

BPI_F3_LP4XP200_32X1

Revision	Date	Change Description
V1.0	20231207	Initial version
V2.0	20240131	Update based on test results
V3.0	20240401	Update based on test results



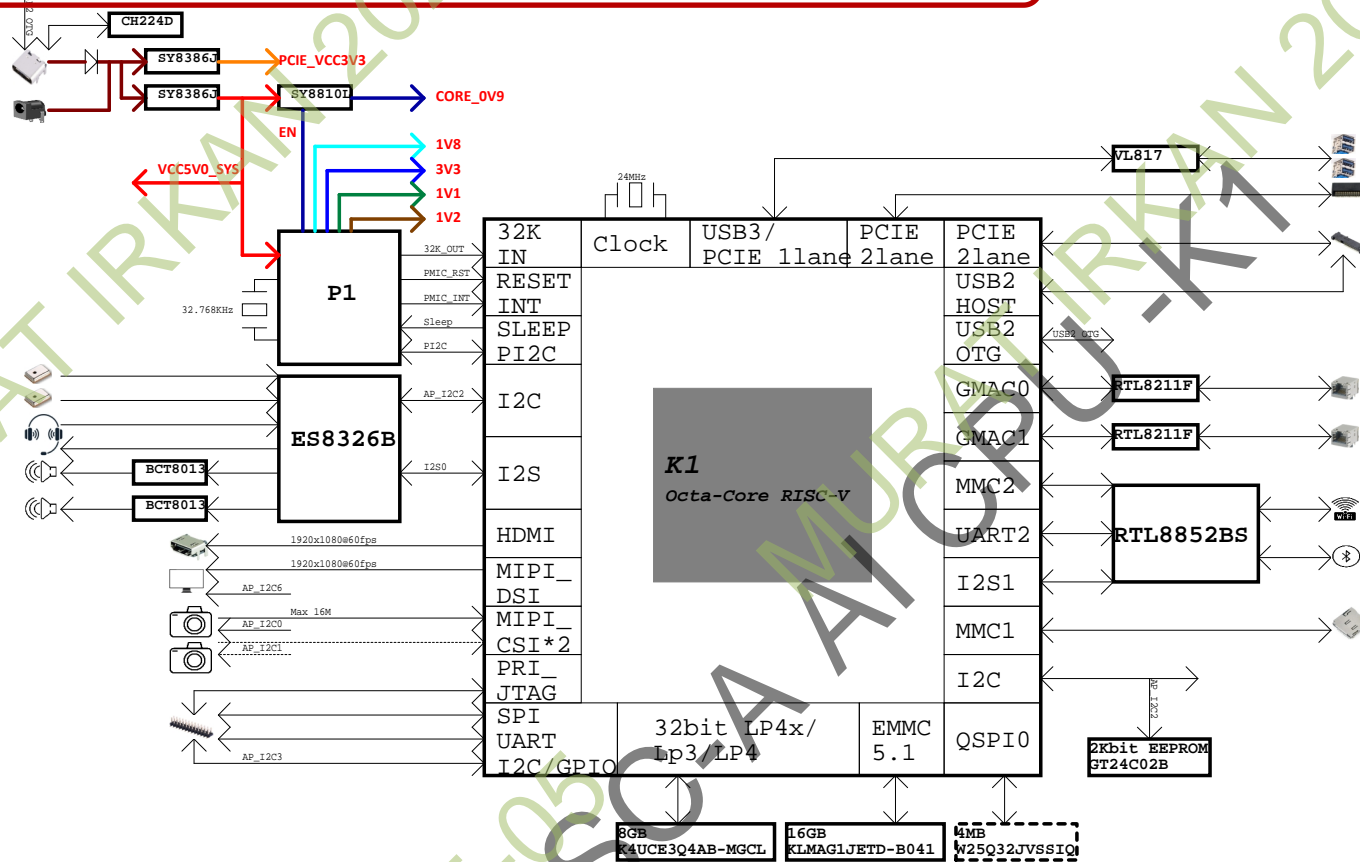
INDEX/NOTES

Page1 01 REVISION HISTORY
Page2 02 INDEX/NOTES
Page3 03 BLOCK DIAGRAM
Page4 04 POWER TREE
Page5 05 POWER SEQUENCE
Page6 06 CLOCK MAP/I2C MAP
Page7 07 UART MAP/OTHER MAP
Page8 08 GPIO ASSIGNMENT
Page9 09 CPU-eMMC-DDR-GPIO
Page10 10 CPU-Perphery
Page11 11 CPU-PWR
Page12 12 CPU-SYS-GPIO
Page13 13 POWER-EXT DCDC
Page14 14 POWER-P1
Page15 15 Memory-LPDDR4x
Page16 16 Storage-eMMC
Page17 17 Storage-FLASH-CARD-EEPROM
Page18 18 VI-Camera
Page19 19 VO-HDMI
Page20 20 VO-MIPI DSI
Page21 21 WiFi/BT-SDIO_2T2R/UART
Page22 22 Ethernet-GMAC0
Page23 23 Ethernet-GMAC1
Page24 24 USB3 HUB/USB2 TypeC/DC IN
Page25 25 PCIEB M.2 KEY M
Page26 26 PCIEC Mini PCIE
Page27 27 Audio ES8326B
Page28 28 26pin GPIO/KEY/LED

