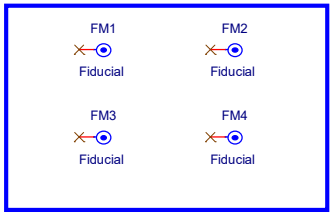
Revision History:

EKI-3400 Rev.A1 01-1 Date 2022/08/19

PCB version: A101-1 P/N: 19A30340000-01 96933400000

Fiducial Mark



<Variant Name>

ADVANTECH

Title	Rev History		
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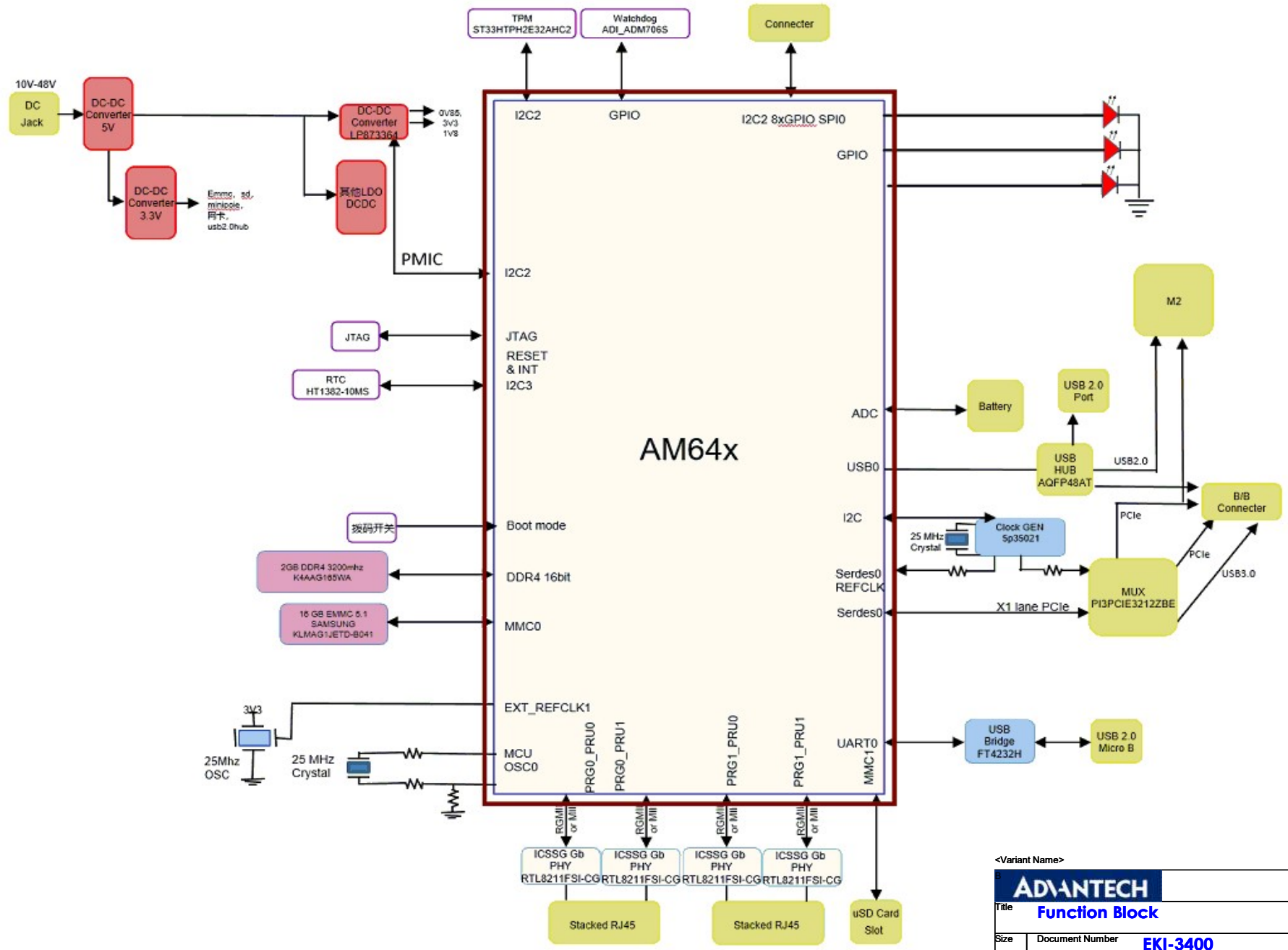

<Variant Name>

ADVANTECH

Title	Function Block	
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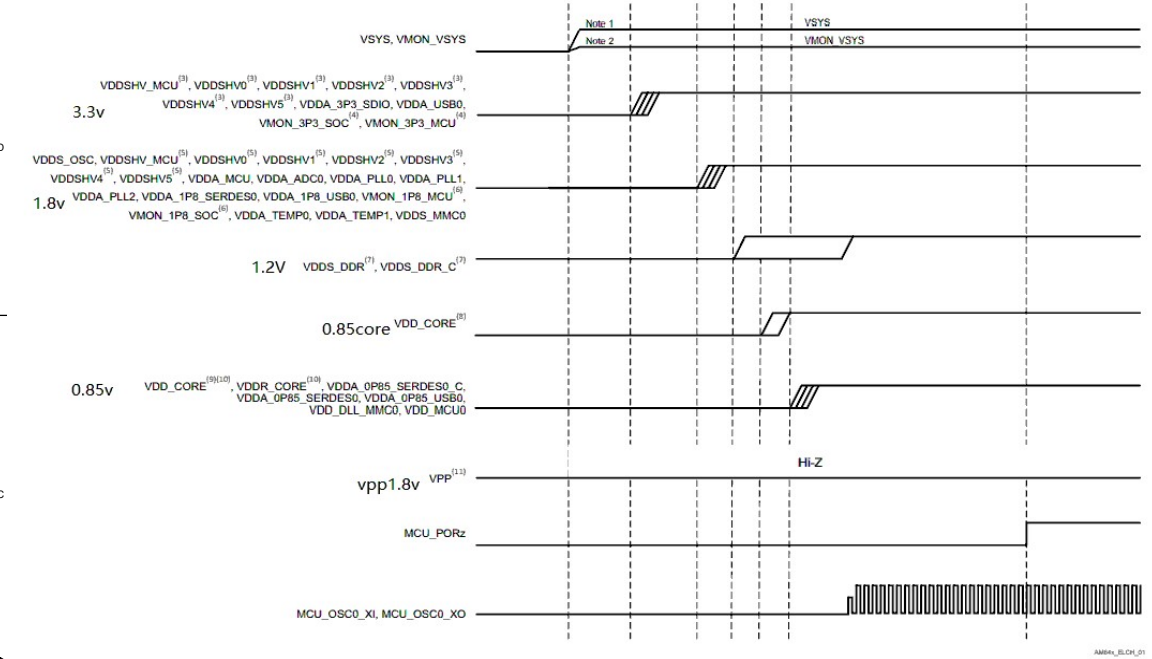

Vin 10-48v						
Vin→	5v					
	5v→	pmic 3.3v				
		5v→	pmic 1.8v			
		5v→	pmic 1.8vs			
			5v→	1.2v		
			3.3v→	2.5v		
				3.3v→	vtt 0.6v	
				1.2v→	0.85v ldo	
				5v→	pmic 0.85v	
				5v→	3.3va	
					3.3va→	1.8vb
					5v→	usb 5v

供电时序与来源

	5v	3.3v	3.3va	1.8v	1.2v	0.85 core	0.85	1.8 core	2.5v		
cpu		140.3		43	172	2533	155	28			
DDR4					550				33		
eMMC		50						180			
232/485x2	0										
tf/sd		100									
USB 2.0	750										
双m2			8000								
网卡芯片			530								
usb 2.0hub	85										
	0	0	0	0	0	0	0	0	0		
每路电流（ma）	835	290.3	8530	43	722	2533	155	208	33	系统总功率（w）	
每路功耗（mw）	4175	957.99	28149	141.9	866.4	2153.05	186	686.4	108.9	37.42464	
黄色代表接入设备才消耗的功率				ldo			ldo	ldo	ldo	7484.928	
黄色部分功率	30.15										

<Variant Name>

ADVANTECH

Title: POWER Function Block

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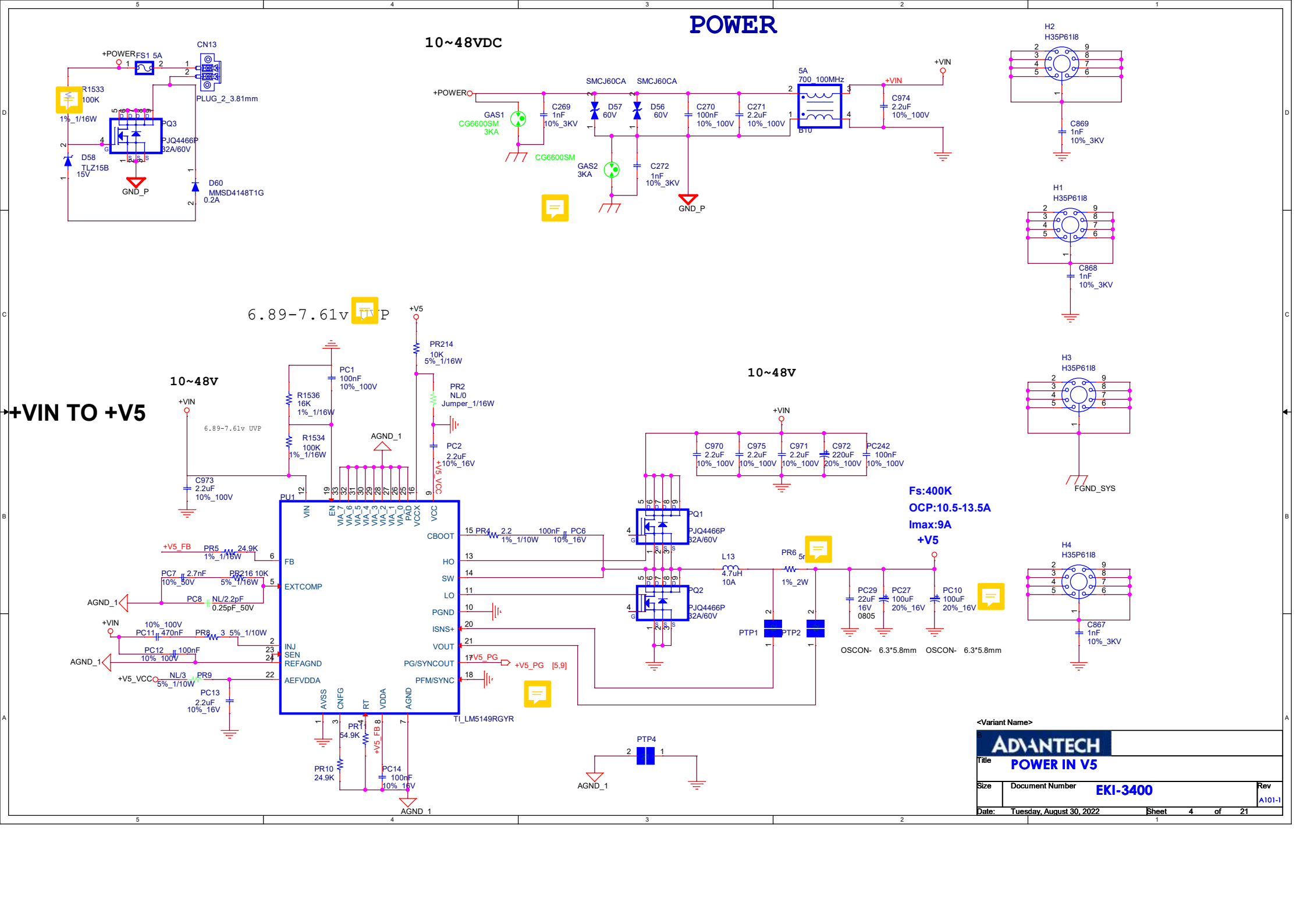
POWER



