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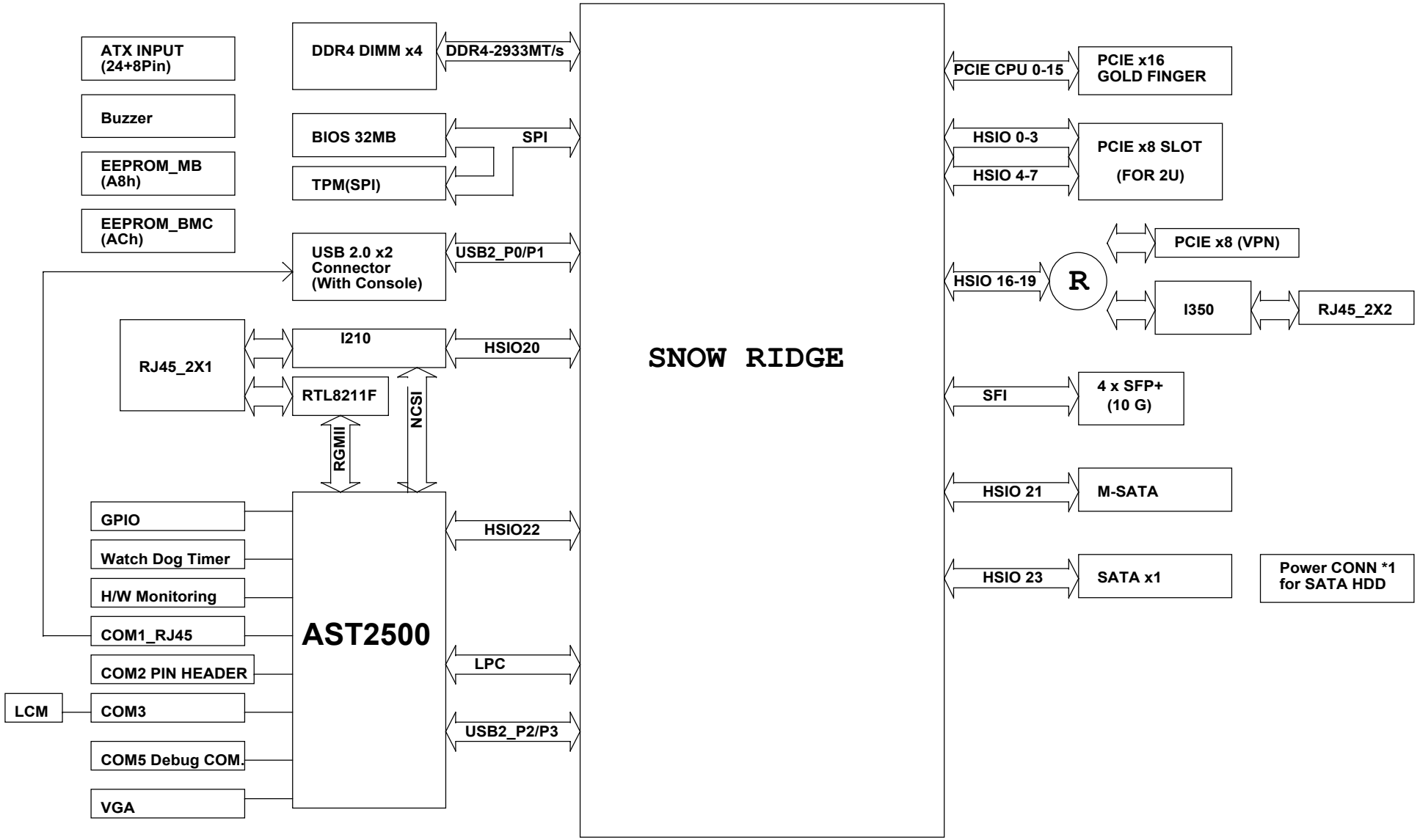
BLOCK DIAGRAM



AEWIN Technologies Co., Ltd.		
Title: BLOCK DIAGRAM		
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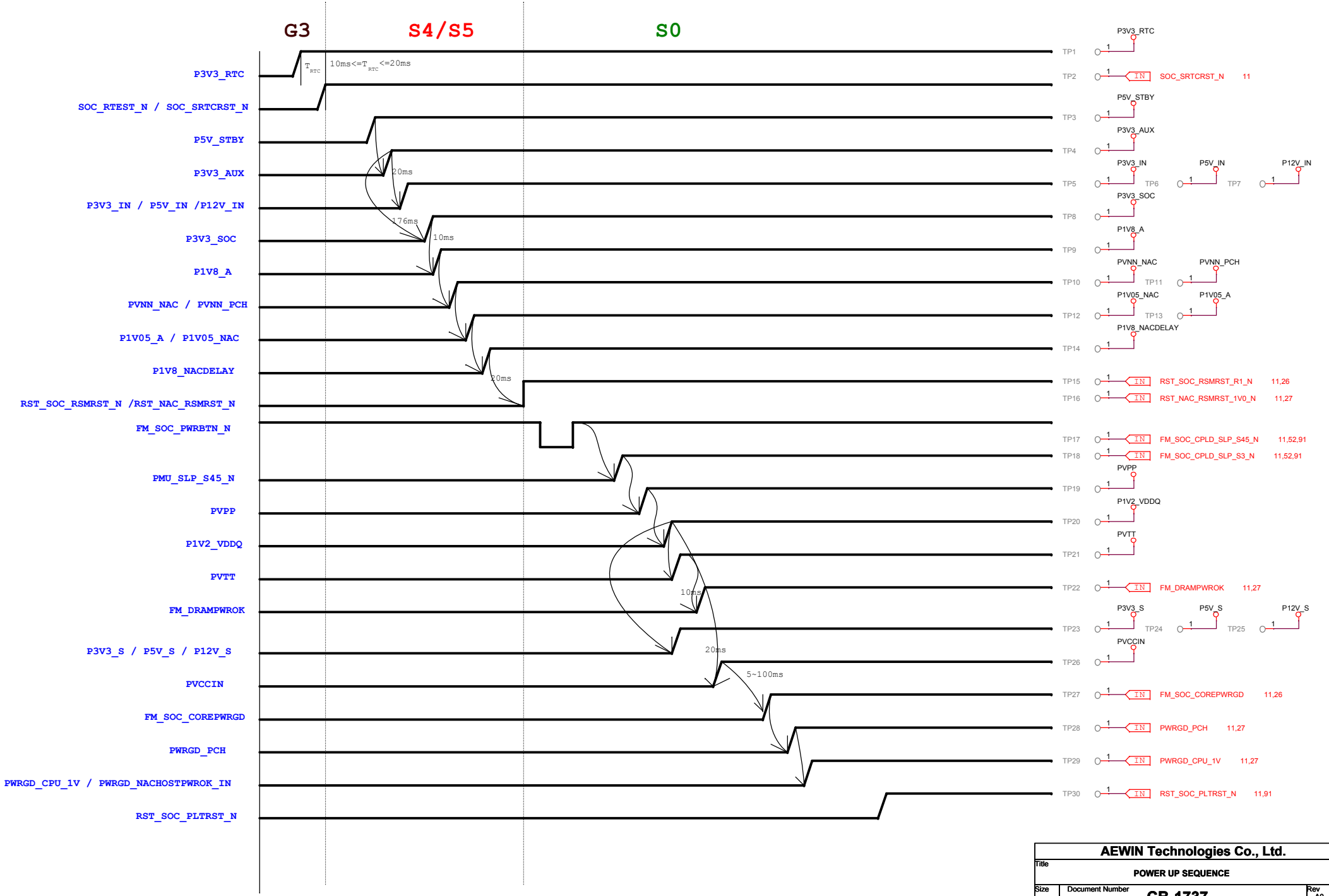
POWER UP TIMING (Non-Deep Sx Platform]



