K230
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Revision History

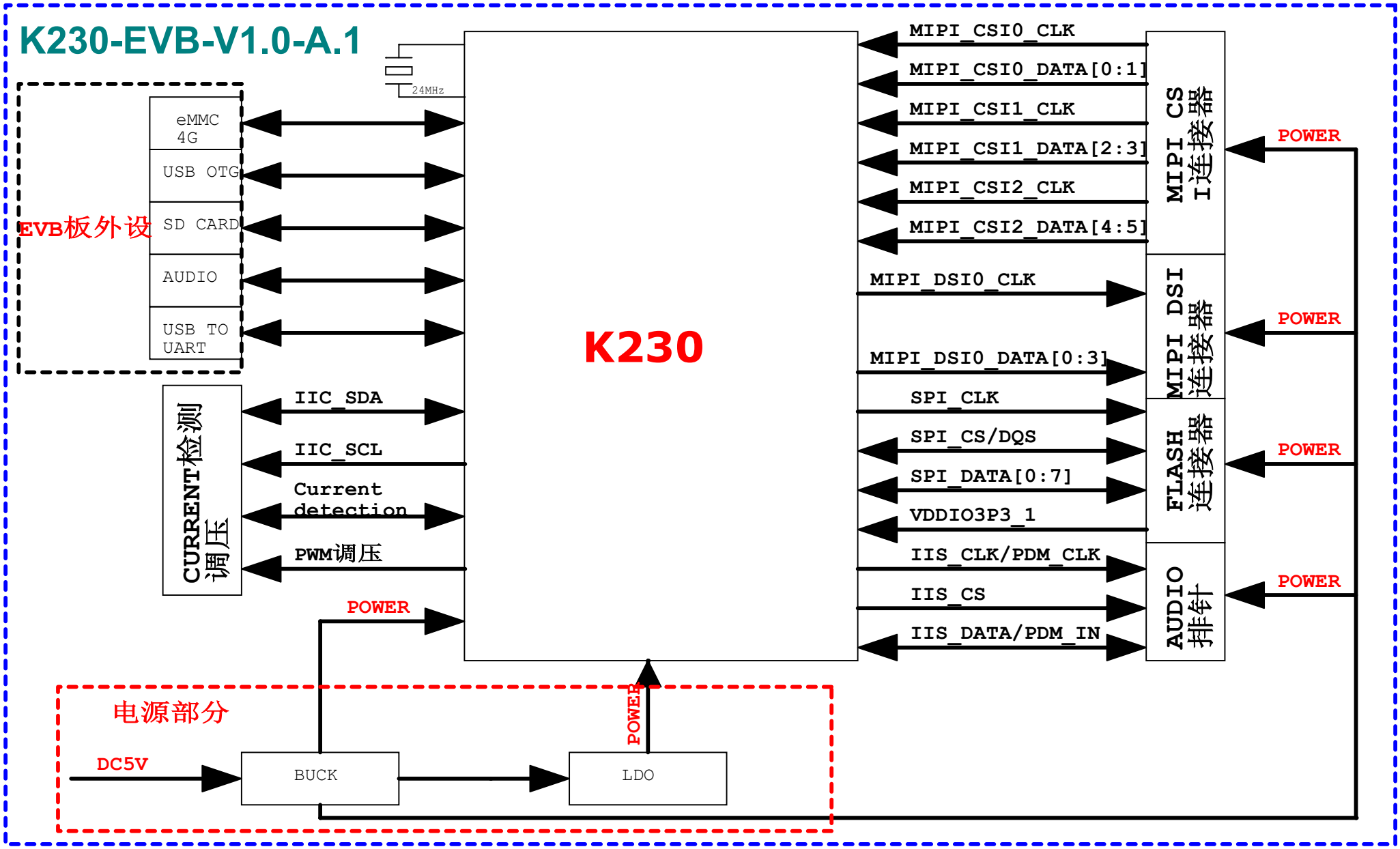
Rev. Code	Date	By	Description
A	2023-03-07	ZHAOZEYU	1 initial version

嘉楠 canaan

Title: 01 CONTENT

Designer: ZZY | Revision: V1.0 | Size: A4

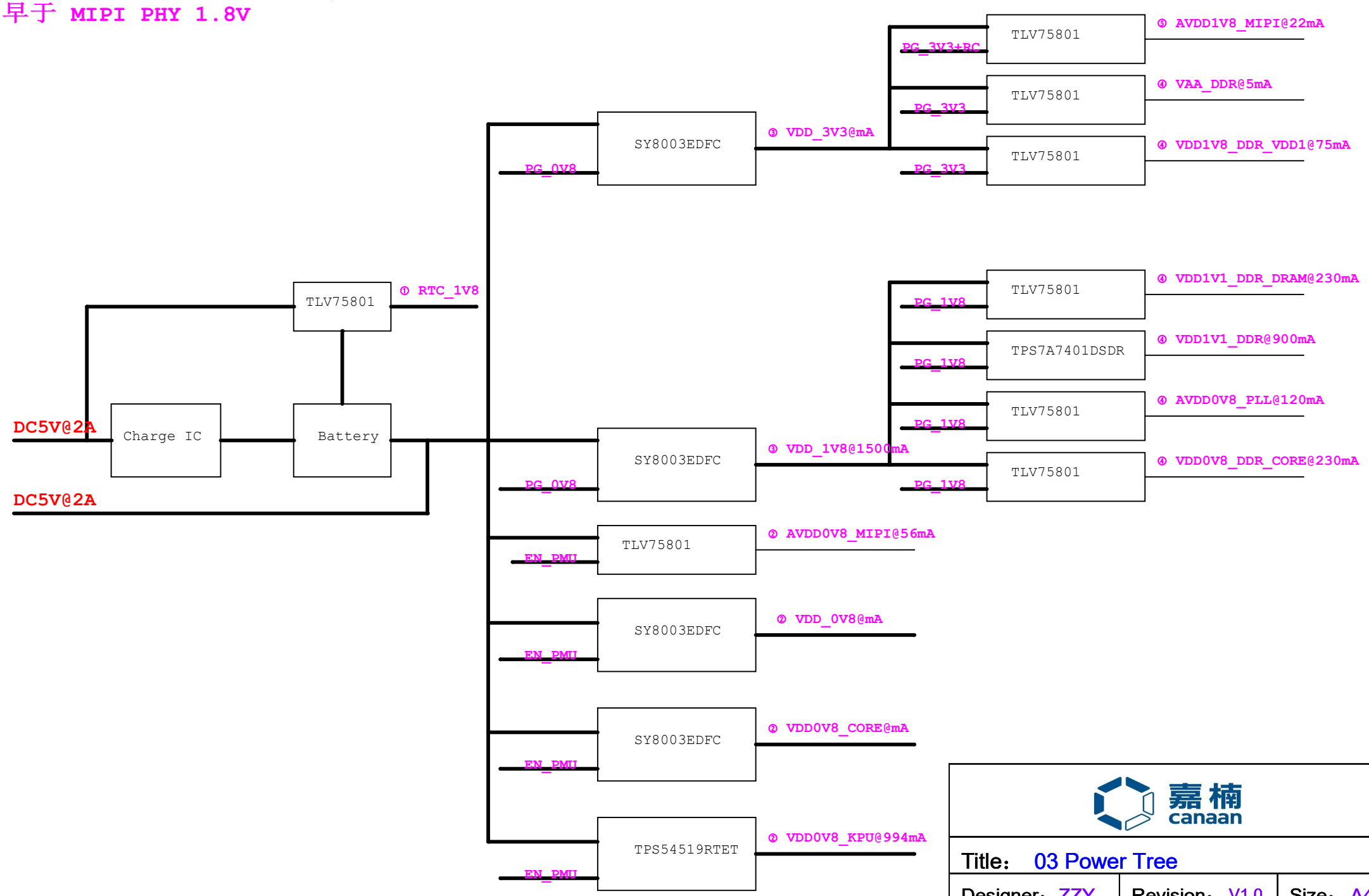
Date: Thursday, March 16, 2023 | Sheet 1 of 24



嘉楠 canaan

Title: 02 Block		
Designer: ZZY	Revision: V1.0	Size: A4
Date: Thursday, March 16, 2023	Sheet 2 of 24	

CORE+MIPI PHY 0.8V 电源早于GPIO
早于 MIPI PHY 1.8V

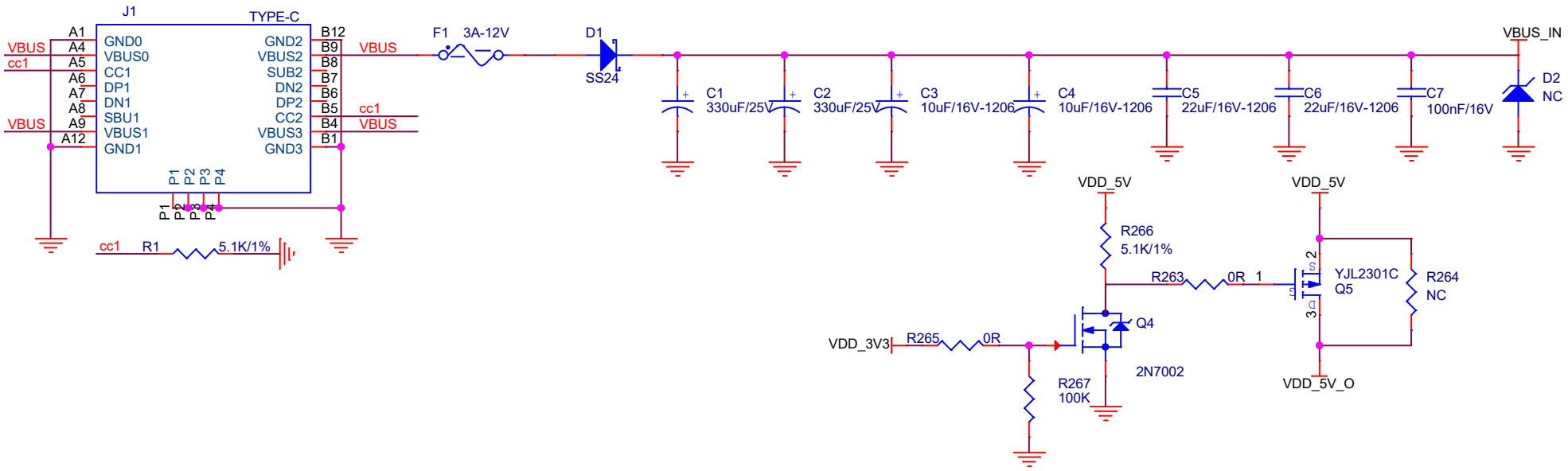


嘉楠 canaan

Title： 03 Power Tree

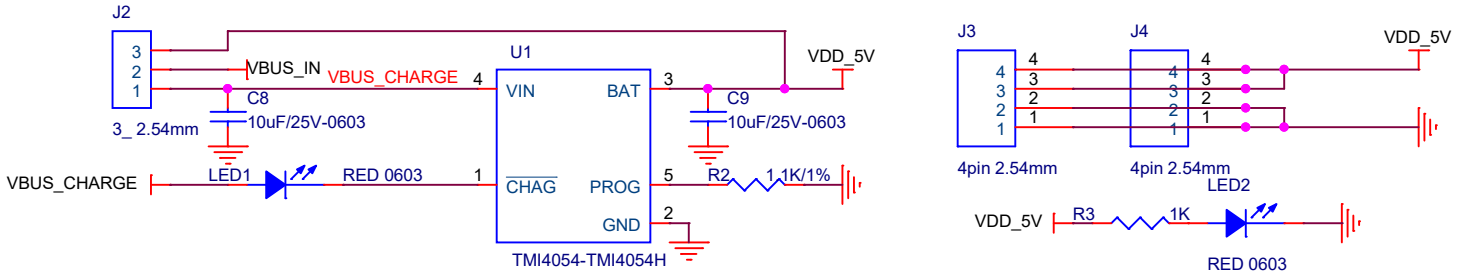
Designer： ZZY	Revision： V1.0	Size： A4
Date： Thursday, March 16, 2023	Sheet 3 of 24	