<Variant Name>

ADVANTECH

Title	POWER IN V5		
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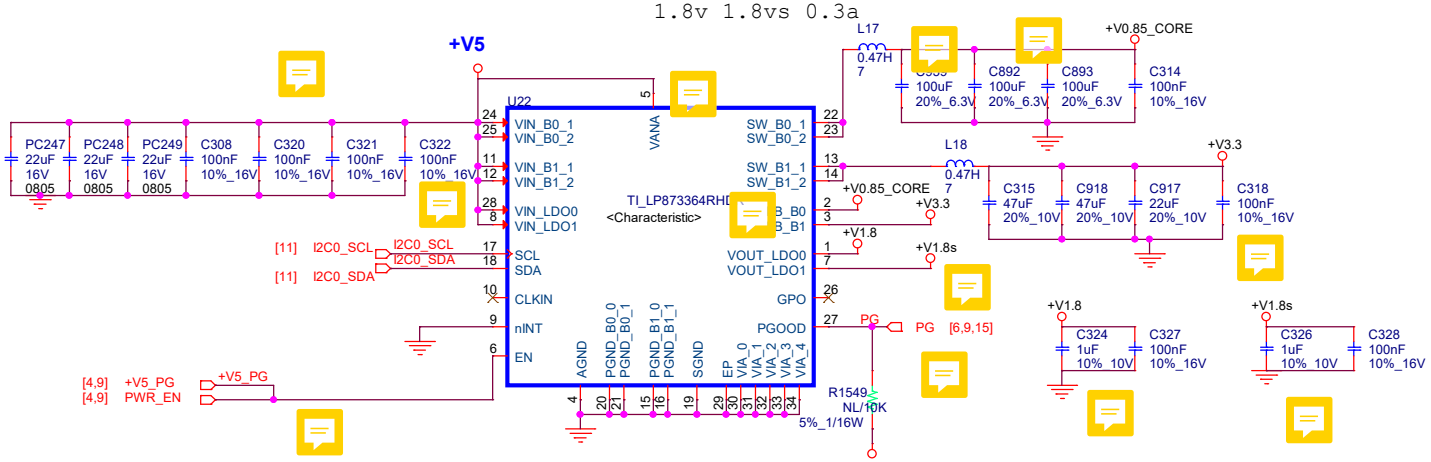
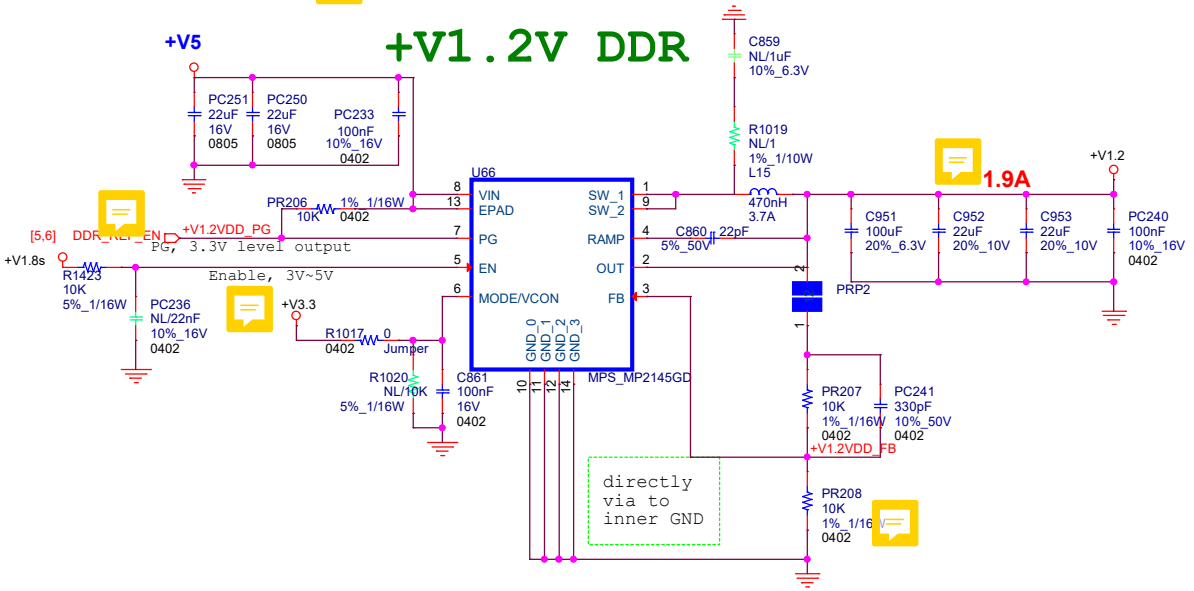
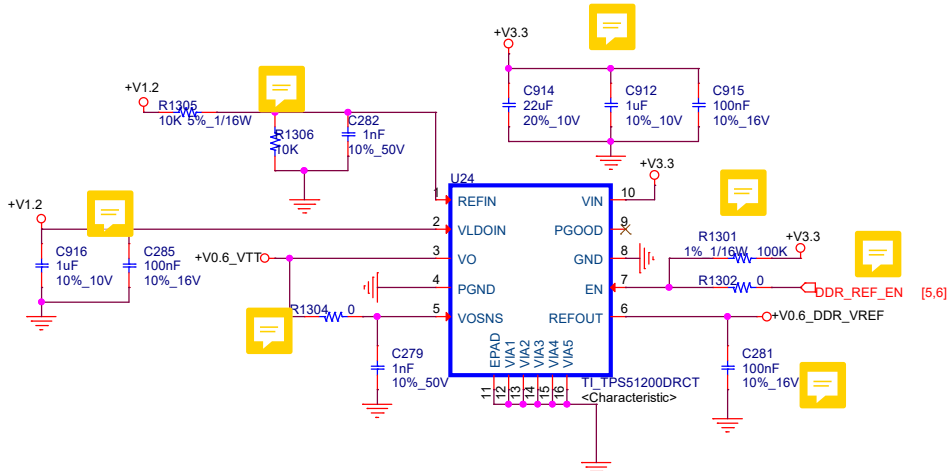
PMIC

0.85v, 3.3v 3a
1.8v 1.8vs 0.3a



+V1.2V DDR





3.3v原则
给cpu供电的支路用3.3
给其他设备供电的用3.3a
3.3a与cpu core一起上电，为时序最后一个

DDR Vtt 0.6V

<Variant Name>

ADVANTECH

Title	POWER PMIC V1.2 V0.6		
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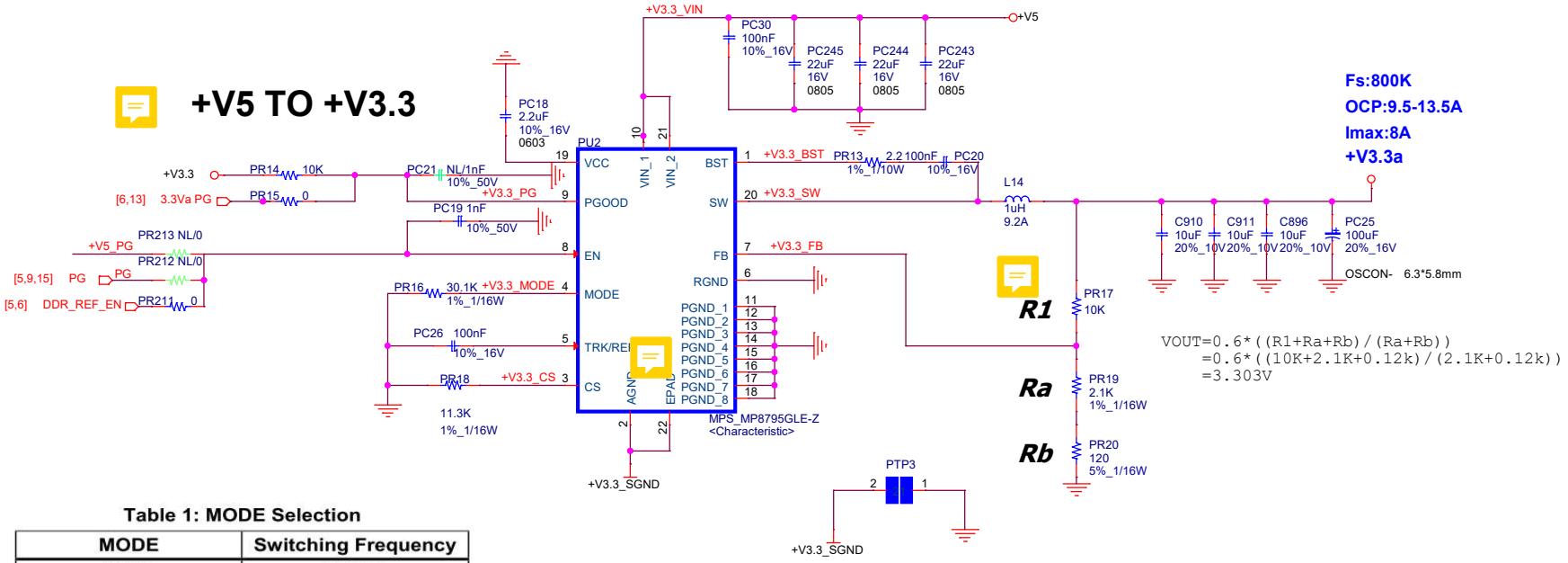
+V5 TO +V3.3



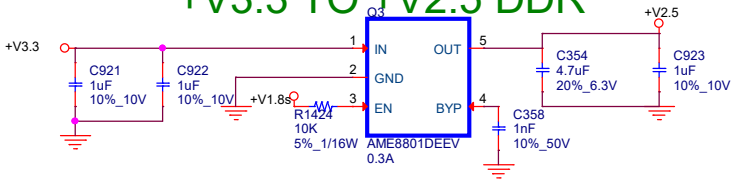
Fs:800K
OCP:9.5-13.5A
Imax:8A
+V3.3a

VOUT=0.6*((R1+Ra+Rb)/(Ra+Rb))
=0.6*((10K+2.1K+0.12k)/(2.1K+0.12k))
=3.303V

Table 1: MODE Selection

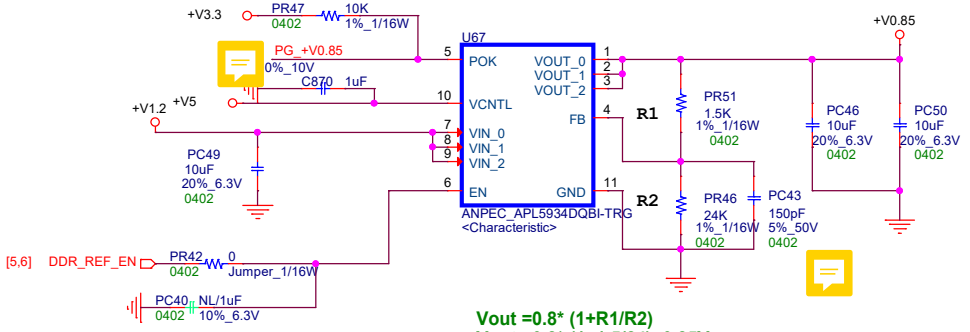
MODE	Switching Frequency
GND	600kHz
30.1kΩ (±20%) to GND	800kHz
60.4kΩ (±20%) to GND	1000kHz

