LINK TO DRIVE SATA TYPE:
https://de.aliexpress.com/item/4001072133790.html?spm=a2g0o.detail.10

NOTEnCONSIDER POWER FLOW --NOW ITS POWERED DIRECTLY FROM SOURCE

WIRELESS QI POWER_INPUT

Sheet: USB)C_OTG_PWR_IN

File: USB)C_OTG_PWR_IN.sch

RK809_PMIC

Sheet: RK809_IC_DCDC

File: PMIC_DCDC.sch

Sheet: RK890_IC_AUXILLARY

I2C0_SCL_PMIC
I2C0_SDA_PMIC
PMIC_INT_L
PMIC_SLEEP_H
PMIC_32KOUT_WIFI
RECOVER
PMIC_EXT_EN
RESETn

Files: RK890_IC_AUXILLARY.sch

Sheet: RK809_CODEC

I2S1_MCLK_M0_RK809
I2S1_SCLK_TX_M0_RK809
I2S1_LRCK_TX_M0_RK809
I2S1_SDO0_M0_RK809
I2S1_SDIO_M0_PDM_SDIO_M0_RK809
PDM_CLK0_M0_RK809
SPK_MIN_N
SPK_MIN_P
MIC1_IN
MIC2_IN
HPL_OUT
HP_SNS
HPR_OUT
TO HEADPHONE JACK
SPK-
SPK+
TP28
TP29

File: RK809_CODEC.sch

Sheet: OTHER_POWER

PMIC_EXT_EN

File: OTHER_POWER.sch

Sheet: BATTERY_CHARGER

File: BATTERY_CHARGER.sch

RK3566 AND SUPPORTING COMPONENTS SECTION

Sheet: RK3566_POWER

File: RK3566.sch

Sheet: RK3566_PART_B

NFC_SDA
NFC_SCL
NFC_REQ
USB_OTG0_VBUSDET
USB_OTG0_D-
USB_OTG0_D+
RECOVER
WIFI_REG_ON_H_GPIO2_B1
WIFI_WAKE_HOST_H_GPIO2_B2
UART1_RX_M0
UART1_TX_M0
UART1_RTSn_M0
UART1_CTSn_M0
BT_REG_ON_H_GPIO2_B7
BT_WAKE_HOST_H_GPIO2_C0
HOST_WAKE_BT_H_GPIO2_C1
I2S2_SCLK_TX_M0
I2S2_LRCK_TX_M0
I2S2_SDO_M0
I2S2_SDI_M0
CLK32K_OUT1_WIFI
RX_IR
TO 5G RADA MODULE
USB2.0 HOST_1 to 4G_MODULE
4G_MODULE_USB_D+
4G_MODULE_USB_D-
TP_RST_L_GPIO0_C5_DISPLAY_TWO
LCD_BL_PWM10_M0_DISPLAY_TWO

Files: RK3566_PART_B.sch

Sheet: RK3566_PART_C

TO CODEC
I2C3_SDA_M0_GPIO1_A0
I2C3_SCL_M0_GPIO1_A1
I2S1_MCLK_M0_RK809
I2S1_SCLK_TX_M0_RK809
PDM_CLK0_M0_RK809
I2S1_LRCK_TX_M0_RK809
I2S1_SDO0_M0_RK809
I2S1_SDIO_M0_PDM_SDIO_M0_RK809
TO DISPLAY_QUMIP_1750
GPIO0_A0_DISPLAY_ZERO
I2C2_SDA_M0_TP
I2C2_SCL_M0_TP
LCD_EN_GPIO0_C7
TP_INT_GPIO0_A5
BL_EN_GPIO0_C0
LCD_BL_PWM4
LCD_RST_L_GPIO0_C2
TP_RST_L_GPIO0_C5
GPIO1_B4_DISPLAY_ONE
LCD_1_EN_GPIO1_B5_C7
TP_INT_GPIO1_B6_DISPLAY_ONE
BL_EN_GPIO1_B7_DISPLAY_ONE
LCD_RST_L_GPIO1_C0_DISPLAY_ONE
TP_RST_L_GPIO1_C2_DISPLAY_ONE
DISPLAY_ONE GPIO
4G_MODULE_SCL
4G_MODULE_SDA
4G_MODEM_ON
4G_MODEM_RESETn
AP_READY
GPIO1_C2_u_DISPLAY_TWO
LCD_2_ENGPIO1_C3_u_TO_DISPLAY
TP_INT_GPIO0_A5_DISPLAY_TWO
BL_EN_GPIO0_C0_DISPLAY_TWO
LCD_RST_L_GPIO0_C2_DISPLAY_TWO
TP_RST_L_GPIO0_C5_DISPLAY_TWO
LCD_BL_PWM10_M0_DISPLAY_TWO
HDMITX_CEC_M0
HDMITX_SDA
HDMITX_SCL

Files: RK3566_PART_C.sch

Sheet: RK3566_LPDDR3

RESETn
PMIC_SLEEP_H
PMIC_INT_L
SDMMC0_DET_L
USB_HOST5V_EN
I2C0_SCL_PMIC
I2C0_SDA_PMIC
PMIC_32KOUT_SOC
I2C1_SCL
I2C1_SDA
I2C2_SCL_M0_TP
I2C2_SDA_M0_TP
GMAC1_RSTn_GPIO0_B7
LCD_MIPI_GPIO
GPIO0_A0_DISPLAY_ZERO
LCD_EN_GPIO0_C7
TP_INT_GPIO0_A5
BL_EN_GPIO0_C0
LCD_BL_PWM4
LCD_RST_L_GPIO0_C2
TP_RST_L_GPIO0_C5
PWM_IR
BT_CLK_INT_L_GPIO0_C1
PWM_IR

Files: RK3566_PART_D.sch

SATA/HDD CONN

LINKS OF REF:
https://www.lanyamacdb.com/media/sata-power-pinout.63971/
https://pinoutguide.com/Power/sata-power_pinout.shtml

GND
SATA1_TX+
SATA1_TX-
GND
SATA1_RX+
SATA1_RX-
GND
VCC_3V3
GND
GND
+5V
GND
GND
+12V
S1 GND_S1
S2 A+
S3 A-
S4 GND_S4
S5 B-
S6 B+
S7 GND_S7
P1 V33_P1
P2 V33_P2
P3 V33_P3
P4 GND_P4
P5 GND_P5
P6 GND_P6
P7 V5_P7
P8 V5_P8
P9 V5_P9
P10 GND_P10
P11 RESERVED
P12 GND_P12
P13 V12_P13
P14 V12_P14
P15 V12_P15

J2
5622-6309-ML

WIFI/BT MODULE

Sheet: AP6256_WIFI_BT

PMIC_32KOUT_WIFI
SDMMC1_D2
SDMMC1_D3
SDMMC1_D1
SDMMC1_D0
SDMMC1_CMD
SDMMC1_CLK
UART1_RX_M0
UART1_TX_M0
UART1_RTSn_M0
UART1_CTSn_M0
I2S2_SCLK_TX_M0
I2S2_SDO_M0
I2S2_SDI_M0
I2S2_LRCK_TX_M0
BT_WAKE_HOST_H_GPIO2_C0
HOST_WAKE_BT_H_GPIO2_C1
BT_REG_ON_H_GPIO2_B7
CLK32K_OUT1_WIFI
WIFI_WAKE_HOST_H_GPIO2_B2
WIFI_REG_ON_H_GPIO2_B1

Files: AP6256_WIFI_BT.sch

POWER OUTPUT SECTION

USB POWER OUTPUT

Sheet: USB POWER OUTPUT

File: USB POWER OUTPUT.sch

5W QI WIRELESS CHARGER

Sheet: 5W_QI_PWR_OUTPUT

File: 5W_QI_PWR_OUTPUT.sch

NFC_MODULE SECTION

NOTE: accompanying NFC ANTENNA
538-146236-2151
links: https://eu.mouser.com/ProductDetail/Molex/146236-2151?qs=v2%2FP%252Bq2xWqYlOZOJu1H6Kw%3D%3D

ANTRDR_p
R55 0R
C180 180pF
C178 220pF
C182 66pF
C179 220pF
C181 180pF
ANTRDR_n
R54 0R
RF1
RF2
GND
ANTENNA CONNECTOR
J3
205957-0271
MP1
MP2

VCC3V3_EXT
I2C_PULLUP
R20 4.7K
R56 4.7K
NFC_SDA
NFC_SCL

NFC_IC_VS1797SM

VCC3V3_EXT
R57 1K
U11
NFC_VS1797SM
VDDIO
C183 100nF
C184 4.7uF
NFC_WAKE
NFC_REQ
NFC_SDA
NFC_SCL
ANTRDR_P
ANTRDR_N
5V/NC
VDDSWP_INO
VDDSWP_O
SWPIO_O
VDDIO
REG_PU
C177 100nF
GND

5G_RADAR_MODULE

https://www.hiktech.com/en/Product/Details/85

J7
Conn_01x05_Male
PWM_IR
TX_IR
RX_IR
+5V
C185 100nF
GND

4G AND GPS_MODULE(COMPACT)

Sheet: 4G_MODULE

4G_MODEM_ON
4G_MODEM_RESETn
4G_MODULE_SCL
4G_MODULE_SDA
AP_READY
4G_MODULE_USB_D+
4G_MODULE_USB_D-
USB2.0 HOST_1 to 4G_MODULE

Files: 4G_MODULE.sch

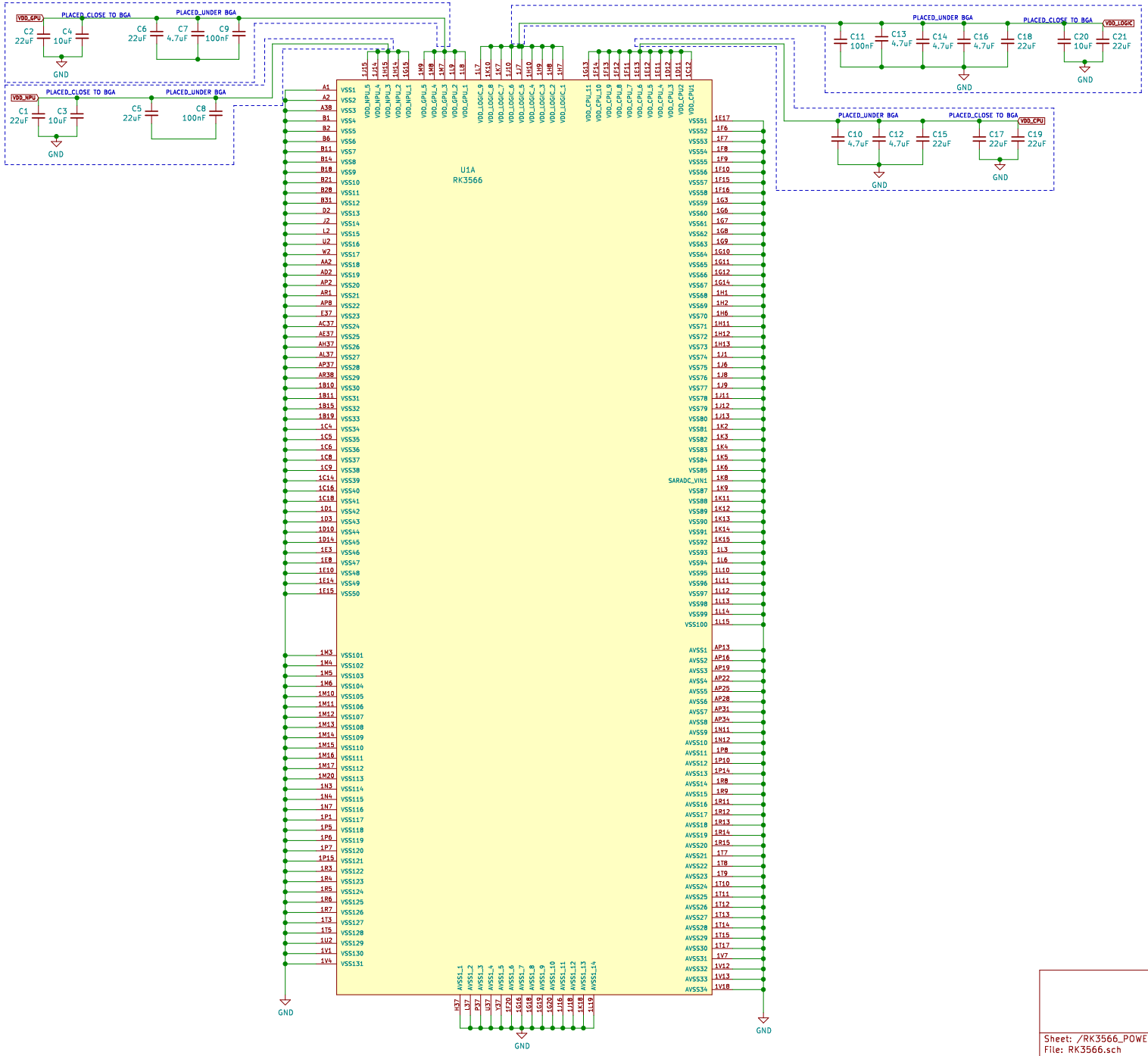
MOUNTING HOLES

H1 MountingHole
H3 MountingHole
H2 MountingHole
H4 MountingHole

Sheet: /
File: ad_power_device.sch

Title:

Size: A3 | Date: | Rev:
KiCad E.D.A. kicad (5.1.10)-1 | Id: 1/17



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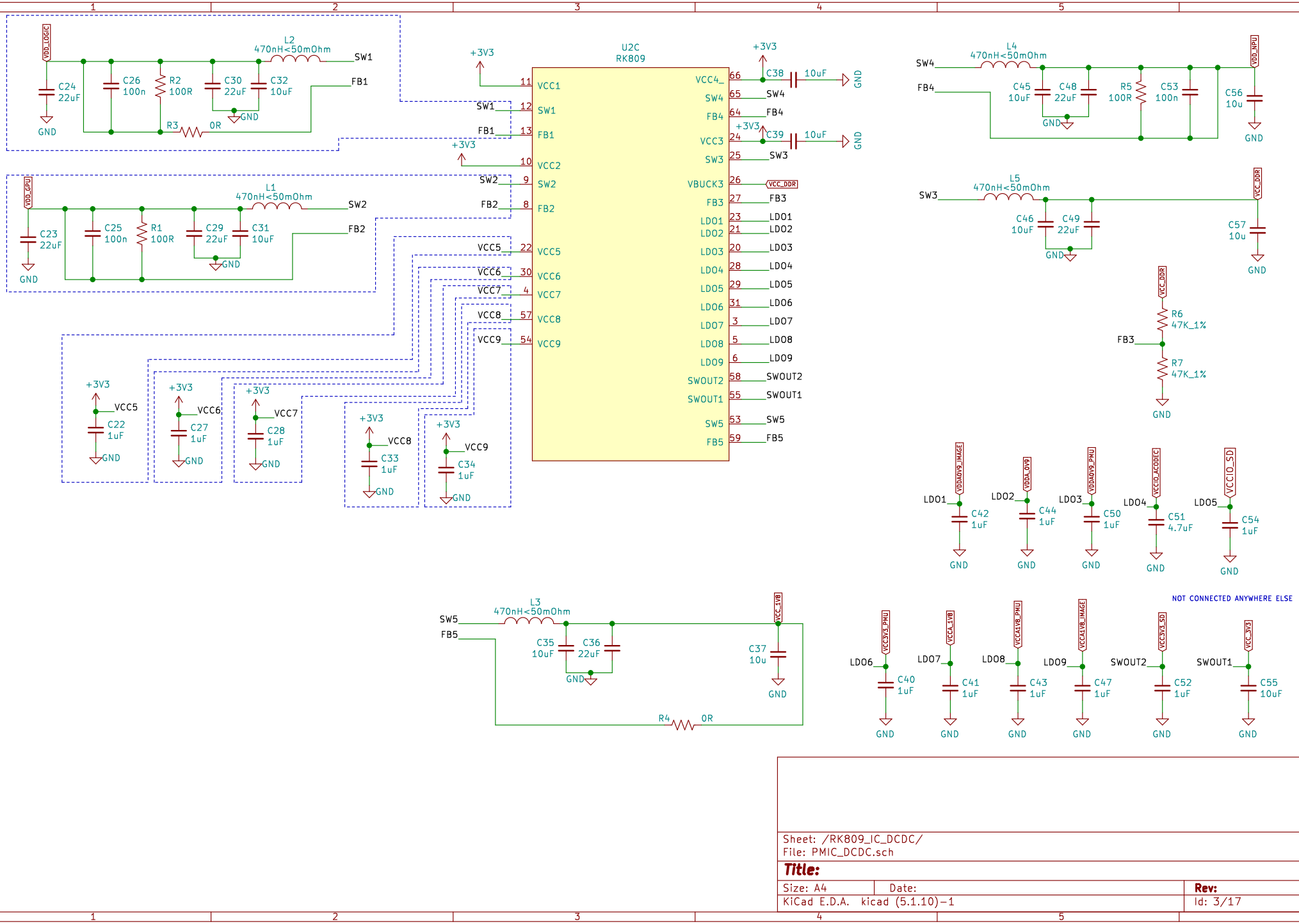
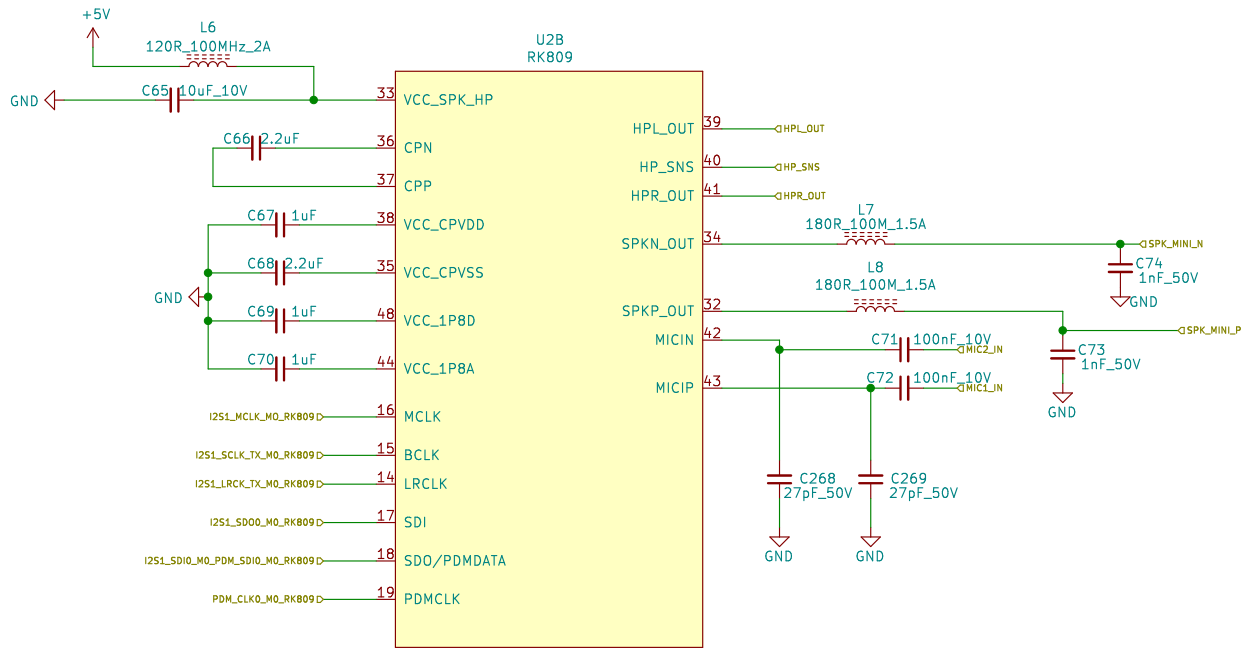
Size: A3	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.10)-1		Id: 2/17


U2C
RK809
VDD_LOGIC
L2
470nH<50mOhm
SW1
FB1
C24
22uF
C26
100n
R2
100R
C30
22uF
C32
10uF
R3
0R
GND
VDD_GPU
L1
470nH<50mOhm
SW2
FB2
C23
22uF
C25
100n
R1
100R
C29
22uF
C31
10uF
+3V3
VCC1
VCC2
VCC5
VCC6
VCC7
VCC8
VCC9
C22
1uF
C27
1uF
C28
1uF
C33
1uF
C34
1uF
C38
10uF
C39
10uF
SW4
FB4
SW3
VCC_DDR
FB3
LDO1
LDO2
LDO3
LDO4
LDO5
LDO6
LDO7
LDO8
LDO9
SWOUT2
SWOUT1
SW5
FB5
L4
470nH<50mOhm
VDD_NPU
C45
10uF
C48
22uF
R5
100R
C53
100n
C56
10u
L5
470nH<50mOhm
C46
10uF
C49
22uF
C57
10u
R6
47K_1%
R7
47K_1%
VDDA0V9_IMAGE
VDDA_0V9
VDDA0V9_PMU
VCCIO_ACODEC
VCCIO_SD
C42
1uF
C44
1uF
C50
1uF
C51
4.7uF
C54
1uF
L3
470nH<50mOhm
VCC_1V8
C35
10uF
C36
22uF
C37
10u
R4
0R
VCC3V3_PMU
VCCA_1V8
VCCA1V8_PMU
VCCA1V8_IMAGE
VCC3V3_SD
VCC_3V3
C40
1uF
C41
1uF
C43
1uF
C47
1uF
C52
1uF
C55
10uF
NOT CONNECTED ANYWHERE ELSE
Sheet: /RK809_IC_DCDC/
File: PMIC_DCDC.sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 3/17



