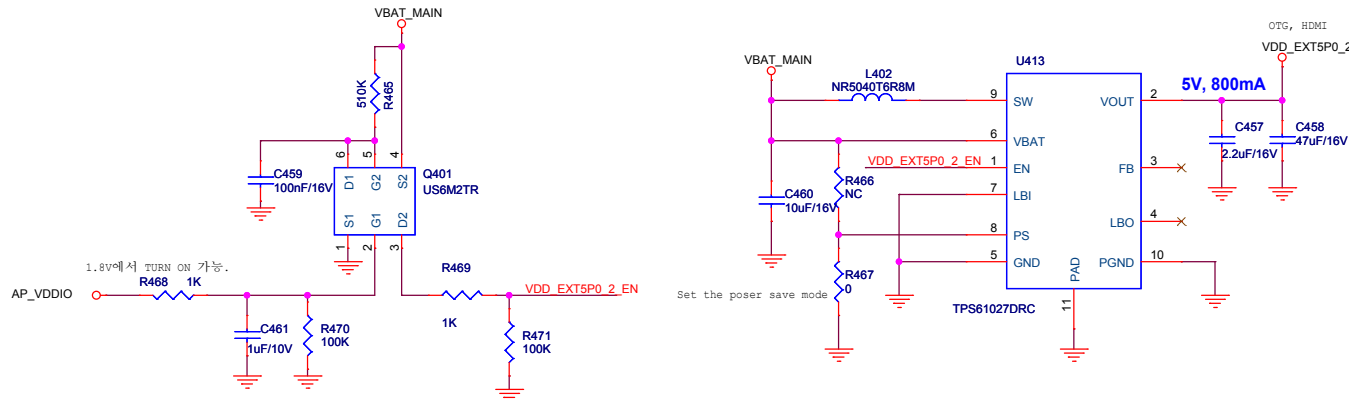


Samsung Electronics Co., Ltd.,		
Title	ARTIK 710 INTERPOSER BOARD REV1.0	
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A3	