5V DC POWER

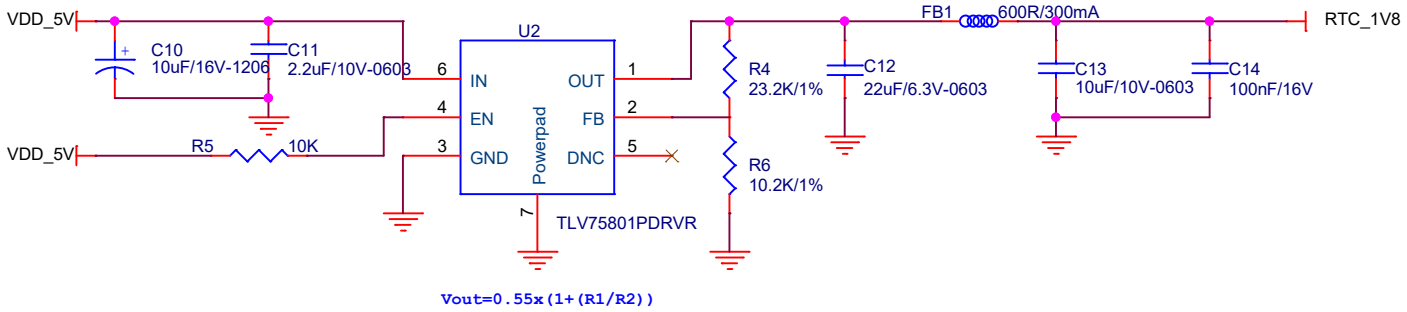


Charge IC

不使用charge IC时；
端接2/3脚
使用charge IC时；
端接2/1脚



PMU POWER

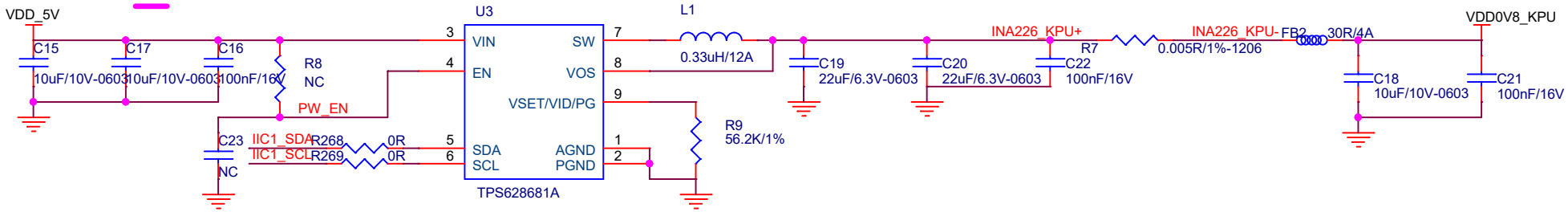


<Variant Name>

嘉楠 canaan

Title： 04 POWER0-USB-CHARGE		
Designer： ZZY	Revision： V1.0	Size： A4
Date： Monday, March 20, 2023	Sheet 4 of 24	

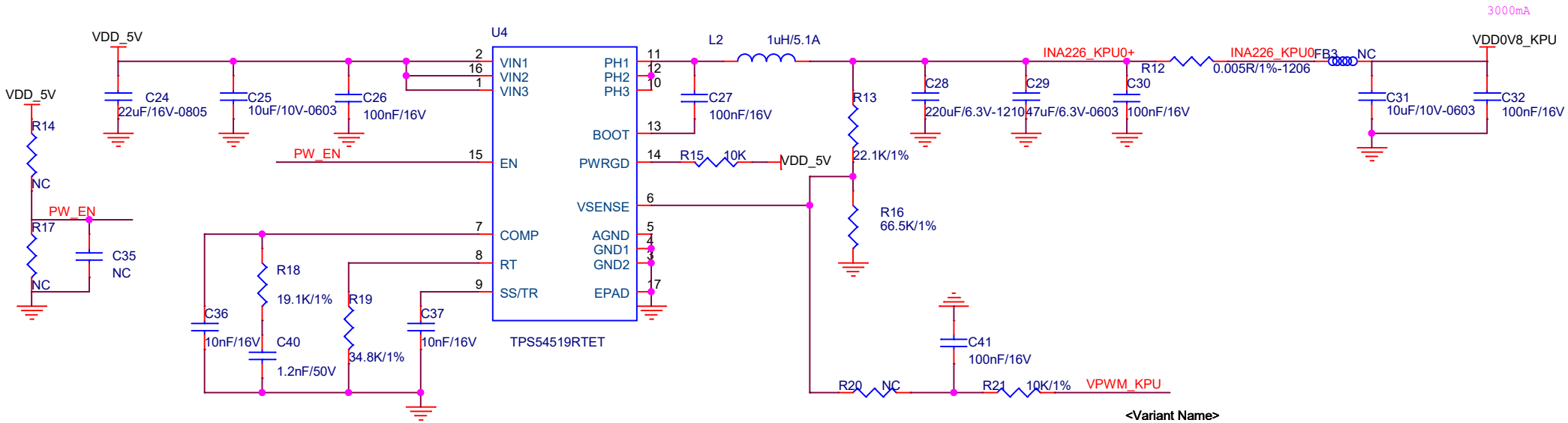
VDD0P8_KPU



【17,22】 IIC1_SDA — IIC1_SDA
【17,22】 IIC1_SCL — IIC1_SCL

【23】 INA226_KPU+ — INA226_KPU+
【23】 INA226_KPU- — INA226_KPU-

INA226_KPU0+ — R10 0R-0603 — INA226_KPU+
INA226_KPU0- — R11 0R-0603 — INA226_KPU-



Switching frequency select F=1MHz
Slow start time Tss=2.5ms
Vo= (1+R10/R12)*0.6

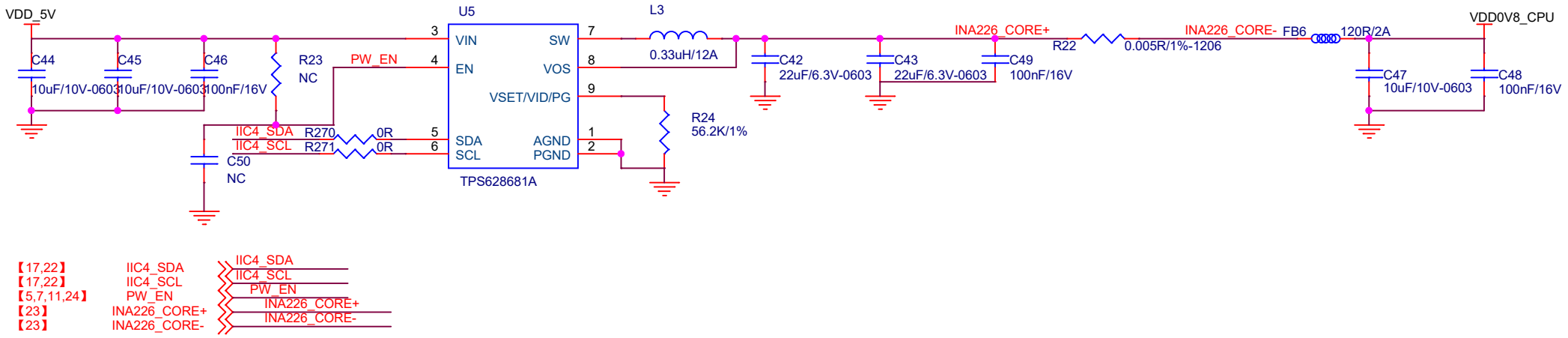
【6,7,11,24】 PW_EN — PW_EN
【17】 VPWM_KPU — VPWM_KPU

<Variant Name>

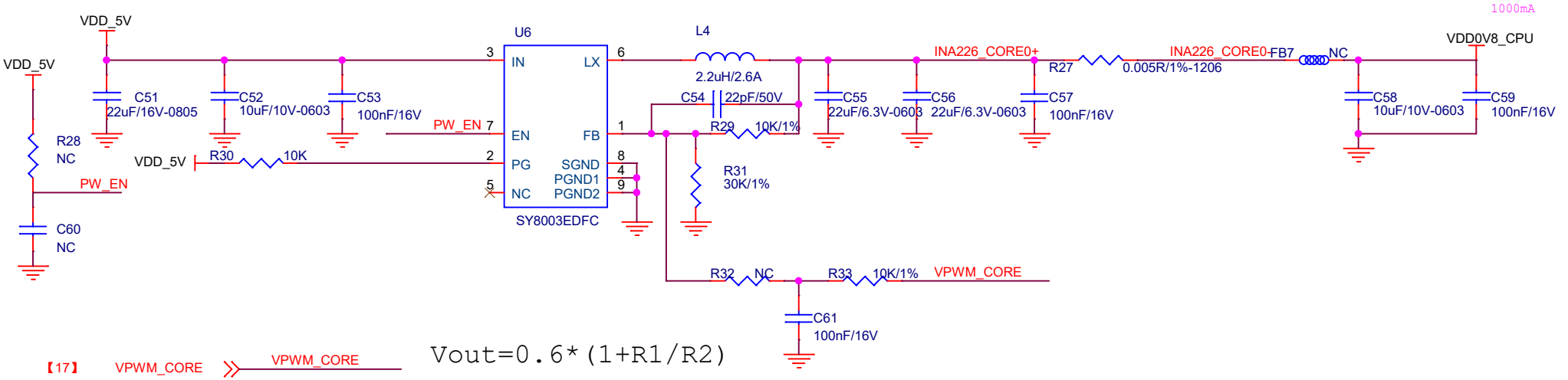
嘉楠 canaan

Title： 05 POWER1-VDD0V8_KPU		
Designer： ZZY	Revision： V1.0	Size： A4
Date： Monday, March 20, 2023	Sheet 5 of 24	

VDD0V8_CPU



【17,22】 IIC4_SDA
【17,22】 IIC4_SCL
【5,7,11,24】 PW_EN
【23】 INA226_CORE+
【23】 INA226_CORE-



【17】 VPWM_CORE

Vout=0.6*(1+R1/R2)

INA226_CORE0+ R25 0R-0603 INA226_CORE+
INA226_CORE0- R26 0R-0603 INA226_CORE-

<Variant Name>

Title: 06 POWER2-(VDD0V8_CORE)		
Designer: ZZY	Revision: V1.0	Size: A4
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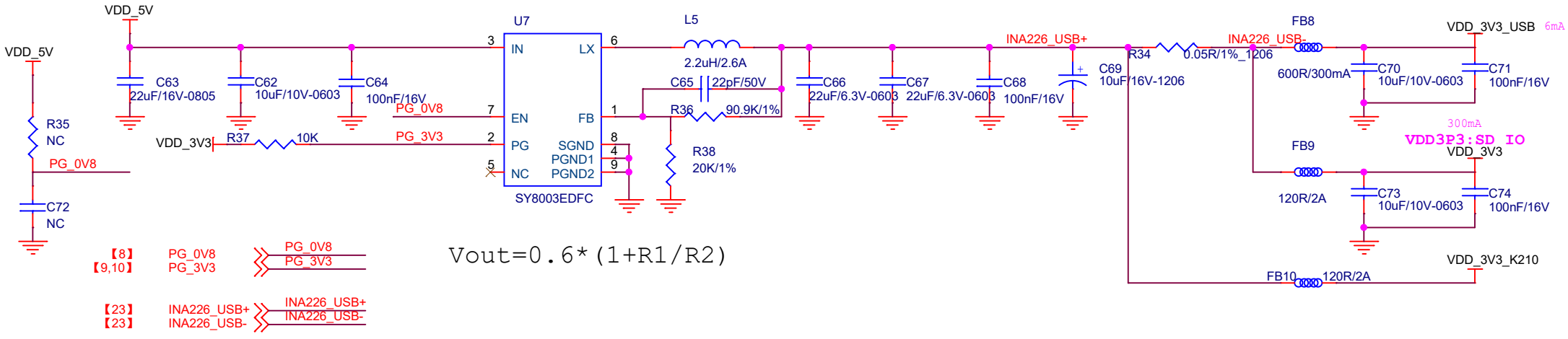
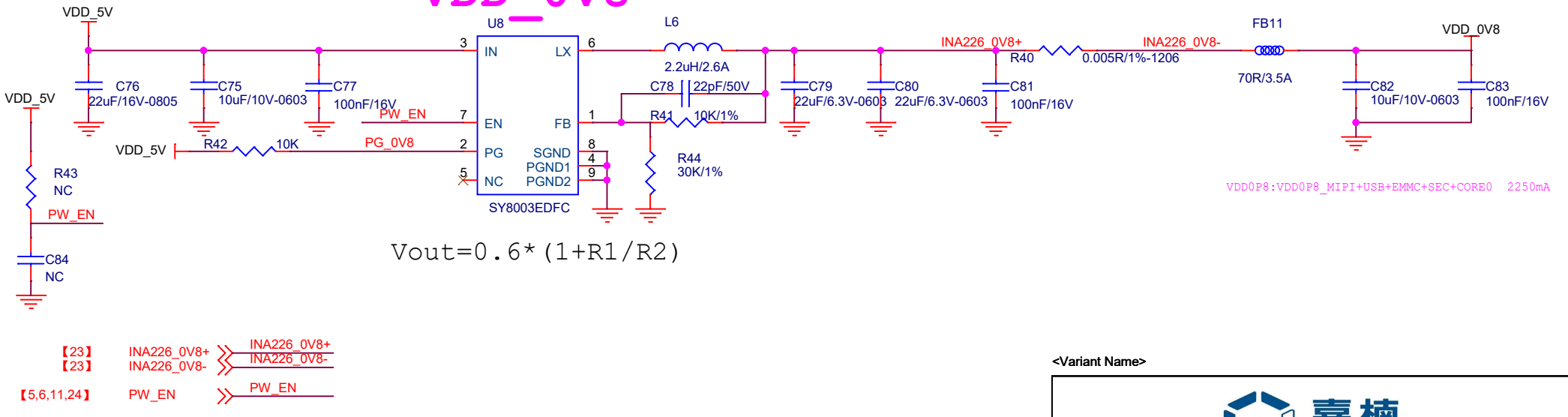
3V3