+V3.3 TO +V2.5 DDR



+V1.2 TO +V0.85

+V0.85@0.3A



Vout =0.8* (1+R1/R2)
Vout =0.8* (1+1.5/24)=0.85V

ADVANTECH			
Title	POWER 2.5 0.85 1.8 3.3		
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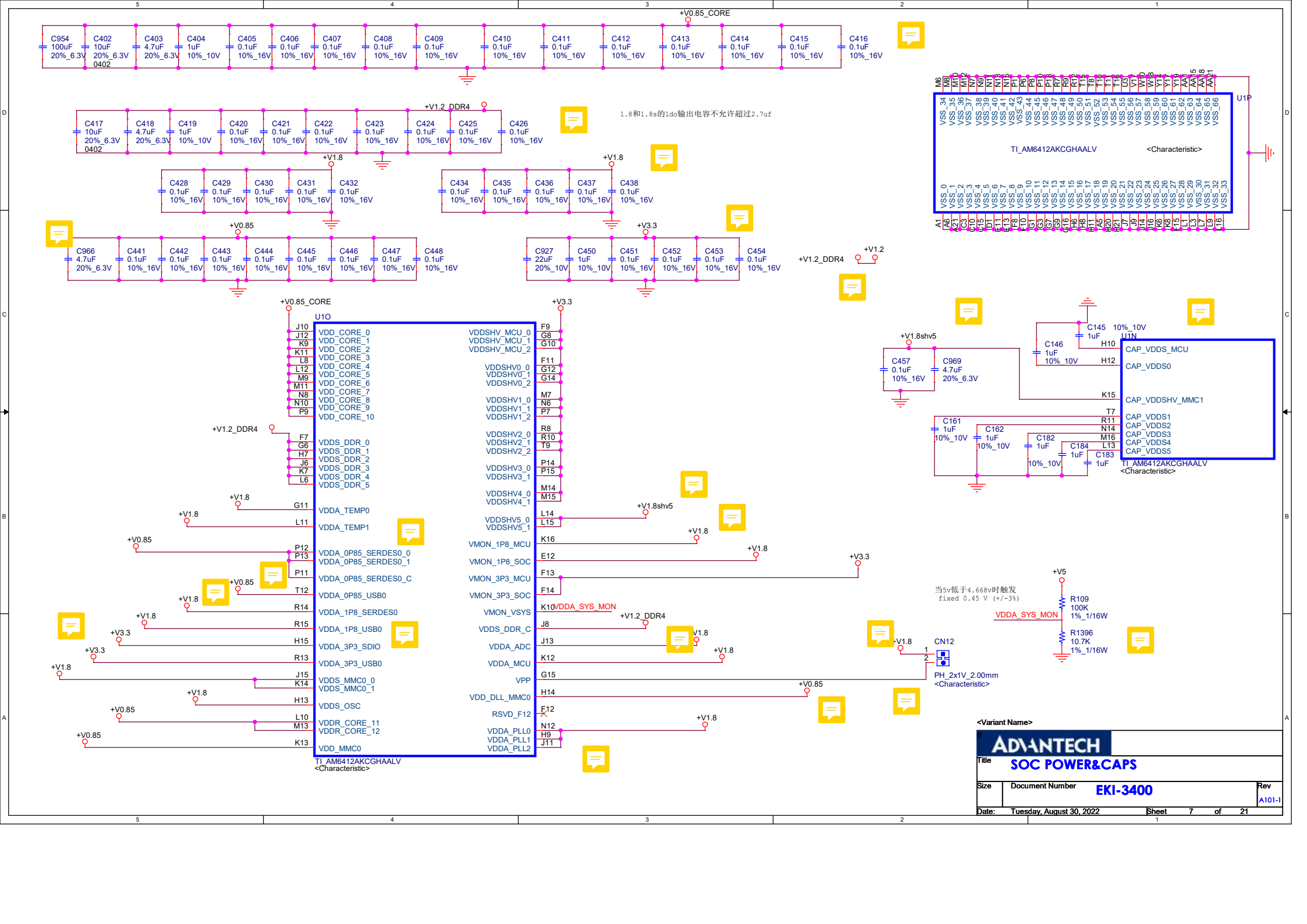
+V0.85_CORE
C954 100uF 20%_6.3V
C402 10uF 20%_6.3V 0402
C403 4.7uF 20%_6.3V
C404 1uF 10%_10V
C405 0.1uF 10%_16V
C406 0.1uF 10%_16V
C407 0.1uF 10%_16V
C408 0.1uF 10%_16V
C409 0.1uF 10%_16V
C410 0.1uF 10%_16V
C411 0.1uF 10%_16V
C412 0.1uF 10%_16V
C413 0.1uF 10%_16V
C414 0.1uF 10%_16V
C415 0.1uF 10%_16V
C416 0.1uF 10%_16V
+V1.2_DDR4
C417 10uF 20%_6.3V 0402
C418 4.7uF 20%_6.3V
C419 1uF 10%_10V
C420 0.1uF 10%_16V
C421 0.1uF 10%_16V
C422 0.1uF 10%_16V
C423 0.1uF 10%_16V
C424 0.1uF 10%_16V
C425 0.1uF 10%_16V
C426 0.1uF 10%_16V
1.8和1.8s的ldo输出电容不允许超过2.7uf
+V1.8
C428 0.1uF 10%_16V
C429 0.1uF 10%_16V
C430 0.1uF 10%_16V
C431 0.1uF 10%_16V
C432 0.1uF 10%_16V
C434 0.1uF 10%_16V
C435 0.1uF 10%_16V
C436 0.1uF 10%_16V
C437 0.1uF 10%_16V
C438 0.1uF 10%_16V
+V0.85
C966 4.7uF 20%_6.3V
C441 0.1uF 10%_16V
C442 0.1uF 10%_16V
C443 0.1uF 10%_16V
C444 0.1uF 10%_16V
C445 0.1uF 10%_16V
C446 0.1uF 10%_16V
C447 0.1uF 10%_16V
C448 0.1uF 10%_16V
+V3.3
C927 22uF 20%_10V
C450 1uF 10%_10V
C451 0.1uF 10%_16V
C452 0.1uF 10%_16V
C453 0.1uF 10%_16V
C454 0.1uF 10%_16V
+V1.2
+V1.2_DDR4
U1P
TI_AM6412AKCGHAALV
<Characteristic>
U1O
TI_AM6412AKCGHAALV
<Characteristic>
+V1.8shv5
C457 0.1uF 10%_16V
C969 4.7uF 20%_6.3V
C145 1uF 10%_10V
C146 1uF 10%_10V
U1N
CAP_VDDS_MCU
CAP_VDDS0
CAP_VDDSHV_MMC1
CAP_VDDS1
CAP_VDDS2
CAP_VDDS3
CAP_VDDS4
CAP_VDDS5
C161 1uF 10%_10V
C162 1uF 10%_10V
C182 1uF 10%_10V
C184 1uF
C183 1uF
TI_AM6412AKCGHAALV
<Characteristic>
当5v低于4.668v时触发
fixed 0.45 V (+/-3%)
+V5
R109 100K 1%_1/16W
R1396 10.7K 1%_1/16W
VDDA_SYS_MON
CN12
PH_2x1V_2.00mm
<Characteristic>
<Variant Name>
ADVANTECH
Title
SOC POWER&CAPS
Size
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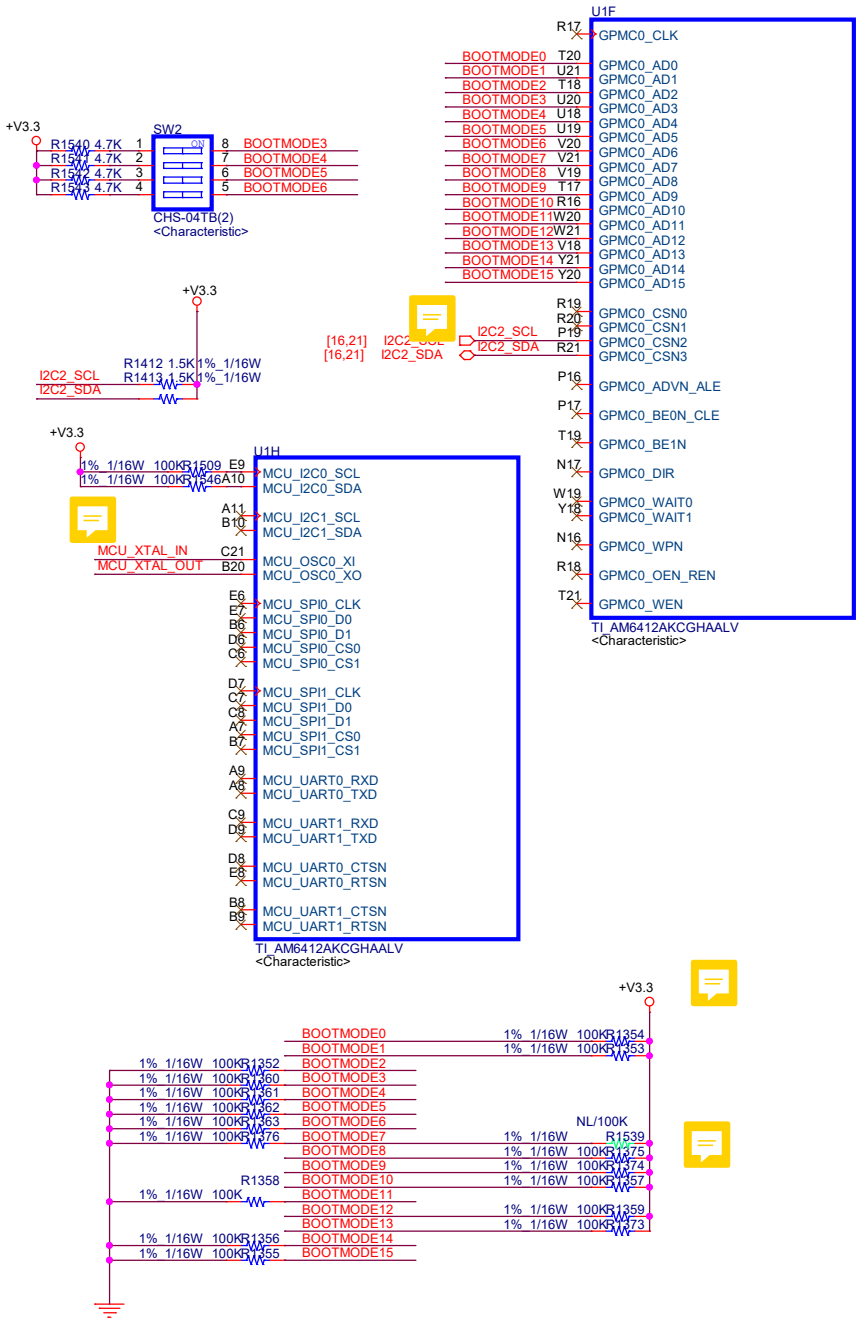


Table 4-4. Primary Boot Mode Selection (continued)

Primary Boot Mode Config							Primary Boot Mode
B9	B8	B7	B6	B5	B4	B3	
Reserved	Iclk	Csel	0	0	1	0	QSPI
Reserved	Mode	Csel	0	0	1	1	SPI
Clkout	0	Link Info	0	1	0	0	Ethernet RGMII
Clkout	Clk src	0	0	1	0	1	Ethernet RMII
Bus reset	Reserved	Addr	0	1	1	0	I2C
Reserved	Reserved	Reserved	0	1	1	1	UART
1	Reserved	Fs/raw	1	0	0	0	MMCSD card
Reserved	Reserved	Reserved	1	0	0	1	eMMC
Core Volt	Mode	Lane Swap	1	0	1	0	USB
Reserved	Reserved	Reserved	1	0	1	1	GPMC NAND
Reserved	Reserved	Reserved	1	1	0	0	GPMC NOR
Reserved	Reserved	Clocking	1	1	0	1	PCIe
SFPD	Read Cmd	Mode	1	1	1	0	xSPI
Reserved	Reserved	No/Dev	1	1	1	1	No-boot/Dev boot

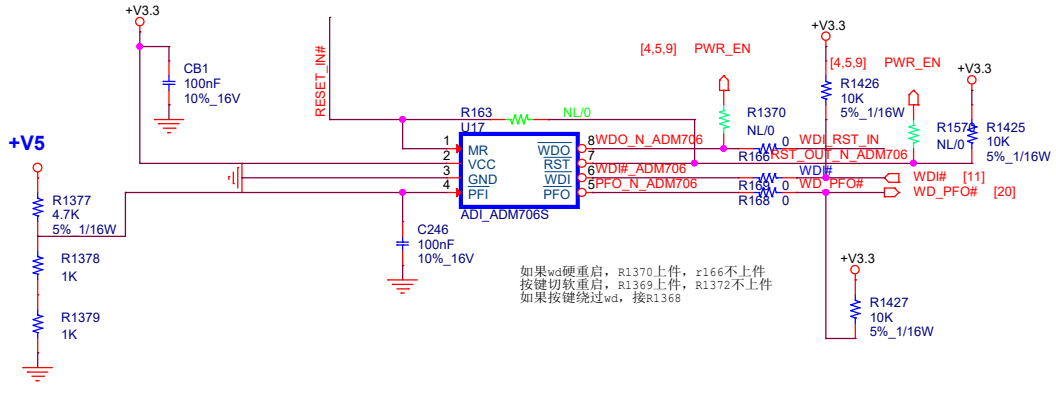
4.3.1.2 Backup Boot Mode Selection and Configuration

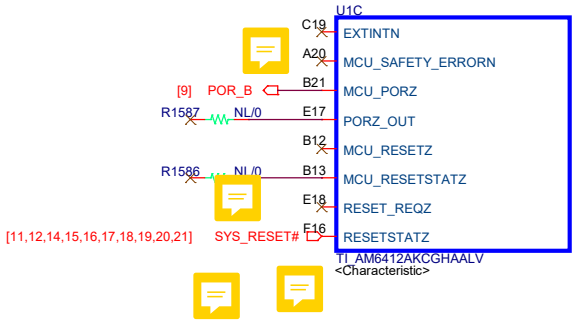
The backup boot mode is selected via pins within the main BOOTMODE map. Table 4-5 lists all possible backup boot modes.

Table 4-5. Backup Mode Selection

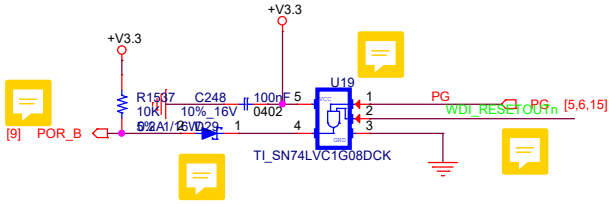
Backup Boot Config	Backup Boot Mode Selection			Backup Boot Mode Selected
B13	B12	B11	B10	
Reserved	0	0	0	None
Mode	0	0	1	USB
Reserved	0	1	0	Reserved
Reserved	0	1	1	UART
IF	1	0	0	Ethernet
Port	1	0	1	MMCSD
Reserved	1	1	0	SPI
Reserved	1	1	1	I2C