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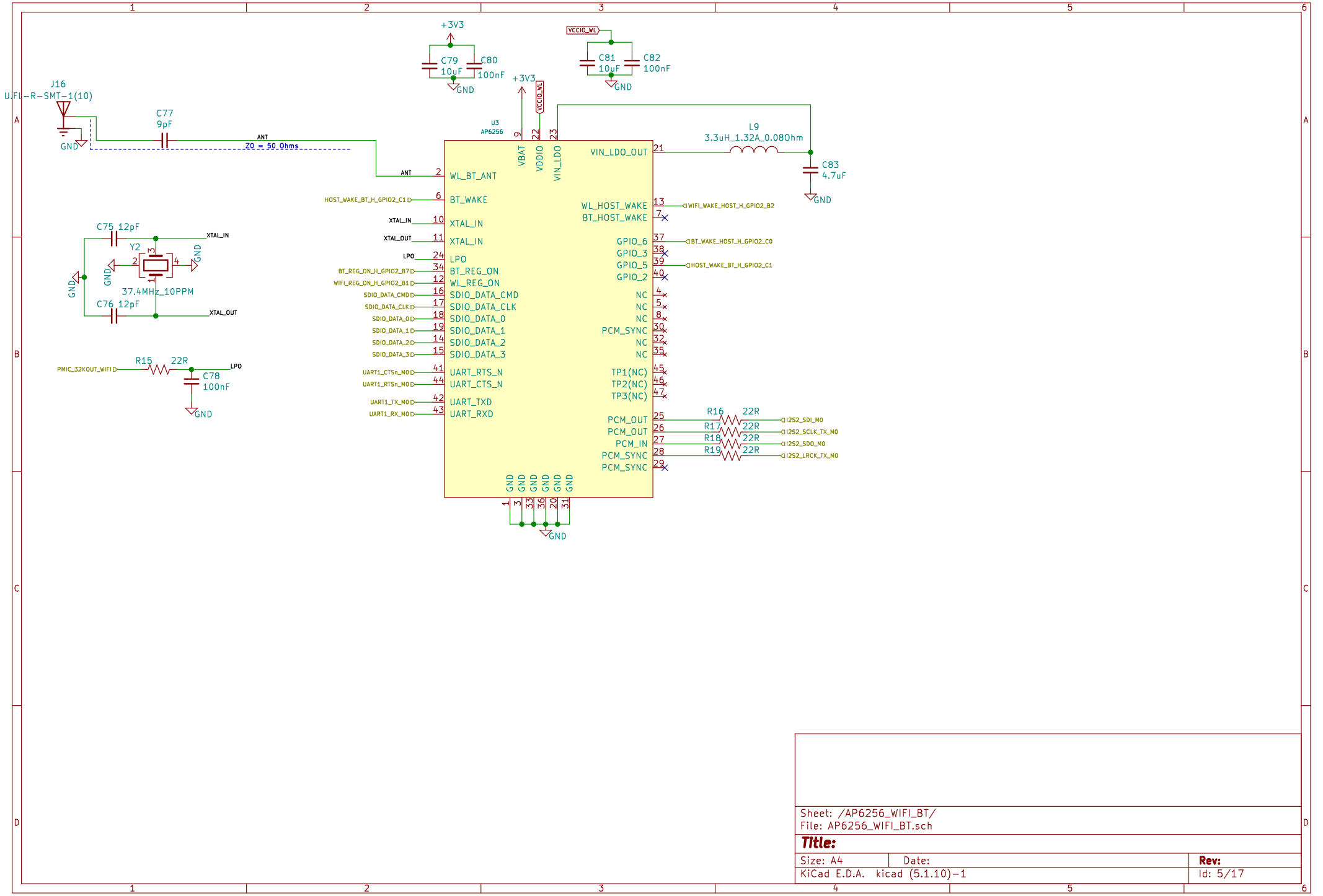
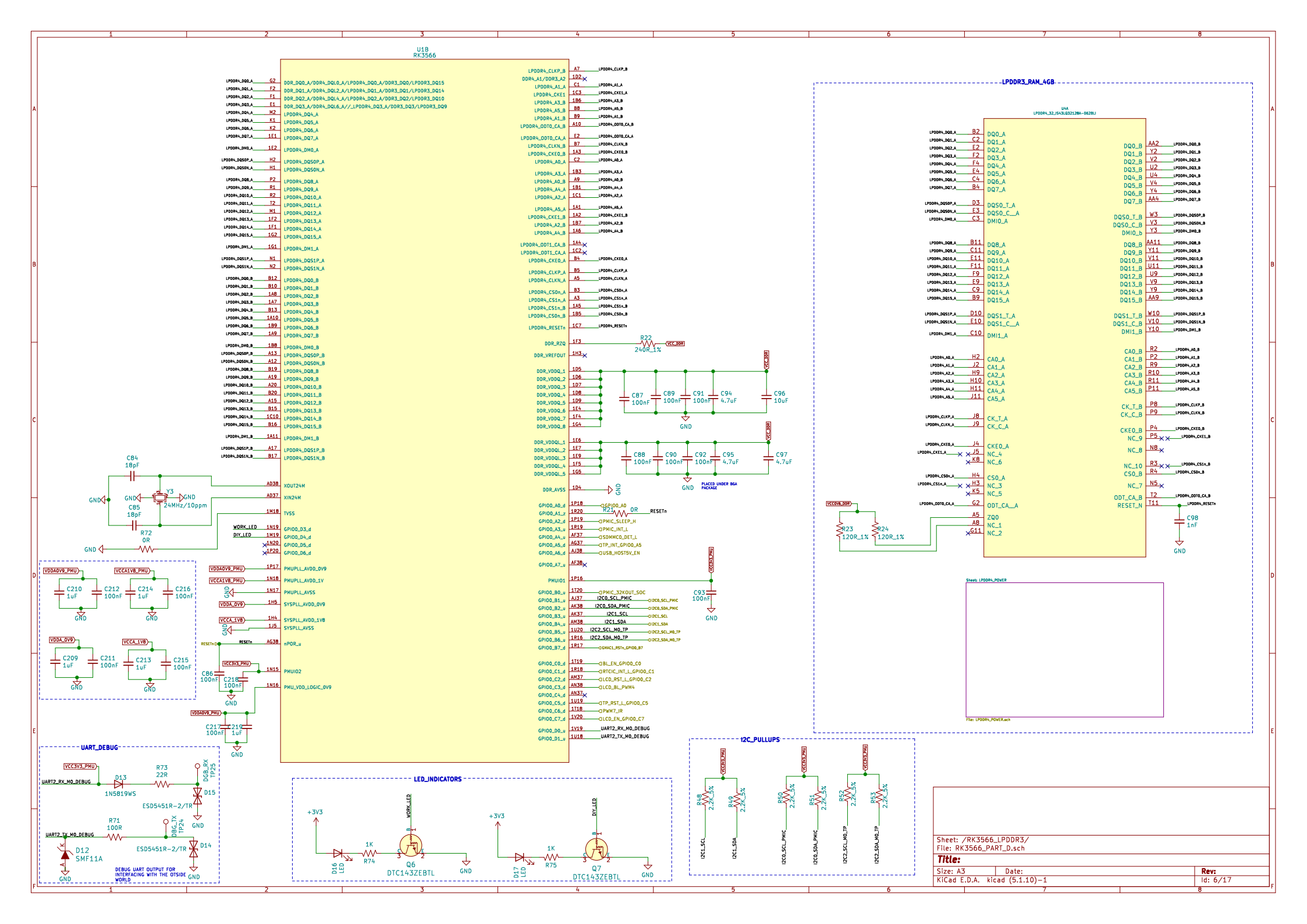
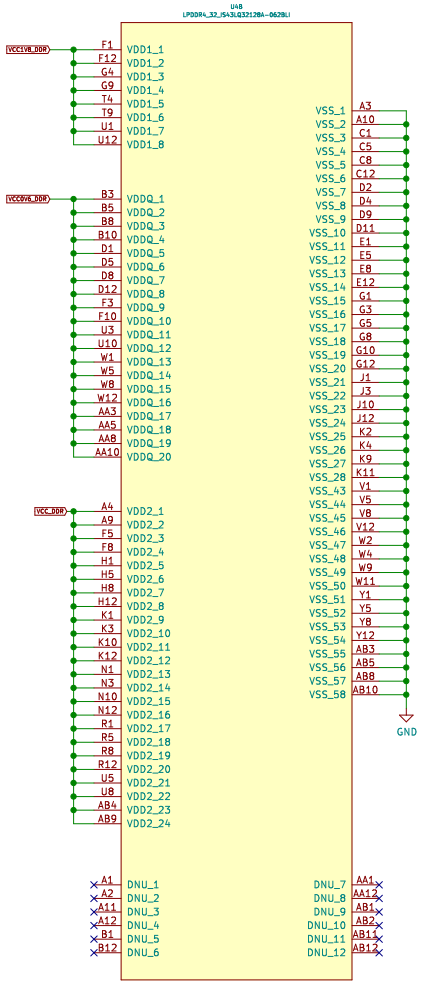
File: RK809_CODEC.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.10)-1		Id: 4/17

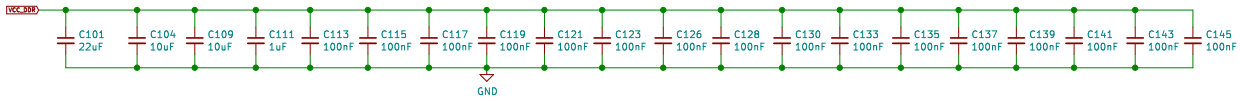

+3V3
C79
10uF
C80
100nF
GND
VCCIO_WL
C81
10uF
C82
100nF
GND
J16
U.FL-R-SMT-1(10)
GND
C77
9pF
ANT
Z0 = 50 Ohms
U3
AP6256
+3V3
VCCIO_WL
L9
3.3uH_1.32A_0.080hm
C83
4.7uF
GND
C75 12pF
XTAL_IN
Y2
37.4MHz_10PPM
C76 12pF
XTAL_OUT
GND
R15
22R
PMIC_32KOUT_WIFI
LPO
C78
100nF
GND
ANT
HOST_WAKE_BT_H_GPIO2_C1
XTAL_IN
XTAL_OUT
LPO
BT_REG_ON_H_GPIO2_B7
WIFI_REG_ON_H_GPIO2_B1
SDIO_DATA_CMD
SDIO_DATA_CLK
SDIO_DATA_0
SDIO_DATA_1
SDIO_DATA_2
SDIO_DATA_3
UART1_CTSn_M0
UART1_RTSn_M0
UART1_TX_M0
UART1_RX_M0
VBAT
VDDIO
VIN_LDO
WL_BT_ANT
BT_WAKE
XTAL_IN
XTAL_IN
LPO
BT_REG_ON
WL_REG_ON
SDIO_DATA_CMD
SDIO_DATA_CLK
SDIO_DATA_0
SDIO_DATA_1
SDIO_DATA_2
SDIO_DATA_3
UART_RTS_N
UART_CTS_N
UART_TXD
UART_RXD
VIN_LDO_OUT
WL_HOST_WAKE
BT_HOST_WAKE
GPIO_6
GPIO_3
GPIO_5
GPIO_2
NC
NC
NC
PCM_SYNC
NC
NC
TP1(NC)
TP2(NC)
TP3(NC)
PCM_OUT
PCM_OUT
PCM_IN
PCM_SYNC
PCM_SYNC
GND
WIFI_WAKE_HOST_H_GPIO2_B2
BT_WAKE_HOST_H_GPIO2_C0
HOST_WAKE_BT_H_GPIO2_C1
R16 22R
R17 22R
R18 22R
R19 22R
I2S2_SDI_M0
I2S2_SCLK_TX_M0
I2S2_SDO_M0
I2S2_LRCK_TX_M0
GND
Sheet: /AP6256_WIFI_BT/
File: AP6256_WIFI_BT.sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 5/17


U1B
RK3566
LPDDR4_DQ0_A
LPDDR4_DQ1_A
LPDDR4_DQ2_A
LPDDR4_DQ3_A
LPDDR4_DQ4_A
LPDDR4_DQ5_A
LPDDR4_DQ6_A
LPDDR4_DQ7_A
LPDDR4_DM0_A
LPDDR4_DQS0P_A
LPDDR4_DQS0N_A
LPDDR4_DQ8_A
LPDDR4_DQ9_A
LPDDR4_DQ10_A
LPDDR4_DQ11_A
LPDDR4_DQ12_A
LPDDR4_DQ13_A
LPDDR4_DQ14_A
LPDDR4_DQ15_A
LPDDR4_DM1_A
LPDDR4_DQS1P_A
LPDDR4_DQS1N_A
LPDDR4_DQ0_B
LPDDR4_DQ1_B
LPDDR4_DQ2_B
LPDDR4_DQ3_B
LPDDR4_DQ4_B
LPDDR4_DQ5_B
LPDDR4_DQ6_B
LPDDR4_DQ7_B
LPDDR4_DM0_B
LPDDR4_DQS0P_B
LPDDR4_DQS0N_B
LPDDR4_DQ8_B
LPDDR4_DQ9_B
LPDDR4_DQ10_B
LPDDR4_DQ11_B
LPDDR4_DQ12_B
LPDDR4_DQ13_B
LPDDR4_DQ14_B
LPDDR4_DQ15_B
LPDDR4_DM1_B
LPDDR4_DQS1P_B
LPDDR4_DQS1N_B
DDR_DQ0_A/DDR4_DQL0_A/LPDDR4_DQ0_A/DDR3_DQ0/LPDDR3_DQ15
DDR_DQ1_A/DDR4_DQL2_A/LPDDR4_DQ1_A/DDR3_DQ1/LPDDR3_DQ14
DDR_DQ2_A/DDR4_DQL4_A/LPDDR4_DQ2_A/DDR3_DQ2/LPDDR3_DQ10
DDR_DQ3_A/DDR4_DQL6_A//_LPDDR4_DQ3_A/DDR3_DQ3/LPDDR3_DQ9
LPDDR4_CLKP_B
DDR4_A1/DDR3_A2
LPDDR4_A1_A
LPDDR4_CKE1_A
LPDDR4_A3_B
LPDDR4_A5_B
LPDDR4_A1_B
LPDDR4_ODT0_CA_B
LPDDR4_ODT0_CA_A
LPDDR4_CLKN_B
LPDDR4_CKE0_B
LPDDR4_A0_A
LPDDR4_A3_A
LPDDR4_A0_B
LPDDR4_A4_A
LPDDR4_A2_A
LPDDR4_A5_A
LPDDR4_CKE1_B
LPDDR4_A2_B
LPDDR4_A4_B
LPDDR4_ODT1_CA_B
LPDDR4_ODT1_CA_A
LPDDR4_CKE0_A
LPDDR4_CLKP_A
LPDDR4_CLKN_A
LPDDR4_CS0n_A
LPDDR4_CS1n_A
LPDDR4_CS1n_B
LPDDR4_CS0n_B
LPDDR4_RESETn
DDR_RZQ
DDR_VREFOUT
DDR_VDDQ_1
DDR_VDDQ_2
DDR_VDDQ_3
DDR_VDDQ_4
DDR_VDDQ_5
DDR_VDDQ_6
DDR_VDDQ_7
DDR_VDDQ_8
DDR_VDDQL_1
DDR_VDDQL_2
DDR_VDDQL_3
DDR_VDDQL_4
DDR_VDDQL_5
DDR_AVSS
GPIO0_A0_d
GPIO0_A1_z
GPIO0_A2_d
GPIO0_A3_u
GPIO0_A4_u
GPIO0_A5_d
GPIO0_A6_d
GPIO0_A7_u
PMUIO1
GPIO0_B0_u
GPIO0_B1_u
GPIO0_B2_u
GPIO0_B3_u
GPIO0_B4_u
GPIO0_B5_u
GPIO0_B6_u
GPIO0_B7_d
GPIO0_C0_d
GPIO0_C1_d
GPIO0_C2_d
GPIO0_C3_d
GPIO0_C4_d
GPIO0_C5_d
GPIO0_C6_d
GPIO0_C7_d
GPIO0_D0_u
GPIO0_D1_u
R22
240R_1%
VCC_DDR
C87 100nF
C89 100nF
C91 100nF
C94 4.7uF
C96 10uF
C88 100nF
C90 100nF
C92 100nF
C95 4.7uF
C97 4.7uF
PLACED UNDER BGA PACKAGE
R23 0R
RESETn
I2C0_SCL_PMIC
I2C0_SDA_PMIC
I2C1_SCL
I2C1_SDA
I2C2_SCL_MO_TP
I2C2_SDA_MO_TP
C93 100nF
C84 18pF
C85 18pF
Y3
24MHz/10ppm
R72 0R
XOUT24M
XIN24M
TVSS
WORK_LED
DIY_LED
GPIO0_D3_d
GPIO0_D4_d
GPIO0_D5_d
GPIO0_D6_d
VDDA0V9_PMU
VCCA1V8_PMU
VDDA_0V9
VCCA_1V8
PMUPLL_AVDD_0V9
PMUPLL_AVDD_1V
PMUPLL_AVSS
SYSPLL_AVDD_0V9
SYSPLL_AVDD_1V8
SYSPLL_AVSS
nPOR_u
VCC3V3_PMU
PMUIO2
PMU_VDD_LOGIC_0V9
C210 1uF
C212 100nF
C214 1uF
C216 100nF
C209 1uF
C211 100nF
C213 1uF
C215 100nF
C86 100nF
C218 100nF
C217 100nF
C219 1uF
LPDDR3_RAM_4GB
U4A
LPDDR4_32_IS43LQ32128A-062BLI
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
DQS0_T_A
DQS0_C__A
DMI0_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
DQS1_T_A
DQS1_C__A
DMI1_A
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CK_T_A
CK_C_A
CKE0_A
NC_4
NC_6
CS0_A
NC_3
NC_5
ODT_CA__A
ZQ0
NC_1
NC_2
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
DQS0_T_B
DQS0_C_B
DMI0_b
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
DQS1_T_B
DQS1_C_B
DMI1_B
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CK_T_B
CK_C_B
CKE0_B
NC_9
NC_8
NC_10
CS0_B
NC_7
ODT_CA_B
RESET_N
R23 120R_1%
R24 120R_1%
C98 1nF
Sheet: LPDDR4_POWER
File: LPDDR4_POWER.sch
UART_DEBUG
VCC3V3_PMU
UART2_RX_MO_DEBUG
UART2_TX_MO_DEBUG
D13 1N5819WS
R73 22R
R71 100R
D15 ESD5451R-2/TR
D14 ESD5451R-2/TR
D12 SMF11A
DBG_RX TP25
DBG_TX TP24
DEBUG UART OUTPUT FOR INTERFACING WITH THE OTSIDE WORLD
LED_INDICATORS
+3V3
WORK_LED
DIY_LED
R74 1K
R75 1K
D16 LED
D17 LED
Q6 DTC143ZEBTL
Q7 DTC143ZEBTL
I2C_PULLUPS
R48 2.2K_5%
R49 2.2K_5%
R50 2.2K_5%
R51 2.2K_5%
R52 2.2K_5%
R53 2.2K_5%
I2C1_SCL
I2C1_SDA
I2C0_SCL_PMIC
I2C0_SDA_PMIC
I2C2_SCL_MO_TP
I2C2_SDA_MO_TP
Sheet: /RK3566_LPDDR3/
File: RK3566_PART_D.sch
Title:
Size: A3
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 6/17