04: ETHERNET-RTL8211E-VB-CG	0.3
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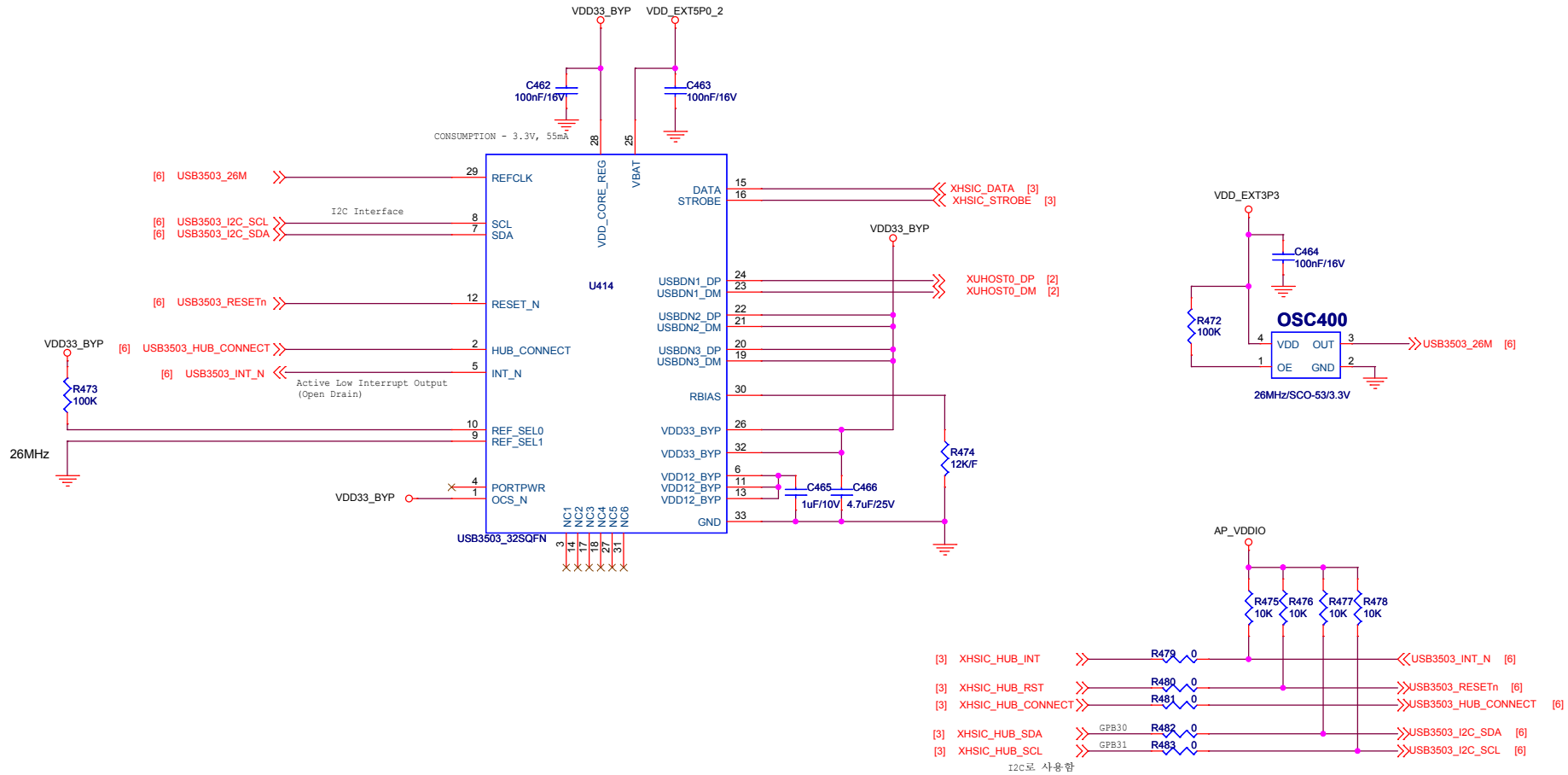
USB OTG