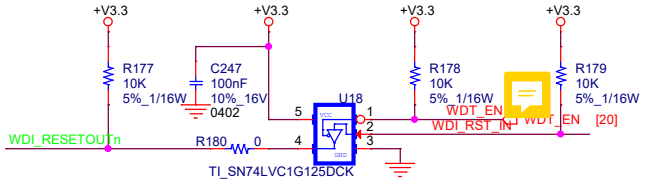
WD&reset



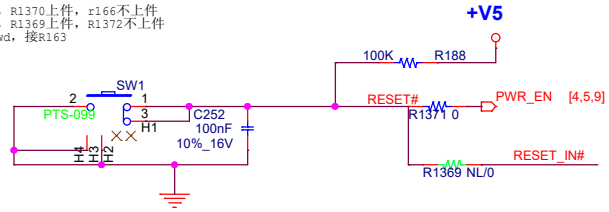


Move up as far as possiable





如果wd硬重启，R1370上件，r166不上件
按键切软重启，R1369上件，R1372不上件
如果按键绕过wd，接R163



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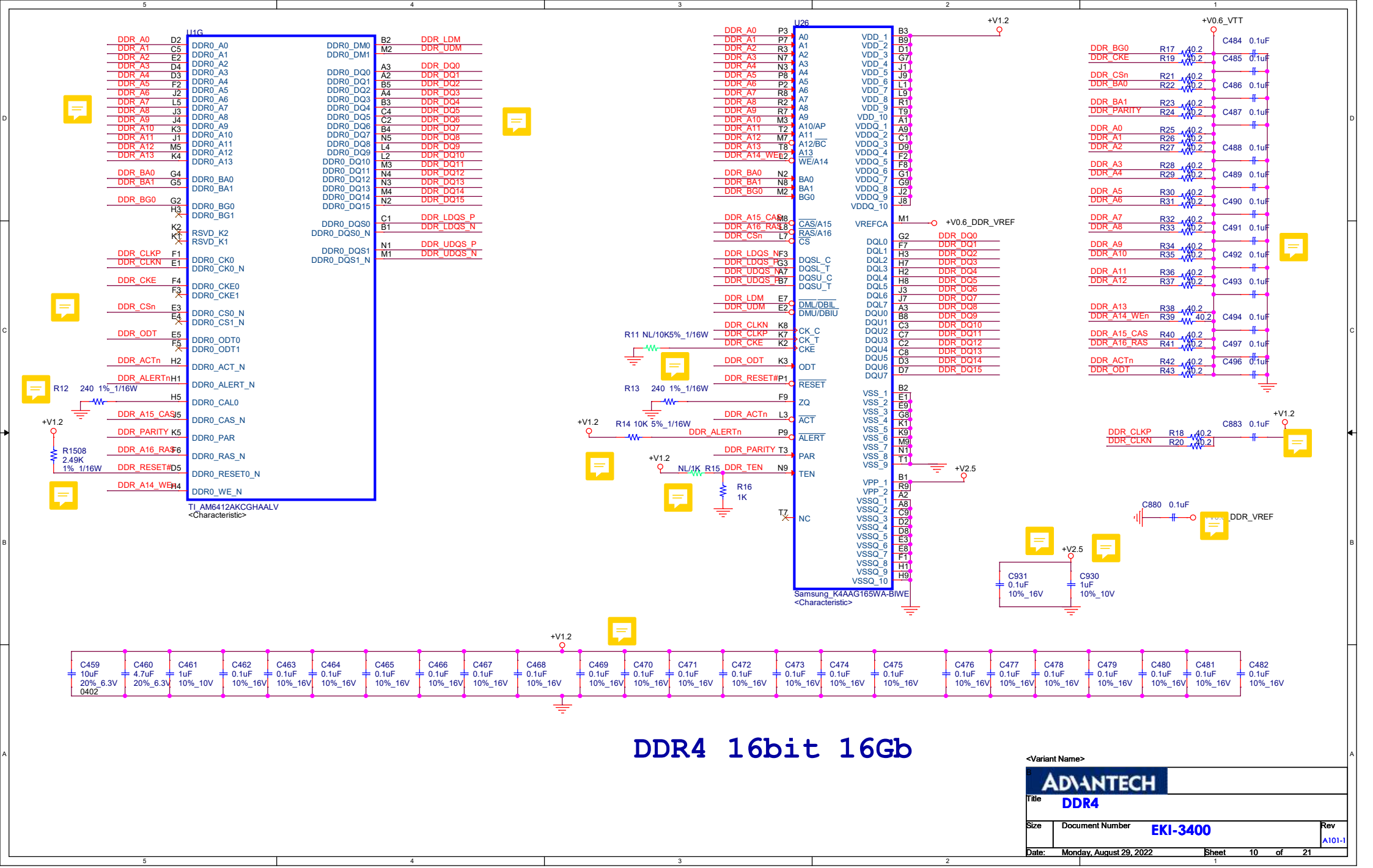

DDR4 16bit 16Gb

<Variant Name>

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Title	DDR4	
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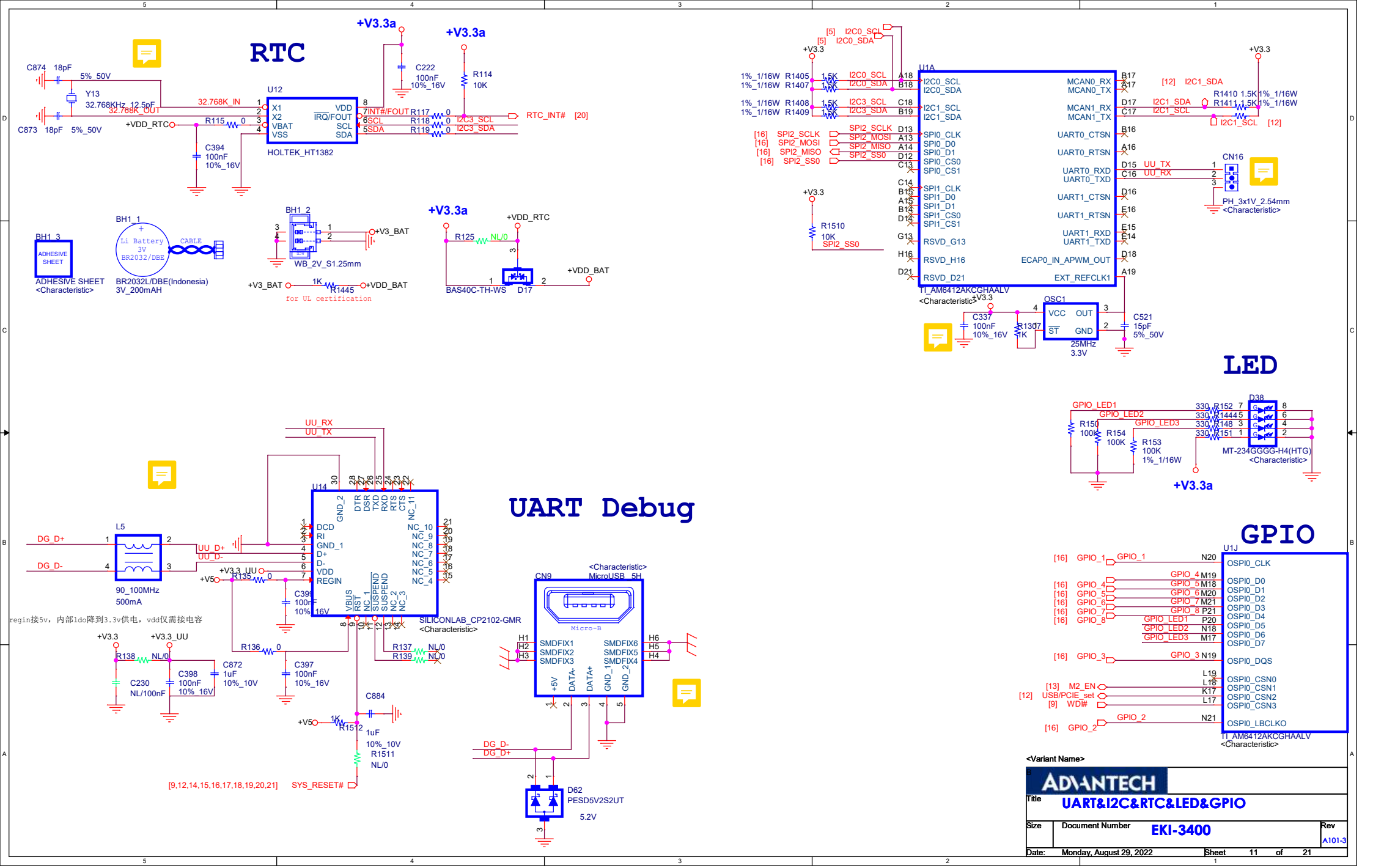
RTC
+V3.3a
+V3.3a
C874 18pF 5% 50V
Y13
32.768KHz 12.5pF
C873 18pF 5% 50V
32.768K_IN
32.768K_OUT
U12
X1
X2
VBAT
VSS
VDD
IRQ/FOUT
SCL
SDA
HOLTEK_HT1382
+VDD_RTC
R115 0
C394 100nF 10% 16V
C222 100nF 10% 16V
R114 10K
7INT#/FOUT
6SCL
5SDA
R117 0
R118 0
R119 0
I2C3_SCL
I2C3_SDA
RTC_INT# [20]
BH1_3
ADHESIVE SHEET
ADHESIVE SHEET
<Characteristic>
BH1_1
Li Battery 3V BR2032/DBE
CABLE
BR2032L/DBE(Indonesia)
3V_200mAH
BH1_2
WB_2V_S1.25mm
+V3_BAT
+V3_BAT
1K
R1445
+VDD_BAT
for UL certification
+V3.3a
+VDD_RTC
R125 NL/0
BAS40C-TH-WS
D17
+VDD_BAT
[5] I2C0_SCL
[5] I2C0_SDA
+V3.3
1%_1/16W R1405 1.5K I2C0_SCL
1%_1/16W R1407 1.5K I2C0_SDA
1%_1/16W R1408 1.5K I2C3_SCL
1%_1/16W R1409 1.5K I2C3_SDA
[16] SPI2_SCLK
[16] SPI2_MOSI
[16] SPI2_MISO
[16] SPI2_SS0
R1510 10K SPI2_SS0
U1A
I2C0_SCL
I2C0_SDA
I2C1_SCL
I2C1_SDA
SPI0_CLK
SPI0_D0
SPI0_D1
SPI0_CS0
SPI0_CS1
SPI1_CLK
SPI1_D0
SPI1_D1
SPI1_CS0
SPI1_CS1
RSVD_G13
RSVD_H16
RSVD_D21
MCAN0_RX
MCAN0_TX
MCAN1_RX
MCAN1_TX
UART0_CTSN
UART0_RTSN
UART0_RXD
UART0_TXD
UART1_CTSN
UART1_RTSN
UART1_RXD
UART1_TXD
ECAP0_IN_APWM_OUT
EXT_REFCLK1
TI_AM6412AKCGHAALV
<Characteristic>
[12] I2C1_SDA
[12] I2C1_SCL
R1410 1.5K 1%_1/16W
R1411 1.5K 1%_1/16W
CN16
UU_TX
UU_RX
PH_3x1V_2.54mm
<Characteristic>
OSC1
VCC
OUT
ST
GND
25MHz
3.3V
C337 100nF 10% 16V
R1307 1K
C521 15pF 5% 50V
LED
GPIO_LED1
GPIO_LED2
GPIO_LED3
R150 100K
R154 100K
R153 100K 1% 1/16W
330 R152
330 R144
330 R148
330 R151
D38
MT-234GGGG-H4(HTG)
<Characteristic>
+V3.3a
UART Debug
UU_RX
UU_TX
U14
GND_2
DTR
DSR
TXD
RXD
RTS
CTS
NC_11
DCD
RI
GND_1
D+
D-
VDD
REGIN
NC_10
NC_9
NC_8
NC_7
NC_6
NC_5
NC_4
VBUS
RST
NC_1
SUSPEND
SUSPEND
NC_2
NC_3
SILICONLAB_CP2102-GMR
<Characteristic>
L5
DG_D+
DG_D-
90_100MHz
500mA
UU_D+
UU_D-
+V3.3_UU
+V5
R135 0
C399 100nF 10% 16V
regin接5v，内部ldo降到3.3v供电，vdd仅需接电容
+V3.3
+V3.3_UU
R138 NL/0
C230 NL/100nF
C398 100nF 10% 16V
C872 1uF 10% 10V
R136 0
C397 100nF 10% 16V
R137 NL/0
R139 NL/0
C884 1uF 10% 10V
+V5
1K
R1512
R1511 NL/0
[9,12,14,15,16,17,18,19,20,21]
SYS_RESET#
CN9
<Characteristic>
MicroUSB_5H
Micro-B
SMDFIX1
SMDFIX2
SMDFIX3
SMDFIX4
SMDFIX5
SMDFIX6
+5V
DATA-
DATA+
GND_1
GND_2
H1
H2
H3
H4
H5
H6
DG_D-
DG_D+
D62
PESD5V2S2UT
5.2V
GPIO
U1J
[16] GPIO_1
[16] GPIO_4
[16] GPIO_5
[16] GPIO_6
[16] GPIO_7
[16] GPIO_8
[16] GPIO_3
[16] GPIO_2
[13] M2_EN
[12] USB/PCIE_set
[9] WDI#
GPIO_1 N20
GPIO_4 M19
GPIO_5 M18
GPIO_6 M20
GPIO_7 M21
GPIO_8 P21
GPIO_LED1 P20
GPIO_LED2 N18
GPIO_LED3 M17
GPIO_3 N19
N21
OSPI0_CLK
OSPI0_D0
OSPI0_D1
OSPI0_D2
OSPI0_D3
OSPI0_D4
OSPI0_D5
OSPI0_D6
OSPI0_D7
OSPI0_DQS
OSPI0_CSN0
OSPI0_CSN1
OSPI0_CSN2
OSPI0_CSN3
OSPI0_LBCLKO
TI_AM6412AKCGHAALV
<Characteristic>
<Variant Name>
ADVANTECH
Title
UART&I2C&RTC&LED&GPIO
Size
Document Number
EKI-3400
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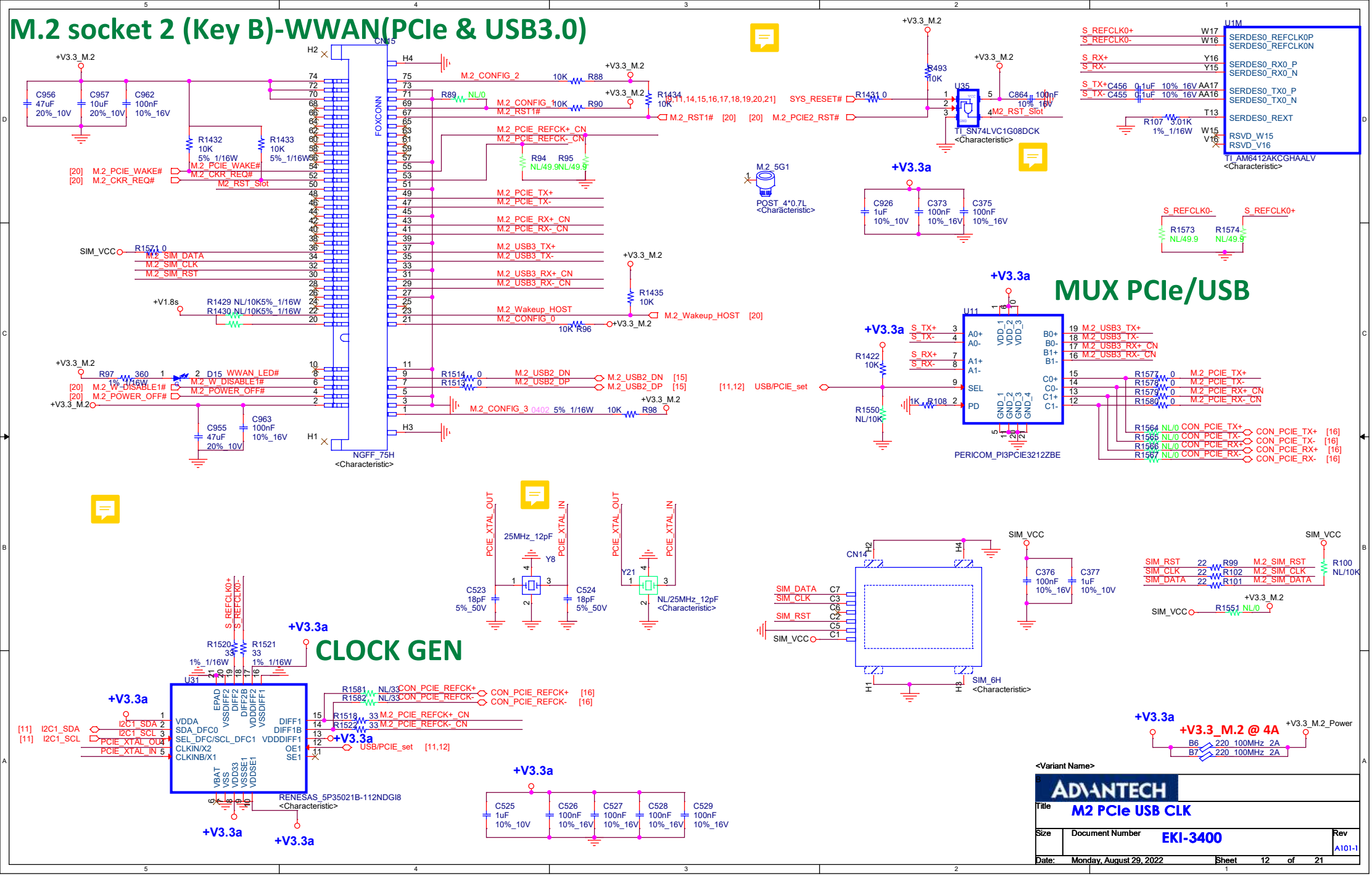
M.2 socket 2 (Key B)-WWAN(PCIe & USB3.0)