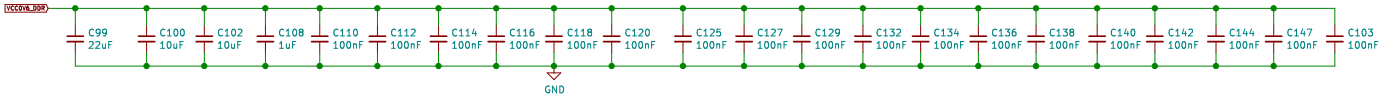
LPDDR3_RAM POWER

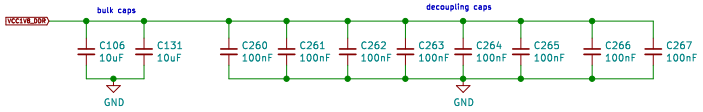


VCC_DDR DECOUPLING CAPACITORS

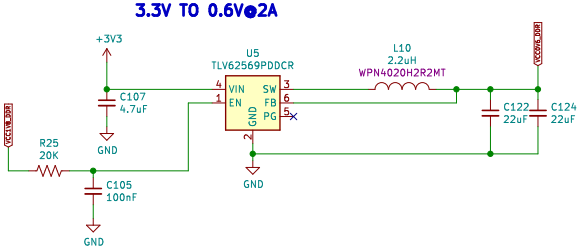


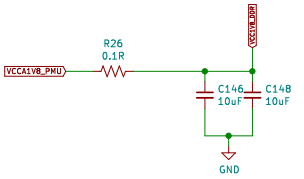
VCC_DDR DECOUPLING CAPACITORS





3.3V TO 0.6V@2A





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File: LPDDR4_POWER.sch

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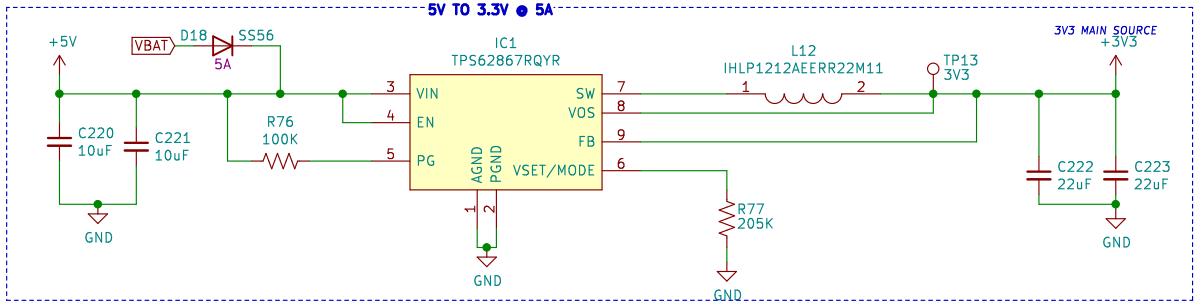
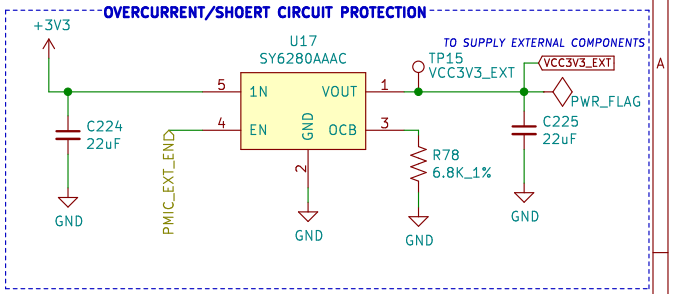
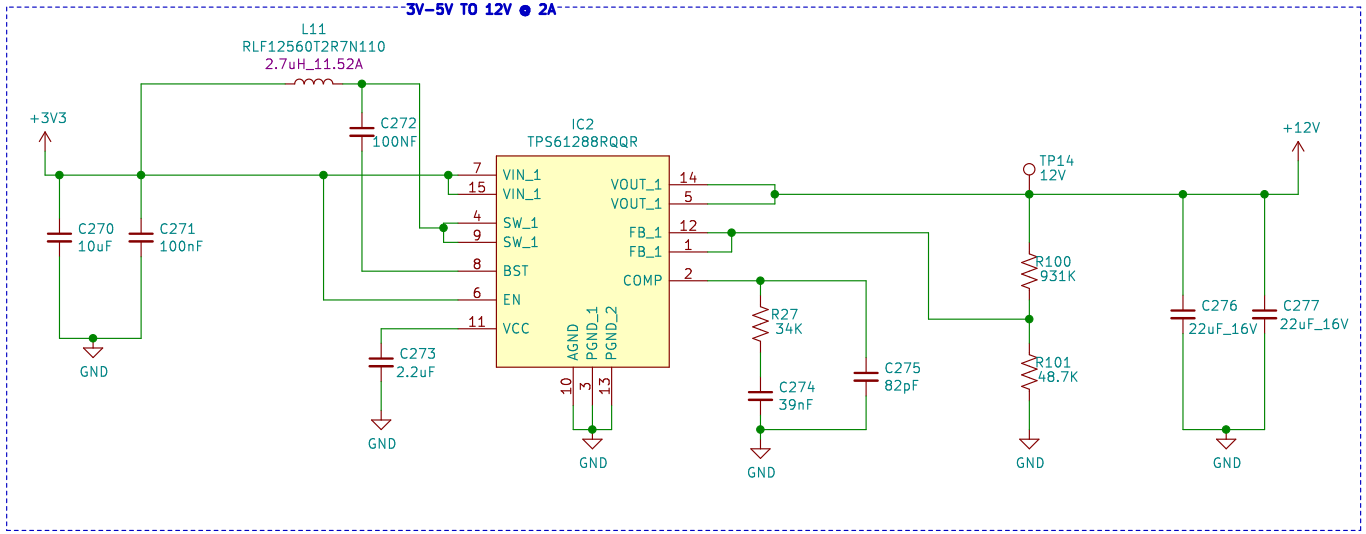
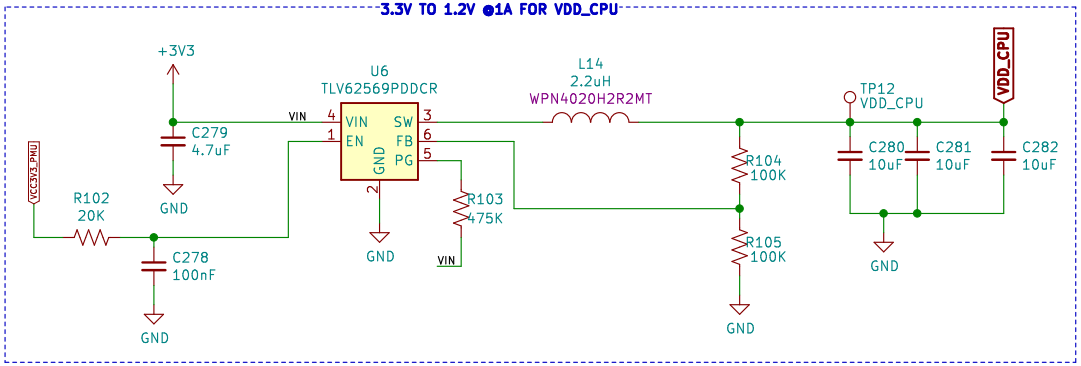
Size: A3	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.10)-1		Id: 7/17