AEWIN Technologies Co., Ltd.		
Title: POWER UP SEQUENCE		
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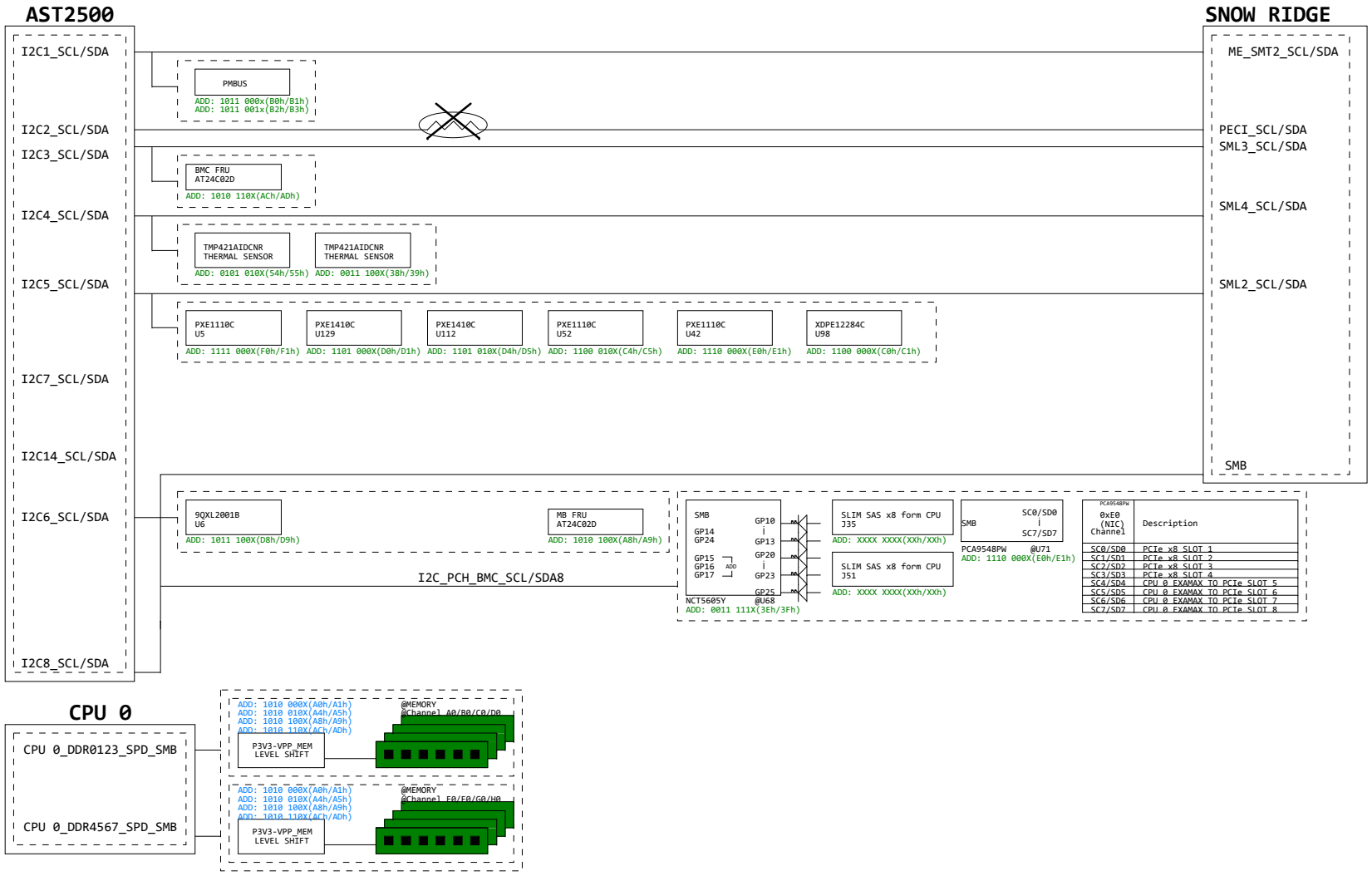
POWER NET	VOLTAGE(V)	POWER WELL	SOURCE	TYPE	Imax(A)	ACTIVE STATE	CONTROL	USAGE
P3V3_RTC	2.8-3.3	RTC	BATT/P3V3_AUX	BATT/DIODE		G3-S0		SOC, BMC
P5V_STBY	4.75-5.25	STANDBY	ATX PSU	ATX PSU	2	S5-S0	ATX PSU	P3V3_AUX
P3V3_AUX	3.1-3.46	STANDBY	P5V_STBY/P5V_IN	TPS568215	8	S5-S0	P5V_STBY	CPLD,P3V3_SOC,P2V5_BMC,P3V3_BMC_SPI RTL8211F, I210, BMC, EMMC, PCIE SLOT
P12V_IN	11.4-12.6	STANDBY	ATX PSU	ATX PSU		S5-S0	CPLD(PWRGD_P3V3_STBY)	PVNN_NAC,P1V05_NAC,VPP,P1V2_VDDQ,PVCCIN P12V_S
P5V_IN	4.75-5.25	STANDBY	ATX PSU	ATX PSU		S5-S0	CPLD(PWRGD_P3V3_STBY)	P3V3_AUX,P1V8_A,P5V_S,GPIO PORT
P3V3_IN	3.1-3.46	STANDBY	ATX PSU	ATX PSU		S5-S0	CPLD(PWRGD_P3V3_STBY)	P1V5_A, P3V3_S, SFP
P3V3_SOC	3.1-3.46	STANDBY	P3V3_AUX	PDC3960X	1	S5-S0	CPLD(PWRGD_P3V3_STBY +5ms Delay)	P3V3_SPI,EMMC, SOC
P1V8_A	1.7-1.9	STANDBY	P5V_IN	TLV62095	3.5	S5-S0	CPLD(PWRGD_P3V3_SOC)	P1V8_NACDELAY,P1V2_BMC,P1V15_BMC,EMMC,SOC
PVNN_NAC	SVID	STANDBY	P12V_IN	PXM1310CPM	51	S5-S0	CPLD((PWRGD_P1V8_A)	SOC
PVNN_PCH	SVID	STANDBY	P12V_IN	PXM1310CPM	7	S5-S0	CPLD((PWRGD_P1V8_A)	SOC
P1V05_NAC	SVID	STANDBY	P12V_IN	PXM1310CPM		S5-S0		



AEWIN Technologies Co., Ltd.			
Title: xx			
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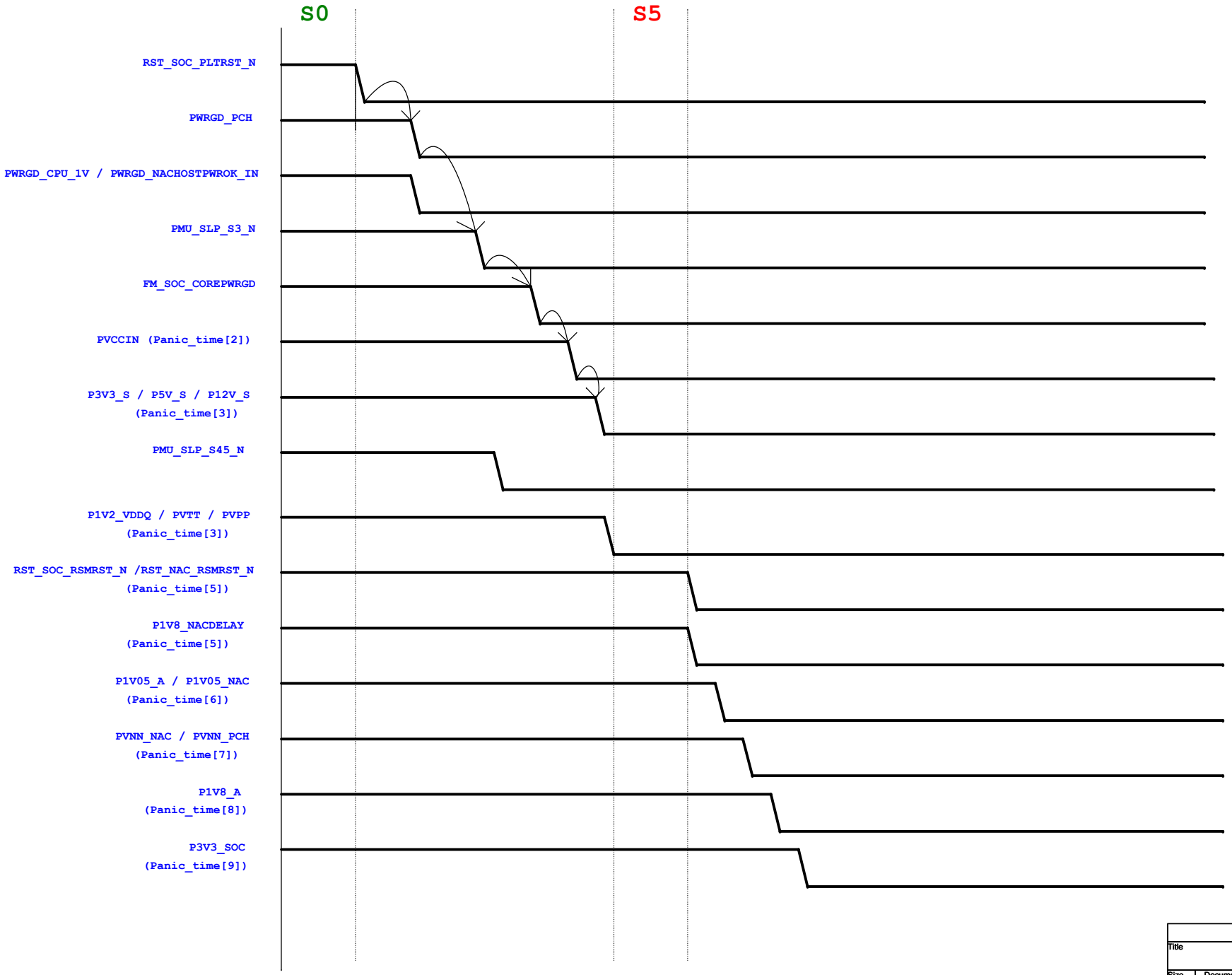
POWER DOWN SEQUENCE