MUX PCIe/USB

CLOCK GEN

<Variant Name>

ADVANTECH

Title	M2 PCIe USB CLK	
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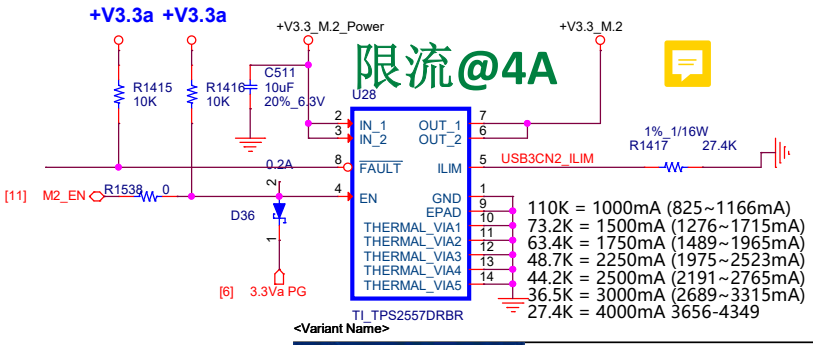
Table 48. Socket 2 Pinout Diagram (Mechanical Key B)

		CONFIG_2	75
74	3.3V	GND	73
72	3.3V	GND	71
70	3.3V	CONFIG_1	69
68	SUSCLK(32kHz) (O)(0/3.3V)	Reset# (O)(0/1.8V)	67
66	SIM Detect (O)	ANTCTL3 (I)(0/1.8V)	65
64	COEX1 (I/O)(0/1.8V)	ANTCTL2 (I)(0/1.8V)	63
62	COEX2(I/O)(0/1.8V)	ANTCTL1 (I)(0/1.8V)	61
60	COEX3(I/O)(0/1.8V)	ANTCTL0 (I)(0/1.8V)	59
58	N/C	GND	57
56	N/C	REFCLKP	55
54	PEWake# (IO)(0/3.3V)	REFCLKN	53
52	CLKREQ# (IO)(0/3.3V)	GND	51
50	PERST# (O)(0/3.3V)	PETp0/SATA-A+	49
48	GPIO_4 (IO)(0/1.8V*)	PETn0/SATA-A-	47
46	GPIO_3 (IO)(0/1.8V*)	GND	45
44	GPIO_2 (IO)(0/1.8V*)	PERp0/SATA-B-	43
42	GPIO_1 (IO)(0/1.8V*)	PERn0/SATA-B+	41
40	GPIO_0 (IO)(0/1.8V*)	GND	39
38	DEVSLP (O)(0/3.3V)	PETp1/USB3.0-Tx+/SSIC-TxP	37
36	UIM-PWR (I)	PETn1/USB3.0-Tx-/SSIC-TxN	35
34	UIM-DATA (IO)	GND	33
32	UIM-CLK (I)	PERp1/USB3.0-Rx+/SSIC-RxP	31
30	UIM-RESET (I)	PERn1/USB3.0-Rx-/SSIC-RxN	29
28	GPIO_8 (IO) (0/1.8V)	GND	27
26	GPIO_10 (IO) (0/1.8V)	GPIO_12 (IO) (0/1.8V)	25
24	GPIO_7 (IO) (0/1.8V)	GPIO_11 (IO) (0/1.8V)	23
22	GPIO_6 (IO)(0/1.8V)	CONFIG_0	21
20	GPIO_5 (IO)(0/1.8V)	Connector Key	
	Connector Key	Connector Key	
	Connector Key	Connector Key	
	Connector Key	Connector Key	
	Connector Key	Connector Key	
10	GPIO_9/DAS/DSS# (I)(OD)	GND	11
8	W_DISABLE#1 (O)(0/3.3V)	USB_D-	9
6	Full_Card_Power_Off# (O)(0/1.8V)	USB_D+	7
4	3.3V	GND	5
2	3.3V	GND	3
		CONFIG_3	1

	Pin	Port Config_0[1]	Port Config_1[2]	Port Config_2[3]	Port Config_3[4]
GPIO_0	40	GNSS_SCL	GNSS_SCL	SIM_DET2	IPC_0
GPIO_1	42	GNSS_SDA	GNSS_SDA	UIM_DTA2	IPC_1
GPIO_2	44	GNSS_IRQ	GNSS_IRQ	UIM_CLK2	IPC_2
GPIO_3	46	SYSCLK	GNSS_0	UIM_RST2	IPC_3
GPIO_4	48	TX_BLANKING	GNSS_1	UIM_PWR2	IPC_4
GPIO_5	20	AUDIO_0	AUDIO_0	RFU	AUDIO_0
GPIO_6	22	AUDIO_1	AUDIO_1	RFU	AUDIO_1
GPIO_7	24	AUDIO_2	AUDIO_2	RFU	IPC_5/AUDIO_2
GPIO_8	28	AUDIO_3	AUDIO_3	RFU	IPC_6/AUDIO_3
GPIO_9 [5,6]	10	LED_1#	LED_1#	LED_1#	IPC_7
GPIO_10	26	W_DISABLE2#	W_DISABLE2#	W_DISABLE2#	HSIC_STROBE
GPIO_11	23	WAKE_ON_WWAN#	WAKE_ON_WWAN#	WAKE_ON_WWAN#	HSIC_DATA

State #	Module Configuration Decodes CONFIG_0 (Pin 21)	CONFIG_1 (Pin 69)	CONFIG_2 (Pin 75)	CONFIG_3 (Pin 1)	Module Type and Main Host Interface[1]	Port Configuration[2]
0	GND	GND	GND	GND	SSD – SATA	N/A
1	GND	N/C	GND	GND	SSD – PCIe	N/A
2	GND	GND	N/C	GND	WWAN – PCIe	0
3	GND	N/C	N/C	GND	WWAN – PCIe	1
12	N/C	GND	GND	N/C	WWAN – PCIe	2
13	N/C	N/C	GND	N/C	WWAN – PCIe	3
14	N/C	GND	N/C	N/C	RFU	N/A
15	N/C	N/C	N/C	N/C	No Module Present	N/A