VDD_0V8



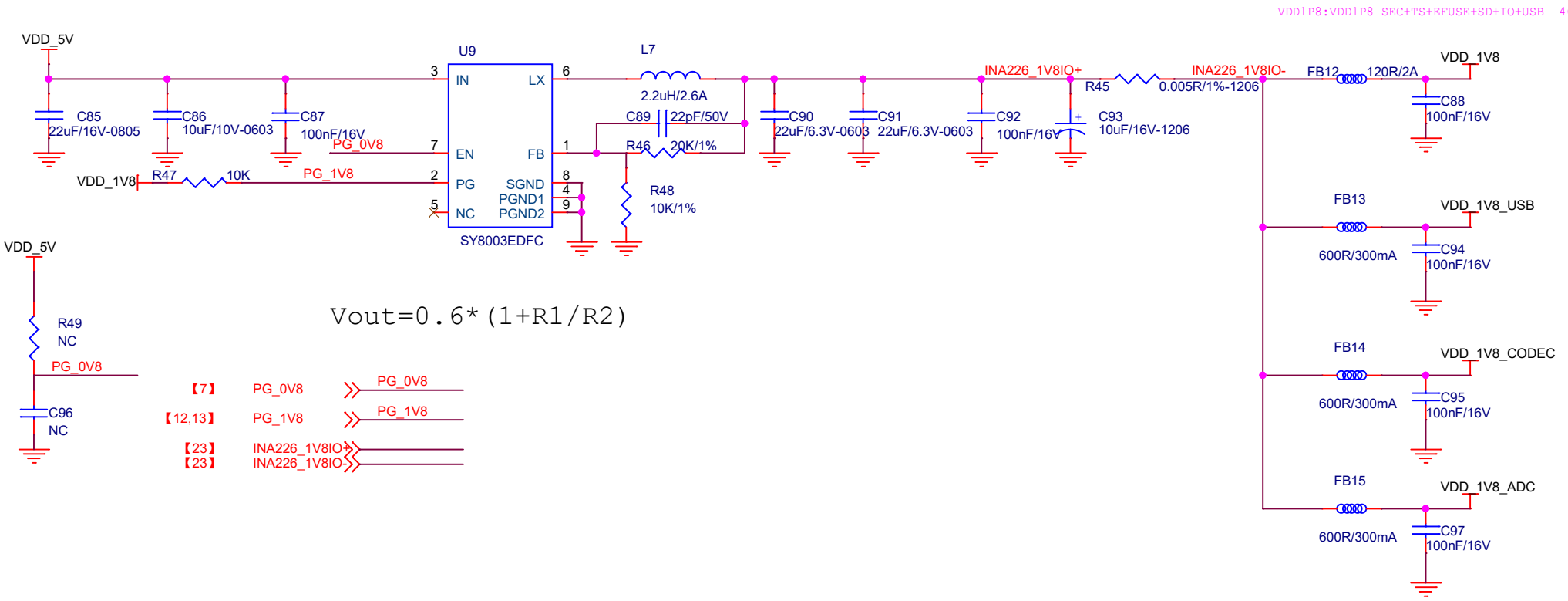
<Variant Name>

VDD0P8:VDD0P8_

嘉楠 canaan

Title： 07 POWER3-(VDD_0V8&3V3)		
Designer： ZZY	Revision： V1.0	Size： A4
Date： Monday, March 20, 2023	Sheet 7 of 24	

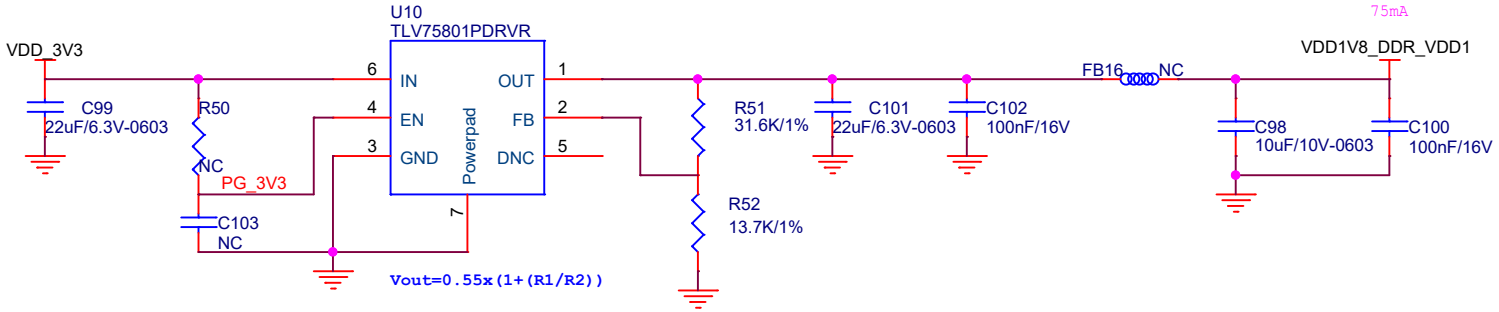
VDD_1V8



<Variant Name>

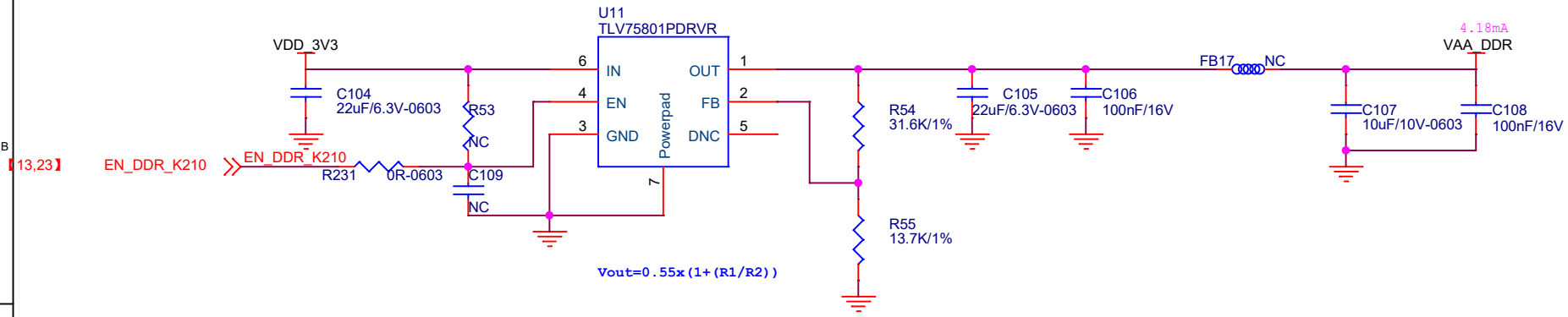
Title： 08 POWER4-(VDD_1V8)		
Designer： ZZY	Revision： V1.0	Size： A4
Date： Monday, March 20, 2023	Sheet 8 of 24	

VDD1V8_DDR_VDD1



【7,10】 PG_3V3 PG_3V3

VAA_DDR

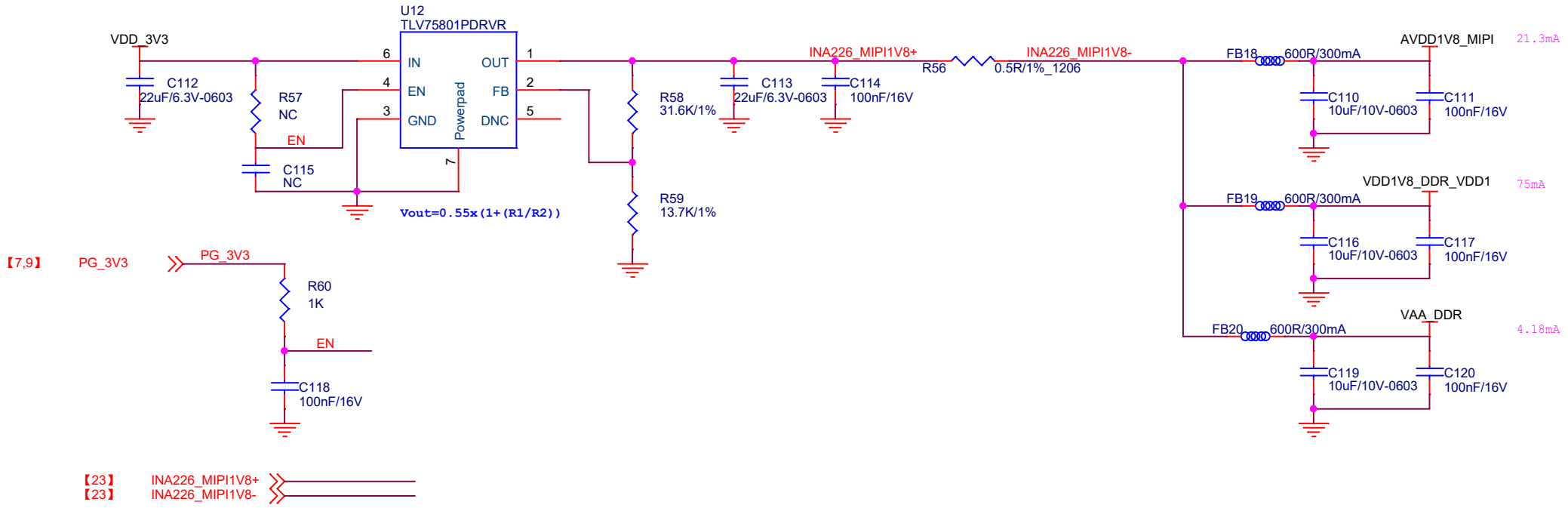


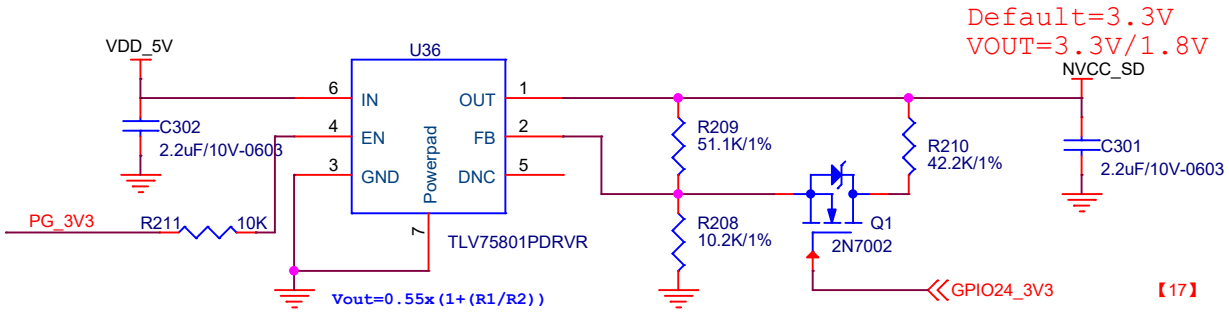
<Variant Name>

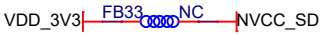
嘉楠 canaan

Title： 09 POWER5-(VDD1V8_DDR_VDD18		
Designer： ZZY	Revision： V1.0	Size： A4
Date： Monday, March 20, 2023	Sheet 9 of 24	