AEWIN Technologies Co., Ltd.		
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AEWIN Technologies Co., Ltd.		
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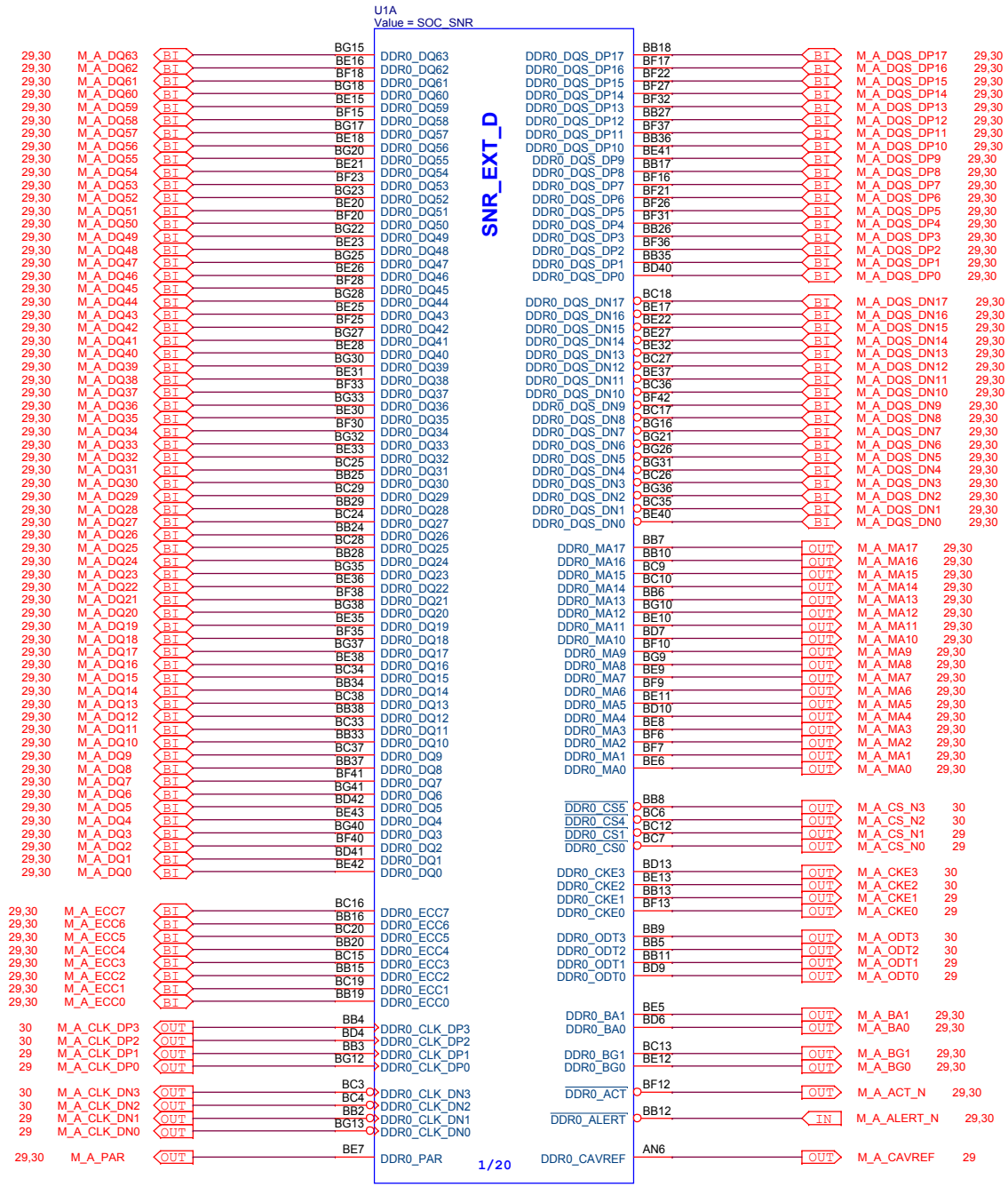