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Title	M2 Pin Definition&Power	
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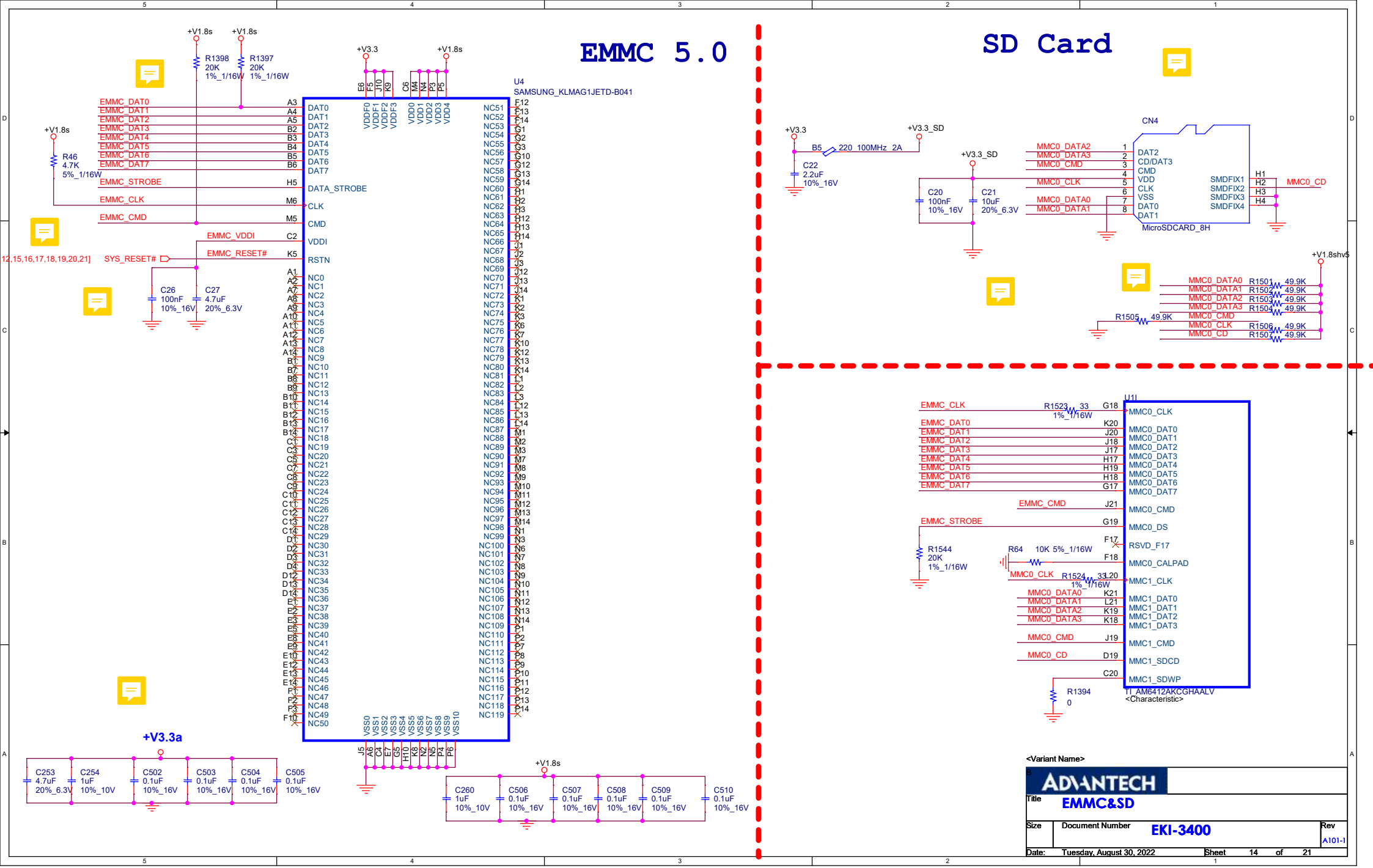
EMMC 5.0
SD Card
U4
SAMSUNG_KLMAG1JETD-B041
R1398 20K 1%_1/16W
R1397 20K 1%_1/16W
R46 4.7K 5%_1/16W
EMMC_DAT0
EMMC_DAT1
EMMC_DAT2
EMMC_DAT3
EMMC_DAT4
EMMC_DAT5
EMMC_DAT6
EMMC_DAT7
EMMC_STROBE
EMMC_CLK
EMMC_CMD
EMMC_VDDI
EMMC_RESET#
SYS_RESET#
DAT0
DAT1
DAT2
DAT3
DAT4
DAT5
DAT6
DAT7
DATA_STROBE
CLK
CMD
VDDI
RSTN
C26 100nF 10%_16V
C27 4.7uF 20%_6.3V
+V3.3a
C253 4.7uF 20%_6.3V
C254 1uF 10%_10V
C502 0.1uF 10%_16V
C503 0.1uF 10%_16V
C504 0.1uF 10%_16V
C505 0.1uF 10%_16V
C260 1uF 10%_10V
C506 0.1uF 10%_16V
C507 0.1uF 10%_16V
C508 0.1uF 10%_16V
C509 0.1uF 10%_16V
C510 0.1uF 10%_16V
+V3.3_SD
B5 220 100MHz 2A
C22 2.2uF 10%_16V
C20 100nF 10%_16V
C21 10uF 20%_6.3V
CN4
MMC0_DATA2
MMC0_DATA3
MMC0_CMD
MMC0_CLK
MMC0_DATA0
MMC0_DATA1
MMC0_CD
MicroSDCARD_8H
+V1.8shv5
R1501 49.9K
R1502 49.9K
R1503 49.9K
R1504 49.9K
R1505 49.9K
R1506 49.9K
R1507 49.9K
U1I
R1523 33 1%_1/16W
R1544 20K 1%_1/16W
R64 10K 5%_1/16W
R1524 33 1%_1/16W
R1394 0
MMC0_CLK
MMC0_DAT0
MMC0_DAT1
MMC0_DAT2
MMC0_DAT3
MMC0_DAT4
MMC0_DAT5
MMC0_DAT6
MMC0_DAT7
MMC0_CMD
MMC0_DS
RSVD_F17
MMC0_CALPAD
MMC1_CLK
MMC1_DAT0
MMC1_DAT1
MMC1_DAT2
MMC1_DAT3
MMC1_CMD
MMC1_SDCD
MMC1_SDWP
TI_AM6412AKCGHAALV
<Characteristic>
<Variant Name>
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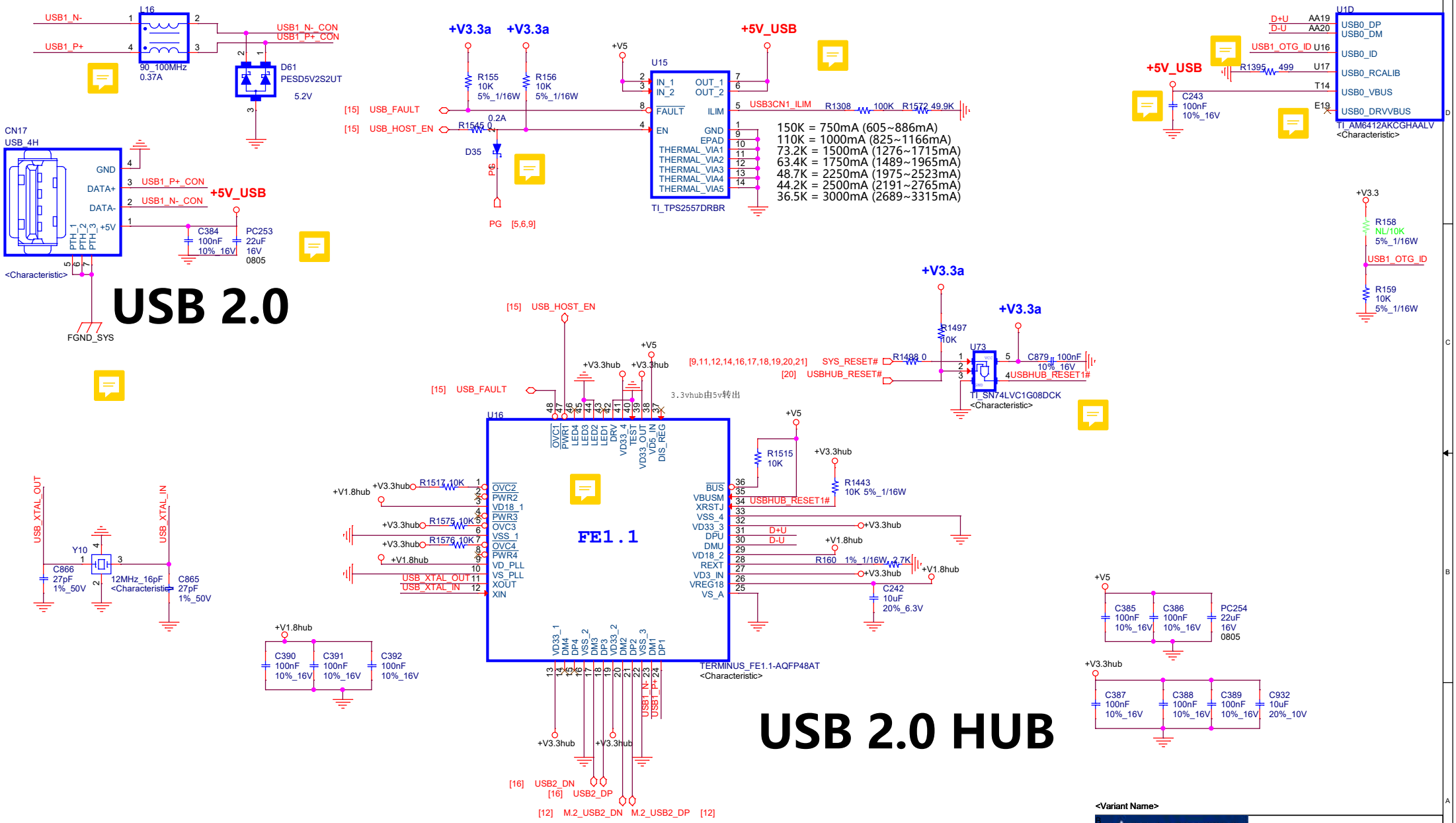
USB 2.0
USB1_N-
USB1_P+
L16
90_100MHz
0.37A
USB1_N-_CON
USB1_P+_CON
D61
PESD5V2S2UT
5.2V
CN17
USB_4H
GND
DATA+
DATA-
+5V
USB1_P+_CON
USB1_N-_CON
+5V_USB
C384
100nF
10%_16V
PC253
22uF
16V
0805
<Characteristic>
FGND_SYS
+V3.3a
R155
10K
5%_1/16W
R156
10K
5%_1/16W
[15] USB_FAULT
[15] USB_HOST_EN
R1545 0
0.2A
D35
PG
[5,6,9]
U15
IN_1
IN_2
FAULT
EN
OUT_1
OUT_2
ILIM
GND
EPAD
THERMAL_VIA1
THERMAL_VIA2
THERMAL_VIA3
THERMAL_VIA4
THERMAL_VIA5
+5V_USB
USB3CN1_ILIM
R1308 100K
R1572 49.9K
TI_TPS2557DRBR
150K = 750mA (605~886mA)
110K = 1000mA (825~1166mA)
73.2K = 1500mA (1276~1715mA)
63.4K = 1750mA (1489~1965mA)
48.7K = 2250mA (1975~2523mA)
44.2K = 2500mA (2191~2765mA)
36.5K = 3000mA (2689~3315mA)
U1D
D+U
D-U
USB1_OTG_ID
USB0_DP
USB0_DM
USB0_ID
USB0_RCALIB
USB0_VBUS
USB0_DRVVBUS
R1395 499
C243
100nF
10%_16V
TI_AM6412AKCGHAALV
<Characteristic>
+V3.3
R158
NL/10K
5%_1/16W
USB1_OTG_ID
R159
10K
5%_1/16W
USB 2.0 HUB
[15] USB_HOST_EN
[15] USB_FAULT
U16
FE1.1
OVC1
PWR1
LED4
LED3
LED2
LED1
DRV
VD33_4
TEST
VD33_OUT
VD5_IN
DIS_REG
OVC2
PWR2
VD18_1
PWR3
OVC3
VSS_1
OVC4
PWR4
VD_PLL
VS_PLL
XOUT
XIN
R1517 10K
R1575 10K
R1576 10K
USB_XTAL_OUT
USB_XTAL_IN
Y10
12MHz_16pF
<Characteristic>
C866
27pF
1%_50V
C865
27pF
1%_50V
BUS
VBUSM
XRSTJ
VSS_4
VD33_3
DPU
DMU
VD18_2
REXT
VD3_IN
VREG18
VS_A
USBHUB_RESET1#
D+U
D-U
R1515
10K
R1443
10K 5%_1/16W
R160 1%_1/16W_2.7K
C242
10uF
20%_6.3V
TERMINUS_FE1.1-AQFP48AT
<Characteristic>
C390
100nF
10%_16V
C391
100nF
10%_16V
C392
100nF
10%_16V
VD33_1
DM4
DP4
VSS_2
DM3
DP3
VD33_2
DM2
DP2
VSS_3
DM1
DP1
USB1_N
USB1_P
[16] USB2_DN
[16] USB2_DP
[12] M.2_USB2_DN
M.2_USB2_DP
[12]
+V3.3a
R1497
10K
U73
R1498 0
C879 100nF
10% 16V
4USBHUB_RESET1#
TI_SN74LVC1G08DCK
<Characteristic>
[9,11,12,14,16,17,18,19,20,21] SYS_RESET#
[20] USBHUB_RESET#
3.3vhub由5v转出
C385
100nF
10%_16V
C386
100nF
10%_16V
PC254
22uF
16V
0805
C387
100nF
10%_16V
C388
100nF
10%_16V
C389
100nF
10%_16V
C932
10uF
20%_10V
<Variant Name>
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Extend Interface

+V5 — B1 220_100MHz_2A — +V5_Extend

+V3.3a

B2 220_100MHz_2A
B3 220_100MHz_2A
— +V3.3_Extend

CN1
BB_20X2V_S0.5mm

P3 P1 P4 P2

+V3.3_Extend
R1436 10K
CON_RST# — CONNECTER_Wakeup_HOST — [20] CONNECTER_Wakeup_HOST
[20] CONNECTER_W_DISABLE1# — CONNECTER_W_DISABLE1#
[20] CONNECTER_POWER_OFF# — CONNECTER_POWER_OFF#
R1437 10K 5%_1/16W
R1438 10K 5%_1/16W
+V3.3_Extend

CON_PCIE_REFCK+ — CON_PCIE_REFCK+ [12]
CON_PCIE_REFCK- — CON_PCIE_REFCK- [12]
CON_PCIE_TX+ — CON_PCIE_TX+ [12]
CON_PCIE_TX- — CON_PCIE_TX- [12]
CON_PCIE_RX+ — CON_PCIE_RX+ [12]
CON_PCIE_RX- — CON_PCIE_RX- [12]
USB2_DN_CN — R1 0 — USB2_DN [15]
USB2_DP_CN — R2 0 — USB2_DP [15]

+V3.3_Extend
C960 47uF 20%_10V
C961 47uF 20%_10V
C964 100nF 10%_16V
C965 100nF 10%_16V

+V5_Extend
C967 47uF 20%_10V
C968 100nF 10%_16V

CN2
PH(F)_11x2V_S1.27mm

[11] SPI2_SS0 — SPI2_SS0
[11] SPI2_MOSI — SPI2_MOSI
[11] SPI2_MISO — SPI2_MISO
[11] SPI2_SCLK — SPI2_SCLK
+V3.3_Extend
+V5_Extend

I2C2_SCL — I2C2_SCL [8,21]
I2C2_SDA — I2C2_SDA [8,21]
GPIO_1 — GPIO_1 [11]
GPIO_2 — GPIO_2 [11]
GPIO_3 — GPIO_3 [11]
GPIO_4 — GPIO_4 [11]
GPIO_5 — GPIO_5 [11]
GPIO_6 — GPIO_6 [11]
GPIO_7 — GPIO_7 [11]
GPIO_8 — GPIO_8 [11]

+V3.3_Extend
R3 10K
R4 10K
[9,11,12,14,15,17,18,19,20,21] SYS_RESET#
[20] connecter_RST# — connecter_RST#
R5 0
R6 0
U2
C393 10%_16V 100nF
CON_RST#
TI_SN74LVC1G08DCK
<Characteristic>