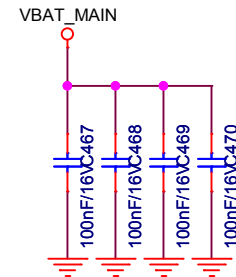
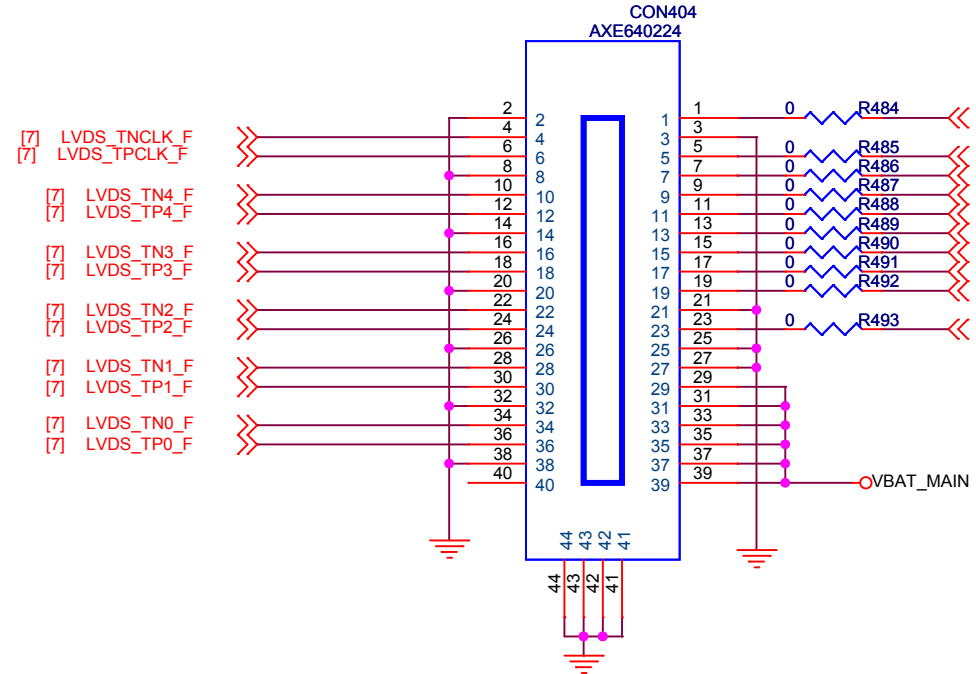
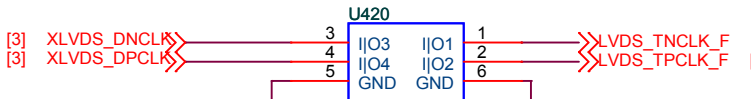
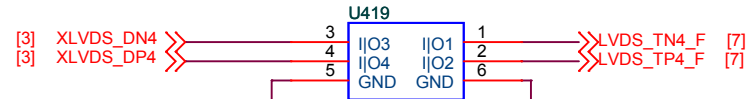
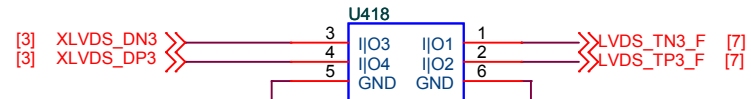
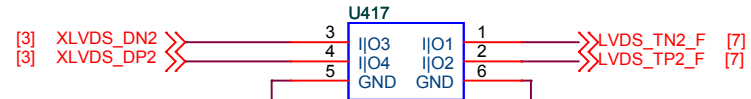
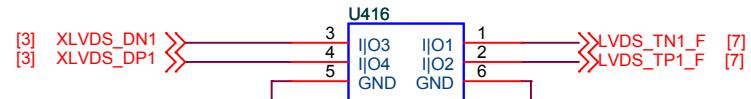
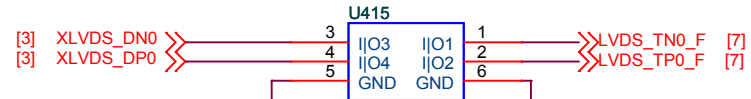
EXT DCDC (Boost) 2