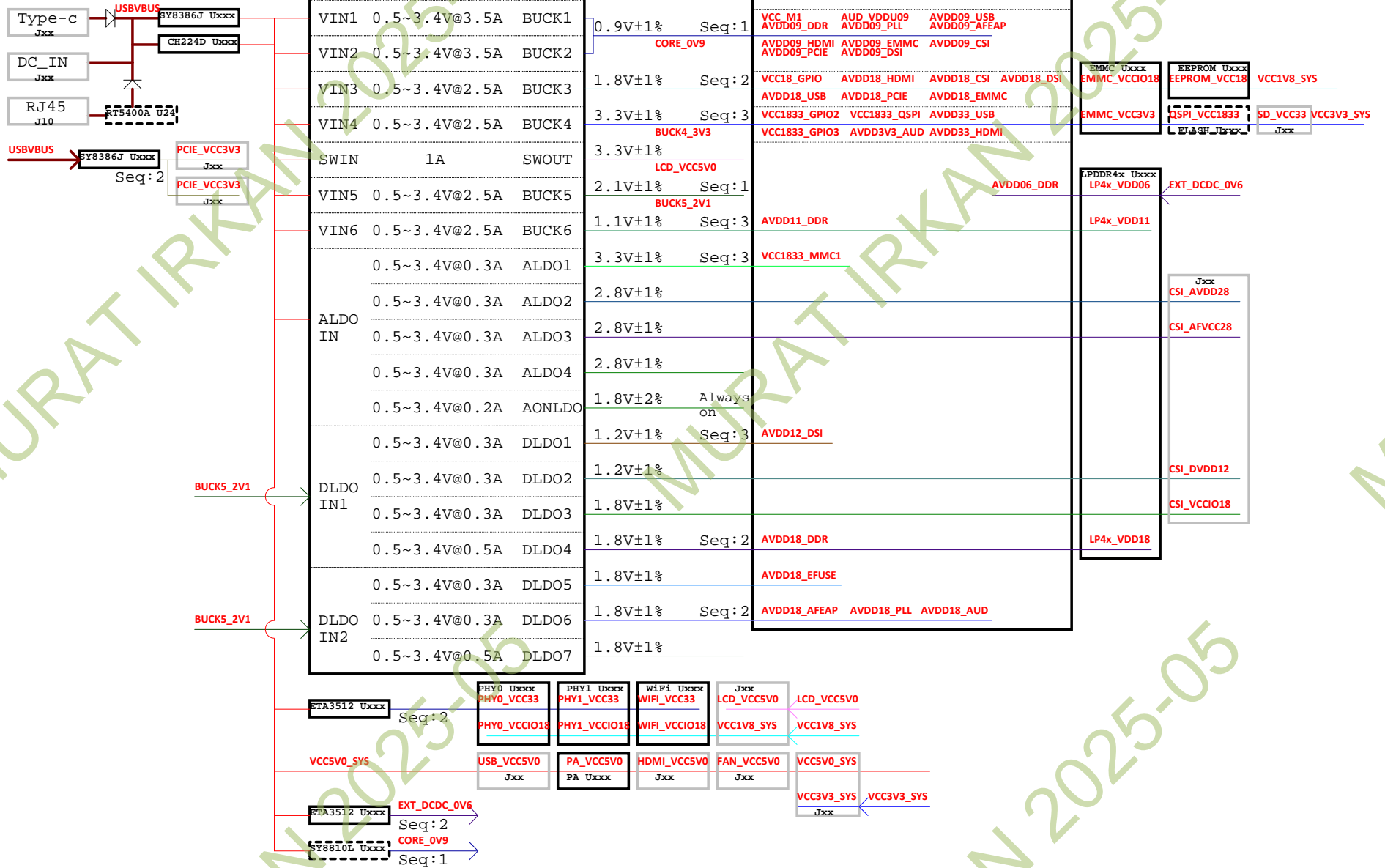


BLOCK

RISC-V 64-BIT K1 CPU : YAPAY ZEKA BİLGİSAYAR-K1

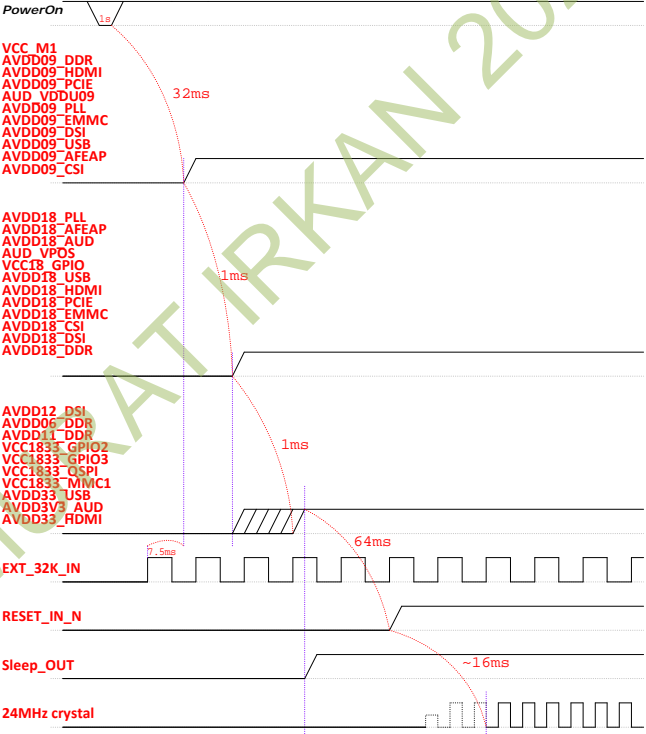


POWER TREE



POWER SEQUENCE

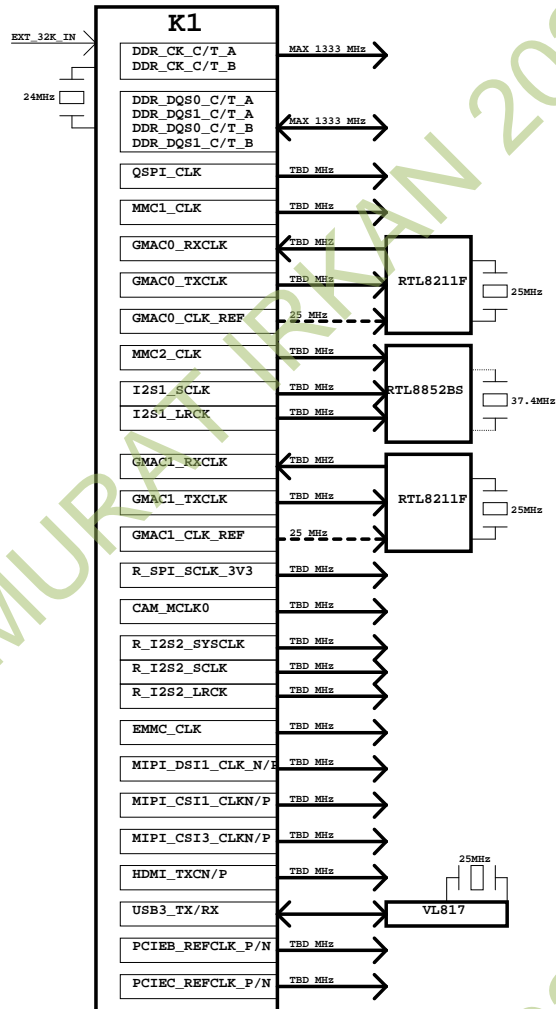
Control by PMIC
冷起自动上电，后续长按关机，短按开机



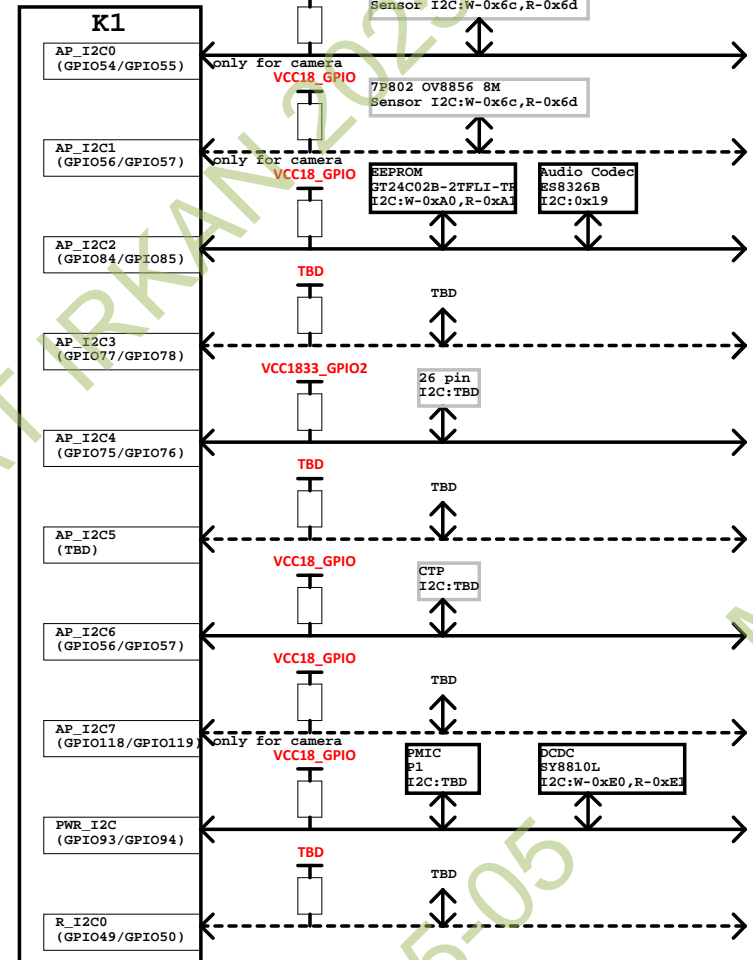
P1



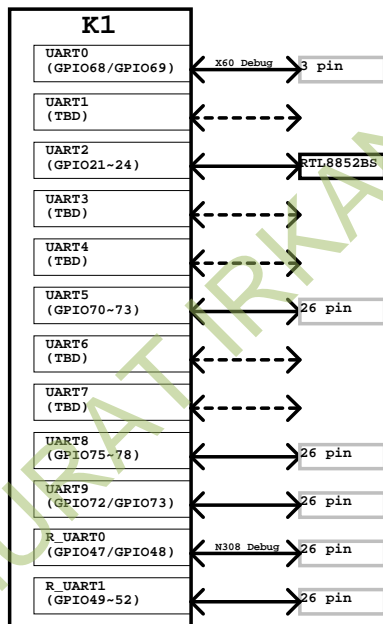
CLOCK MAP



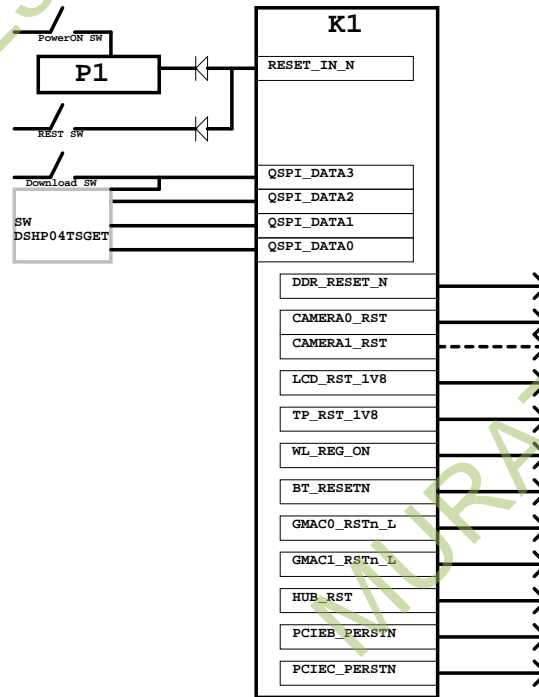
I2C MAP



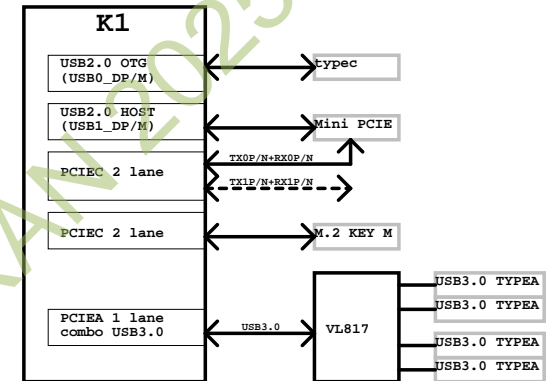
UART MAP



SW&RESET MAP



PCIE/USB MAP



GPIO ASSIGNMENT

PIN	Define	CFG	Function
GPIO0	GMAC0_RXDV	1	Ethernet -GMAC0
GPIO1	GMAC0_RXD0	1	
GPIO2	GMAC0_RXD1	1	
GPIO3	GMAC0_RXCLK	1	
GPIO4	GMAC0_RXD2	1	
GPIO5	GMAC0_RXD3	1	
GPIO6	GMAC0_TXD0	1	
GPIO7	GMAC0_TXD1	1	
GPIO8	GMAC0_TXCLK	1	
GPIO9	GMAC0_TXD2	1	
GPIO10	GMAC0_TXD3	1	
GPIO11	GMAC0_TXEN	1	
GPIO12	GMAC0_MDC	1	
GPIO13	GMAC0_MDIO	1	
GPIO14	GMAC0_INT_N	1	WiFi/BT
GPIO15	MMC2_DATA3	1	
GPIO16	MMC2_DATA2	1	
GPIO17	MMC2_DATA1	1	
GPIO18	MMC2_DATA0	1	
GPIO19	MMC2_CMD	1	
GPIO20	MMC2_CLK	1	
GPIO21	UART2_TXD	1	
GPIO22	UART2_RXD	1	
GPIO23	UART2_CTS_N	1	
GPIO24	UART2_RTS_N	1	
GPIO25	I2S1_SCLK	1	
GPIO26	I2S1_LRCK	1	
GPIO27	I2S1_TXD	1	Ethernet -GMAC1
GPIO28	I2S1_RXD	1	
GPIO29	GMAC1_RXDV	1	
GPIO30	GMAC1_RXD0	1	
GPIO31	GMAC1_RXD1	1	
GPIO32	GMAC1_RXCLK	1	
GPIO33	GMAC1_RXD2	1	
GPIO34	GMAC1_RXD3	1	
GPIO35	GMAC1_TXD0	1	
GPIO36	GMAC1_TXD1	1	
GPIO37	GMAC1_TXCLK	1	
GPIO38	GMAC1_TXD2	1	
GPIO39	GMAC1_TXD3	1	
GPIO40	GMAC1_TXEN	1	LCD/CTP
GPIO41	GMAC1_MDC	1	
GPIO42	GMAC1_MDIO	1	
GPIO43	GMAC1_INT_N	1	
GPIO44	LCD_BL_PWM_1V8	4	
GPIO45	GMAC0_CLK_REF	1	GMAC0
GPIO46	GMAC1_CLK_REF	1	GMAC1

PIN	Define	CFG	Function
GPIO110	GMAC0_RSTn_L	0	GMAC0
GPIO115	GMAC1_RSTn_L	0	GMAC1
GPIO116	WL_DIS_N	0	WiFi/BT
GPIO117	PCIEC_CLKREQN	4	PCIEC
GPIO118	I2S0_SCLK	3	Audio Codec
GPIO119	I2S0_LRCK	3	
GPIO120	I2S0_OUT	3	
GPIO121	I2S0_IN	3	USB3_HUB
GPIO122	I2S0_SYSCLK	3	
GPIO123	HUB_PWREN	0	
GPIO124	HUB_RST	0	USB2
GPIO125	VBUS_ON0	1	
GPIO126	CODEC_IRQ	0	
GPIO127	PA_SHUTDOWN	0	