<Variant Name>

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Title	CONNECTER	
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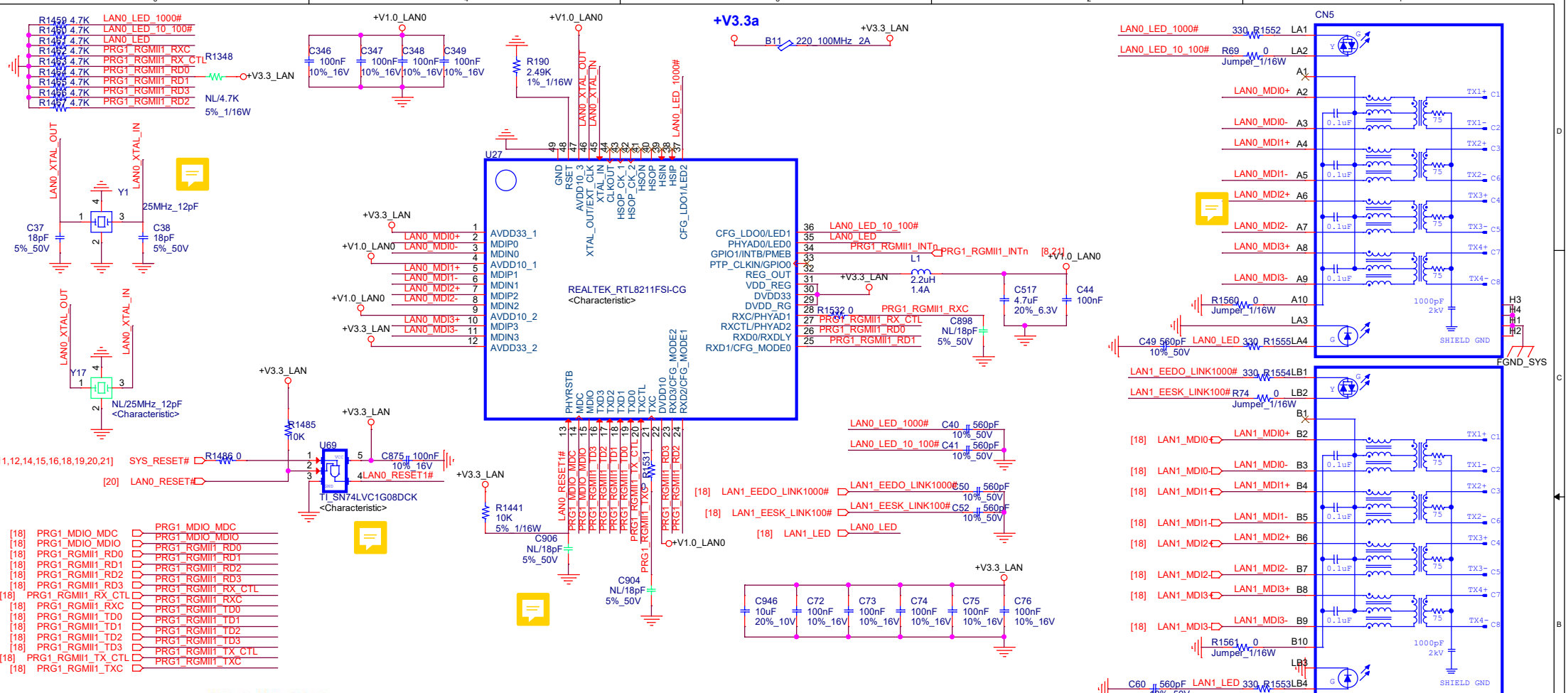
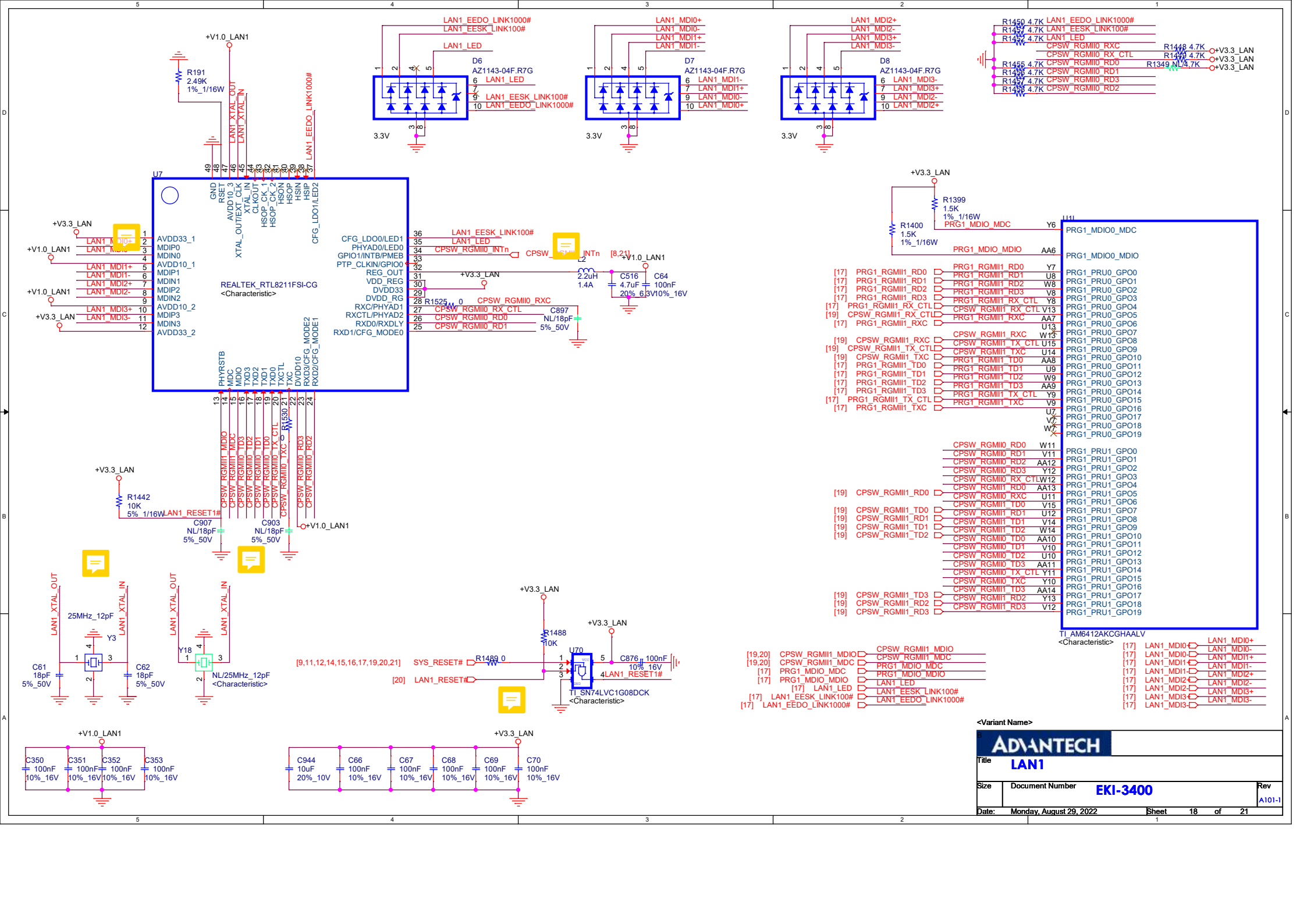


Table 8. Mode Selection

Pin No.	Pin Name	Type	Description
35	PHYAD0	O/LI/PU	PHYAD[2:0]. PHY Address Configuration.
28	PHYAD1	O/LI/PD	
27	PHYAD2	O/LI/PD	
26	RXDLY	O/LI/PU	RGMII Receiver Clock Timing Control. Pull up to add 2ns delay to RXC for RXD latching. *Note: On the other hand, enabling of TXDLY is left in the register setting: Page 0xd08, Reg 17, Bit[8] = 1.*
36	CFG_LDO0	O/LI/PU	Voltage Selection for I/O Pad.
37	CFG_LDO1	O/LI/PD	2'b00: 3.3V. 2'b01: 2.5V. 2'b10: 1.8V. 2'b11: 1.5V.
25	CFG_MODE0	O/PD	Operation Mode.
24	CFG_MODE1	O/PD	3'b000: UTP ←→ RGMII 3'b001: FIBER ←→ RGMII 3'b010: UTP/FIBER ←→ RGMII (Media Auto Detection) 3'b011: UTP ←→ SGMII 3'b100: SGMII (PHY side) ←→ RGMII (MAC side) 3'b101: SGMII (MAC side) ←→ RGMII (PHY side) 3'b110: UTP ←→ FIBER (Media Conversion auto mode) 3'b111: UTP ←→ FIBER (Media Conversion force mode)
23	CFG_MODE2	O/PD	