USB HSIC HUB

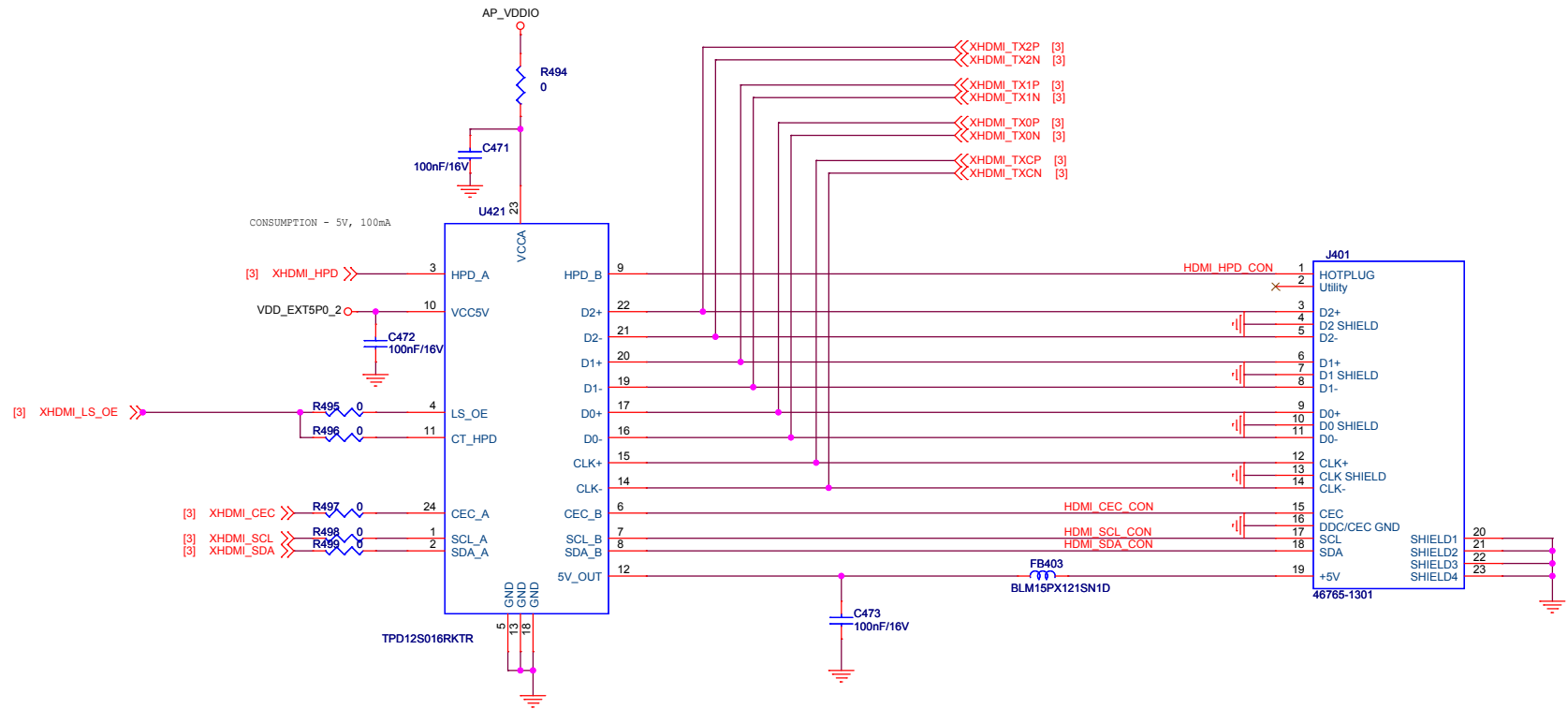


LVDS



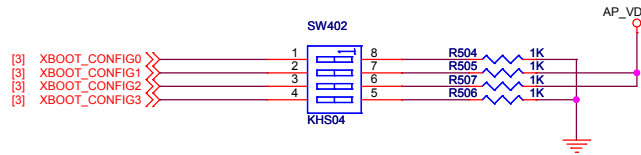
Title		
ARTIK 710 INTERPOSER BOARD REV1.0		
Size	Document Number	Rev
A4	07: LCD LVDS DISPLAY	0.3
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HDMI

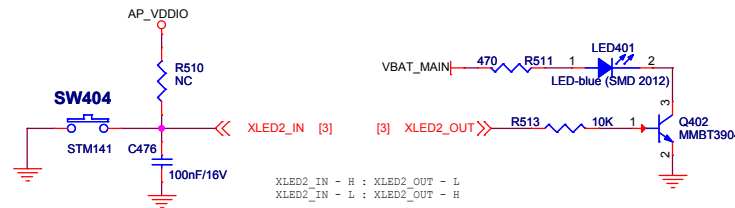
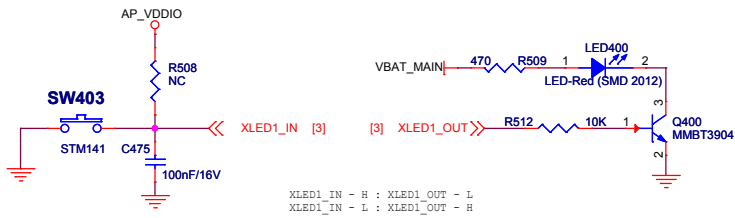