AVDD1P8_MIPI



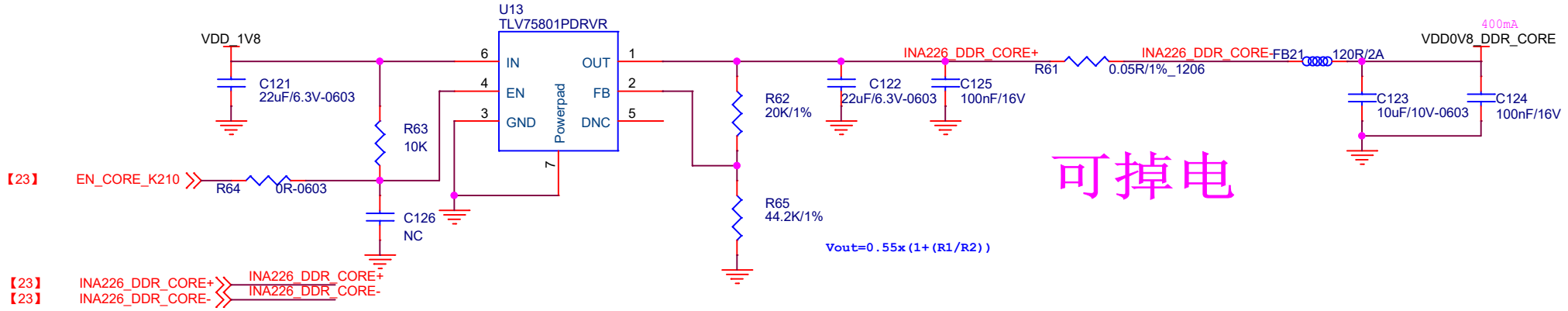




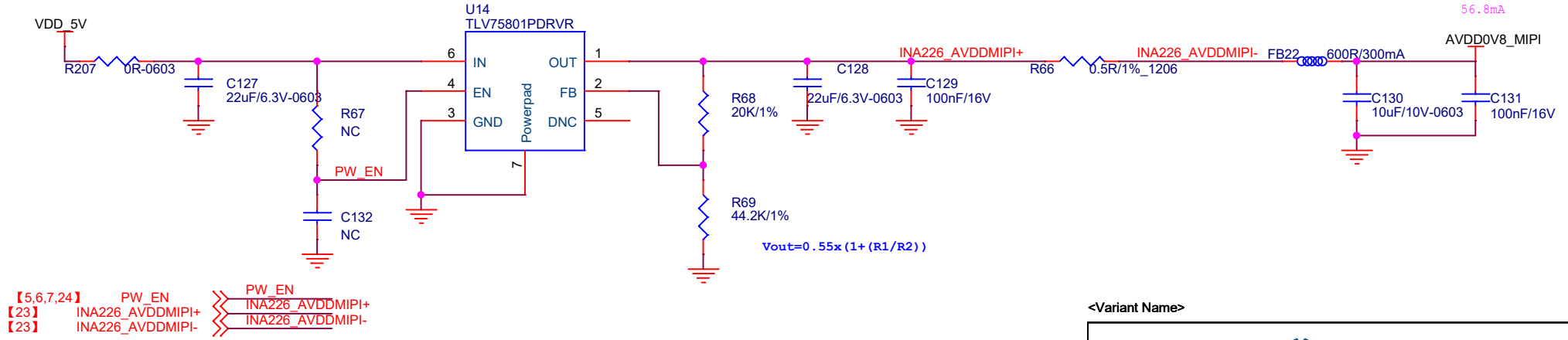
<Variant Name>

Title: 10 POWER6-(AVDD1V8_MIPI)		
Designer: ZZY	Revision: V1.0	Size: A4
Date: Monday, March 20, 2023	Sheet 10 of 24	

VDD0P8_DDR_CORE



AVDD0P8_MIPI

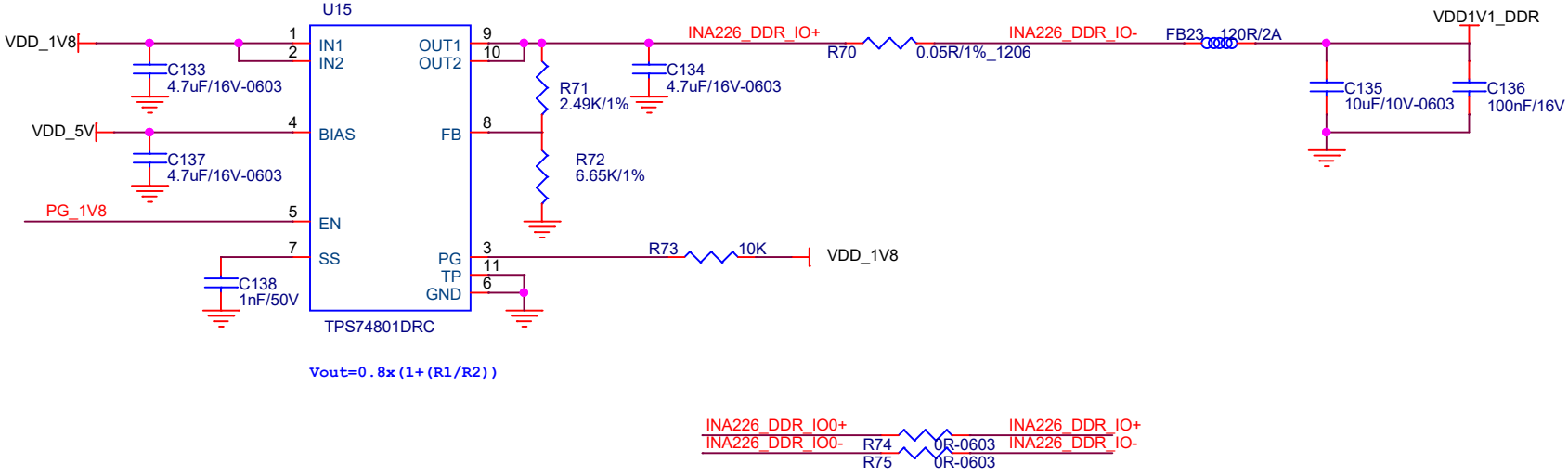


<Variant Name>

嘉楠 canaan

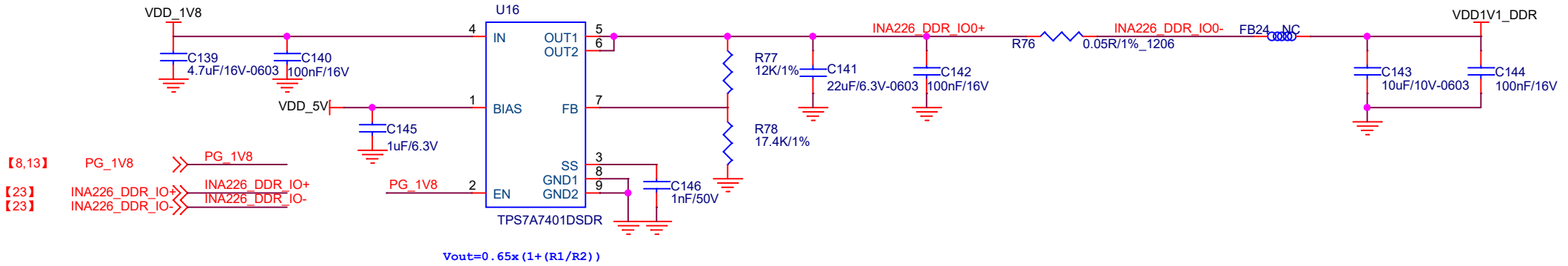
Title： 11 POWER7-AVDD0V8_MIPI&DDR		
Designer： ZZY	Revision： V1.0	Size： A4
Date： Monday, March 20, 2023	Sheet 11 of 24	

VDD1V1_DDR



VDD1V1_DDR

VDD1V1_DDR 不可掉电

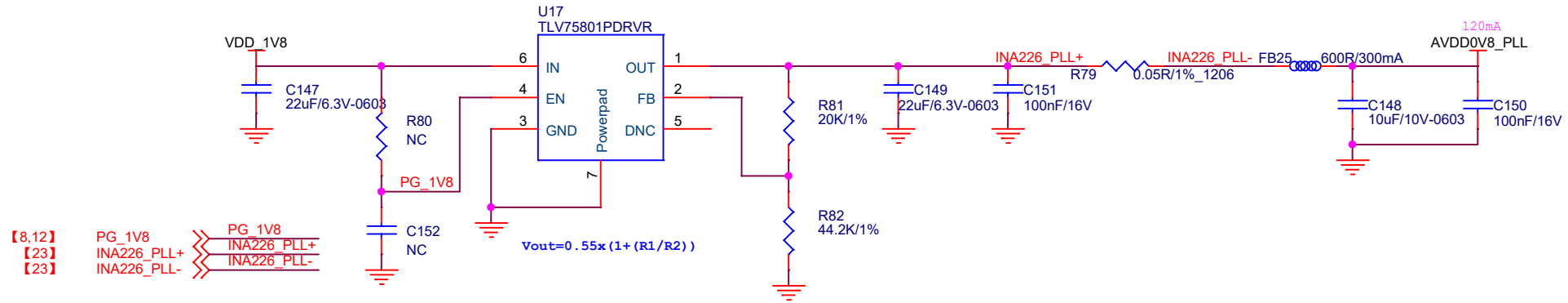


<Variant Name>

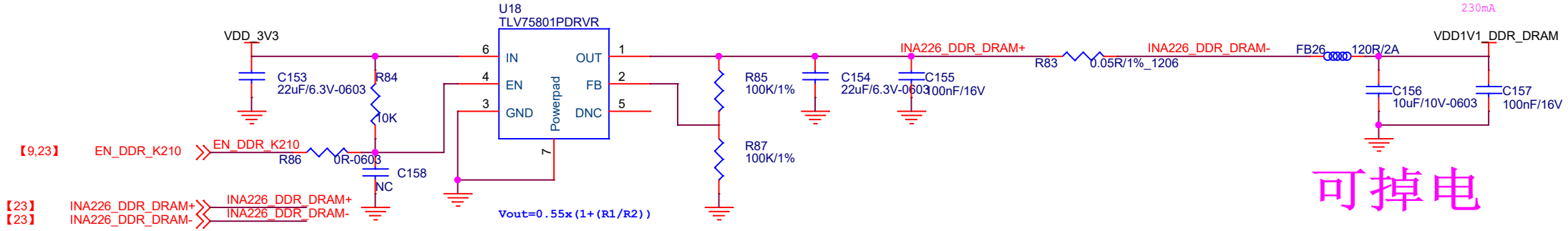
嘉楠 canaan

Title： 12 POWER8-(VDD_1V1_DDR)		
Designer： ZZY	Revision： V1.0	Size： A4
Date： Monday, March 20, 2023	Sheet 12 of 24	