AEWIN Technologies Co., Ltd.		
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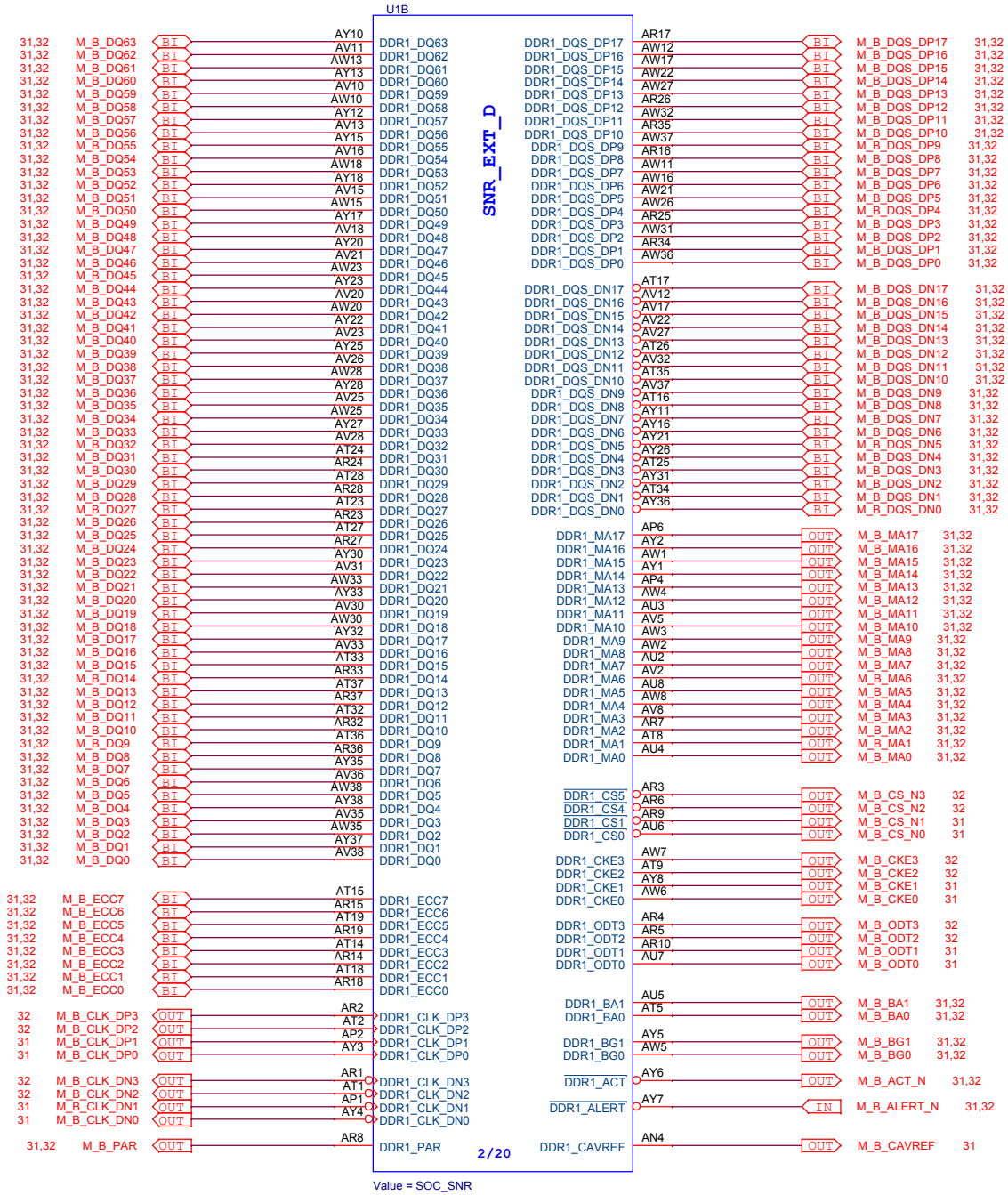
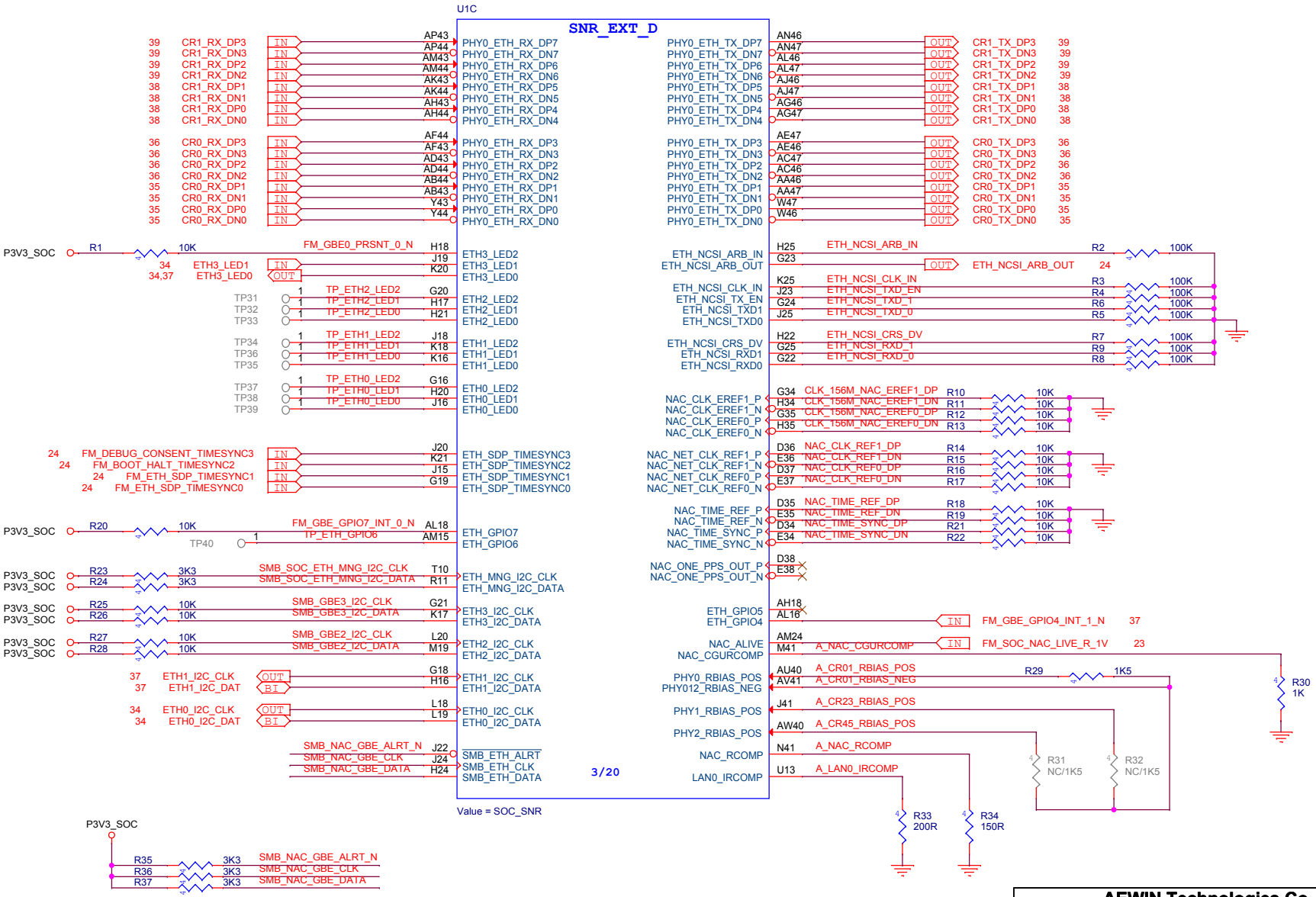

U1B
SNR_EXT_D
2/20
Value = SOC_SNR
DDR1_DQ63 DDR1_DQ62 DDR1_DQ61 DDR1_DQ60 DDR1_DQ59 DDR1_DQ58 DDR1_DQ57 DDR1_DQ56 DDR1_DQ55 DDR1_DQ54 DDR1_DQ53 DDR1_DQ52 DDR1_DQ51 DDR1_DQ50 DDR1_DQ49 DDR1_DQ48 DDR1_DQ47 DDR1_DQ46 DDR1_DQ45 DDR1_DQ44 DDR1_DQ43 DDR1_DQ42 DDR1_DQ41 DDR1_DQ40 DDR1_DQ39 DDR1_DQ38 DDR1_DQ37 DDR1_DQ36 DDR1_DQ35 DDR1_DQ34 DDR1_DQ33 DDR1_DQ32 DDR1_DQ31 DDR1_DQ30 DDR1_DQ29 DDR1_DQ28 DDR1_DQ27 DDR1_DQ26 DDR1_DQ25 DDR1_DQ24 DDR1_DQ23 DDR1_DQ22 DDR1_DQ21 DDR1_DQ20 DDR1_DQ19 DDR1_DQ18 DDR1_DQ17 DDR1_DQ16 DDR1_DQ15 DDR1_DQ14 DDR1_DQ13 DDR1_DQ12 DDR1_DQ11 DDR1_DQ10 DDR1_DQ9 DDR1_DQ8 DDR1_DQ7 DDR1_DQ6 DDR1_DQ5 DDR1_DQ4 DDR1_DQ3 DDR1_DQ2 DDR1_DQ1 DDR1_DQ0
DDR1_ECC7 DDR1_ECC6 DDR1_ECC5 DDR1_ECC4 DDR1_ECC3 DDR1_ECC2 DDR1_ECC1 DDR1_ECC0
DDR1_CLK_DP3 DDR1_CLK_DP2 DDR1_CLK_DP1 DDR1_CLK_DP0
DDR1_CLK_DN3 DDR1_CLK_DN2 DDR1_CLK_DN1 DDR1_CLK_DN0
DDR1_PAR
DDR1_DQS_DP17 DDR1_DQS_DP16 DDR1_DQS_DP15 DDR1_DQS_DP14 DDR1_DQS_DP13 DDR1_DQS_DP12 DDR1_DQS_DP11 DDR1_DQS_DP10 DDR1_DQS_DP9 DDR1_DQS_DP8 DDR1_DQS_DP7 DDR1_DQS_DP6 DDR1_DQS_DP5 DDR1_DQS_DP4 DDR1_DQS_DP3 DDR1_DQS_DP2 DDR1_DQS_DP1 DDR1_DQS_DP0
DDR1_DQS_DN17 DDR1_DQS_DN16 DDR1_DQS_DN15 DDR1_DQS_DN14 DDR1_DQS_DN13 DDR1_DQS_DN12 DDR1_DQS_DN11 DDR1_DQS_DN10 DDR1_DQS_DN9 DDR1_DQS_DN8 DDR1_DQS_DN7 DDR1_DQS_DN6 DDR1_DQS_DN5 DDR1_DQS_DN4 DDR1_DQS_DN3 DDR1_DQS_DN2 DDR1_DQS_DN1 DDR1_DQS_DN0
DDR1_MA17 DDR1_MA16 DDR1_MA15 DDR1_MA14 DDR1_MA13 DDR1_MA12 DDR1_MA11 DDR1_MA10 DDR1_MA9 DDR1_MA8 DDR1_MA7 DDR1_MA6 DDR1_MA5 DDR1_MA4 DDR1_MA3 DDR1_MA2 DDR1_MA1 DDR1_MA0
DDR1_CS5 DDR1_CS4 DDR1_CS1 DDR1_CS0
DDR1_CKE3 DDR1_CKE2 DDR1_CKE1 DDR1_CKE0
DDR1_ODT3 DDR1_ODT2 DDR1_ODT1 DDR1_ODT0
DDR1_BA1 DDR1_BA0
DDR1_BG1 DDR1_BG0
DDR1_ACT
DDR1_ALERT
DDR1_CAVREF