PIN	Define	CFG	Function
GPIO53	CAM_MCLK0	1	CAMERA0
GPIO54	CAM_I2C0_SCL	1	
GPIO55	CAM_I2C0_SDA	1	
GPIO56	AP_I2C6_SCL	5	LCD/CTP
GPIO57	AP_I2C6_SDA	5	
GPIO58	TP_INT_1V8	0	
GPIO111	CAMERA0_RST	1	CAMERA0
GPIO112	PCIEC_WAKEN	3	PCIEC
GPIO113	CAMERA0_PDN	1	CAMERA0
GPIO114	TP_RST_1V8	0	LCD/CTP
GPIO63	BT_RESETN	0	WiFi/BT
GPIO64	AP_WAKE_BT	0	
GPIO65	BT_WAKE_AP	0	
GPIO66	WL_WAKE_AP	0	
GPIO67	WL_REG_ON	0	X60 Debug
GPIO68	UART0_TXD	2	
GPIO69	UART0_RXD	2	

PIN	Define	CFG	Function
GPIO59	PCIEB_PERSTN	4	PCIEB
GPIO60	PCIEB_WAKEN	4	
GPIO61	PCIEB_CLKREQN	4	
GPIO62	PCIEC_PERSTN	4	PCIEC
GPIO70	GPIO70	1	26 pin
GPIO71	GPIO71	1	
GPIO72	GPIO72	1	
GPIO73	GPIO73	1	
GPIO74	GPIO74	0	

红色字体GPIO表示默认、持续上拉，等效上拉电阻约60K。需要软件修改才能解除默认上拉状态

GENEL KULLANIM PIN TANIMLAMA TABLOSU

PIN	Define	CFG	Function
GPIO93	PI2C_SCL	0	PMIC
GPIO94	PI2C_SDA	0	
GPIO95	SLEEP_OUT	0	LED
GPIO96	GPIO96	1	
GPIO97	USB3_PWREN	1	USB3_HUB
GPIO81	LCD_RST_1V8	0	LCD/CTP
GPIO82	LCD_BL_EN_1V8	0	
GPIO83	LCD_PWR_EN_1V8	0	EEPROM Audio
GPIO84	AP_I2C2_SCL	4	
GPIO85	AP_I2C2_SDA	4	HDMI_OUT
GPIO86	HDMI_SCL	1	
GPIO87	HDMI_SDA	1	
GPIO88	HDMI_CEC	1	26 pin
GPIO89	HDMI_HPD	1	
GPIO90	GPIO90	0	
GPIO91	GPIO91	0	
GPIO92	GPIO92	0	

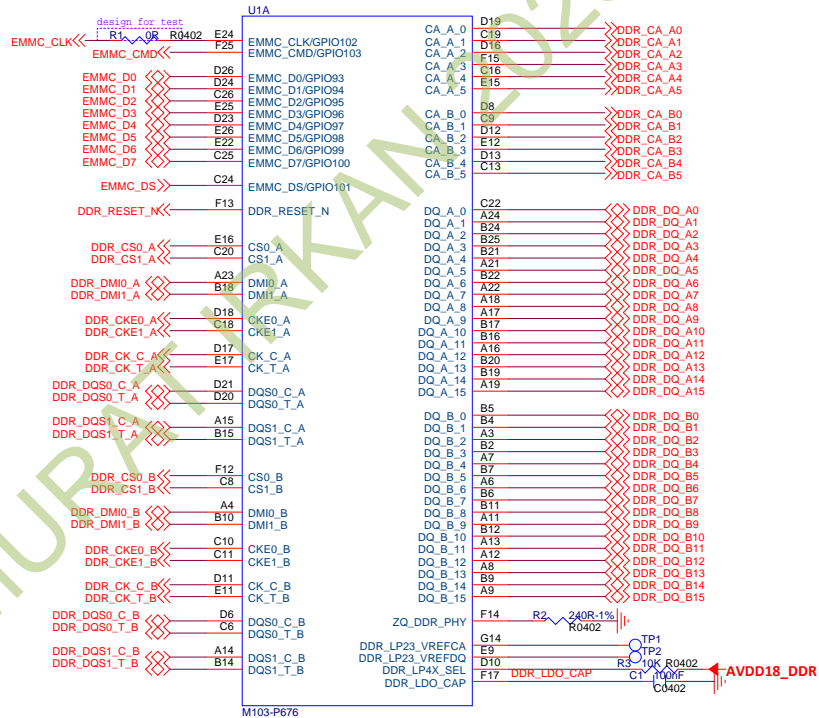
PIN	Define	CFG	Function
GPIO98	QSPI_DATA3	0	SPI FLASH
GPIO99	QSPI_DATA2	0	
GPIO100	QSPI_DATA1	0	
GPIO101	QSPI_DATA0	0	
GPIO102	QSPI_CLK	0	
GPIO103	QSPI_CS1	0	

PIN	Define	CFG	Function
GPIO104	MMC1_DATA3	0	TF CARD
GPIO105	MMC1_DATA2	0	
GPIO106	MMC1_DATA1	0	
GPIO107	MMC1_DATA0	0	
GPIO108	MMC1_CMD	0	
GPIO109	MMC1_CLK	0	

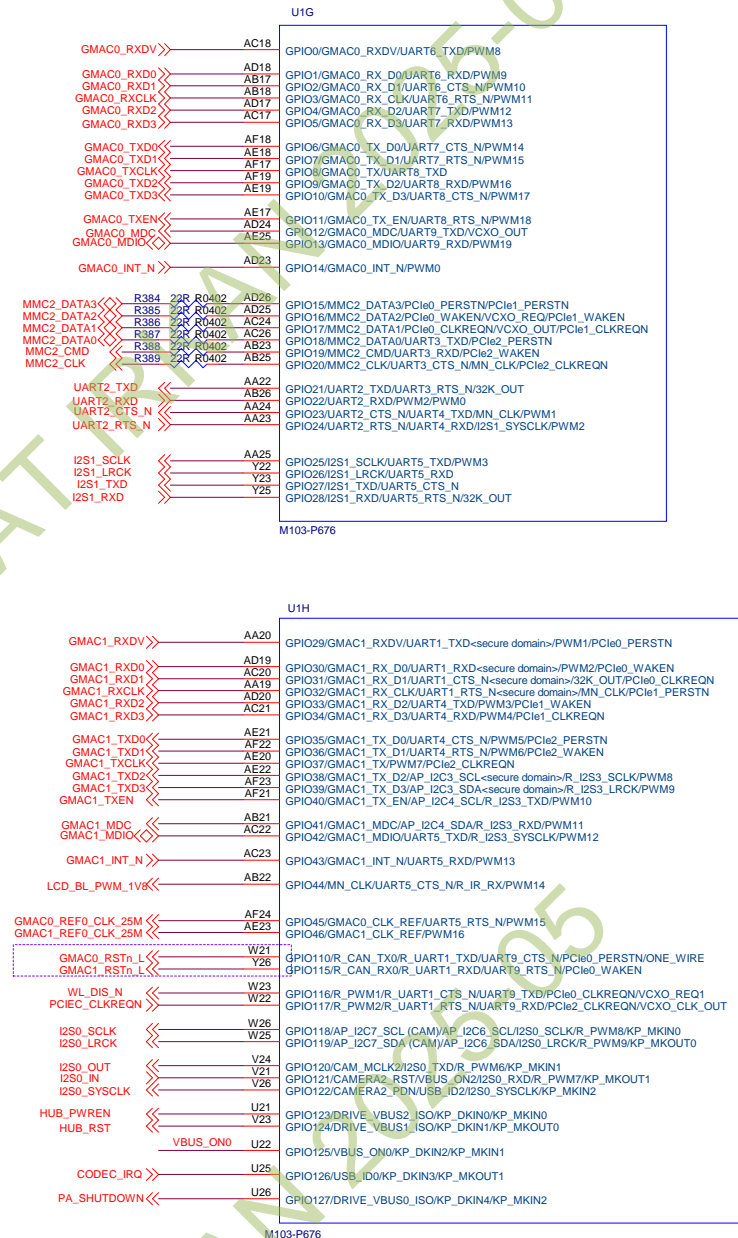
PIN	Define	CFG	Function
GPIO75	SPI3_SCLK_3V3	2	26 pin
GPIO76	SPI3_CS_3V3	2	
GPIO77	SPI3_MOSI_3V3	2	
GPIO78	SPI3_MISO_3V3	2	
GPIO79	FAN_PWM	2	FAN
GPIO80	SD_CD_3V3	1	TF CARD

PIN	Define	CFG	Function
GPIO47	R_UART0_TXD_3V3	1	26 pin
GPIO48	R_UART0_RXD_3V3	1	
GPIO49	GPIO_49_3V3	0	
GPIO50	GPIO_50_3V3	0	
GPIO51	AP_I2C4_SCL_3V3	4	
GPIO52	AP_I2C4_SDA_3V3	4	

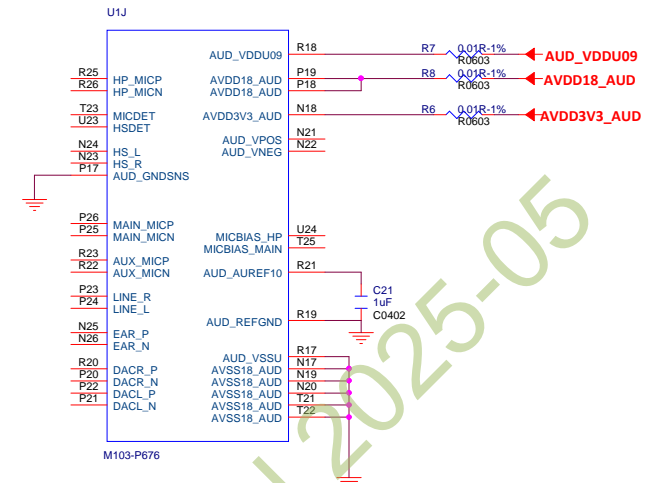
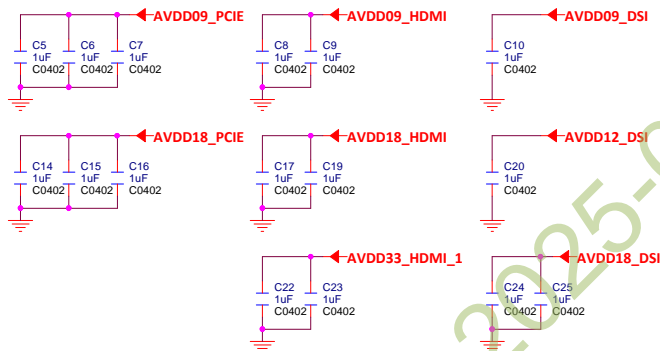
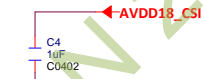
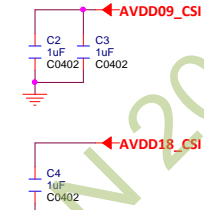
eMMC+DDR