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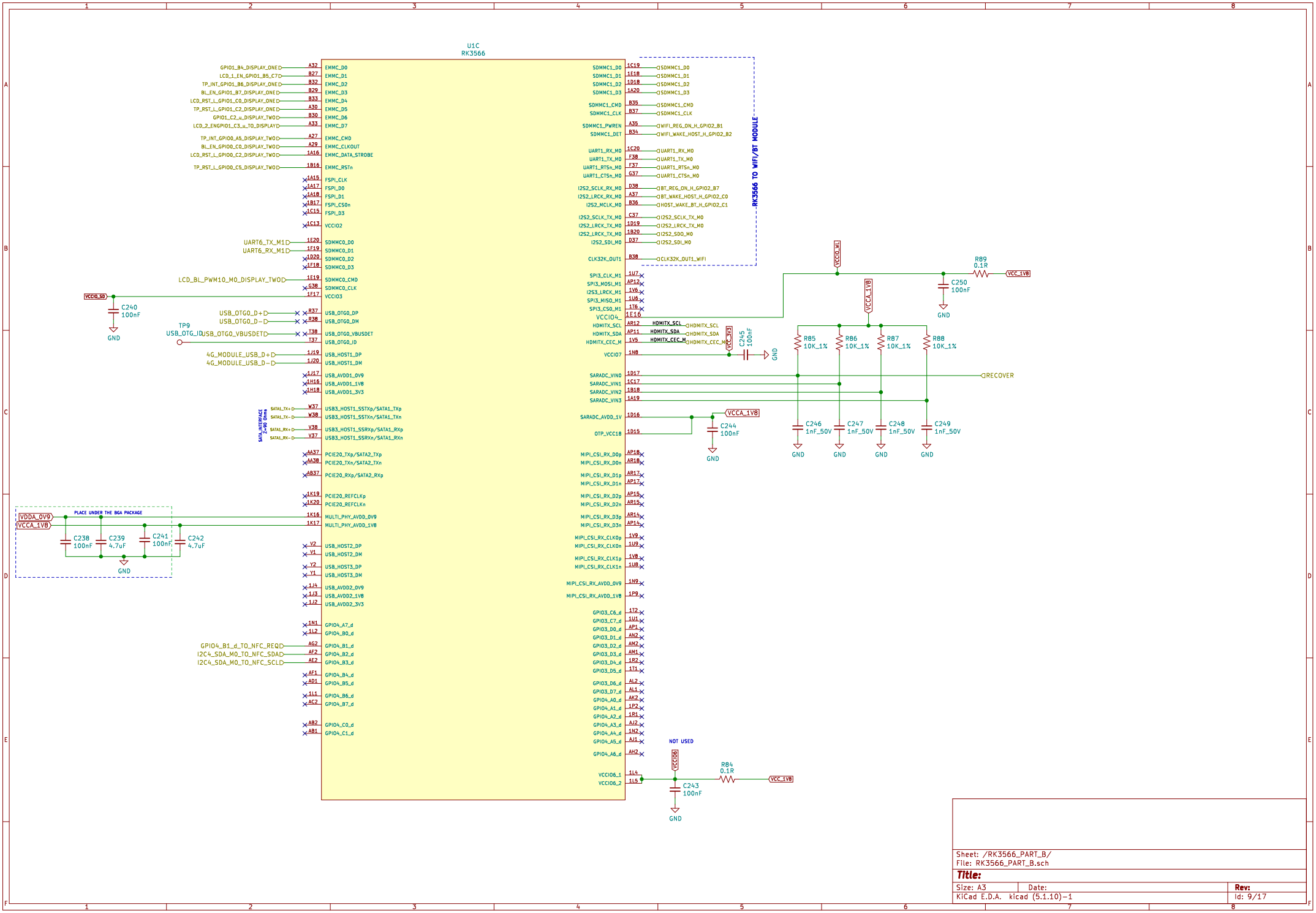
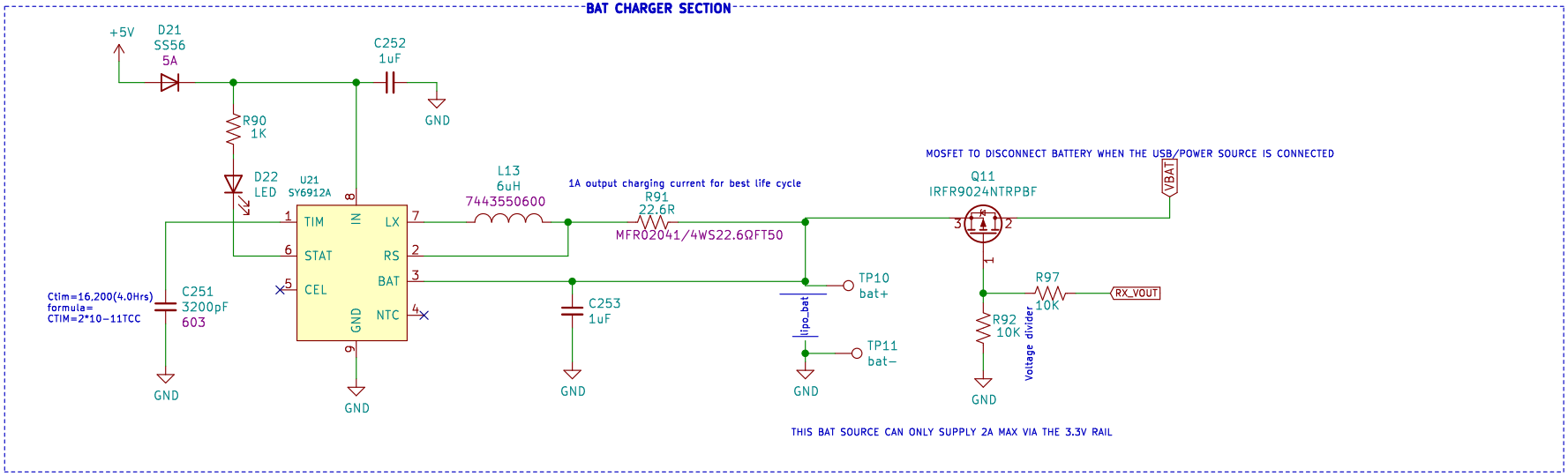
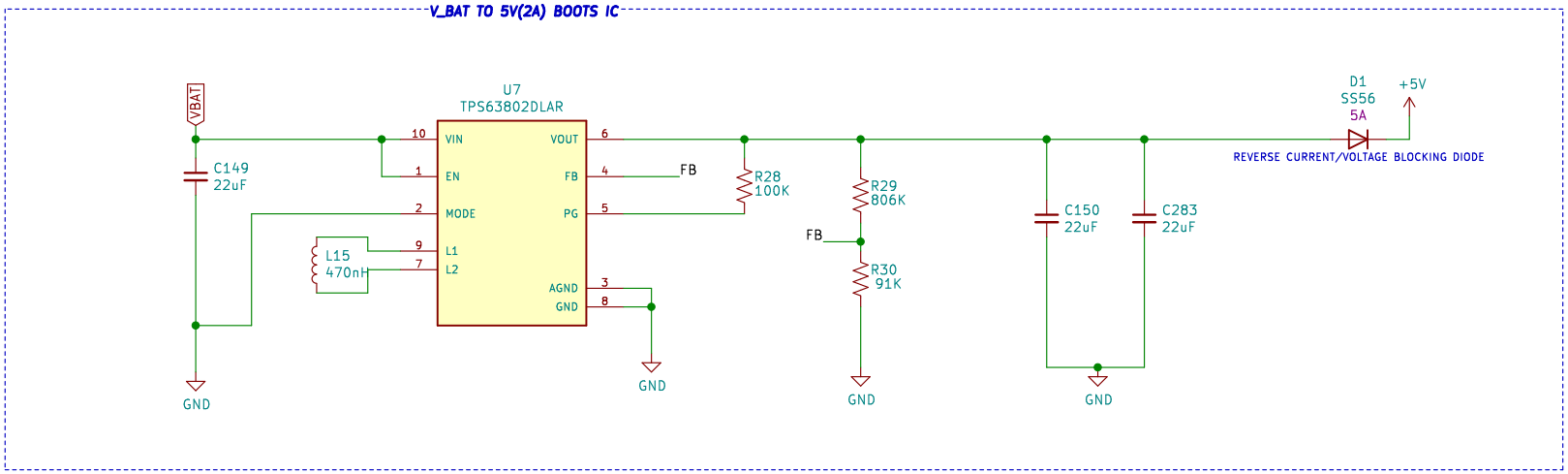
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.10)-1		Id: 8/17


U1C
RK3566
RK3566 TO WIFI/BT MODULE
GPIO1_B4_DISPLAY_ONE
LCD_1_EN_GPIO1_B5_C7
TP_INT_GPIO1_B6_DISPLAY_ONE
BL_EN_GPIO1_B7_DISPLAY_ONE
LCD_RST_L_GPIO1_C0_DISPLAY_ONE
TP_RST_L_GPIO1_C2_DISPLAY_ONE
GPIO1_C2_u_DISPLAY_TWO
LCD_2_ENGPIO1_C3_u_TO_DISPLAY
TP_INT_GPIO0_A5_DISPLAY_TWO
BL_EN_GPIO0_C0_DISPLAY_TWO
LCD_RST_L_GPIO0_C2_DISPLAY_TWO
TP_RST_L_GPIO0_C5_DISPLAY_TWO
EMMC_D0
EMMC_D1
EMMC_D2
EMMC_D3
EMMC_D4
EMMC_D5
EMMC_D6
EMMC_D7
EMMC_CMD
EMMC_CLKOUT
EMMC_DATA_STROBE
EMMC_RSTn
FSPI_CLK
FSPI_D0
FSPI_D1
FSPI_CS0n
FSPI_D3
VCCIO2
UART6_TX_M1
UART6_RX_M1
SDMMC0_D0
SDMMC0_D1
SDMMC0_D2
SDMMC0_D3
LCD_BL_PWM10_M0_DISPLAY_TWO
SDMMC0_CMD
SDMMC0_CLK
VCCIO3
VCCIO_SD
C240
100nF
GND
USB_OTG0_D+
USB_OTG0_D-
USB_OTG0_DP
USB_OTG0_DM
TP9
USB_OTG_ID
USB_OTG0_VBUSDET
USB_OTG0_ID
4G_MODULE_USB_D+
4G_MODULE_USB_D-
USB_HOST1_DP
USB_HOST1_DM
USB_AVDD1_0V9
USB_AVDD1_1V8
USB_AVDD1_3V3
SATA_INTERFACE 2-90 Ohms
SATA1_TX+
SATA1_TX-
SATA1_RX+
SATA1_RX-
USB3_HOST1_SSTXp/SATA1_TXp
USB3_HOST1_SSTXn/SATA1_TXn
USB3_HOST1_SSRXp/SATA1_RXp
USB3_HOST1_SSRXn/SATA1_RXn
PCIE20_TXp/SATA2_TXp
PCIE20_TXn/SATA2_TXn
PCIE20_RXp/SATA2_RXp
PCIE20_REFCLKp
PCIE20_REFCLKn
PLACE UNDER THE BGA PACKAGE
VDDA_0V9
VCCA_1V8
C238
100nF
C239
4.7uF
C241
100nF
C242
4.7uF
GND
MULTI_PHY_AVDD_0V9
MULTI_PHY_AVDD_1V8
USB_HOST2_DP
USB_HOST2_DM
USB_HOST3_DP
USB_HOST3_DM
USB_AVDD2_0V9
USB_AVDD2_1V8
USB_AVDD2_3V3
GPIO4_A7_d
GPIO4_B0_d
GPIO4_B1_d_TO_NFC_REQ
I2C4_SDA_M0_TO_NFC_SDA
I2C4_SDA_M0_TO_NFC_SCL
GPIO4_B1_d
GPIO4_B2_d
GPIO4_B3_d
GPIO4_B4_d
GPIO4_B5_d
GPIO4_B6_d
GPIO4_B7_d
GPIO4_C0_d
GPIO4_C1_d
SDMMC1_D0
SDMMC1_D1
SDMMC1_D2
SDMMC1_D3
SDMMC1_CMD
SDMMC1_CLK
SDMMC1_PWREN
SDMMC1_DET
UART1_RX_M0
UART1_TX_M0
UART1_RTSn_M0
UART1_CTSn_M0
I2S2_SCLK_RX_M0
I2S2_LRCK_RX_M0
I2S2_MCLK_M0
I2S2_SCLK_TX_M0
I2S2_LRCK_TX_M0
I2S2_LRCK_TX_M0
I2S2_SDI_M0
CLK32K_OUT1
SPI3_CLK_M1
SPI3_MOSI_M1
I2S3_LRCK_M1
SPI3_MISO_M1
SPI3_CS0_M1
VCCIO4_
HDMITX_SCL
HDMITX_SDA
HDMITX_CEC_M
VCCIO7
SARADC_VIN0
SARADC_VIN1
SARADC_VIN2
SARADC_VIN3
SARADC_AVDD_1V
OTP_VCC18
MIPI_CSI_RX_D0p
MIPI_CSI_RX_D0n
MIPI_CSI_RX_D1p
MIPI_CSI_RX_D1n
MIPI_CSI_RX_D2p
MIPI_CSI_RX_D2n
MIPI_CSI_RX_D3p
MIPI_CSI_RX_D3n
MIPI_CSI_RX_CLK0p
MIPI_CSI_RX_CLK0n
MIPI_CSI_RX_CLK1p
MIPI_CSI_RX_CLK1n
MIPI_CSI_RX_AVDD_0V9
MIPI_CSI_RX_AVDD_1V8
GPIO3_C6_d
GPIO3_C7_d
GPIO3_D0_d
GPIO3_D1_d
GPIO3_D2_d
GPIO3_D3_d
GPIO3_D4_d
GPIO3_D5_d
GPIO3_D6_d
GPIO3_D7_d
GPIO4_A0_d
GPIO4_A1_d
GPIO4_A2_d
GPIO4_A3_d
GPIO4_A4_d
GPIO4_A5_d
GPIO4_A6_d
VCCIO6_1
VCCIO6_2
NOT USED
VCCIO6
R84
0.1R
C243
100nF
VCC_1V8
VCCIO_M1
R89
0.1R
C250
100nF
VCCA_1V8
R85
10K_1%
R86
10K_1%
R87
10K_1%
R88
10K_1%
RECOVER
VCC_3V3
C245
100nF
C244
100nF
C246
1nF_50V
C247
1nF_50V
C248
1nF_50V
C249
1nF_50V
Sheet: /RK3566_PART_B/
File: RK3566_PART_B.sch
Title:
Size: A3
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 9/17