| | | |


U1C
SNR_EXT_D
3/20
Value = SOC_SNR
PHY0_ETH_RX_DP7
PHY0_ETH_RX_DN7
PHY0_ETH_RX_DP6
PHY0_ETH_RX_DN6
PHY0_ETH_RX_DP5
PHY0_ETH_RX_DN5
PHY0_ETH_RX_DP4
PHY0_ETH_RX_DN4
PHY0_ETH_RX_DP3
PHY0_ETH_RX_DN3
PHY0_ETH_RX_DP2
PHY0_ETH_RX_DN2
PHY0_ETH_RX_DP1
PHY0_ETH_RX_DN1
PHY0_ETH_RX_DP0
PHY0_ETH_RX_DN0
PHY0_ETH_TX_DP7
PHY0_ETH_TX_DN7
PHY0_ETH_TX_DP6
PHY0_ETH_TX_DN6
PHY0_ETH_TX_DP5
PHY0_ETH_TX_DN5
PHY0_ETH_TX_DP4
PHY0_ETH_TX_DN4
PHY0_ETH_TX_DP3
PHY0_ETH_TX_DN3
PHY0_ETH_TX_DP2
PHY0_ETH_TX_DN2
PHY0_ETH_TX_DP1
PHY0_ETH_TX_DN1
PHY0_ETH_TX_DP0
PHY0_ETH_TX_DN0
CR1_RX_DP3
CR1_RX_DN3
CR1_RX_DP2
CR1_RX_DN2
CR1_RX_DP1
CR1_RX_DN1
CR1_RX_DP0
CR1_RX_DN0
CR0_RX_DP3
CR0_RX_DN3
CR0_RX_DP2
CR0_RX_DN2
CR0_RX_DP1
CR0_RX_DN1
CR0_RX_DP0
CR0_RX_DN0
CR1_TX_DP3
CR1_TX_DN3
CR1_TX_DP2
CR1_TX_DN2
CR1_TX_DP1
CR1_TX_DN1
CR1_TX_DP0
CR1_TX_DN0
CR0_TX_DP3
CR0_TX_DN3
CR0_TX_DP2
CR0_TX_DN2
CR0_TX_DP1
CR0_TX_DN1
CR0_TX_DP0
CR0_TX_DN0
P3V3_SOC
R1
10K
FM_GBE0_PRSNT_0_N
ETH3_LED1
ETH3_LED0
ETH3_LED2
ETH3_LED1
ETH3_LED0
TP31
TP32
TP33
TP_ETH2_LED2
TP_ETH2_LED1
TP_ETH2_LED0
ETH2_LED2
ETH2_LED1
ETH2_LED0
TP34
TP36
TP35
TP_ETH1_LED2
TP_ETH1_LED1
TP_ETH1_LED0
ETH1_LED2
ETH1_LED1
ETH1_LED0
TP37
TP38
TP39
TP_ETH0_LED2
TP_ETH0_LED1
TP_ETH0_LED0
ETH0_LED2
ETH0_LED1
ETH0_LED0
FM_DEBUG_CONSENT_TIMESYNC3
FM_BOOT_HALT_TIMESYNC2
FM_ETH_SDP_TIMESYNC1
FM_ETH_SDP_TIMESYNC0
ETH_SDP_TIMESYNC3
ETH_SDP_TIMESYNC2
ETH_SDP_TIMESYNC1
ETH_SDP_TIMESYNC0
R20
FM_GBE_GPIO7_INT_0_N
TP_ETH_GPIO6
TP40
ETH_GPIO7
ETH_GPIO6
R23
R24
3K3
SMB_SOC_ETH_MNG_I2C_CLK
SMB_SOC_ETH_MNG_I2C_DATA
ETH_MNG_I2C_CLK
ETH_MNG_I2C_DATA
R25
R26
SMB_GBE3_I2C_CLK
SMB_GBE3_I2C_DATA
ETH3_I2C_CLK
ETH3_I2C_DATA
R27
R28
SMB_GBE2_I2C_CLK
SMB_GBE2_I2C_DATA
ETH2_I2C_CLK
ETH2_I2C_DATA
ETH1_I2C_CLK
ETH1_I2C_DAT
ETH1_I2C_CLK
ETH1_I2C_DATA
ETH0_I2C_CLK
ETH0_I2C_DAT
ETH0_I2C_CLK
ETH0_I2C_DATA
SMB_NAC_GBE_ALRT_N
SMB_NAC_GBE_CLK
SMB_NAC_GBE_DATA
SMB_ETH_ALRT
SMB_ETH_CLK
SMB_ETH_DATA
ETH_NCSI_ARB_IN
ETH_NCSI_ARB_OUT
ETH_NCSI_CLK_IN
ETH_NCSI_TX_EN
ETH_NCSI_TXD1
ETH_NCSI_TXD0
ETH_NCSI_CRS_DV
ETH_NCSI_RXD1
ETH_NCSI_RXD0
R2
R3
R4
R6
R5
R7
R9
R8
100K
NAC_CLK_EREF1_P
NAC_CLK_EREF1_N
NAC_CLK_EREF0_P
NAC_CLK_EREF0_N
CLK_156M_NAC_EREF1_DP
CLK_156M_NAC_EREF1_DN
CLK_156M_NAC_EREF0_DP
CLK_156M_NAC_EREF0_DN
R10
R11
R12
R13
10K
NAC_NET_CLK_REF1_P
NAC_NET_CLK_REF1_N
NAC_NET_CLK_REF0_P
NAC_NET_CLK_REF0_N
NAC_CLK_REF1_DP
NAC_CLK_REF1_DN
NAC_CLK_REF0_DP
NAC_CLK_REF0_DN
R14
R15
R16
R17
NAC_TIME_REF_P
NAC_TIME_REF_N
NAC_TIME_SYNC_P
NAC_TIME_SYNC_N
NAC_TIME_REF_DP
NAC_TIME_REF_DN
NAC_TIME_SYNC_DP
NAC_TIME_SYNC_DN
R18
R19
R21
R22
NAC_ONE_PPS_OUT_P
NAC_ONE_PPS_OUT_N
ETH_GPIO5
ETH_GPIO4
FM_GBE_GPIO4_INT_1_N
NAC_ALIVE
NAC_CGURCOMP
A_NAC_CGURCOMP
FM_SOC_NAC_LIVE_R_1V
PHY0_RBIAS_POS
PHY012_RBIAS_NEG
A_CR01_RBIAS_POS
A_CR01_RBIAS_NEG
R29
1K5
R30
1K
PHY1_RBIAS_POS
A_CR23_RBIAS_POS
PHY2_RBIAS_POS
A_CR45_RBIAS_POS
NAC_RCOMP
A_NAC_RCOMP
R31
NC/1K5
R32
NC/1K5
LAN0_IRCOMP
A_LAN0_IRCOMP
R33
200R
R34
150R
R35
R36
R37
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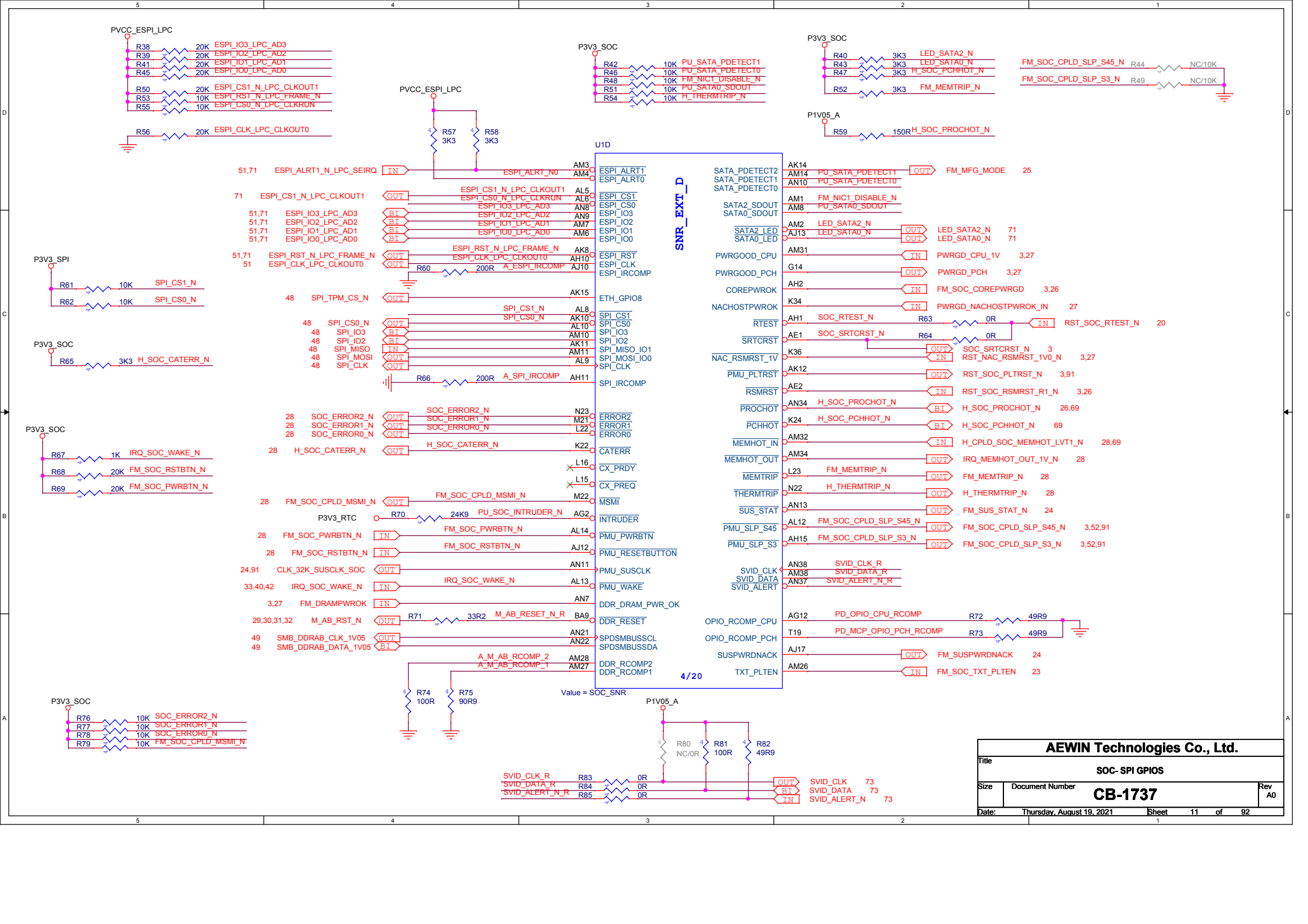