GPIO

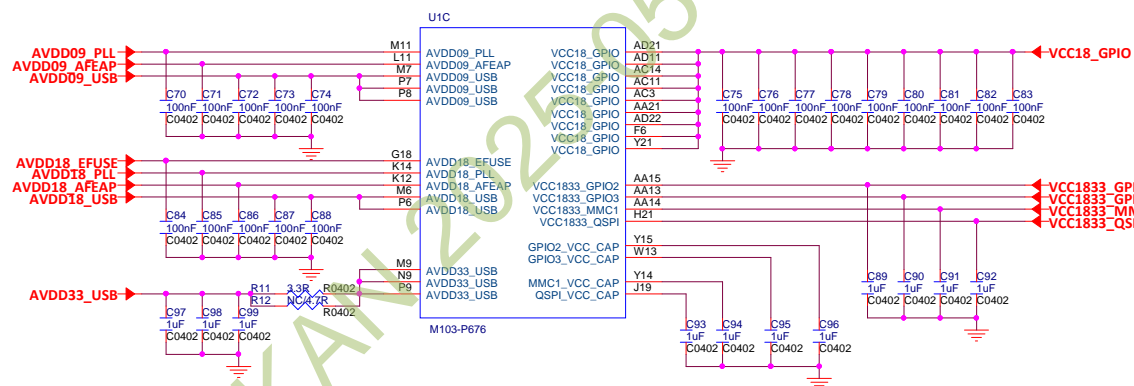
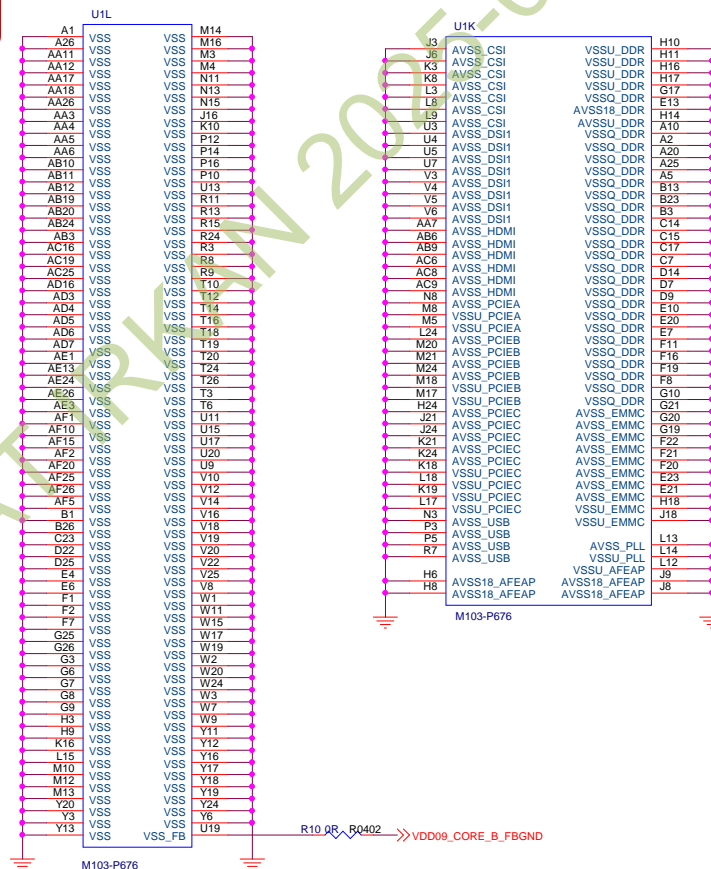
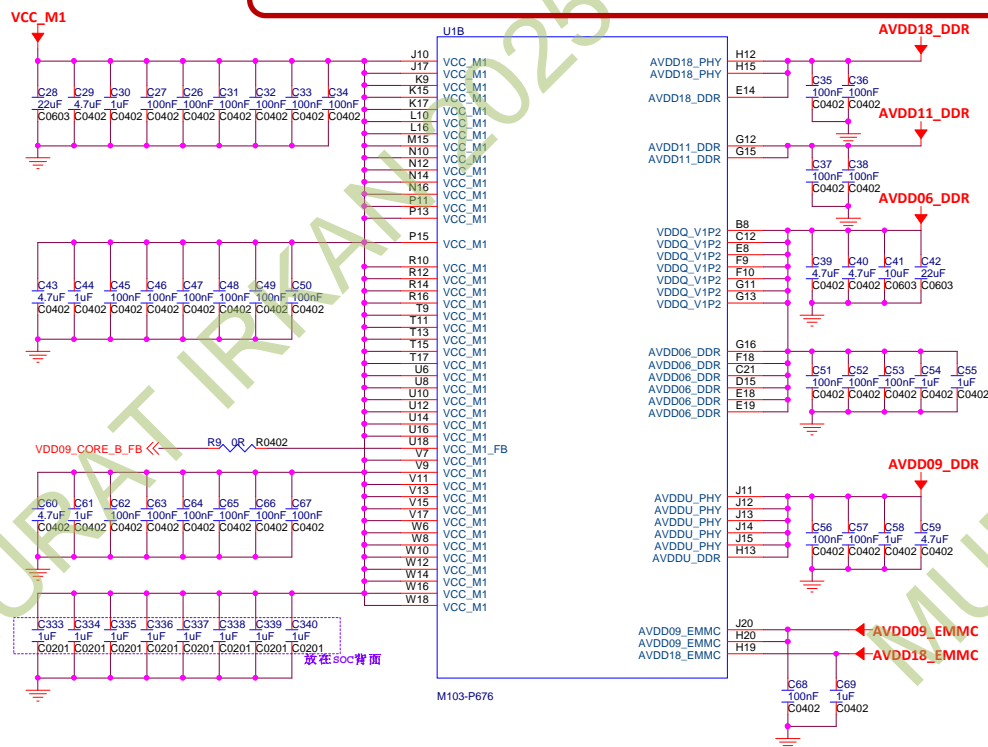


VIDEO BAĞLANTILARI

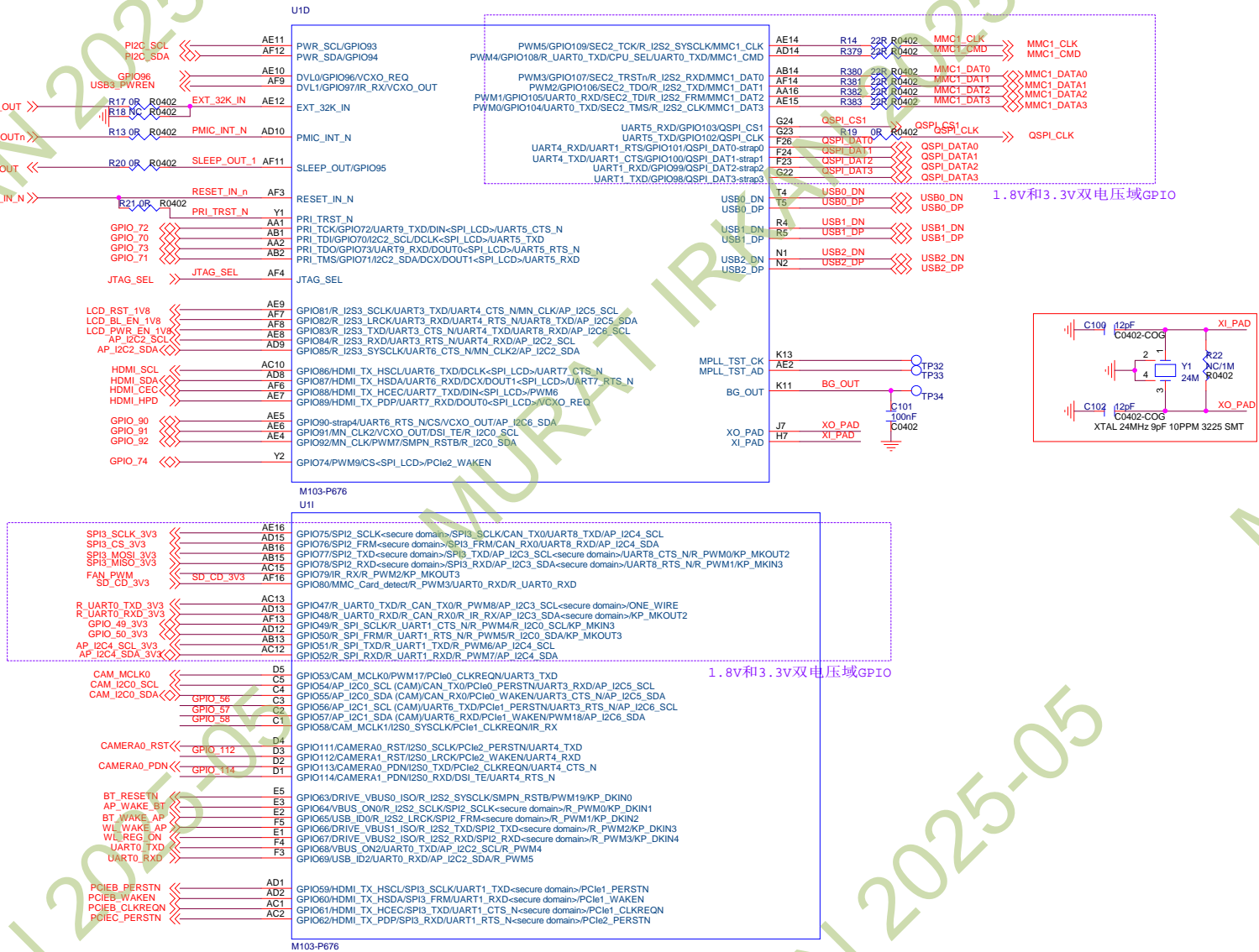
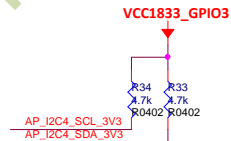
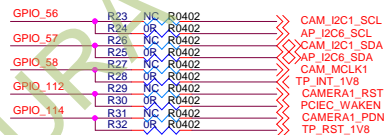
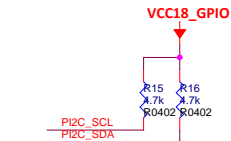