AVDD0V8_PLL



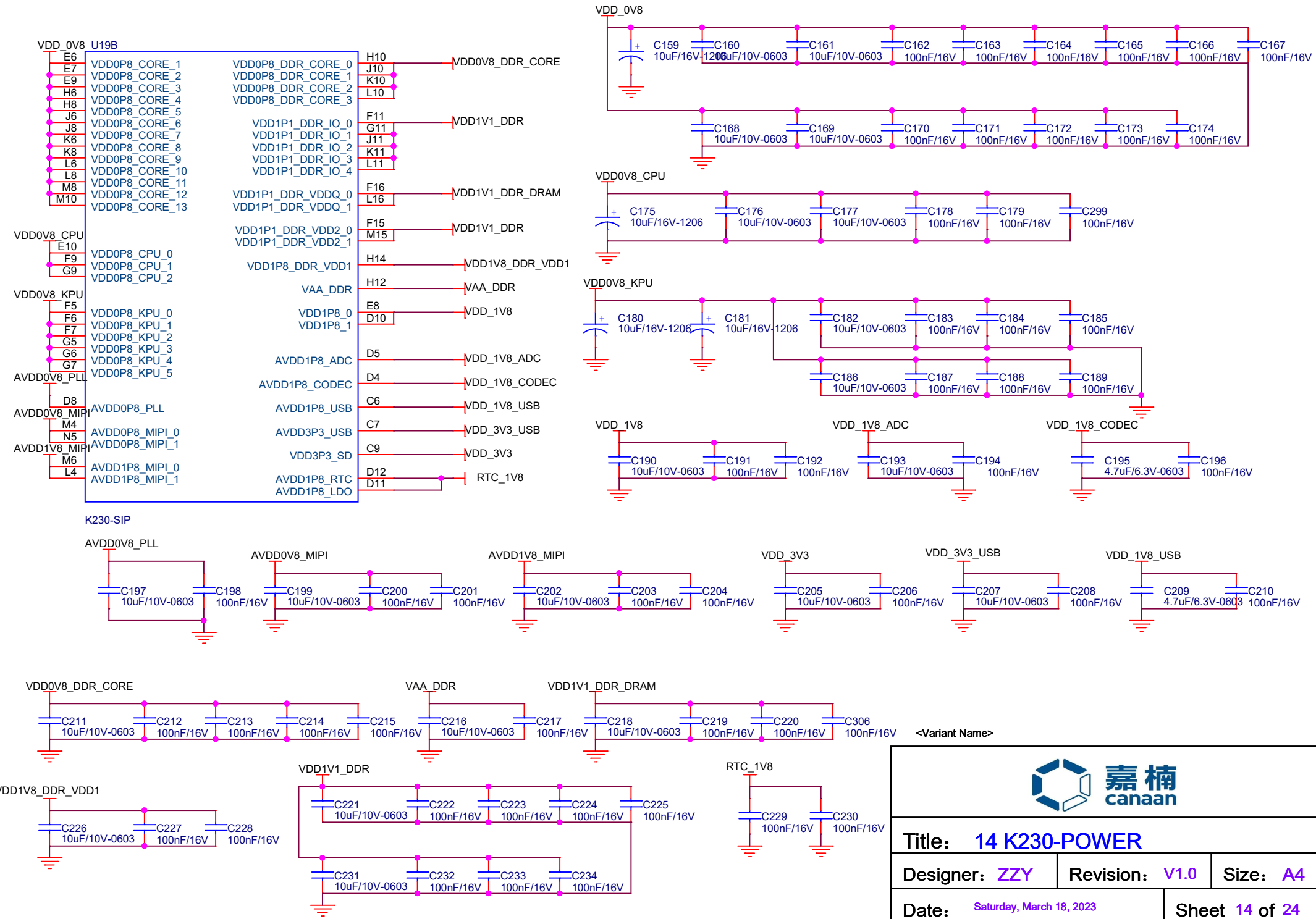
VDD1V1_DDR_DRAM



可掉电

<Variant Name>

Title： 13 POWER9-AVDD0V8_PLL&1V1_D		
Designer： ZZY	Revision： V1.0	Size： A4
Date： Monday, March 20, 2023	Sheet 13 of 24	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VDD0P8_CORE_1
VDD0P8_CORE_2
VDD0P8_CORE_3
VDD0P8_CORE_4
VDD0P8_CORE_5
VDD0P8_CORE_6
VDD0P8_CORE_7
VDD0P8_CORE_8
VDD0P8_CORE_9
VDD0P8_CORE_10
VDD0P8_CORE_11
VDD0P8_CORE_12
VDD0P8_CORE_13
VDD0V8_CPU
VDD0P8_CPU_0
VDD0P8_CPU_1
VDD0P8_CPU_2
VDD0V8_KPU
VDD0P8_KPU_0
VDD0P8_KPU_1
VDD0P8_KPU_2
VDD0P8_KPU_3
VDD0P8_KPU_4
VDD0P8_KPU_5
AVDD0V8_PLL
AVDD0P8_PLL
AVDD0V8_MIPI
AVDD0P8_MIPI_0
AVDD0P8_MIPI_1
AVDD1V8_MIPI
AVDD1P8_MIPI_0
AVDD1P8_MIPI_1
VDD0P8_DDR_CORE_0
VDD0P8_DDR_CORE_1
VDD0P8_DDR_CORE_2
VDD0P8_DDR_CORE_3
VDD1P1_DDR_IO_0
VDD1P1_DDR_IO_1
VDD1P1_DDR_IO_2
VDD1P1_DDR_IO_3
VDD1P1_DDR_IO_4
VDD1P1_DDR_VDDQ_0
VDD1P1_DDR_VDDQ_1
VDD1P1_DDR_VDD2_0
VDD1P1_DDR_VDD2_1
VDD1P8_DDR_VDD1
VAA_DDR
VDD1P8_0
VDD1P8_1
AVDD1P8_ADC
AVDD1P8_CODEC
AVDD1P8_USB
AVDD3P3_USB
VDD3P3_SD
AVDD1P8_RTC
AVDD1P8_LDO
VDD0V8_DDR_CORE
VDD1V1_DDR
VDD1V1_DDR_DRAM
VDD1V1_DDR
VDD1V8_DDR_VDD1
VAA_DDR
VDD_1V8
VDD_1V8_ADC
VDD_1V8_CODEC
VDD_1V8_USB
VDD_3V3_USB
VDD_3V3
RTC_1V8
K230-SIP
VDD_0V8
C159 10uF/16V-1206
C160 10uF/10V-0603
C161 10uF/10V-0603
C162 100nF/16V
C163 100nF/16V
C164 100nF/16V
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C166 100nF/16V
C167 100nF/16V
C168 10uF/10V-0603
C169 10uF/10V-0603
C170 100nF/16V
C171 100nF/16V
C172 100nF/16V
C173 100nF/16V
C174 100nF/16V
VDD0V8_CPU
C175 10uF/16V-1206
C176 10uF/10V-0603
C177 10uF/10V-0603
C178 100nF/16V
C179 100nF/16V
C299 100nF/16V
VDD0V8_KPU
C180 10uF/16V-1206
C181 10uF/16V-1206
C182 10uF/10V-0603
C183 100nF/16V
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VDD_1V8
C190 10uF/10V-0603
C191 100nF/16V
C192 100nF/16V
VDD_1V8_ADC
C193 10uF/10V-0603
C194 100nF/16V
VDD_1V8_CODEC
C195 4.7uF/6.3V-0603
C196 100nF/16V
AVDD0V8_PLL
C197 10uF/10V-0603
C198 100nF/16V
AVDD0V8_MIPI
C199 10uF/10V-0603
C200 100nF/16V
C201 100nF/16V
AVDD1V8_MIPI
C202 10uF/10V-0603
C203 100nF/16V
C204 100nF/16V
VDD_3V3
C205 10uF/10V-0603
C206 100nF/16V
VDD_3V3_USB
C207 10uF/10V-0603
C208 100nF/16V
VDD_1V8_USB
C209 4.7uF/6.3V-0603
C210 100nF/16V
VDD0V8_DDR_CORE
C211 10uF/10V-0603
C212 100nF/16V
C213 100nF/16V
C214 100nF/16V
C215 100nF/16V
VAA_DDR
C216 10uF/10V-0603
C217 100nF/16V
VDD1V1_DDR_DRAM
C218 10uF/10V-0603
C219 100nF/16V
C220 100nF/16V
C306 100nF/16V
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VDD1V8_DDR_VDD1
C226 10uF/10V-0603
C227 100nF/16V
C228 100nF/16V
VDD1V1_DDR
C221 10uF/10V-0603
C222 100nF/16V
C223 100nF/16V
C224 100nF/16V
C225 100nF/16V
C231 10uF/10V-0603
C232 100nF/16V
C233 100nF/16V
C234 100nF/16V
RTC_1V8
C229 100nF/16V
C230 100nF/16V
嘉楠 canaan
Title: 14 K230-POWER
Designer: ZZY
Revision: V1.0
Size: A4
Date: Saturday, March 18, 2023
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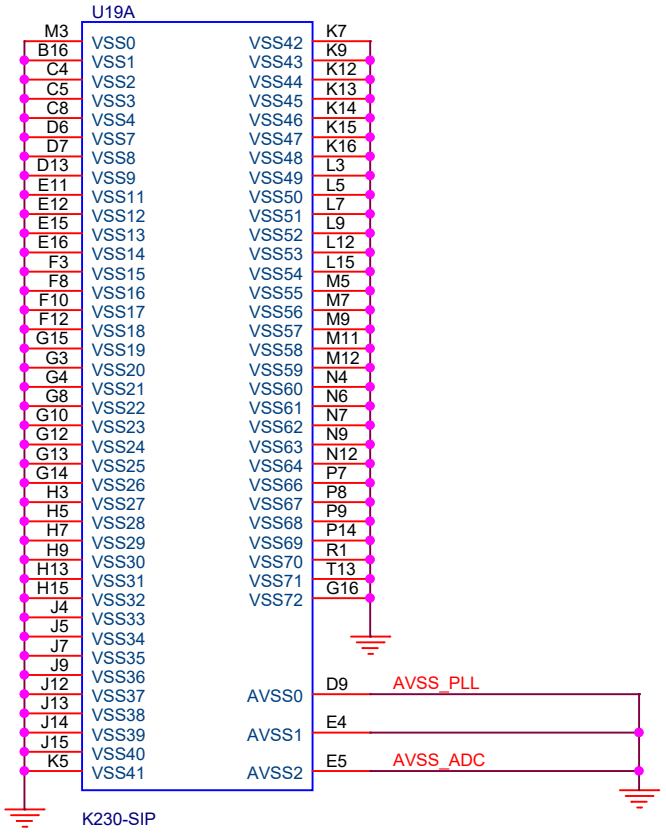
POWER

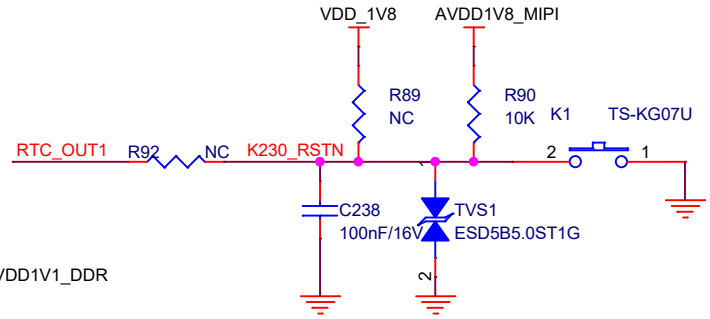


PLL
CODEC
ADC

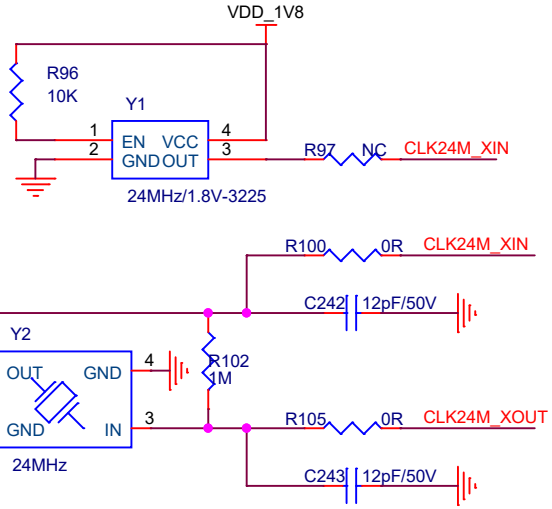
<Variant Name>

Title: 15 K230-GND		
Designer: ZZY	Revision: V1.0	Size: A4
Date: Thursday, March 16, 2023	Sheet 15 of 24	