AEWIN Technologies Co., Ltd.		
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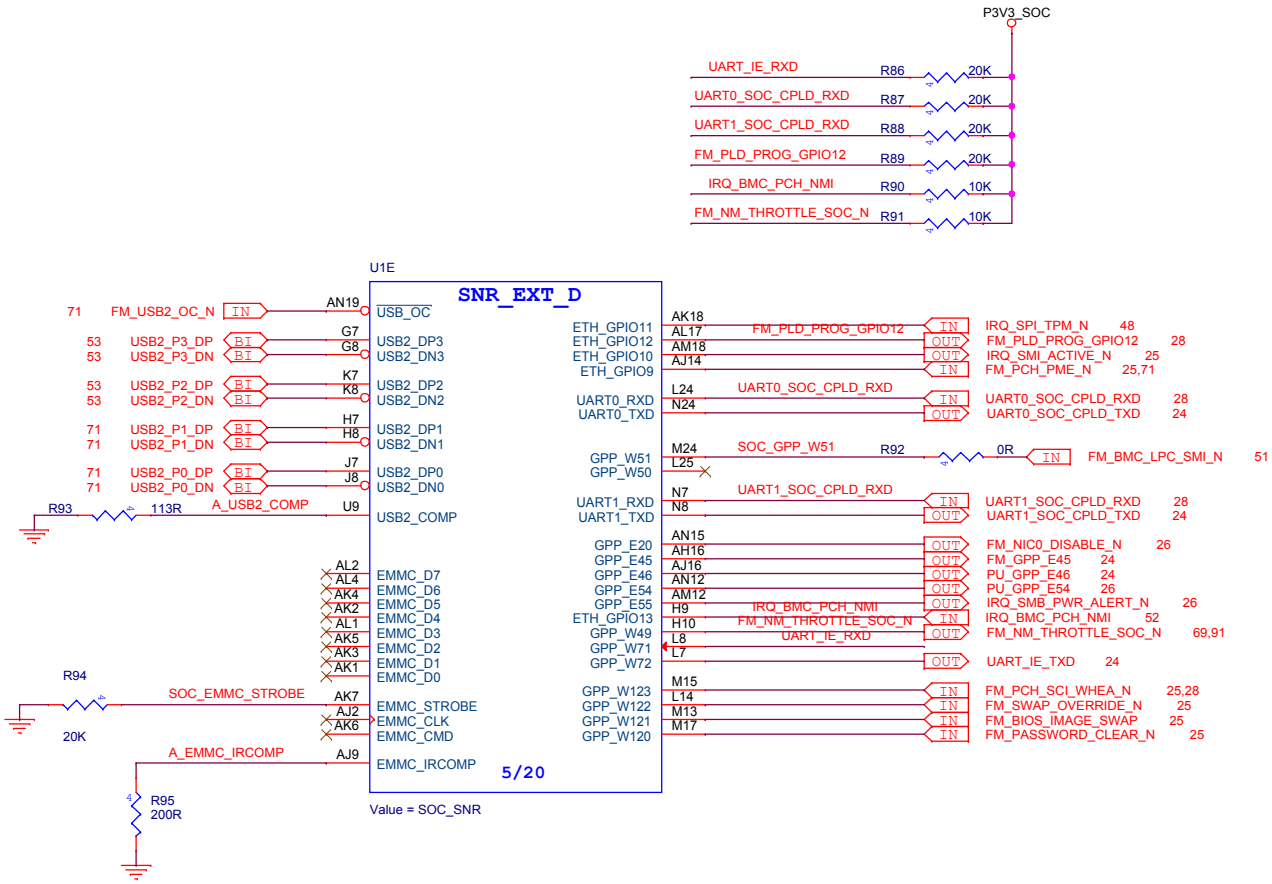