+V1.0_LAN1
R191
2.49K
1%_1/16W
LAN1_XTAL_OUT
LAN1_XTAL_IN
LAN1_EEDO_LINK1000#
U7
REALTEK_RTL8211FSI-CG
<Characteristic>
GND
RSET
AVDD10_3
XTAL_OUT/EXT_CLK
XTAL_IN
CLKOUT
HSOP_CK_1
HSOP_CK_2
HSON
HSOP
HSIN
HSIP
CFG_LDO1/LED2
+V3.3_LAN
LAN1_MDI0+
LAN1_MDI0-
LAN1_MDI1+
LAN1_MDI1-
LAN1_MDI2+
LAN1_MDI2-
LAN1_MDI3+
LAN1_MDI3-
AVDD33_1
MDIP0
MDIN0
AVDD10_1
MDIP1
MDIN1
MDIP2
MDIN2
AVDD10_2
MDIP3
MDIN3
AVDD33_2
CFG_LDO0/LED1
PHYAD0/LED0
GPIO1/INTB/PMEB
PTP_CLKIN/GPIO0
REG_OUT
VDD_REG
DVDD33
DVDD_RG
RXC/PHYAD1
RXCTL/PHYAD2
RXD0/RXDLY
RXD1/CFG_MODE0
LAN1_EESK_LINK100#
LAN1_LED
CPSW_RGMII0_INTn
CPSW_INTn
[8,21]
L2
2.2uH
1.4A
C516
4.7uF
20%_6.3V
C64
100nF
10%_16V
R1525 0
CPSW_RGMII0_RXC
CPSW_RGMII0_RX_CTL
CPSW_RGMII0_RD0
CPSW_RGMII0_RD1
C897
NL/18pF
5%_50V
PHYRSTB
MDC
MDIO
TXD3
TXD2
TXD1
TXD0
TXCTL
TXC
DVDD10
RXD3/CFG_MODE2
RXD2/CFG_MODE1
R1530 0
CPSW_RGMII1_MDIO
CPSW_RGMII1_MDC
CPSW_RGMII0_TD3
CPSW_RGMII0_TD2
CPSW_RGMII0_TD1
CPSW_RGMII0_TD0
CPSW_RGMII0_TX_CTL
CPSW_RGMII0_TXC
CPSW_RGMII0_RD3
CPSW_RGMII0_RD2
R1442
10K
5%_1/16W
LAN1_RESET1#
C907
NL/18pF
5%_50V
C903
NL/18pF
5%_50V
25MHz_12pF
Y3
C61
18pF
5%_50V
C62
18pF
5%_50V
Y18
NL/25MHz_12pF
<Characteristic>
[9,11,12,14,15,16,17,19,20,21]
SYS_RESET#
R1489 0
[20]
R1488
10K
U70
TI_SN74LVC1G08DCK
<Characteristic>
C876
100nF
10%_16V
D6
AZ1143-04F.R7G
D7
AZ1143-04F.R7G
D8
AZ1143-04F.R7G
3.3V
LAN1_MDI0+
LAN1_MDI0-
LAN1_MDI1+
LAN1_MDI1-
LAN1_MDI2+
LAN1_MDI2-
LAN1_MDI3+
LAN1_MDI3-
R1450 4.7K
R1451 4.7K
R1452 4.7K
R1455 4.7K
R1456 4.7K
R1457 4.7K
R1458 4.7K
CPSW_RGMII0_RXC
CPSW_RGMII0_RX_CTL
CPSW_RGMII0_RD0
CPSW_RGMII0_RD1
CPSW_RGMII0_RD3
CPSW_RGMII0_RD2
R1448 4.7K
R1449 4.7K
R1349 NL/4.7K
+V3.3_LAN
R1399
1.5K
1%_1/16W
R1400
1.5K
1%_1/16W
PRG1_MDIO_MDC
PRG1_MDIO_MDIO
U11
TI_AM6412AKCGHAALV
<Characteristic>
PRG1_MDIO0_MDC
PRG1_MDIO0_MDIO
PRG1_PRU0_GPO0
PRG1_PRU0_GPO1
PRG1_PRU0_GPO2
PRG1_PRU0_GPO3
PRG1_PRU0_GPO4
PRG1_PRU0_GPO5
PRG1_PRU0_GPO6
PRG1_PRU0_GPO7
PRG1_PRU0_GPO8
PRG1_PRU0_GPO9
PRG1_PRU0_GPO10
PRG1_PRU0_GPO11
PRG1_PRU0_GPO12
PRG1_PRU0_GPO13
PRG1_PRU0_GPO14
PRG1_PRU0_GPO15
PRG1_PRU0_GPO16
PRG1_PRU0_GPO17
PRG1_PRU0_GPO18
PRG1_PRU0_GPO19
PRG1_PRU1_GPO0
PRG1_PRU1_GPO1
PRG1_PRU1_GPO2
PRG1_PRU1_GPO3
PRG1_PRU1_GPO4
PRG1_PRU1_GPO5
PRG1_PRU1_GPO6
PRG1_PRU1_GPO7
PRG1_PRU1_GPO8
PRG1_PRU1_GPO9
PRG1_PRU1_GPO10
PRG1_PRU1_GPO11
PRG1_PRU1_GPO12
PRG1_PRU1_GPO13
PRG1_PRU1_GPO14
PRG1_PRU1_GPO15
PRG1_PRU1_GPO16
PRG1_PRU1_GPO17
PRG1_PRU1_GPO18
PRG1_PRU1_GPO19
PRG1_RGMII1_RD0
PRG1_RGMII1_RD1
PRG1_RGMII1_RD2
PRG1_RGMII1_RD3
PRG1_RGMII1_RX_CTL
PRG1_RGMII1_RXC
PRG1_RGMII1_TX_CTL
PRG1_RGMII1_TXC
PRG1_RGMII1_TD0
PRG1_RGMII1_TD1
PRG1_RGMII1_TD2
PRG1_RGMII1_TD3
CPSW_RGMII1_RD0
CPSW_RGMII1_RD1
CPSW_RGMII1_RD2
CPSW_RGMII1_RD3
CPSW_RGMII1_RX_CTL
CPSW_RGMII1_RXC
CPSW_RGMII1_TX_CTL
CPSW_RGMII1_TXC
CPSW_RGMII1_TD0
CPSW_RGMII1_TD1
CPSW_RGMII1_TD2
CPSW_RGMII1_TD3
CPSW_RGMII0_RD0
CPSW_RGMII0_RD1
CPSW_RGMII0_RD2
CPSW_RGMII0_RD3
CPSW_RGMII0_RX_CTL
CPSW_RGMII0_RXC
CPSW_RGMII0_TD0
CPSW_RGMII0_TD1
CPSW_RGMII0_TD2
CPSW_RGMII0_TD3
CPSW_RGMII0_TX_CTL
CPSW_RGMII0_TXC
PRG1_MDIO_MDC
PRG1_MDIO_MDIO
LAN1_LED
LAN1_EESK_LINK100#
LAN1_EEDO_LINK1000#
+V1.0_LAN1
C350
100nF
10%_16V
C351
100nF
10%_16V
C352
100nF
10%_16V
C353
100nF
10%_16V
+V3.3_LAN
C944
10uF
20%_10V
C66
100nF
10%_16V
C67
100nF
10%_16V
C68
100nF
10%_16V
C69
100nF
10%_16V
C70
100nF
10%_16V
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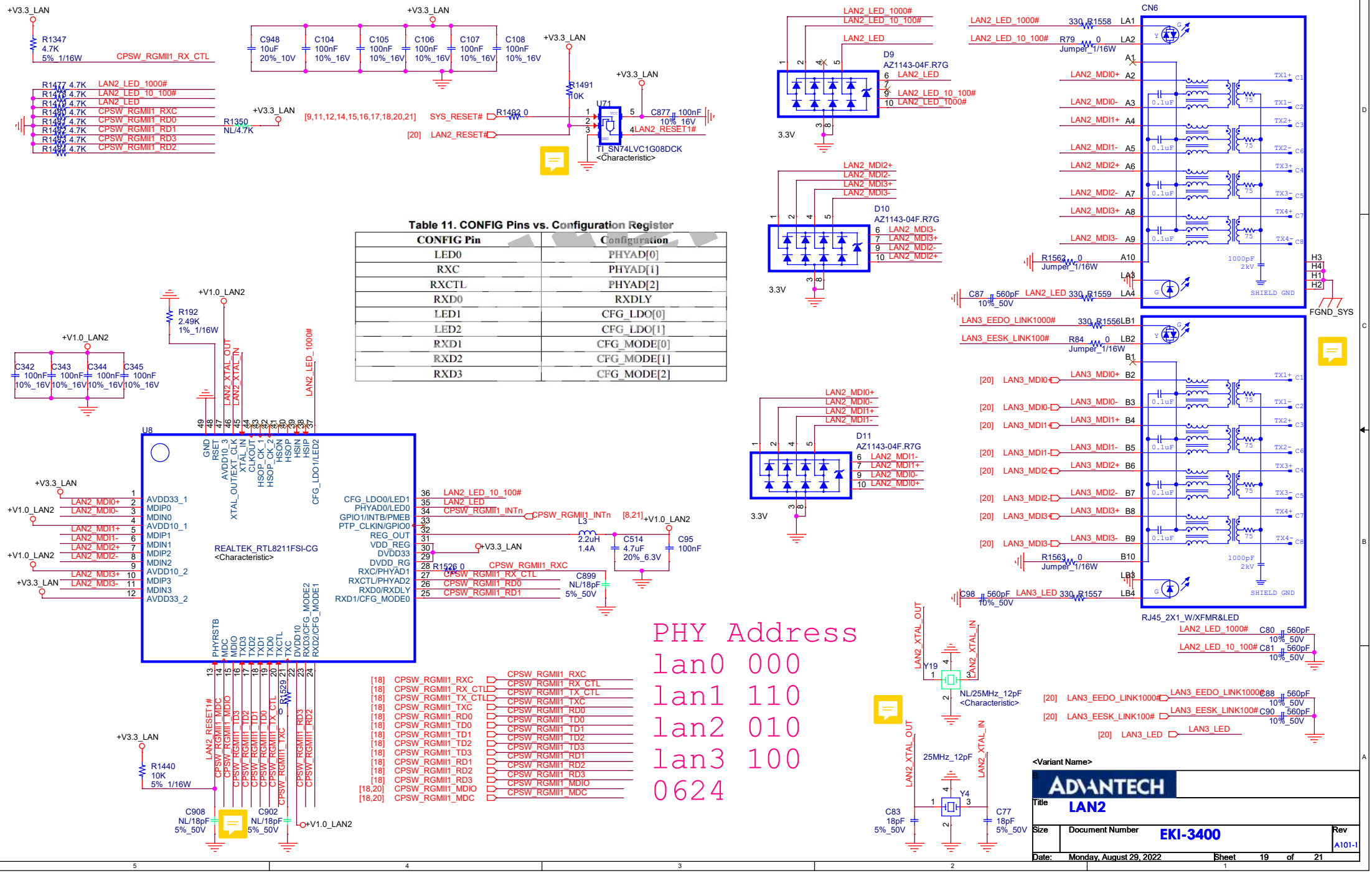
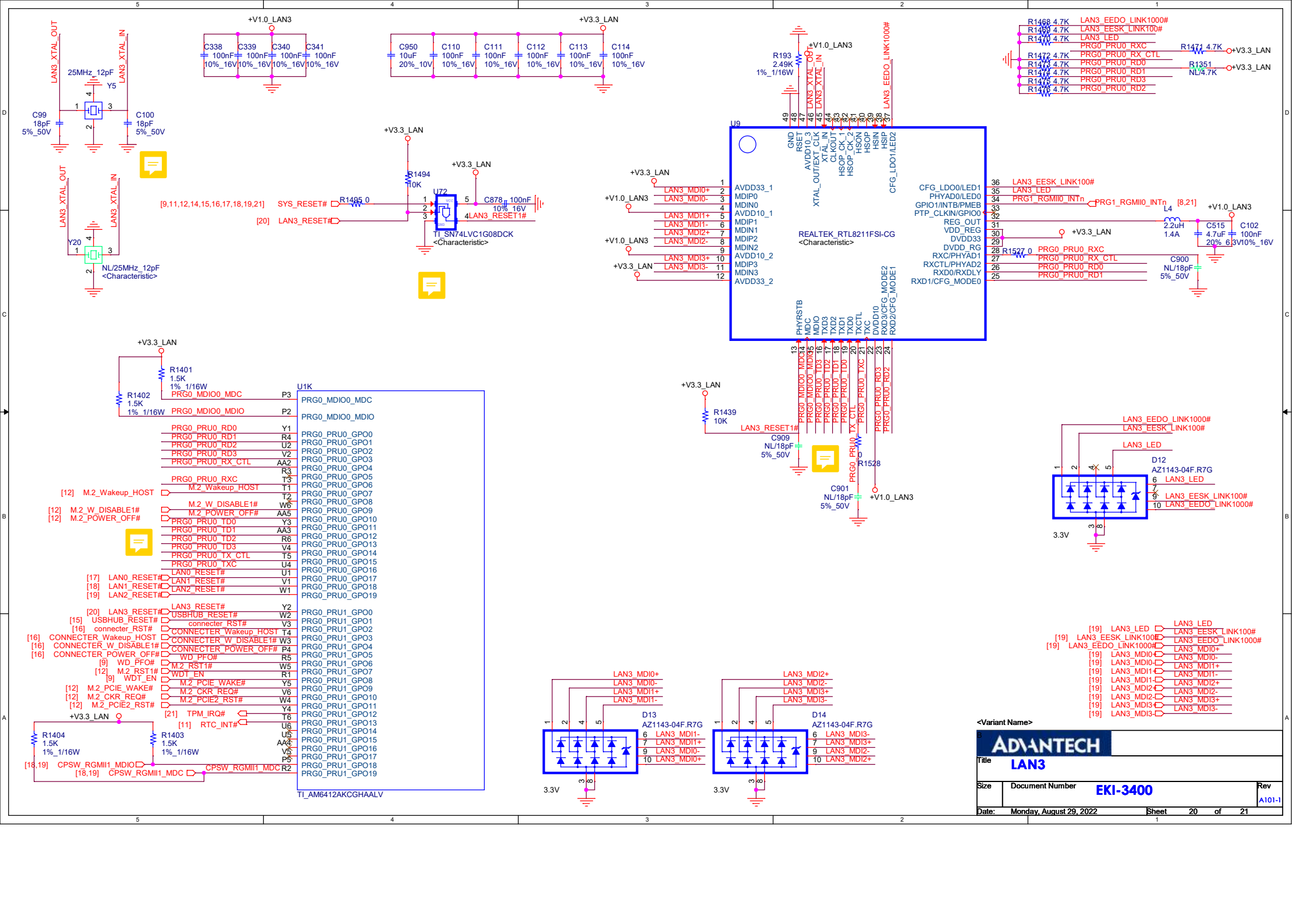


Table 11. CONFIG Pins vs. Configuration Register

CONFIG Pin	Configuration
LED0	PHYAD[0]
RXC	PHYAD[1]
RXCTL	PHYAD[2]
RXD0	RXDLY
LED1	CFG_LDO[0]
LED2	CFG_LDO[1]
RXD1	CFG_MODE[0]
RXD2	CFG_MODE[1]
RXD3	CFG_MODE[2]


LAN3_XTAL_OUT
LAN3_XTAL_IN
25MHz_12pF
Y5
C99 18pF 5%_50V
C100 18pF 5%_50V
Y20
NL/25MHz_12pF
<Characteristic>
+V1.0_LAN3
C338 100nF 10%_16V
C339 100nF 10%_16V
C340 100nF 10%_16V
C341 100nF 10%_16V
+V3.3_LAN
C950 10uF 20%_10V
C110 100nF 10%_16V
C111 100nF 10%_16V
C112 100nF 10%_16V
C113 100nF 10%_16V
C114 100nF 10%_16V
R1494 10K
U72
SYS_RESET#
R1495 0
LAN3_RESET#
C878 100nF 10%_16V
LAN3_RESET1#
TI_SN74LVC1G08DCK
<Characteristic>
R193 2.49K 1%_1/16W
LAN3_EEDO_LINK1000#
U9
REALTEK_RTL8211FSI-CG
<Characteristic>
R1468 4.7K
R1469 4.7K
R1470 4.7K
R1471 4.7K
R1472 4.7K
R1473 4.7K
R1474 4.7K
R1475 4.7K
LAN3_EESK_LINK100#
LAN3_LED
PRG0_PRU0_RXC
PRG0_PRU0_RX_CTL
PRG0_PRU0_RD0
PRG0_PRU0_RD1
PRG0_PRU0_RD3
PRG0_PRU0_RD2
R1351 NL/4.7K
L4 2.2uH 1.4A
C515 4.7uF 20%_6.3V
C102 100nF 10%_16V
C900 NL/18pF 5%_50V
R1527 0
PRG1_RGMII0_INTn
[8,21]
R1401 1.5K 1%_1/16W
R1402 1.5K 1%_1/16W
U1K
TI_AM6412AKCGHAALV
R1439 10K
C909 NL/18pF 5%_50V
R1528 0
C901 NL/18pF 5%_50V
D12
AZ1143-04F.R7G
D13
AZ1143-04F.R7G
D14
AZ1143-04F.R7G
3.3V
R1404 1.5K 1%_1/16W
R1403 1.5K 1%_1/16W
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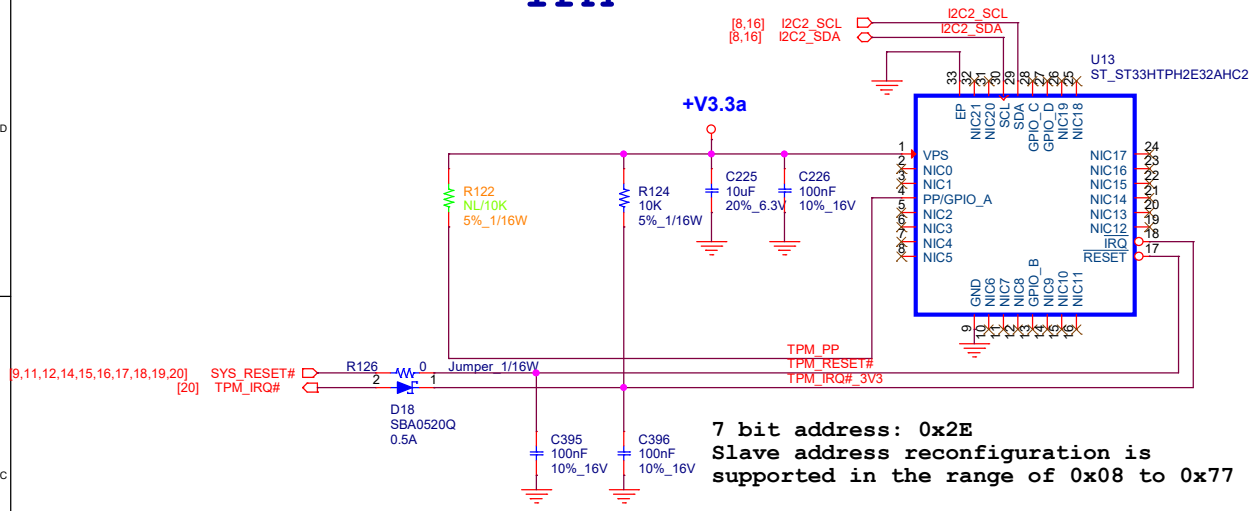
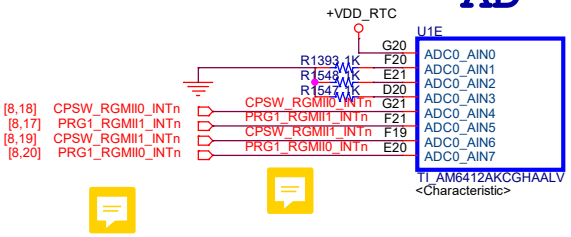
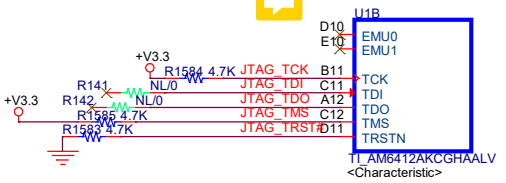


7 bit address: 0x2E
Slave address reconfiguration is supported in the range of 0x08 to 0x77

AD



JTAG



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