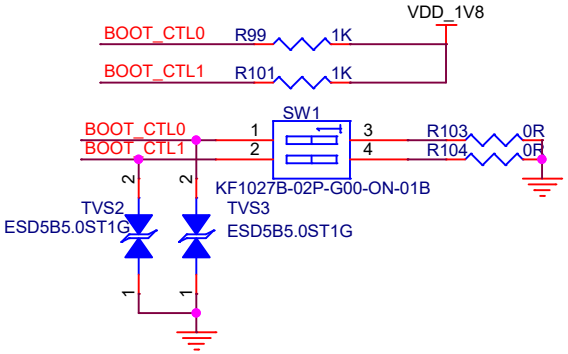
Key Reset



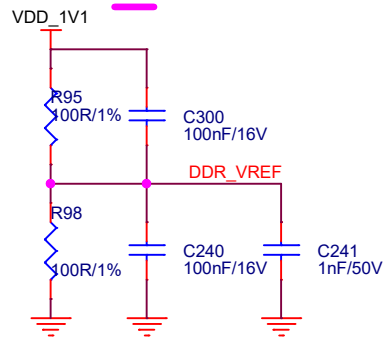
Clock



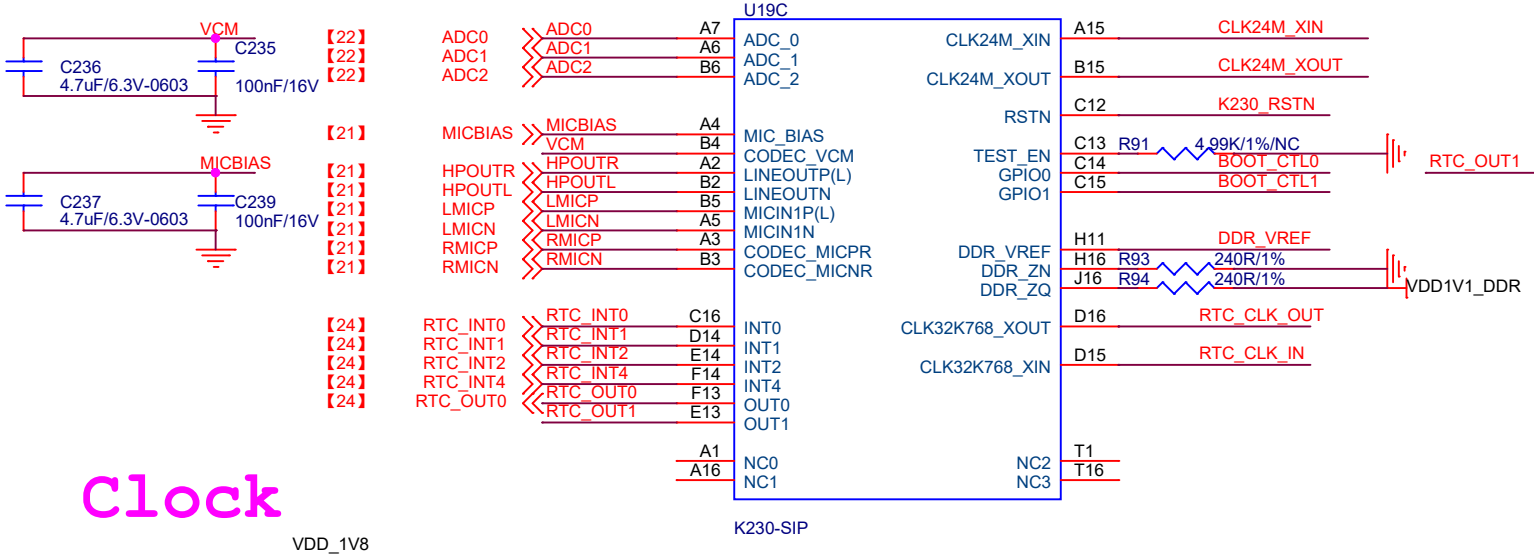
SYS CONFIG



DDR_VREF



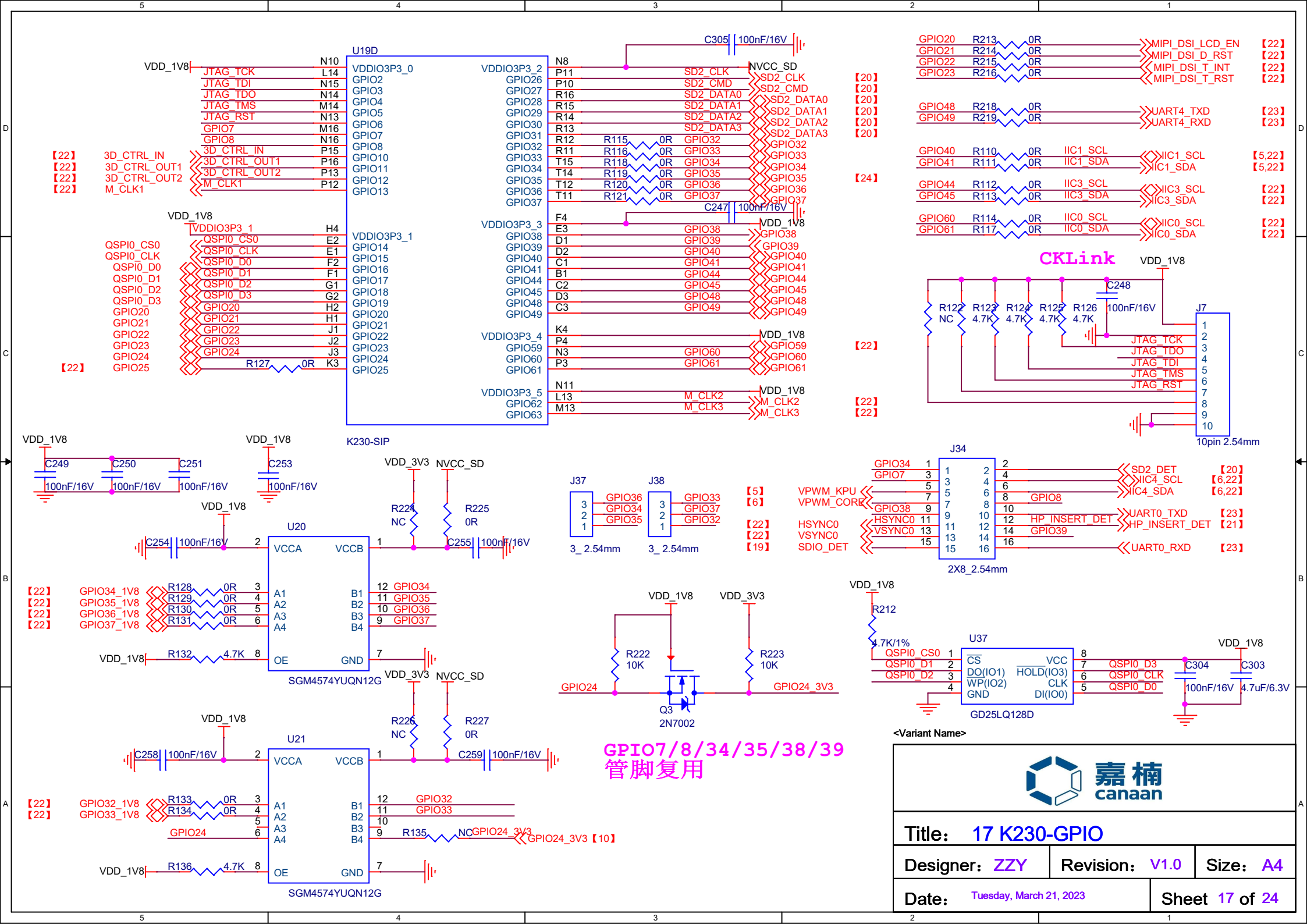
RTC CLOCK



BOOT0 / BOOT1	0	1
0	NAND FLASH NOR FLASH	TF CARD
1	EMMC	USB UART

<Variant Name>

Title: 16 K230 CLK-RESET-DDR		
Designer: ZZY	Revision: V1.0	Size: A4
Date: Saturday, March 18, 2023	Sheet 16 of 24	


U19D
K230-SIP
VDD_1V8
JTAG_TCK
JTAG_TDI
JTAG_TDO
JTAG_TMS
JTAG_RST
GPIO7
GPIO8
3D_CTRL_IN
3D_CTRL_OUT1
3D_CTRL_OUT2
M_CLK1
QSPI0_CS0
QSPI0_CLK
QSPI0_D0
QSPI0_D1
QSPI0_D2
QSPI0_D3
GPIO20
GPIO21
GPIO22
GPIO23
GPIO24
GPIO25
R127 0R
VDDIO3P3_0
VDDIO3P3_1
VDDIO3P3_2
VDDIO3P3_3
VDDIO3P3_4
VDDIO3P3_5
C305 100nF/16V
NVCC_SD
SD2_CLK
SD2_CMD
SD2_DATA0
SD2_DATA1
SD2_DATA2
SD2_DATA3
R115 0R GPIO32
R116 0R GPIO33
R118 0R GPIO34
R119 0R GPIO35
R120 0R GPIO36
R121 0R GPIO37
C247 100nF/16V
GPIO38
GPIO39
GPIO40
GPIO41
GPIO44
GPIO45
GPIO48
GPIO49
GPIO59
GPIO60
GPIO61
M_CLK2
M_CLK3
GPIO26
GPIO27
GPIO28
GPIO29
GPIO30
GPIO31
GPIO32
GPIO33
GPIO34
GPIO35
GPIO36
GPIO37
GPIO63
GPIO20 R213 0R MIPI_DSI_LCD_EN
GPIO21 R214 0R MIPI_DSI_D_RST
GPIO22 R215 0R MIPI_DSI_T_INT
GPIO23 R216 0R MIPI_DSI_T_RST
GPIO48 R218 0R UART4_TXD
GPIO49 R219 0R UART4_RXD
GPIO40 R110 0R IIC1_SCL
GPIO41 R111 0R IIC1_SDA
GPIO44 R112 0R IIC3_SCL
GPIO45 R113 0R IIC3_SDA
GPIO60 R114 0R IIC0_SCL
GPIO61 R117 0R IIC0_SDA
CKLink
R122 NC
R123 4.7K
R124 4.7K
R125 4.7K
R126 4.7K
C248 100nF/16V
J7
10pin 2.54mm
C249 C250 C251 C253 100nF/16V
U20
U21
SGM4574YUQN12G
VCCA
VCCB
OE
GND
R224 NC
R225 0R
R226 NC
R227 0R
C254 C255 C258 C259 100nF/16V
GPIO34_1V8
GPIO35_1V8
GPIO36_1V8
GPIO37_1V8
GPIO32_1V8
GPIO33_1V8
R128 R129 R130 R131 R133 R134 0R
R132 R136 4.7K
R135 NC
GPIO24_3V3
J37
J38
3_ 2.54mm
J34
2X8_2.54mm
VPWM_KPU
VPWM_CORE
HSYNC0
VSYNC0
SDIO_DET
HP_INSERT_DET
R222 10K
R223 10K
Q3
2N7002
GPIO7/8/34/35/38/39
管脚复用
R212 4.7K/1%
U37
GD25LQ128D
C304 100nF/16V
C303 4.7uF/6.3V
<Variant Name>
Title: 17 K230-GPIO
Designer: ZZY
Revision: V1.0
Size: A4
Date: Tuesday, March 21, 2023
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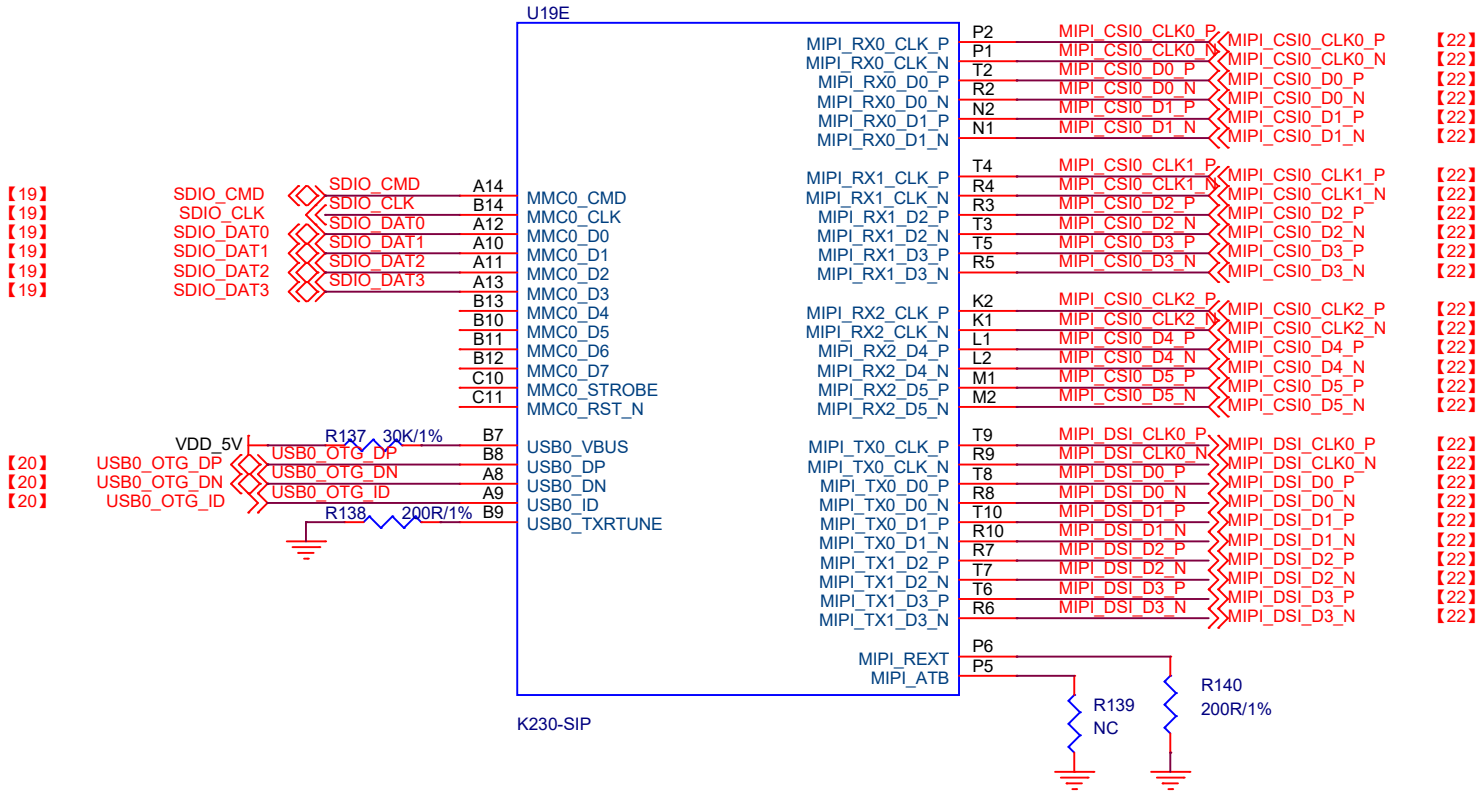
K230-MIPI CSI-MIPI DSI-EMMC-USB