AEWIN Technologies Co., Ltd.		
Title: SOC-EMMC USB2 GPIOS		
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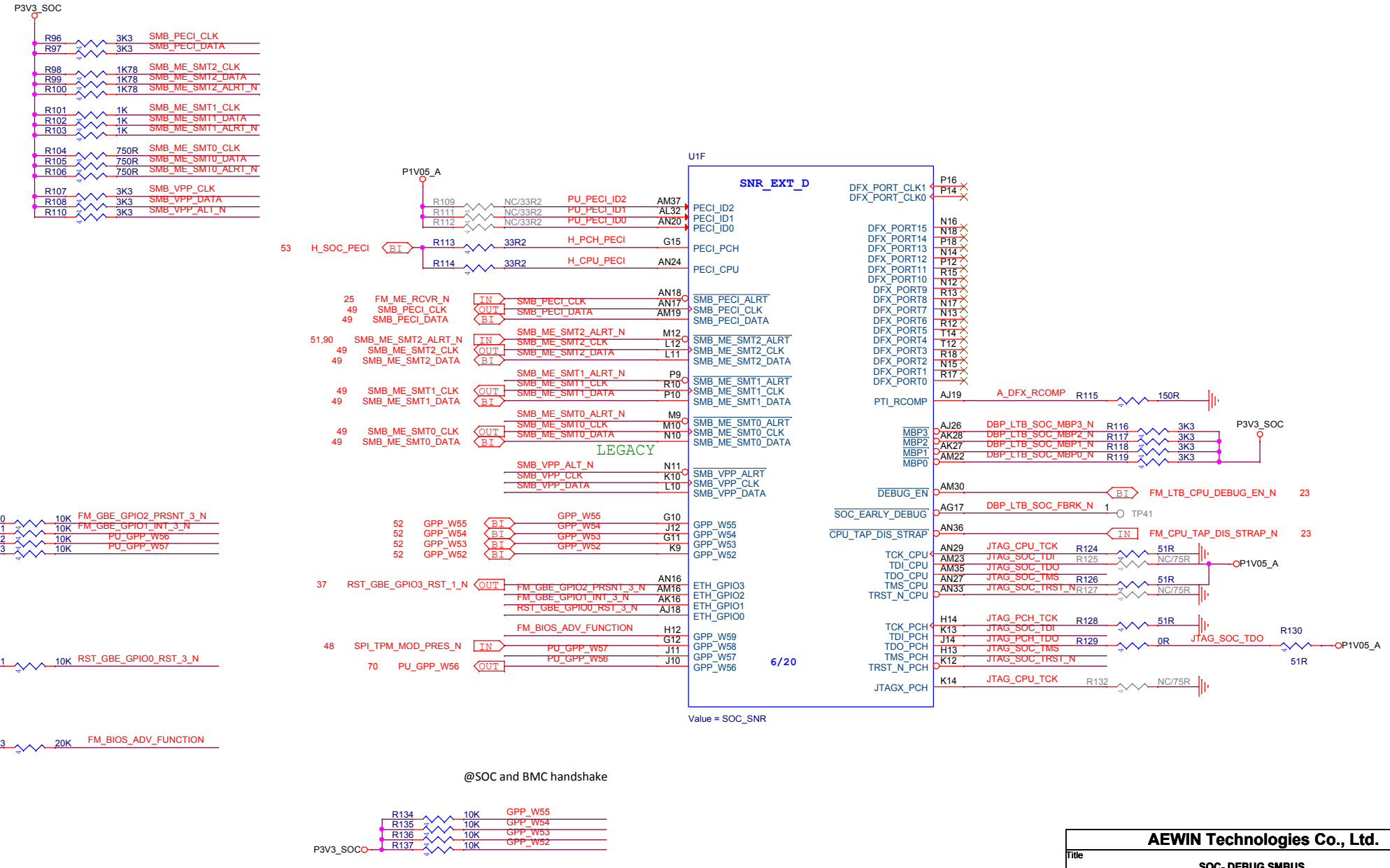

AEWIN Technologies Co., Ltd.			
Title: SOC- DEBUG SMBUS			
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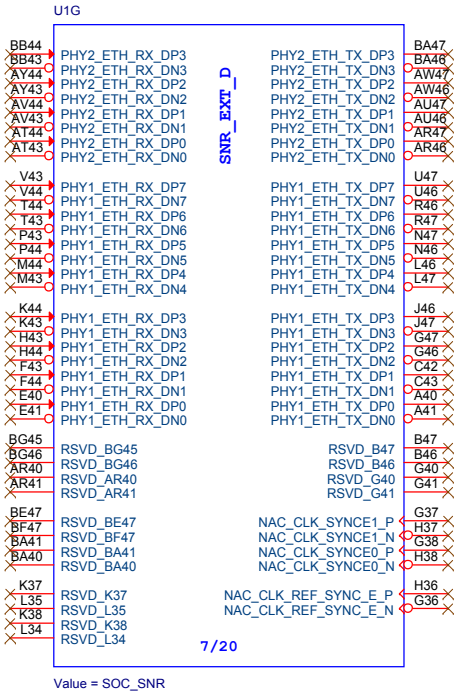

AEWIN Technologies Co., Ltd.		
Title: **SOC- RSVD**		
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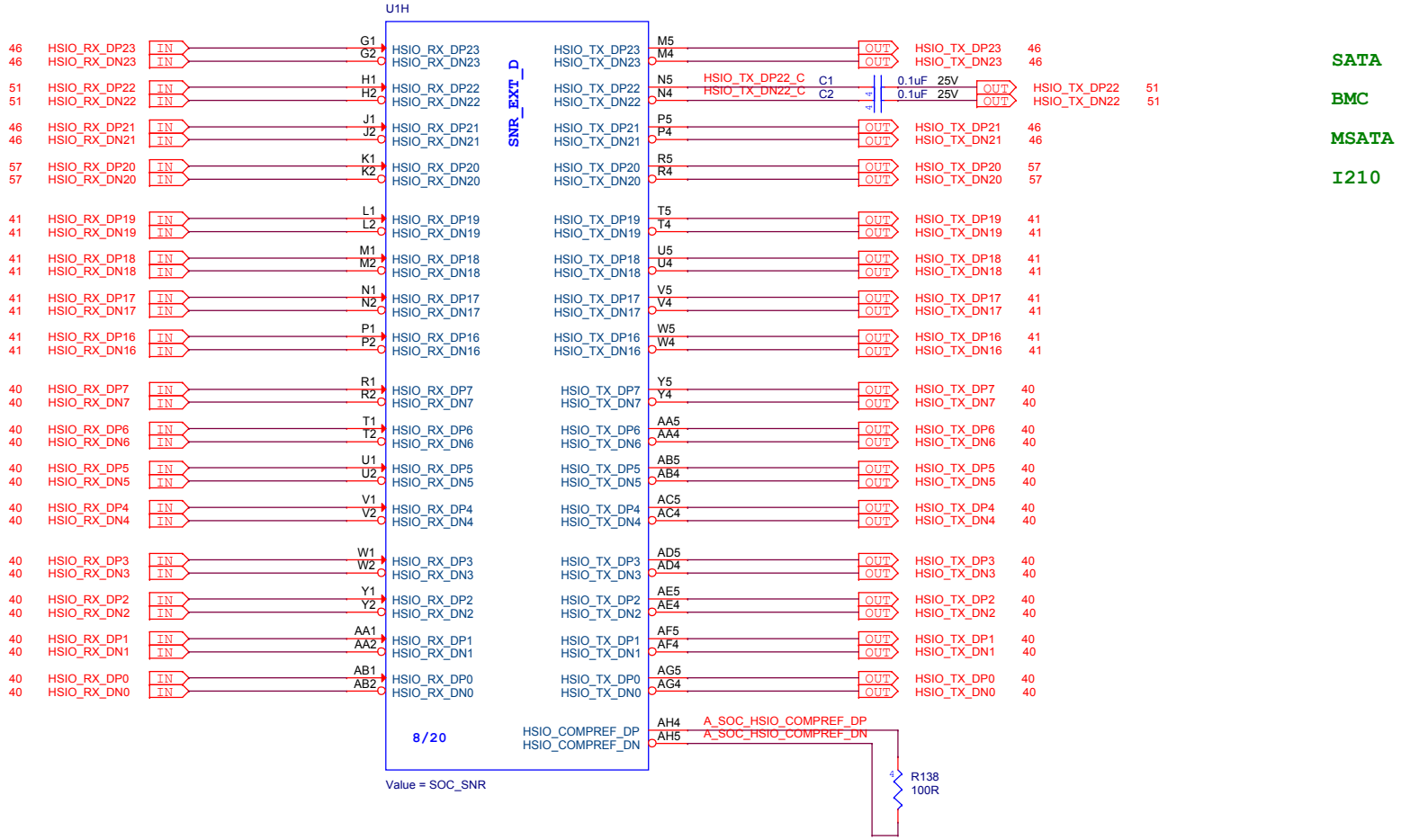