CPU-PWR

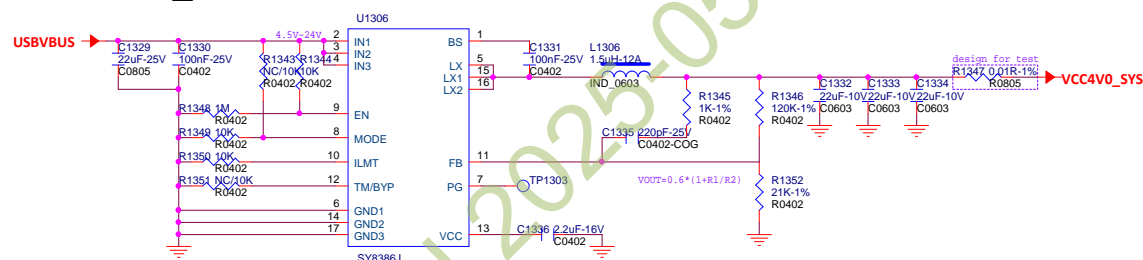
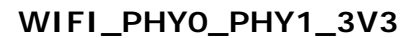
K1 CPU GÜÇ BAĞLANTILARI



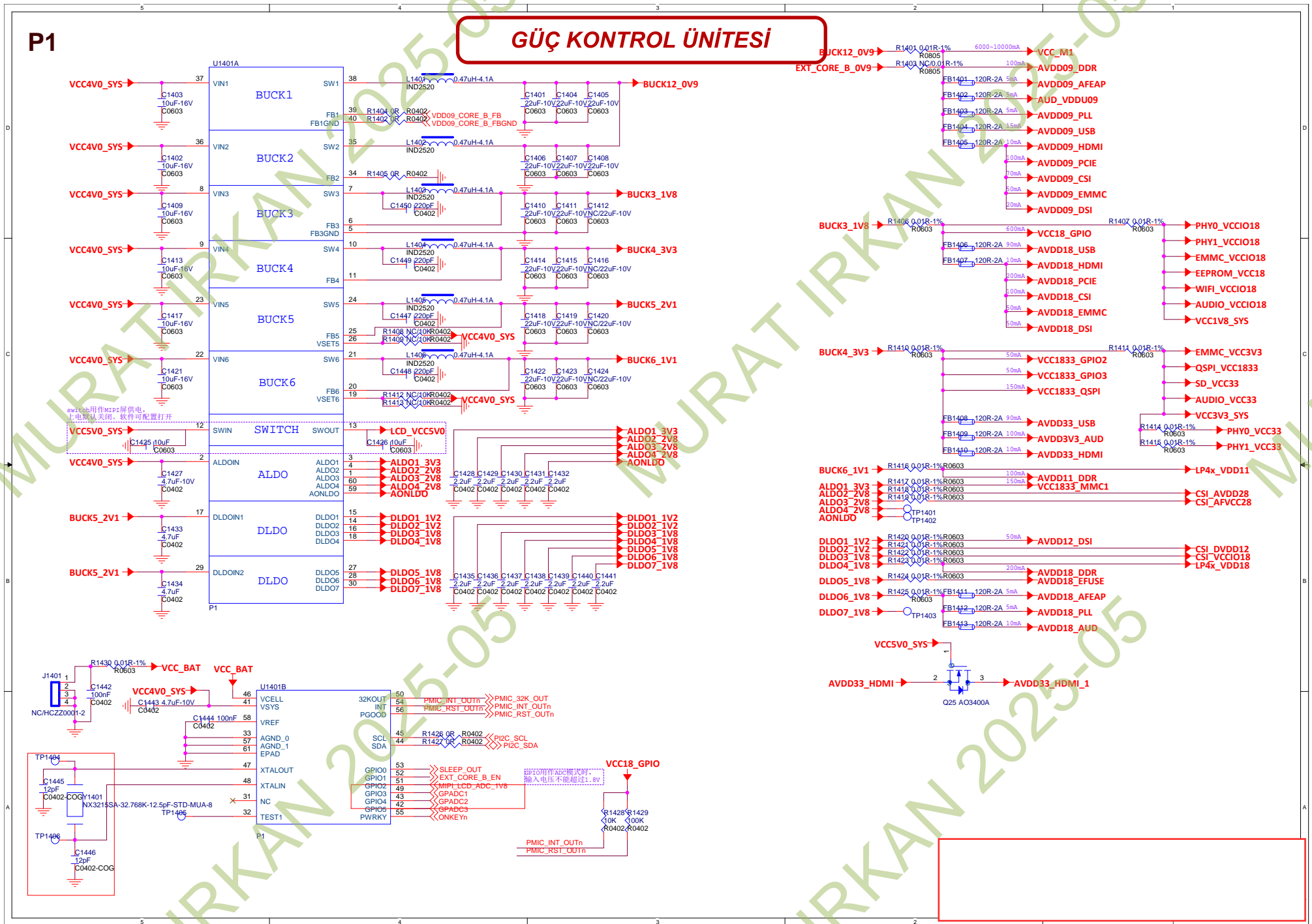
SYS-GPIO



GÜÇ KONTROL IC



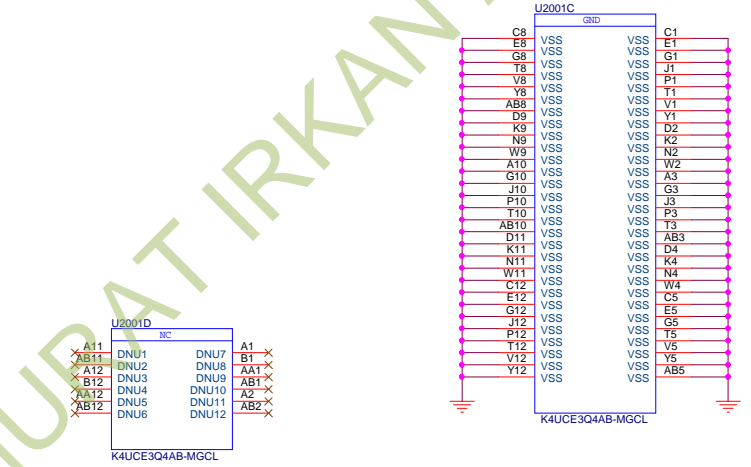
GÜÇ KONTROL ÜNİTESİ



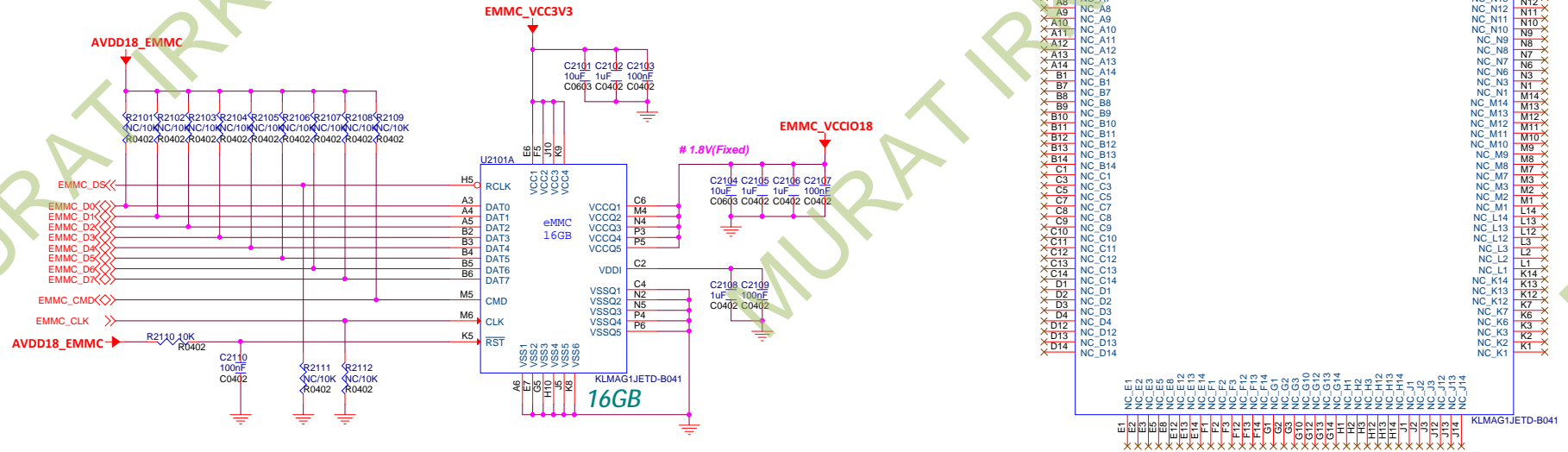
LPDDR4X

LPDDR4 HAFIZA MODÜLÜ

NOTE:CKE2/CS2/ZQ2 NC IN SAMSUNG



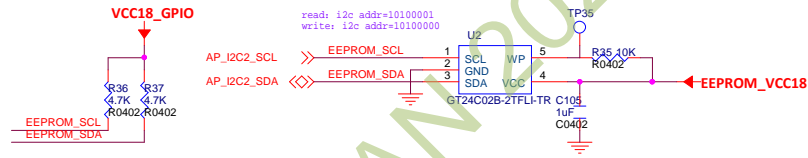
MULTİ MEDYA KART SİSTEMLERİ



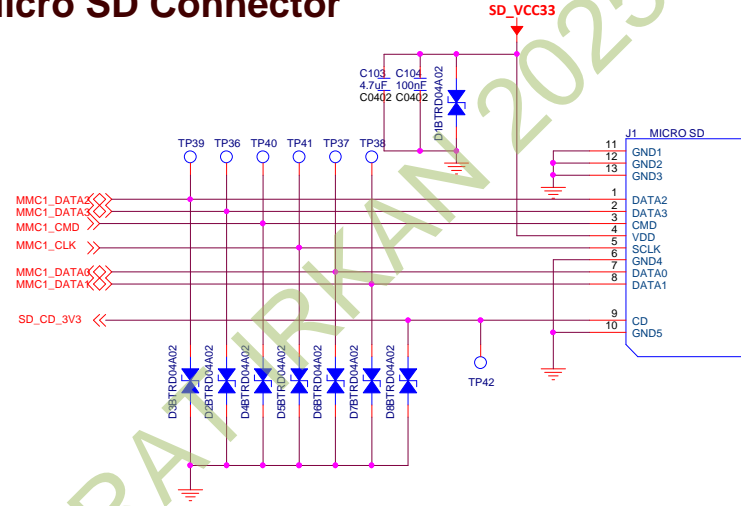
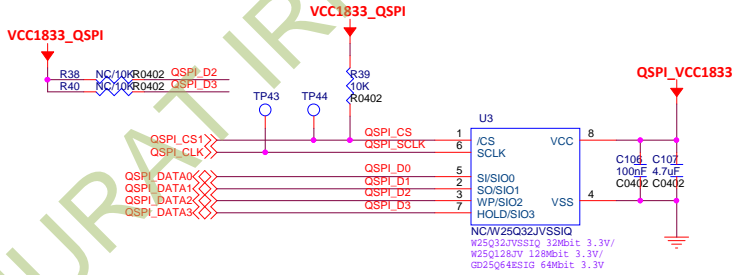
MİKRO -SD VE FLASH BELLEK + EEPROM HAFIZA KART