<Variant Name>

Title： 18 K230-MIPI-USB-SDIO		
Designer： ZZY	Revision： V1.0	Size： A4
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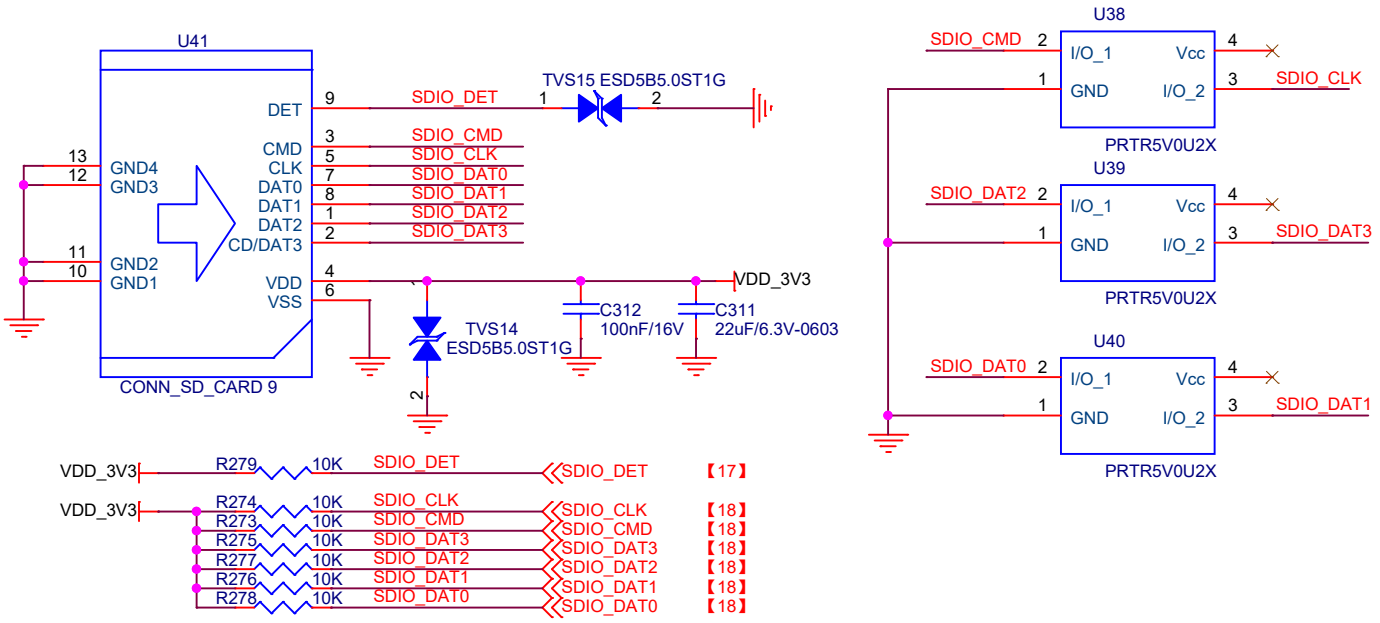
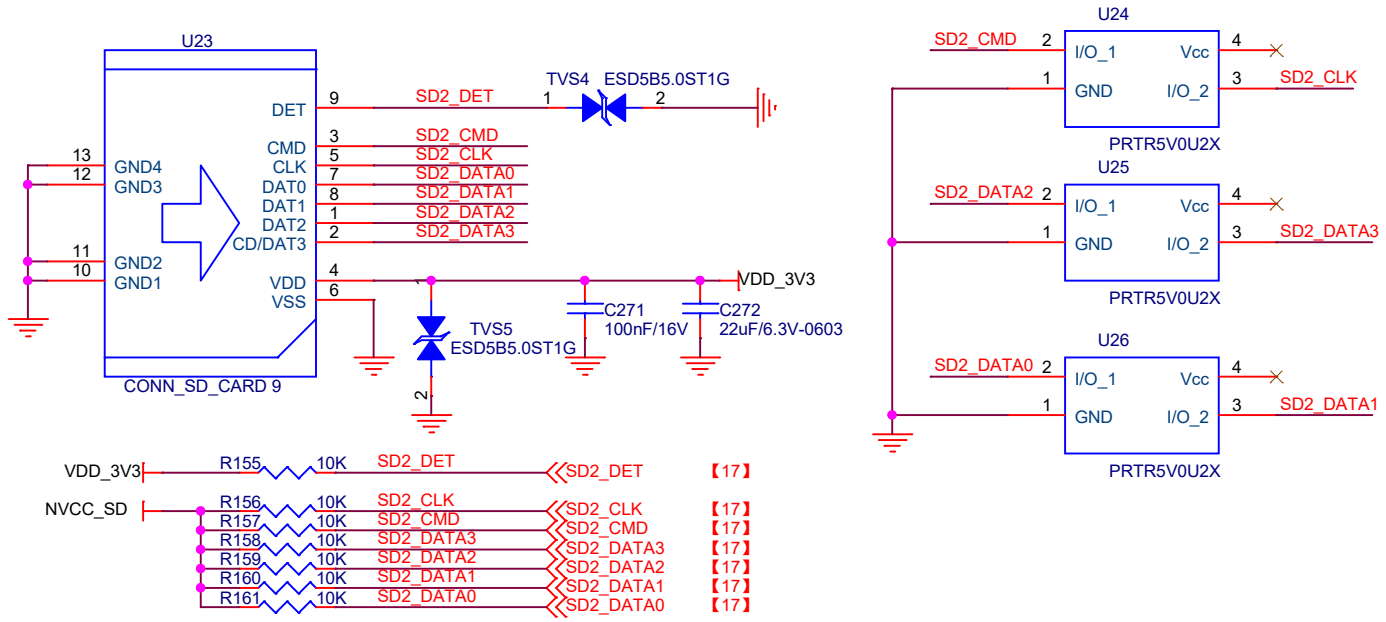
SD CARD TO WIFI



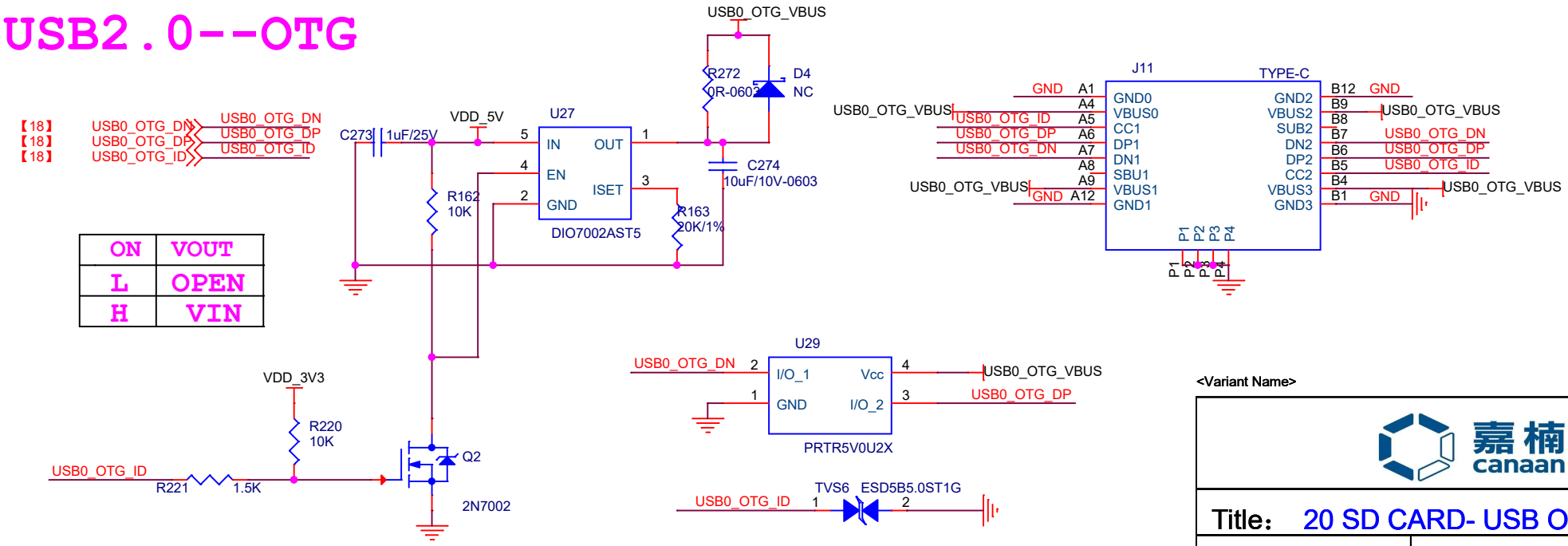
<Variant Name>

Title: 19 SD TO WIFI		
Designer: ZZY	Revision: V1.0	Size: A4
Date: Tuesday, March 21, 2023	Sheet 19 of 24	

SD CARD



USB2.0--OTG



<Variant Name>

嘉楠 canaan

Title: 20 SD CARD- USB OTG		
Designer: ZZY	Revision: V1.0	Size: A4
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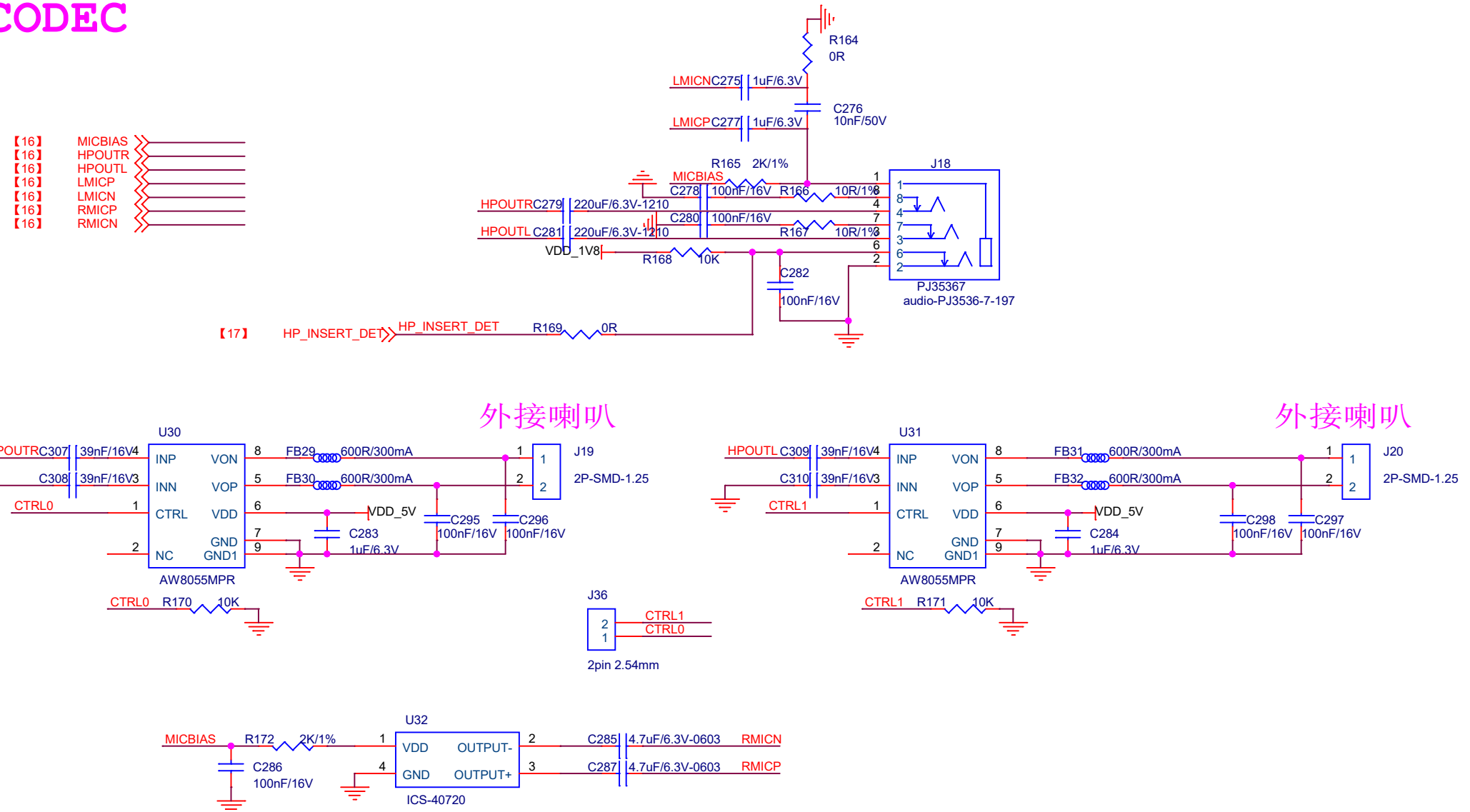
CODEC