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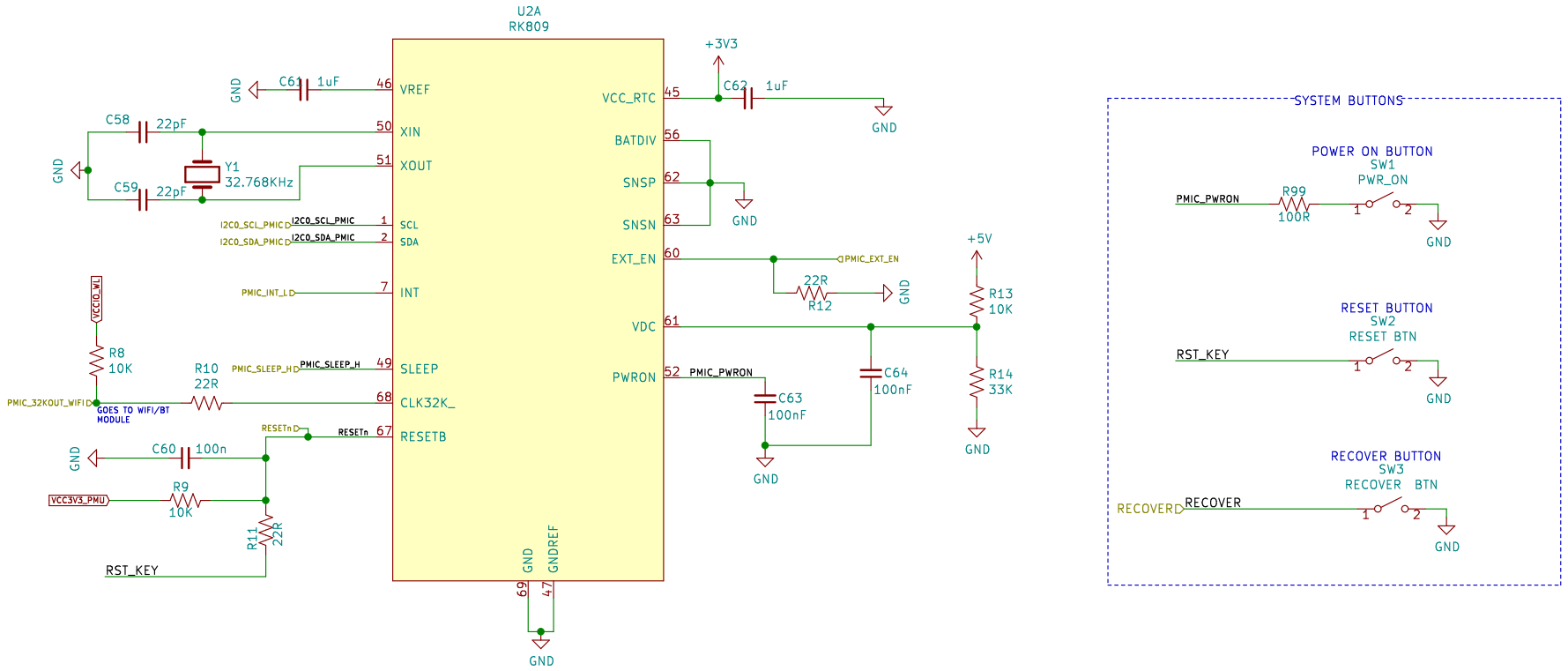
KiCad E.D.A. kicad (5.1.10)-1	Id: 10/17
	Rev:



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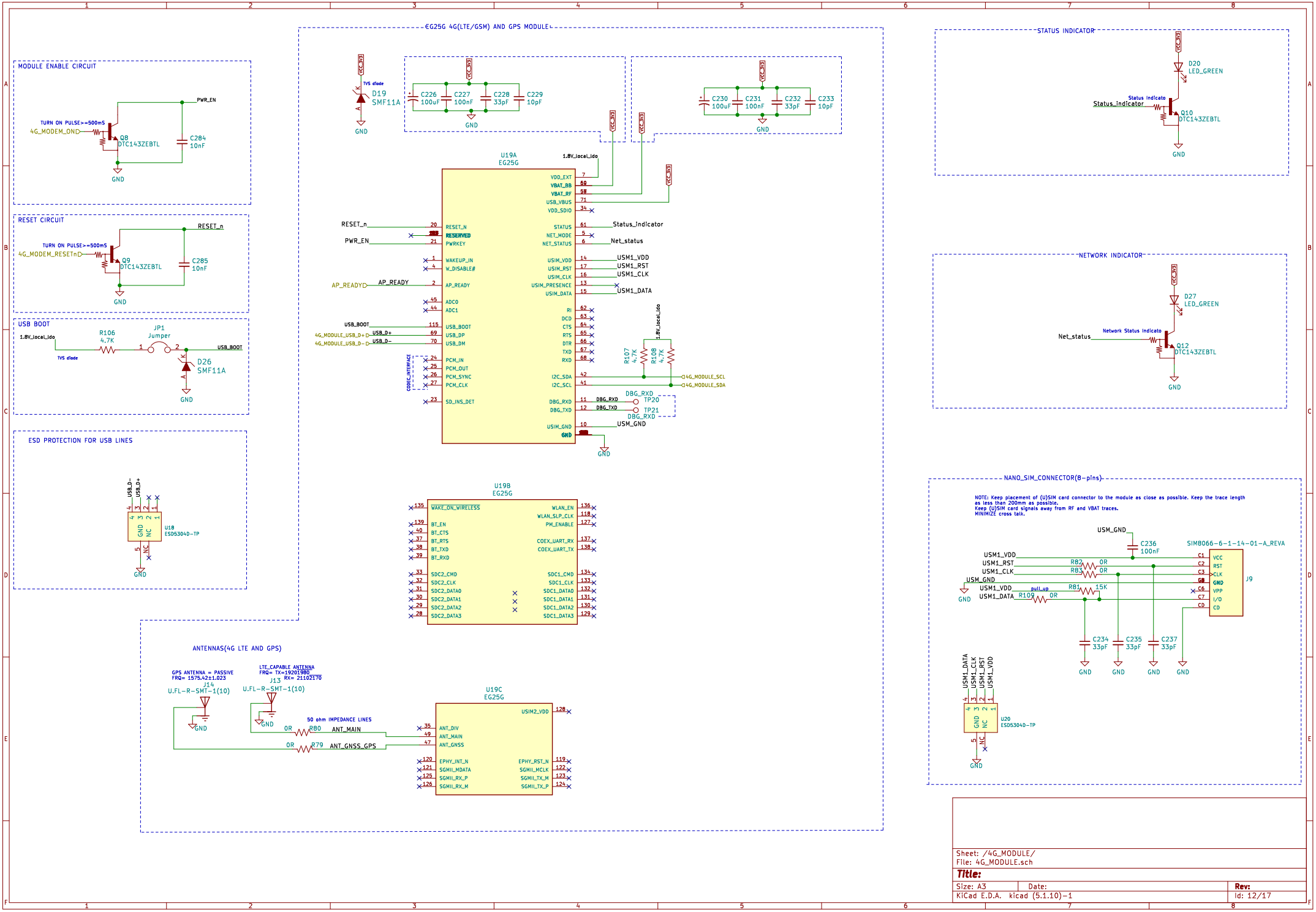
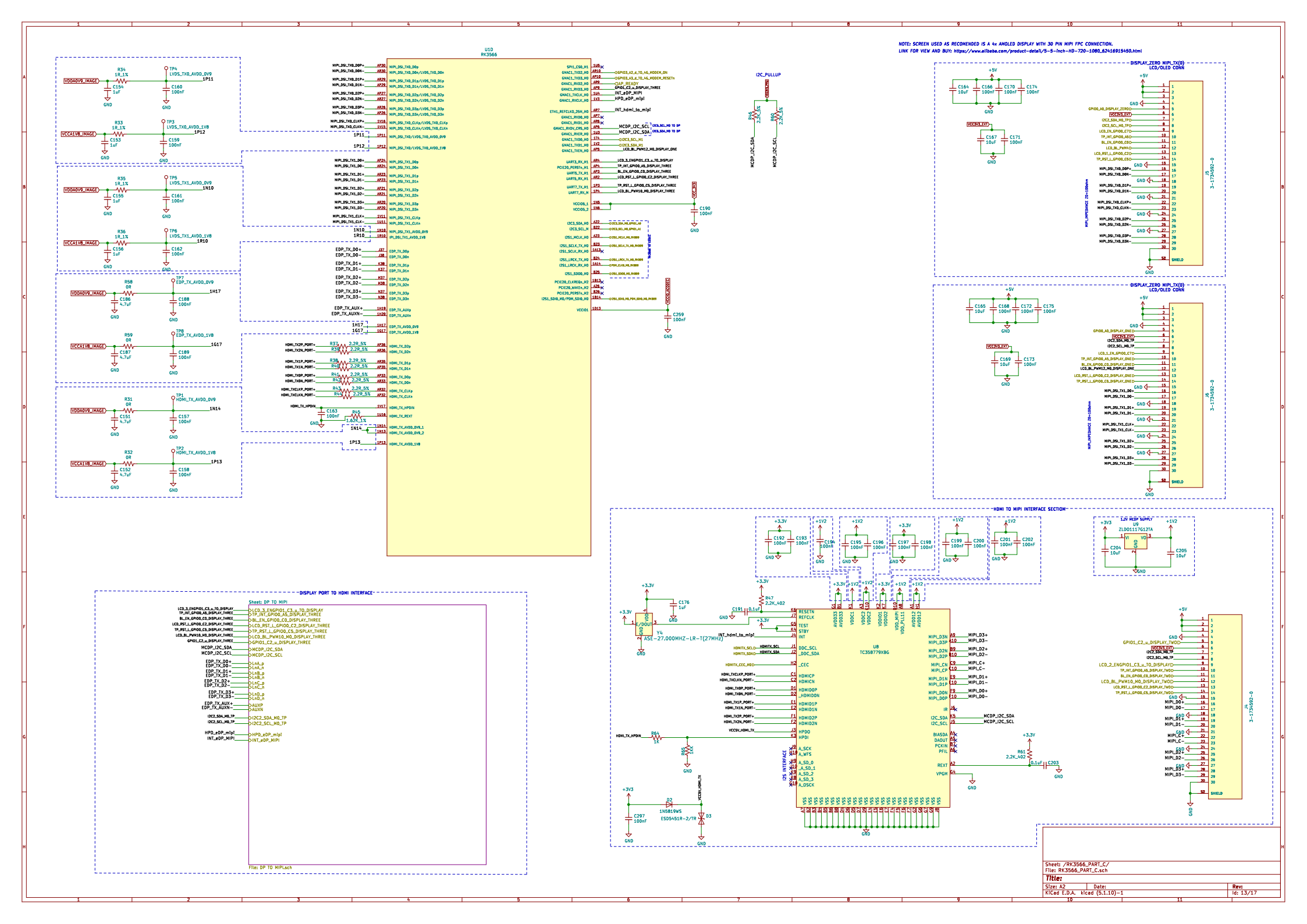
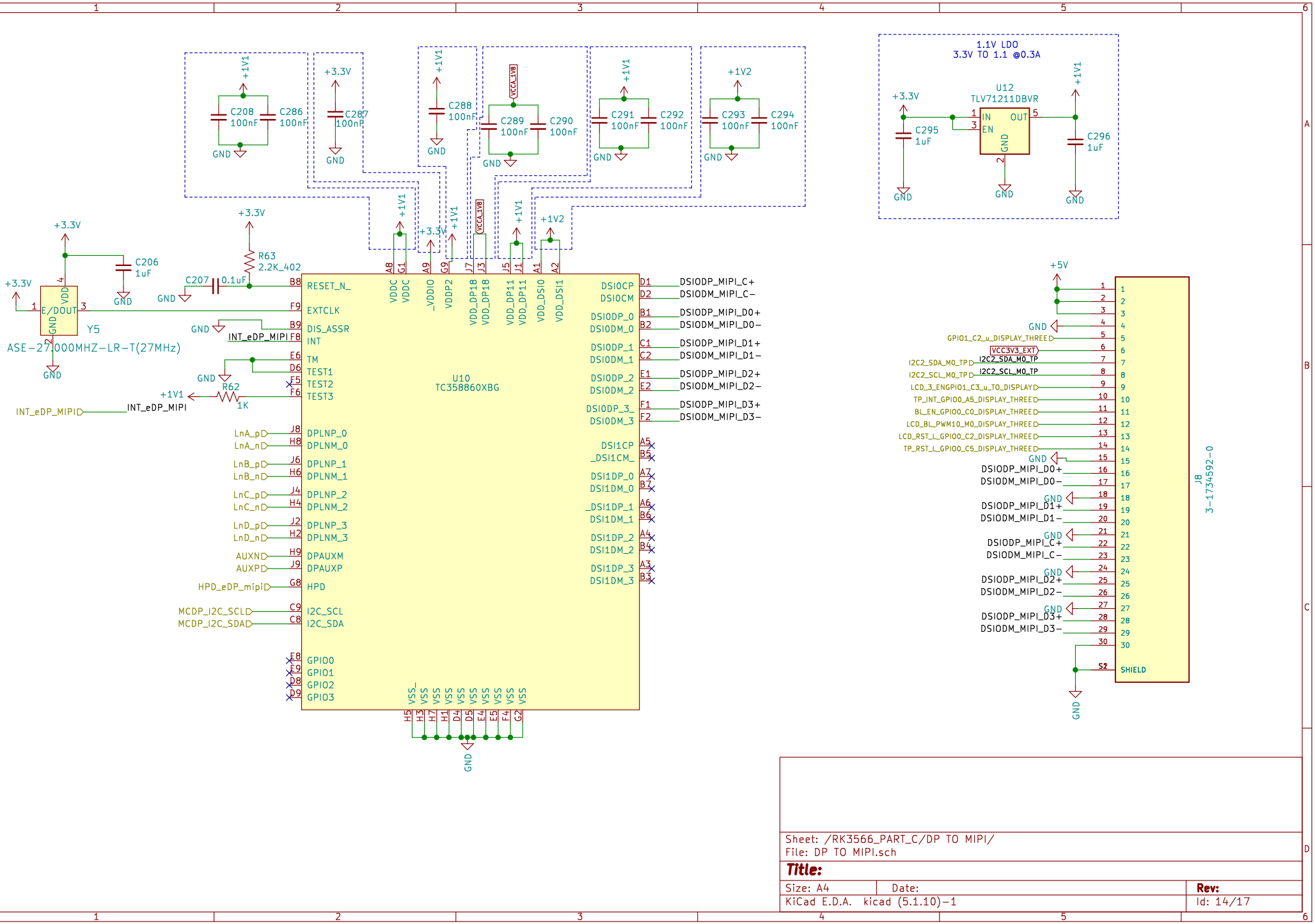
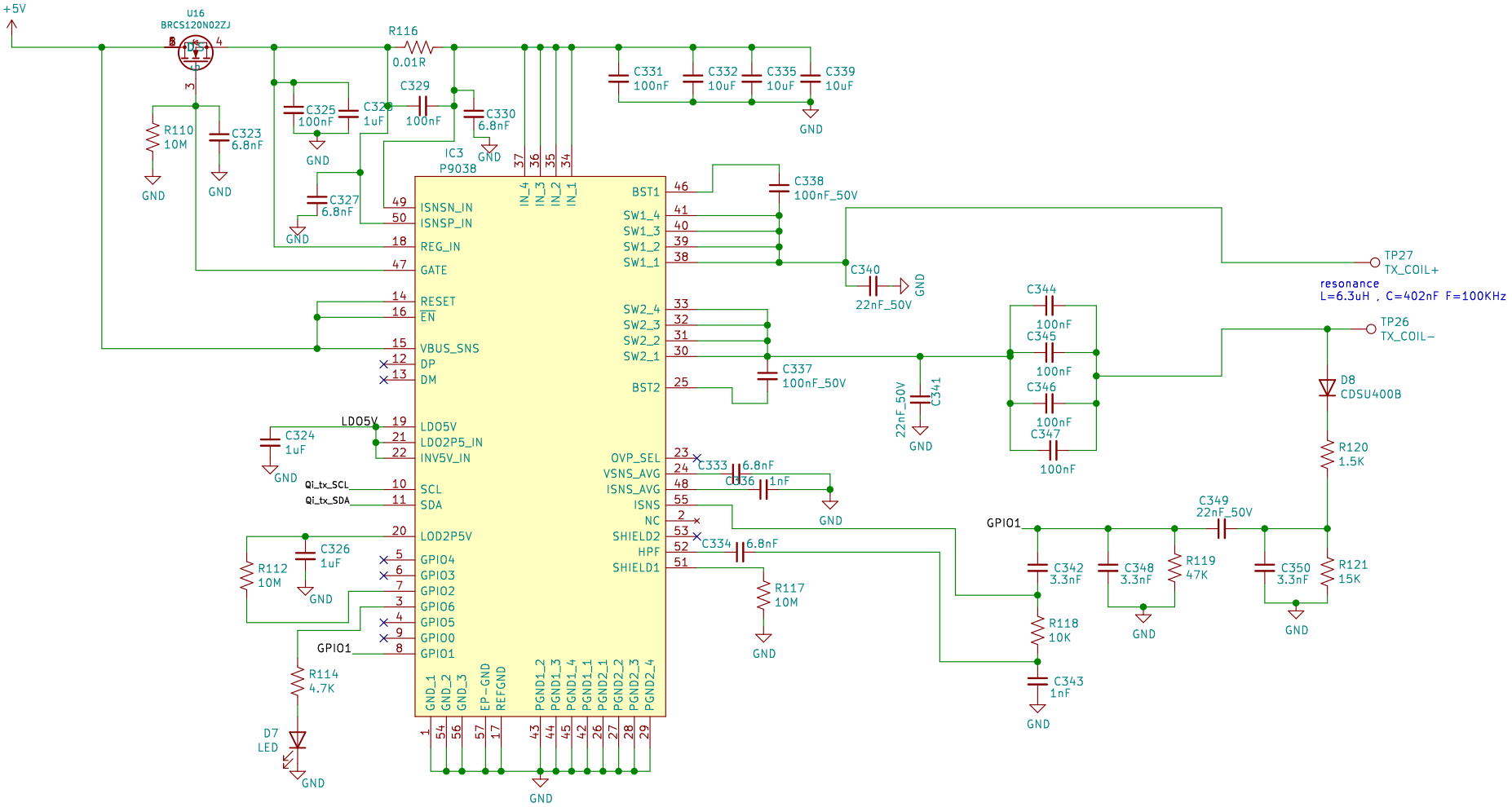
	Rev:

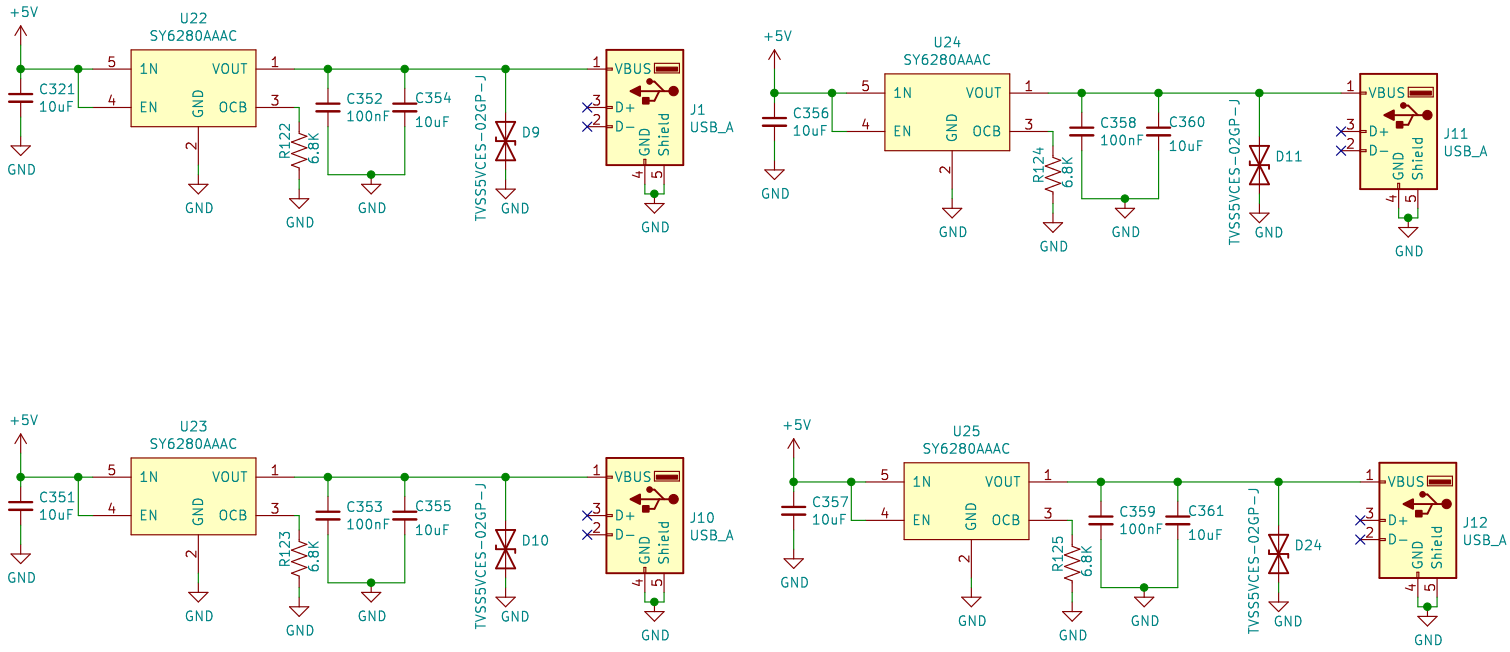

EG25G 4G(LTE/GSM) AND GPS MODULE
MODULE ENABLE CIRCUIT
PWR_EN
TURN ON PULSE>=500mS
4G_MODEM_ONO
Q8
DTC143ZEBTL
C284
10nF
GND
RESET CIRCUIT
RESET_n
TURN ON PULSE>=500mS
4G_MODEM_RESETnO
Q9
DTC143ZEBTL
C285
10nF
GND
USB BOOT
1.8V_local_ido
R106
4.7K
JP1
Jumper
USB_BOOT
TVS diode
D26
SMF11A
GND
ESD PROTECTION FOR USB LINES
USB_D-
USB_D+
U18
ESD5304D-TP
GND
TVS diode
D19
SMF11A
VCC_3V3
C226
100uF
C227
100nF
C228
33pF
C229
10pF
C230
100uF
C231
100nF
C232
33pF
C233
10pF
U19A
EG25G
VDD_EXT
VBAT_BB
VBAT_RF
USB_VBUS
VDD_SDIO
RESET_N
RESERVED
PWRKEY
WAKEUP_IN
W_DISABLE#
AP_READY
ADC0
ADC1
USB_BOOT
USB_DP
USB_DM
PCM_IN
PCM_OUT
PCM_SYNC
PCM_CLK
SD_INS_DET
STATUS
NET_MODE
NET_STATUS
USIM_VDD
USIM_RST
USIM_CLK
USIM_PRESENCE
USIM_DATA
RI
DCD
CTS
RTS
DTR
TXD
RXD
I2C_SDA
I2C_SCL
DBG_RXD
DBG_TXD
USIM_GND
GND
RESET_n
PWR_EN
AP_READY
USB_BOOT
4G_MODULE_USB_D+
4G_MODULE_USB_D-
USB_D+
USB_D-
CODEC_INTERFACE
Status_Indicator
Net_status
USM1_VDD
USM1_RST
USM1_CLK
USM1_DATA
USM_GND
R107
4.7K
R108
4.7K
4G_MODULE_SCL
4G_MODULE_SDA
DBG_RXD
TP20
TP21
U19B
EG25G
WAKE_ON_WIRELESS
BT_EN
BT_CTS
BT_RTS
BT_TXD
BT_RXD
SDC2_CMD
SDC2_CLK
SDC2_DATA0
SDC2_DATA1
SDC2_DATA2
SDC2_DATA3
WLAN_EN
WLAN_SLP_CLK
PM_ENABLE
COEX_UART_RX
COEX_UART_TX
SDC1_CMD
SDC1_CLK
SDC1_DATA0
SDC1_DATA1
SDC1_DATA2
SDC1_DATA3
ANTENNAS(4G LTE AND GPS)
GPS ANTENNA = PASSIVE
FRQ= 1575.42±1.023
J14
U.FL-R-SMT-1(10)
LTE_CAPABLE ANTENNA
FRQ= TX=19201980 RX= 21102170
J13
U.FL-R-SMT-1(10)
50 ohm IMPEDANCE LINES
R80
0R
ANT_MAIN
R79
0R
ANT_GNSS_GPS
U19C
EG25G
USIM2_VDD
ANT_DIV
ANT_MAIN
ANT_GNSS
EPHY_INT_N
SGMII_MDATA
SGMII_RX_P
SGMII_RX_M
EPHY_RST_N
SGMII_MCLK
SGMII_TX_M
SGMII_TX_P
STATUS INDICATOR
D20
LED_GREEN
Status_Indicator
Q10
DTC143ZEBTL
GND
NETWORK INDICATOR
D27
LED_GREEN
Net_status
Q12
DTC143ZEBTL
GND
NANO_SIM_CONNECTOR(8-pins)
NOTE: Keep placement of (U)SIM card connector to the module as close as possible. Keep the trace length as less than 200mm as possible.
Keep (U)SIM card signals away from RF and VBAT traces.
MINIMIZE cross talk.
USM_GND
C236
100nF
SIM8066-6-1-14-01-A_REVA
USM1_VDD
USM1_RST
USM1_CLK
USM_GND
USM1_VDD
USM1_DATA
R82
0R
R83
0R
R84
15K
pull_up
R105
0R
VCC
RST
CLK
GND
VPP
I/O
CD
J9
C234
33pF
C235
33pF
C237
33pF
U20
ESD5304D-TP
Sheet: /4G_MODULE/
File: 4G_MODULE.sch
Title:
Size: A3
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 12/17