Micro SD Connector

EEPROM



SPI FLASH



Flash Boot voltage sel

VCC18_GPIO

根据贴的spi flash
确认默认启动电压
GPIO_90 <>>

GPIO 90	Function
0	1V8
1	3V3

boot download sel

QSPI_DATA3	Function
0	启动
1	下载

download sel

QSPI_DATA2	Function
0	USB
1	UART

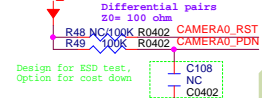
Boot SEL

QSPI_DATA1	QSPI_DATA0	Function
0	0	TF Card -> EMMC
0	1	TF Card -> SPI NOR
1	0	TF Card -> SPI NAND
1	1	TF Card -> SD

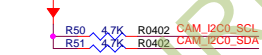
CAMERA

KAMERA SİSTEMİ

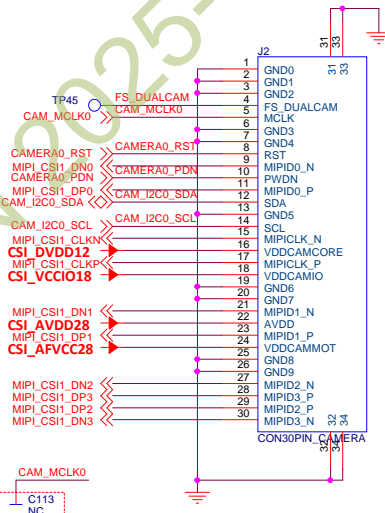
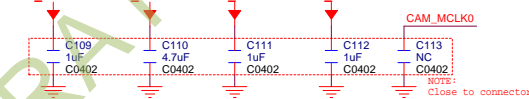
VCC18_GPIO



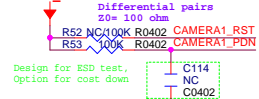
VCC18_GPIO



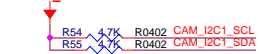
CSI_AFVCC28 CSI_AVDD28 CSI_VCCIO18 CSI_DVDD12



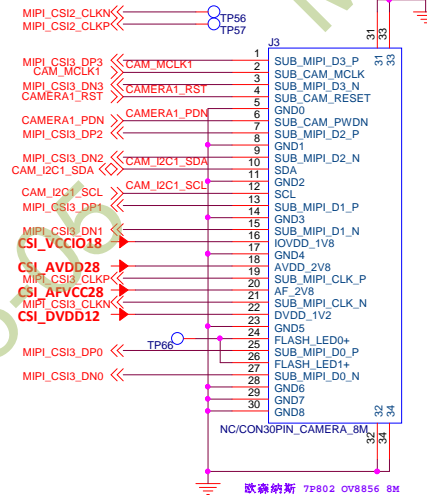
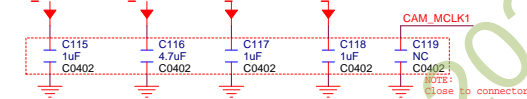
VCC18_GPIO



VCC18_GPIO



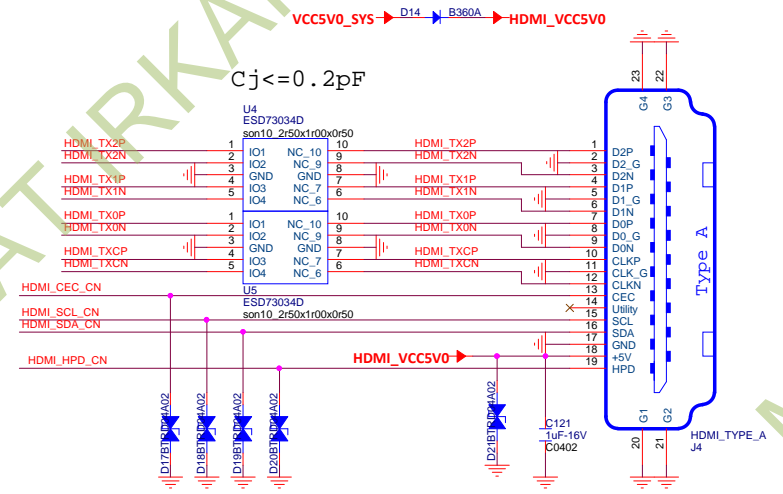
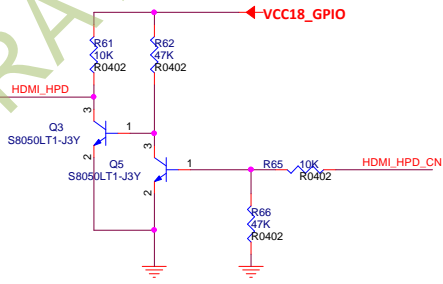
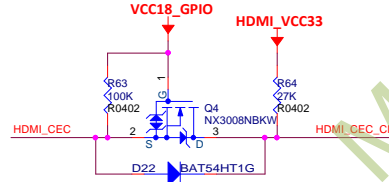
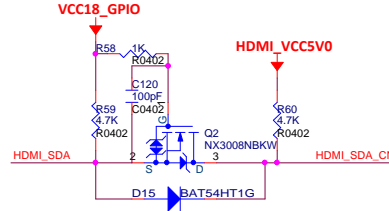
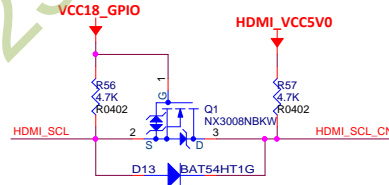
CSI_AFVCC28 CSI_AVDD28 CSI_VCCIO18 CSI_DVDD12

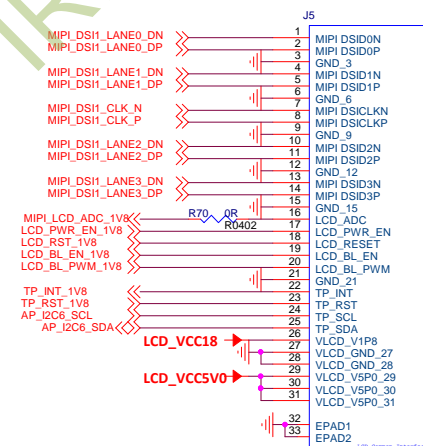
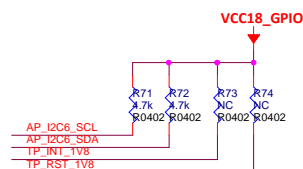
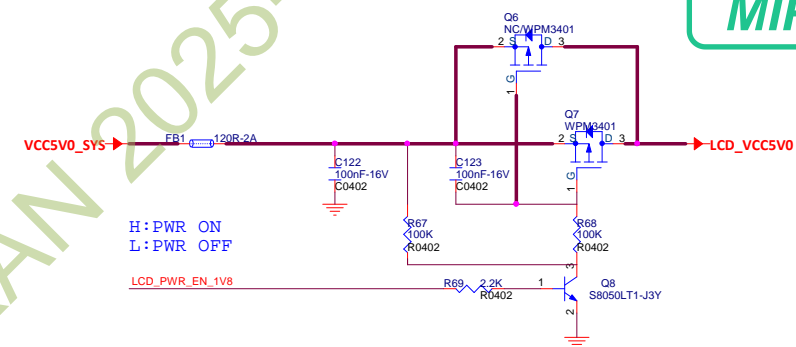


HDMI

HDMI GÖRÜNTÜ PORTU

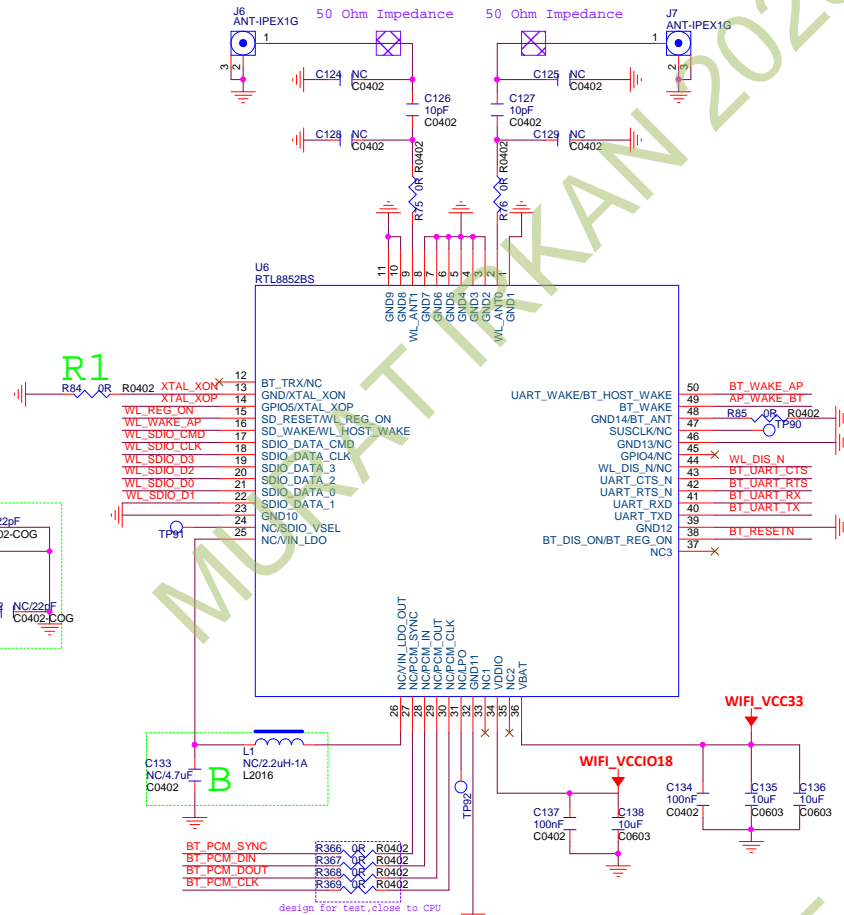
HDMI_TX0P
HDMI_TX0N
HDMI_TX1P
HDMI_TX1N
HDMI_TX2P
HDMI_TX2N
HDMI_TXCP
HDMI_TXCN
HDMI_SCL
HDMI_SDA
HDMI_CEC
HDMI_HPD