analog and digital GND combine

<Variant Name>

嘉楠 canaan

Title: 21 AUDIO		
Designer: ZZY	Revision: V1.0	Size: A4
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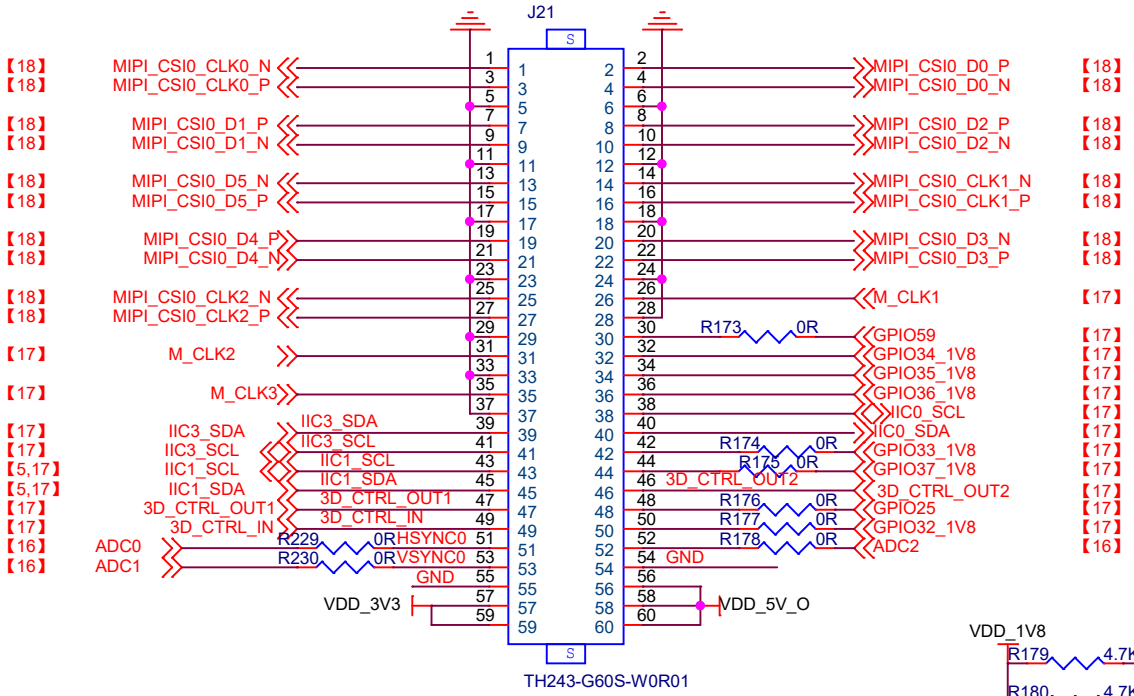
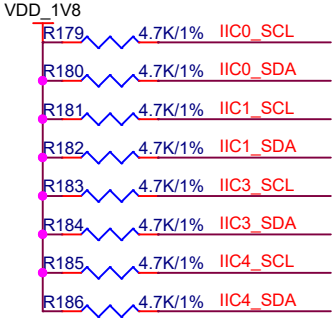
MIPI CSI

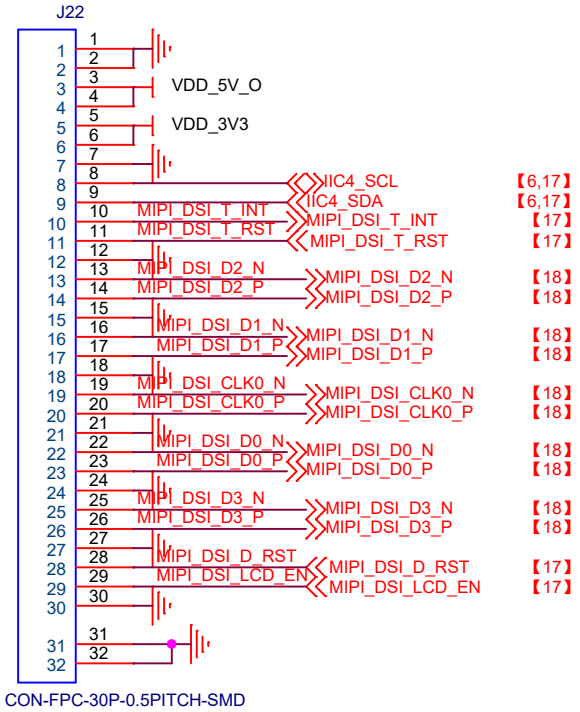




IIC0_SCL和HSYNC1复用
IIC0_SDA和VSYNC1复用

UART0_TXD和HSYNC0复用
UART0_RXD和VSYNC0复用

MIPI DSI



<Variant Name>

嘉楠 canaan

Title： 22 MIPI CSI-MIPI DSI		
Designer： ZZY	Revision： V1.0	Size： A4
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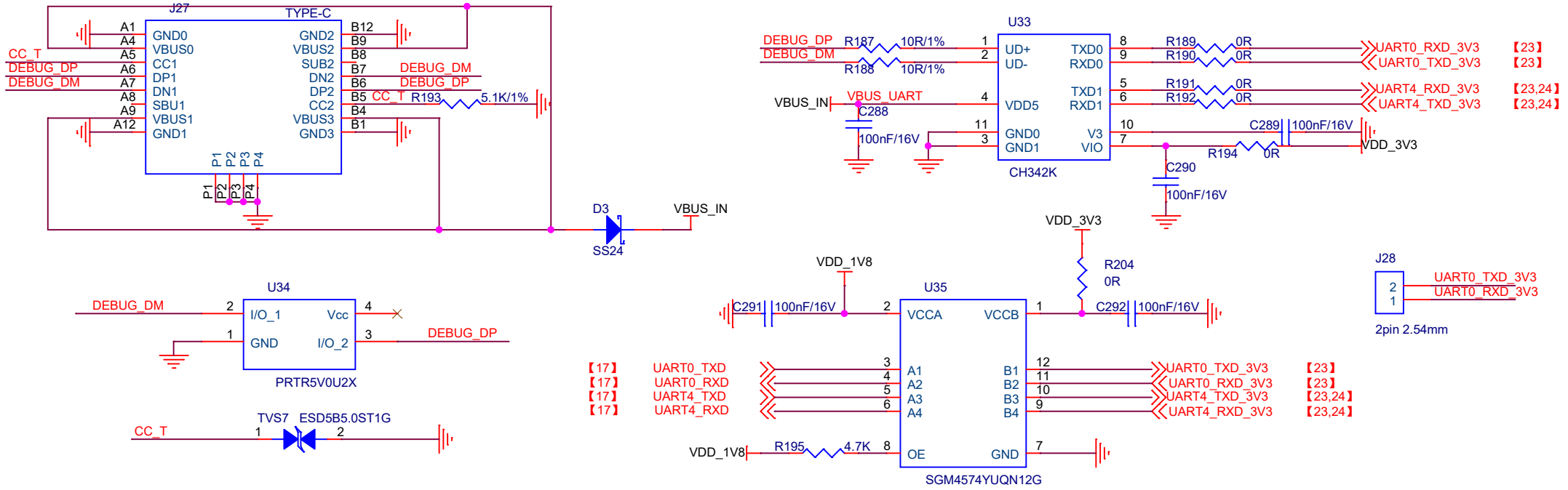
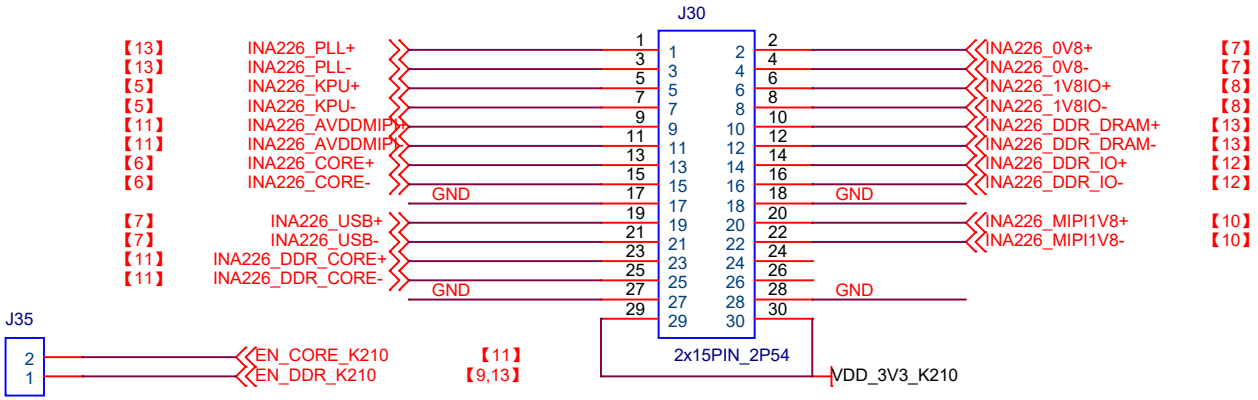
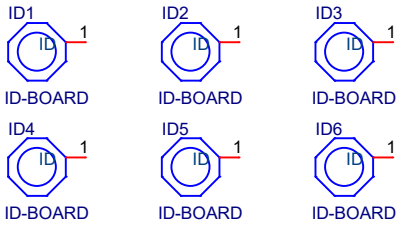
USB TO UART



CURRENT DETECTION & PWM调压





<Variant Name>

嘉楠 canaan

Title: 23 USB TO UART		
Designer: ZZY	Revision: V1.0	Size: A4
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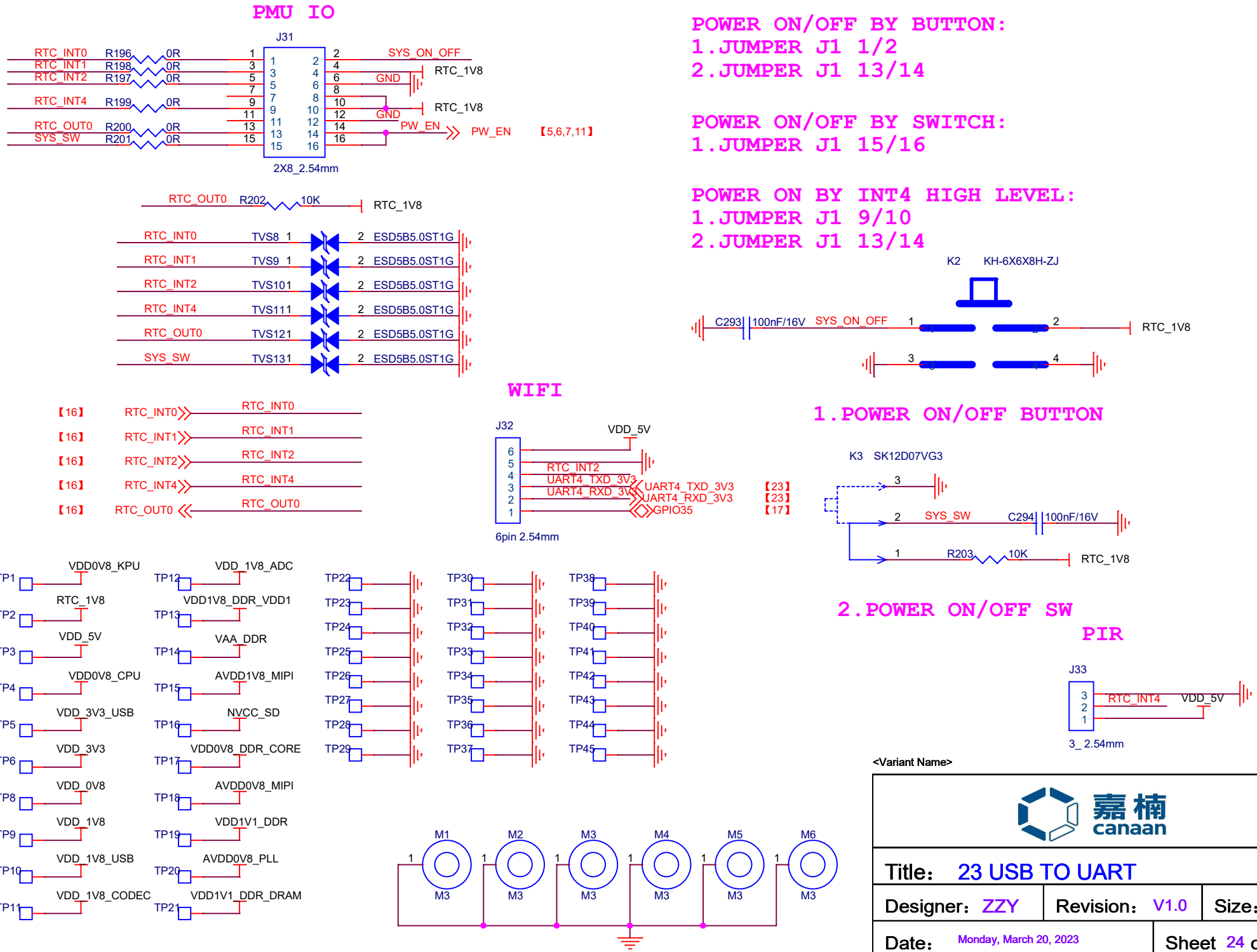

<Variant Name>

嘉楠 canaan

Title: 23 USB TO UART		
Designer: ZZY	Revision: V1.0	Size: A4
Date: Monday, March 20, 2023	Sheet 24 of 24	