NOTE: SCREEN USED AS RECOMENDED IS A 4x AMOLED DISPLAY WITH 30 PIN MIPI FPC CONNECTION.
LINK FOR VIEW AND BUY: https://www.alibaba.com/product-detail/5-5-Inch-HD-720-1080_62416915450.html
U1D
RK3566
I2C_PULLUP
DISPLAY_ZERO MIPI_TX(0)
LCD/OLED CONN
DISPLAY_ZERO MIPI_TX(0)
LCD/OLED CONN
HDMI TO MIPI INTERFACE SECTION
U8
TC358779XBG
DISPLAY PORT TO HDMI INTERFACE
Sheet: DP TO MIPI
File: DP TO MIPI.sch
Sheet: /RK3566_PART_C/
File: RK3566_PART_C.sch
Title:
Size: A2
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 13/17

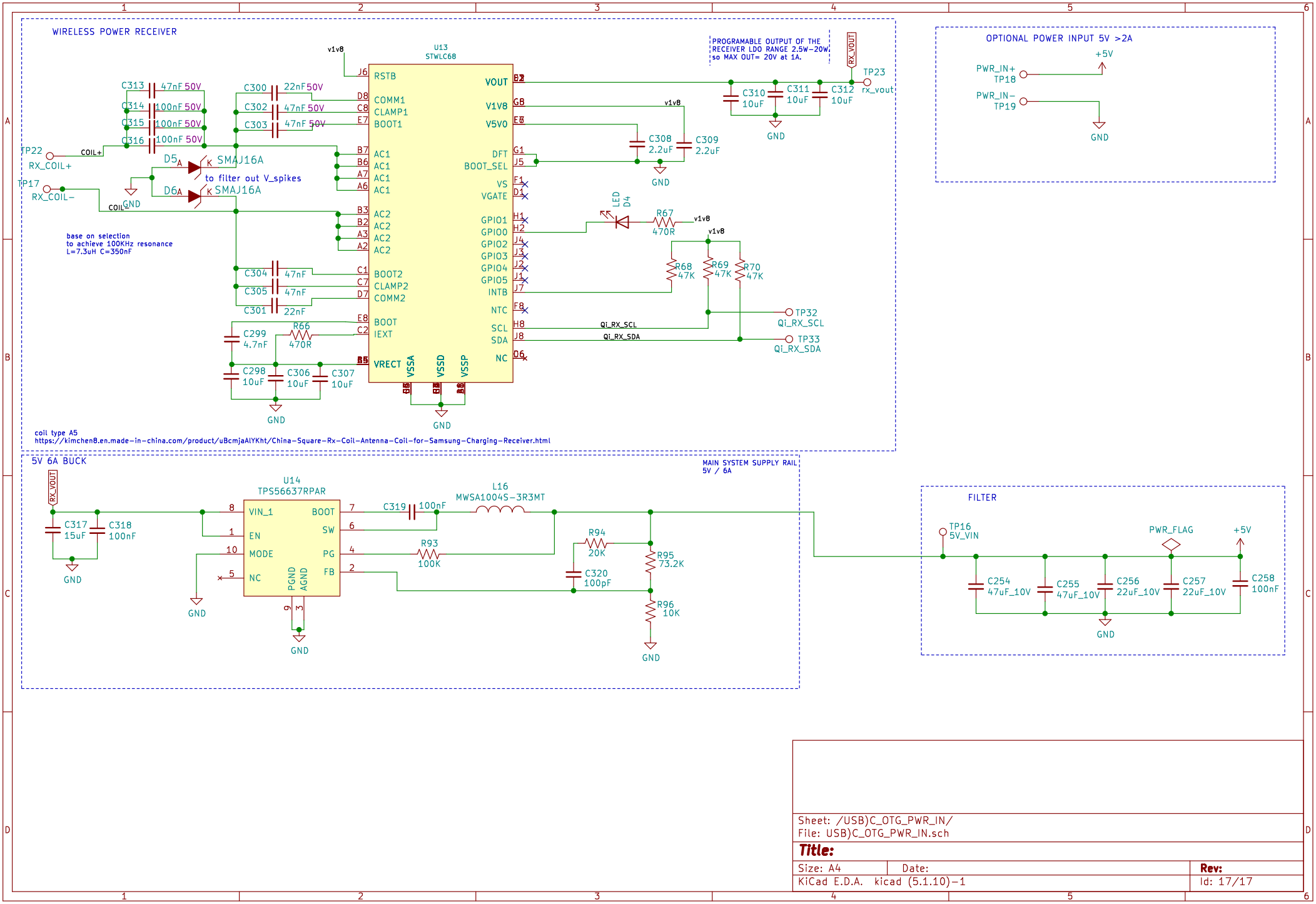

1.1V LDO
3.3V TO 1.1 @0.3A
U12
TLV71211DBVR
C295 1uF
C296 1uF
C208 100nF
C286 100nF
C287 100nF
C288 100nF
C289 100nF
C290 100nF
C291 100nF
C292 100nF
C293 100nF
C294 100nF
C206 1uF
C207 0.1uF
R63 2.2K_402
R62 1K
Y5
ASE-27.000MHZ-LR-T(27MHz)
U10
TC358860XBG
RESET_N
EXTCLK
DIS_ASSR
INT
TM
TEST1
TEST2
TEST3
DPLNP_0
DPLNM_0
DPLNP_1
DPLNM_1
DPLNP_2
DPLNM_2
DPLNP_3
DPLNM_3
DPAUXM
DPAUXP
HPD
I2C_SCL
I2C_SDA
GPIO0
GPIO1
GPIO2
GPIO3
DSI0CP
DSI0CM
DSI0DP_0
DSI0DM_0
DSI0DP_1
DSI0DM_1
DSI0DP_2
DSI0DM_2
DSI0DP_3_
DSI0DM_3
DSI1CP
DSI1CM
DSI1DP_0
DSI1DM_0
_DSI1DP_1
DSI1DM_1
DSI1DP_2
DSI1DM_2
DSI1DP_3
DSI1DM_3
DSI0DP_MIPI_C+
DSI0DM_MIPI_C−
DSI0DP_MIPI_D0+
DSI0DM_MIPI_D0−
DSI0DP_MIPI_D1+
DSI0DM_MIPI_D1−
DSI0DP_MIPI_D2+
DSI0DM_MIPI_D2−
DSI0DP_MIPI_D3+
DSI0DM_MIPI_D3−
LnA_p
LnA_n
LnB_p
LnB_n
LnC_p
LnC_n
LnD_p
LnD_n
AUXN
AUXP
HPD_eDP_mipi
MCDP_I2C_SCL
MCDP_I2C_SDA
INT_eDP_MIPI
J8
3-1734592-0
SHIELD
GPIO1_C2_u_DISPLAY_THREE
VCC3V3_EXT
I2C2_SDA_M0_TP
I2C2_SCL_M0_TP
LCD_3_ENGPIO1_C3_u_TO_DISPLAY
TP_INT_GPIO0_A5_DISPLAY_THREE
BL_EN_GPIO0_C0_DISPLAY_THREE
LCD_BL_PWM10_M0_DISPLAY_THREE
LCD_RST_L_GPIO0_C2_DISPLAY_THREE
TP_RST_L_GPIO0_C5_DISPLAY_THREE
Sheet: /RK3566_PART_C/DP TO MIPI/
File: DP TO MIPI.sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 14/17


+5V
U16
BRCS120N02ZJ
R116
0.01R
C331
100nF
C332
10uF
C335
10uF
C339
10uF
GND
C329
100nF
C330
6.8nF
C325
100nF
C328
1uF
R110
10M
C323
6.8nF
C327
6.8nF
IC3
P9038
ISNSN_IN
ISNSP_IN
REG_IN
GATE
RESET
EN
VBUS_SNS
DP
DM
LDO5V
LDO2P5_IN
INV5V_IN
SCL
SDA
LOD2P5V
GPIO4
GPIO3
GPIO2
GPIO6
GPIO5
GPIO0
GPIO1
IN_4
IN_3
IN_2
IN_1
BST1
SW1_4
SW1_3
SW1_2
SW1_1
SW2_4
SW2_3
SW2_2
SW2_1
BST2
OVP_SEL
VSNS_AVG
ISNS_AVG
ISNS
NC
SHIELD2
HPF
SHIELD1
GND_1
GND_2
GND_3
EP-GND
REFGND
PGND1_2
PGND1_3
PGND1_4
PGND1_1
PGND2_1
PGND2_2
PGND2_3
PGND2_4
C338
100nF_50V
C340
22nF_50V
C337
100nF_50V
C341
22nF_50V
C333
6.8nF
C336
1nF
C334
6.8nF
R117
10M
C324
1uF
C326
1uF
R112
10M
R114
4.7K
D7
LED
Qi_tx_SCL
Qi_tx_SDA
GPIO1
C344
100nF
C345
100nF
C346
100nF
C347
100nF
TP27
TX_COIL+
TP26
TX_COIL-
resonance
L=6.3uH , C=402nF F=100KHz
D8
CDSU400B
R120
1.5K
C349
22nF_50V
C342
3.3nF
C348
3.3nF
R119
47K
C350
3.3nF
R121
15K
R118
10K
C343
1nF
U15
24AA64T-I/OT
C322
1uF
R111
10K
R113
4.7K
R115
4.7K
LDO5V
A0
A1
A2
VCC
WP
SCL
SDA
TP30
Qi_tx_SCL
TP31
Qi_tx_SDA
6.3uH TX coil
link: https://kimchen8.en.made-in-china.com/product/pvWQfngkJchS/China-Qi-Wireless-Charger-Transmitter-6-3-Uh-Coil-for-Mobile-Phone.html
Sheet: /5W_QI_PWR_OUTPUT/
File: 5W_QI_PWR_OUTPUT.sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 15/17

4 ports USB POWER OUTOUT 5V @ 1A



Sheet: /USB POWER OUTPUT/		
File: USB POWER OUTPUT.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.10)-1		Id: 16/17


WIRELESS POWER RECEIVER
U13
STWLC68
RSTB
COMM1
CLAMP1
BOOT1
AC1
AC1
AC1
AC1
AC2
AC2
AC2
AC2
BOOT2
CLAMP2
COMM2
BOOT
IEXT
VRECT
VOUT
V1V8
V5V0
DFT
BOOT_SEL
VS
VGATE
GPIO1
GPIO0
GPIO2
GPIO3
GPIO4
GPIO5
INTB
NTC
SCL
SDA
NC
VSSA
VSSD
VSSP
PROGRAMABLE OUTPUT OF THE RECEIVER LDO RANGE 2.5W-20W. so MAX OUT= 20V at 1A.
RX_VOUT
TP23
rx_vout
C310 10uF
C311 10uF
C312 10uF
C308 2.2uF
C309 2.2uF
C313 47nF 50V
C314 100nF 50V
C315 100nF 50V
C316 100nF 50V
C300 22nF 50V
C302 47nF 50V
C303 47nF 50V
TP22
RX_COIL+
TP17
RX_COIL-
COIL+
COIL-
D5 SMAJ16A
D6 SMAJ16A
to filter out V_spikes
base on selection
to achieve 100KHz resonance
L=7.3uH C=350nF
C304 47nF
C305 47nF
C301 22nF
C299 4.7nF
R66 470R
C298 10uF
C306 10uF
C307 10uF
LED D4
R67 470R
R68 47K
R69 47K
R70 47K
TP32
Qi_RX_SCL
TP33
Qi_RX_SDA
coil type A5
https://kimchen8.en.made-in-china.com/product/uBcmjaAlYKht/China-Square-Rx-Coil-Antenna-Coil-for-Samsung-Charging-Receiver.html
OPTIONAL POWER INPUT 5V >2A
PWR_IN+
TP18
PWR_IN-
TP19
+5V
GND
5V 6A BUCK
MAIN SYSTEM SUPPLY RAIL
5V / 6A
U14
TPS56637RPAR
VIN_1
EN
MODE
NC
BOOT
SW
PG
FB
PGND
AGND
L16
MWSA1004S-3R3MT
C317 15uF
C318 100nF
C319 100nF
R93 100K
R94 20K
R95 73.2K
R96 10K
C320 100pF
FILTER
TP16
5V_VIN
PWR_FLAG
C254 47uF_10V
C255 47uF_10V
C256 22uF_10V
C257 22uF_10V
C258 100nF
Sheet: /USB)C_OTG_PWR_IN/
File: USB)C_OTG_PWR_IN.sch
Title:
Size: A4
Date:
Rev:
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