MIPI- SES

EH35C-31S-0 3SHW/

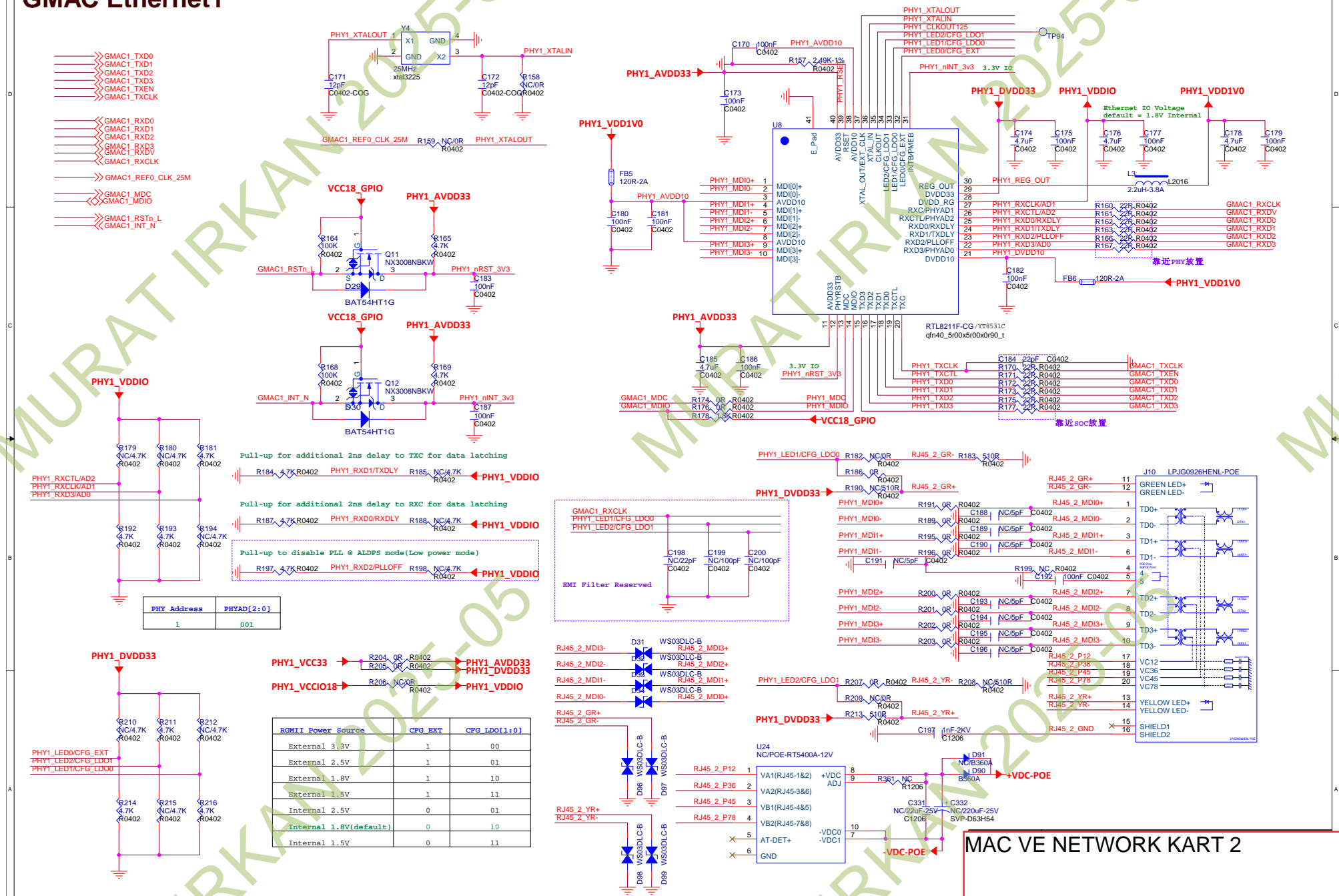
REALTEK RTL8852BS WIFI KONTROL DEVRESİ (IC)



[illegible]

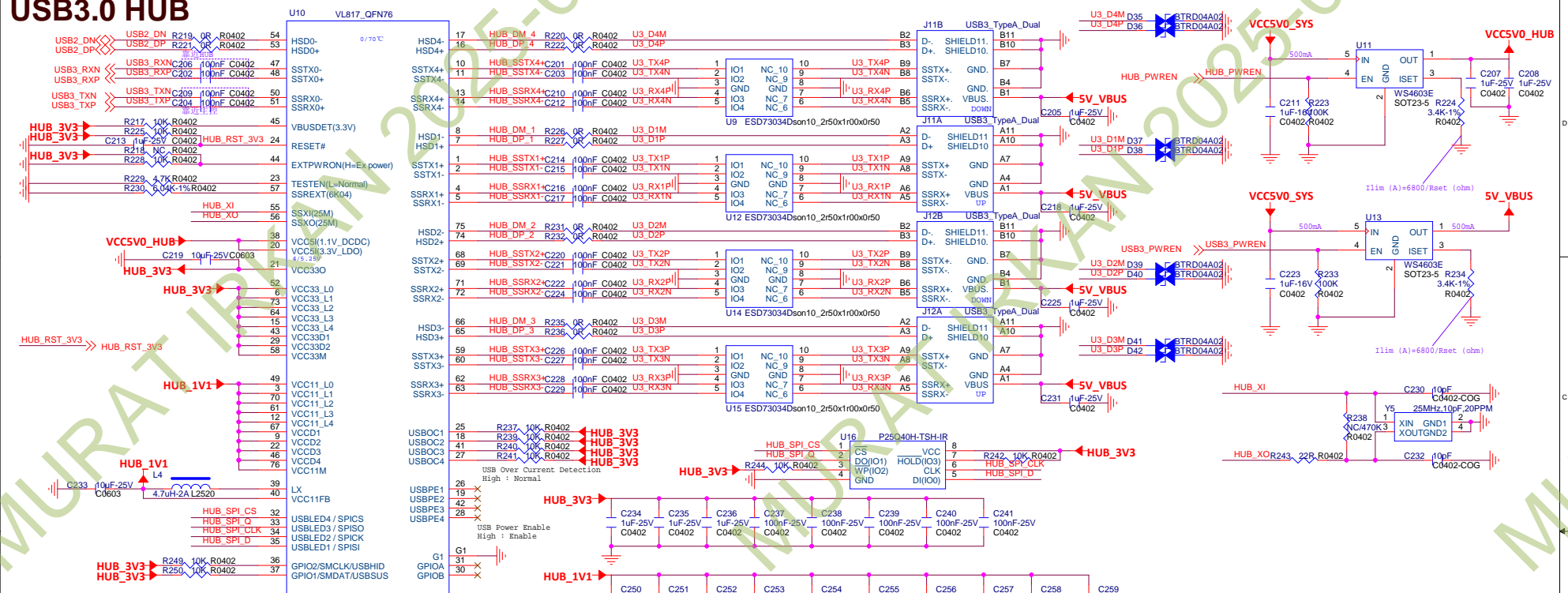
NETWORK KART 1

GMAC Ethernet1

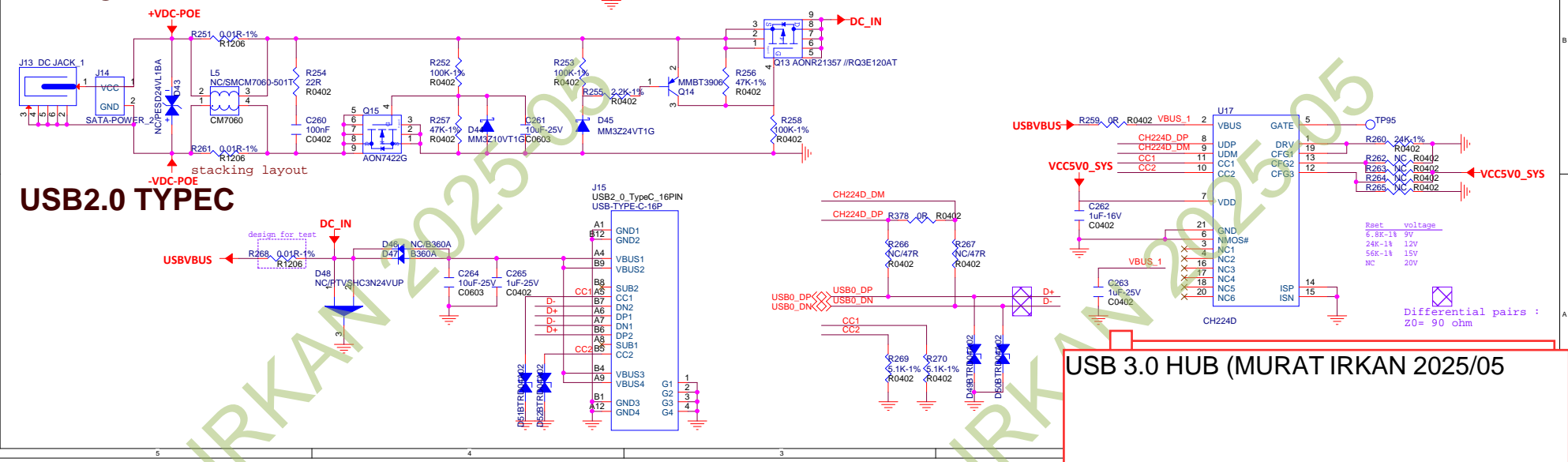


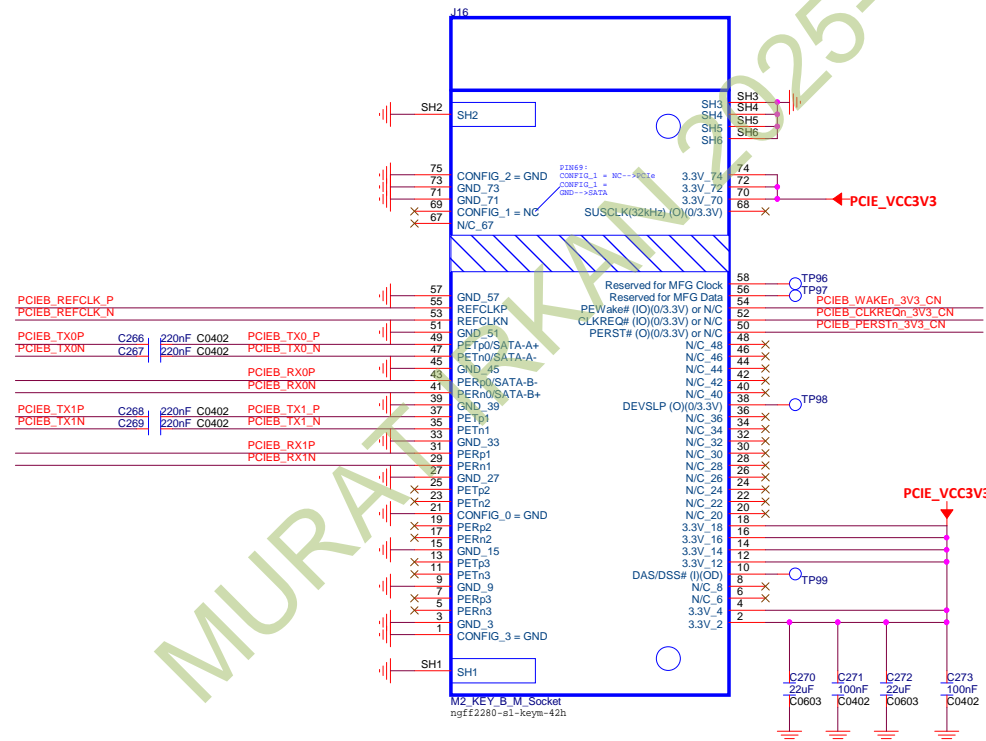
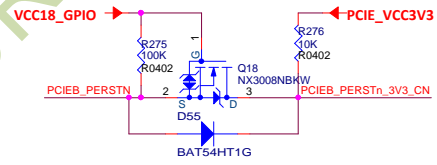
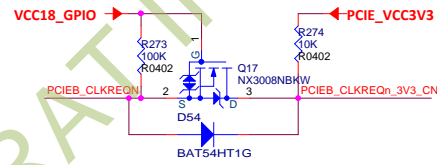
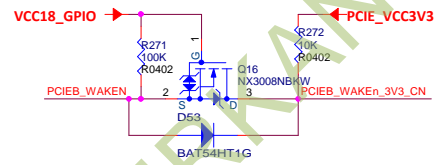
MAC VE NETWORK KART 2