BOOT MODE SEL

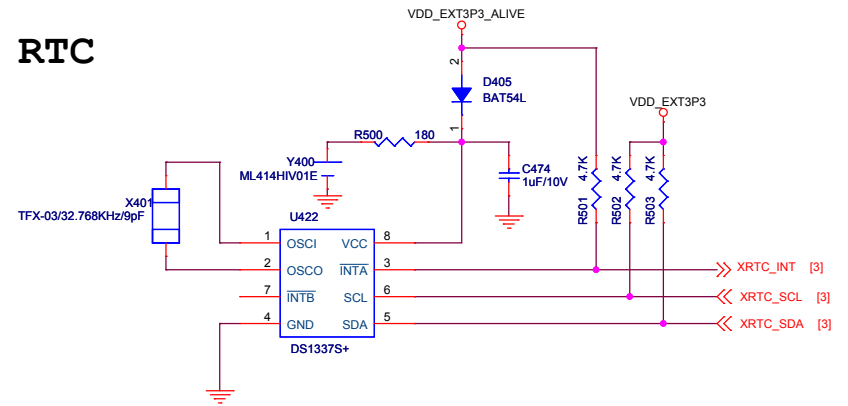
SW402	Comment	eMMC 1st Boot	SD Card 1st Boot	USB 1st Boot
1	-	Off	Off	On
2	-	Off	Off	On
3	Hardware Board Revision ≤ 0.5	On	On	X
3	Hardware Board Revision ≥ 1.0	X	X	X
4	-	Off	On	X



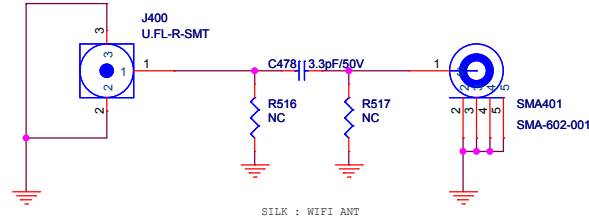
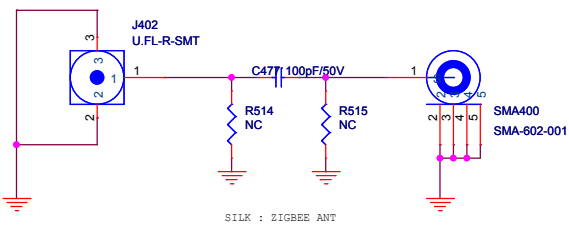
XLED TEST



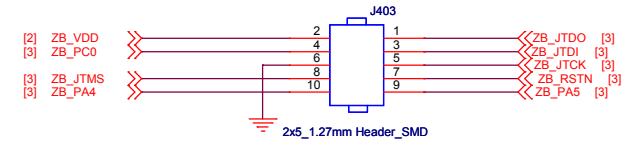
RTC



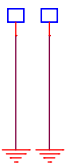
RF ANT PORT



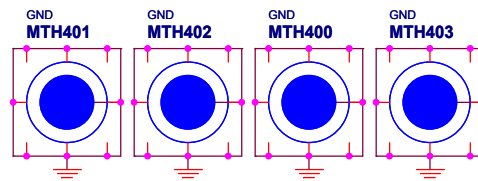
ZIGBEE DN TOOL



tp_2_5x4_5_smd tp_2_5x4_5_smd
TPH40TPH400



GND TP HOLE



Mount Hole

Samsun Electronics Co., Ltd.,		
Title	ARTIK 710 INTERPOSER BOARD REV1.0	
Size	Document Number	Rev
A3	09: BM, RTC, ANT, ZIGBEE	0.3
Date:	Wednesday, November 02, 2016	Sheet 9 of 10

REV #.#	DATE	REVISION HISTORY
0.1	16.05.29	SW2, 3 - ST타입으로 변경
	16.05.31	LVDS FILTER - PIN SWAP
	16.06.02	XTSP1_INT - level shifter 변경 CON6 - AXE640224으로 변경, 39PIN - 삭제
0.2	16.06.16	BM - SILK 수정
0.3	16.06.23	JP1 - SMD로 변경 reference number 변경
	16.06.24	XBASE_PWRON 회로 변경 LED402 추가 R415 삭제
	16.07.18	C440, 441 - 12pF으로 튜닝
	16.07.26	C440, 441 - 27pF으로 원복
	16.08.04	C478 - 3.3pF으로 튜닝
0.3	16.09.28	U402 - PAL31 PAD NAME - AP_GPD4_VID1_3_BOOT -> AP_GPB4_VID1_3_BOOT
	16.10.28	BOOT CONFIG TABLE 변경

REV #.#	DATE	REVISION HISTORY
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