USB3.0 HUB

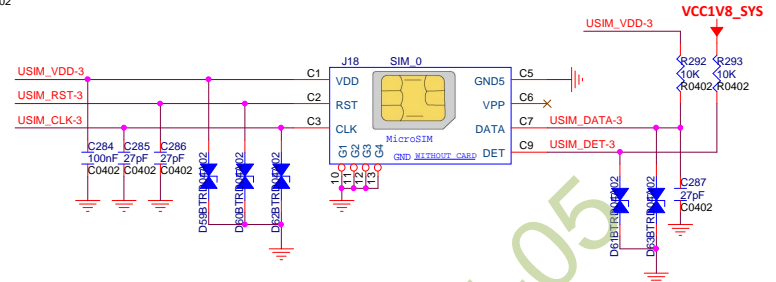


12V DC IN

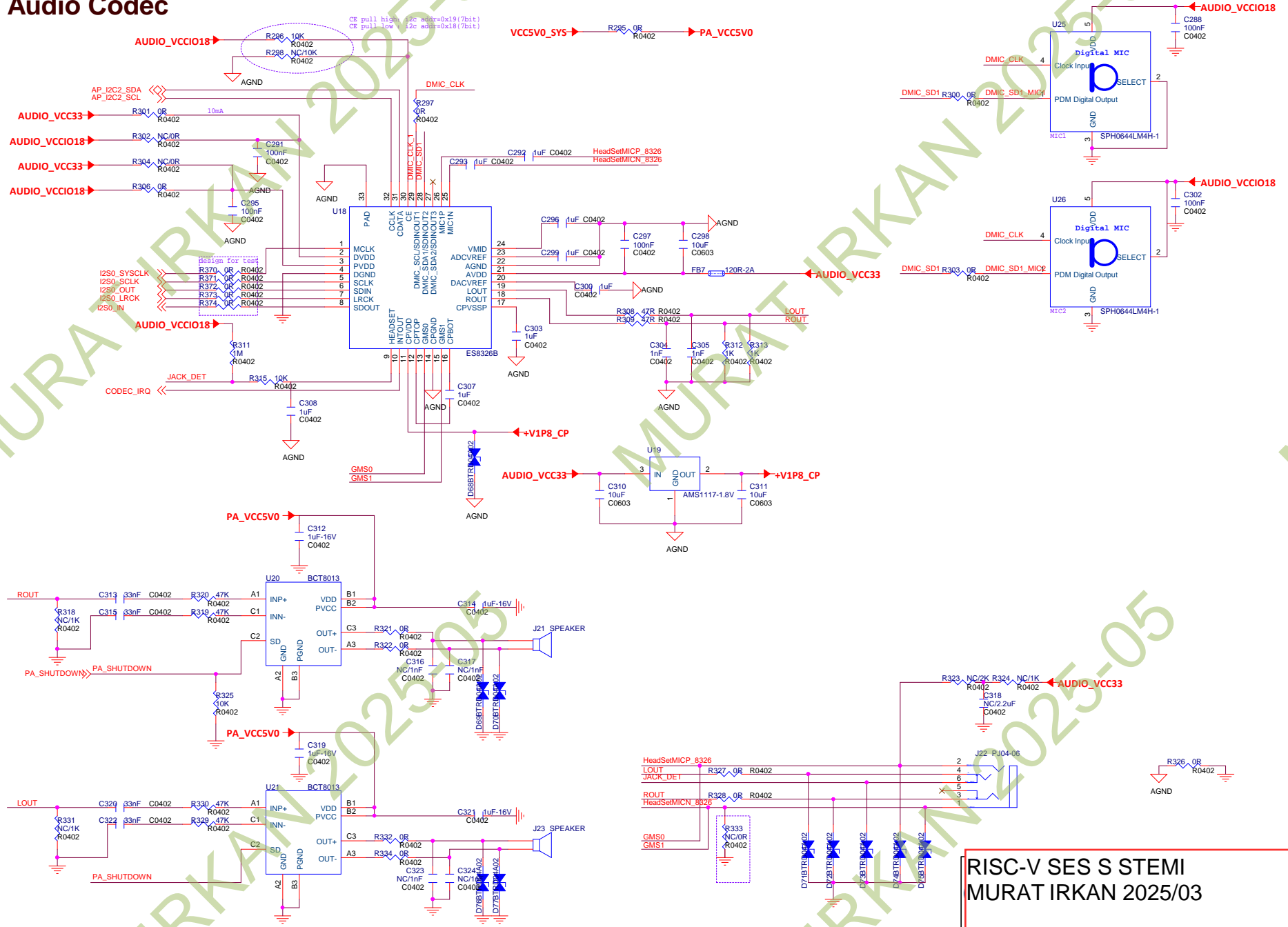


PCIEB

PCI HATTI



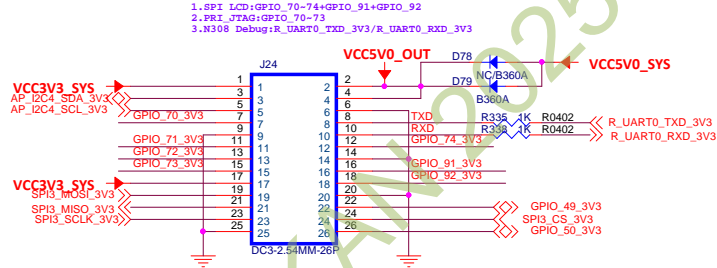
Audio Codec



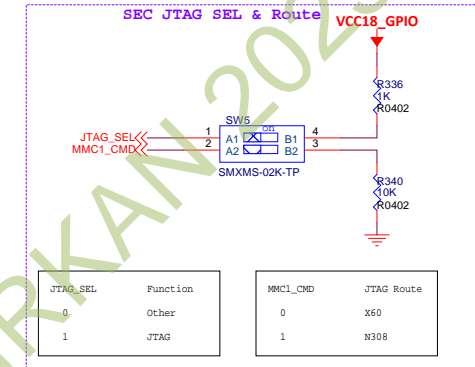
RISC-V SES S STEMI
MURAT IRKAN 2025/03

Rev
RevCode

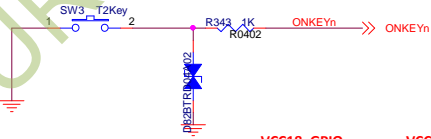
26 pin GPIO



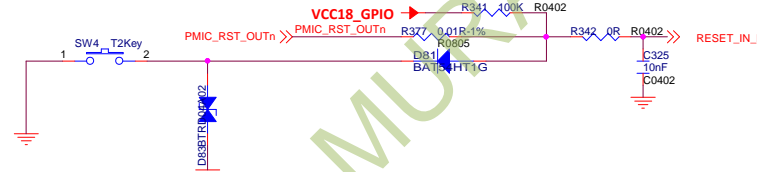
JTAG SEL



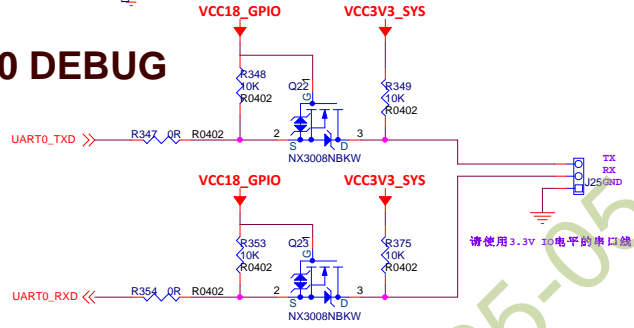
PowerON



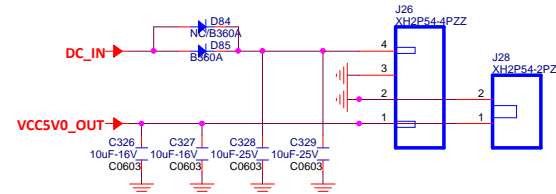
REST



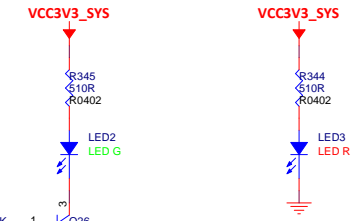
X60 DEBUG



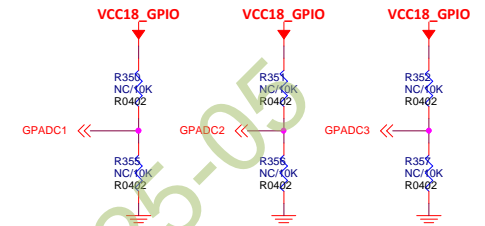
SATA HDD



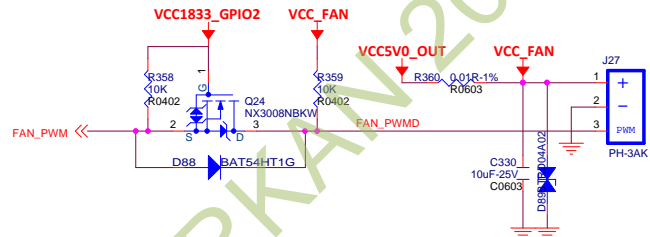
LED



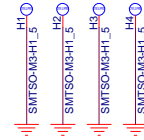
ADC



FAN



Mark Port



RISC-V GENEL KULLANIM PINLER
MURAT IRKAN 2025/04