AEWIN Technologies Co., Ltd.			
Title: SOC- HSIO			
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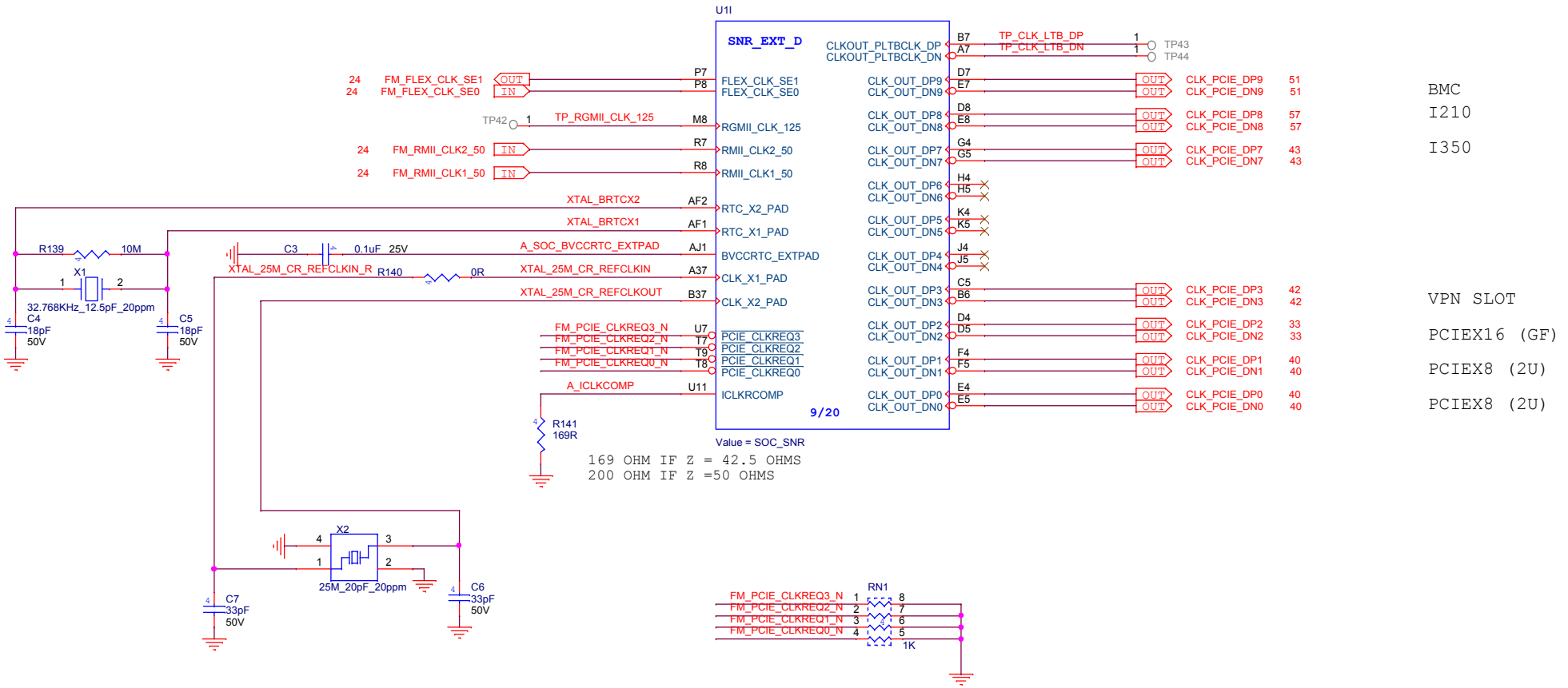

Company	AEWIN Technologies Co., Ltd.
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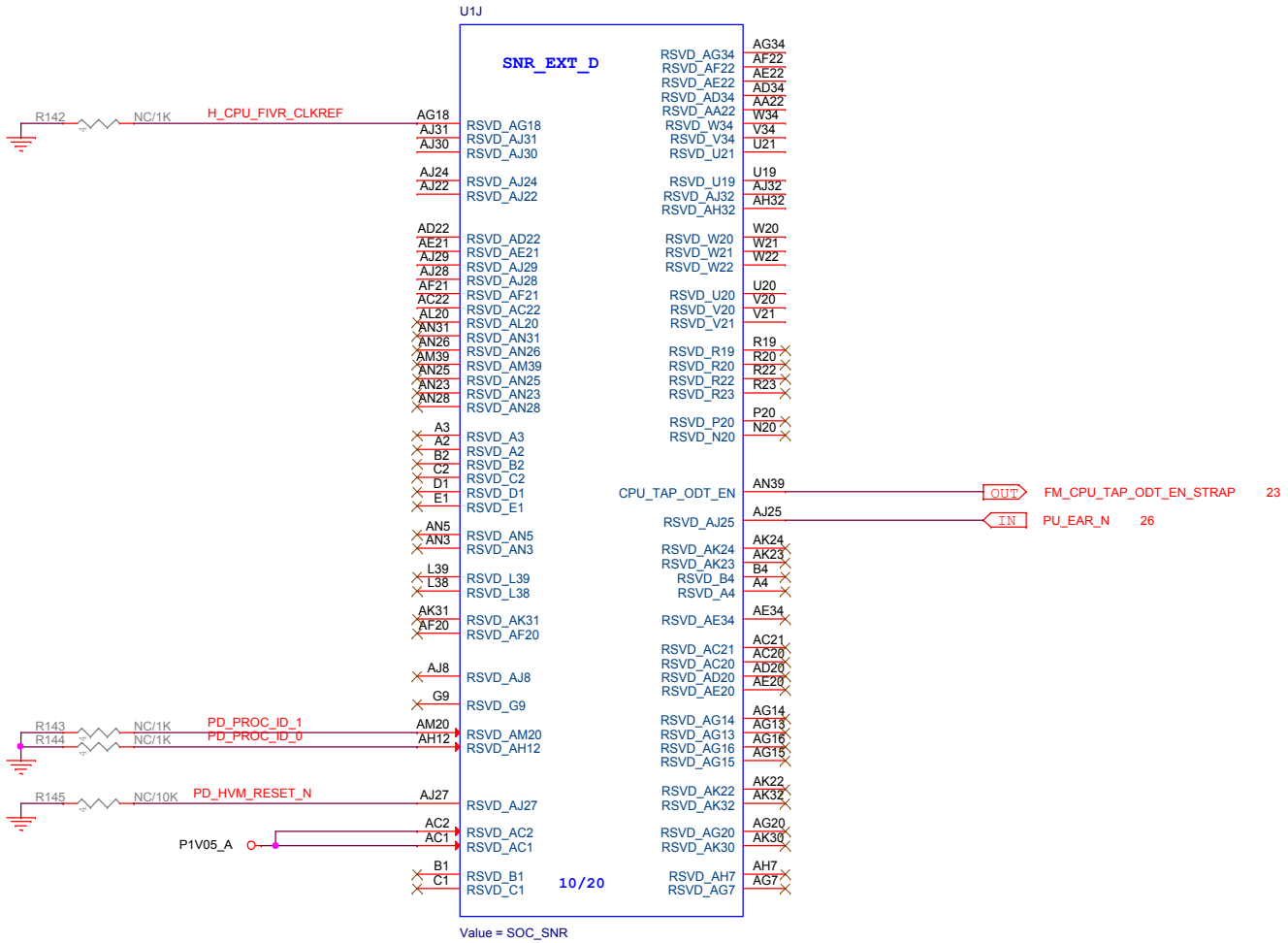

AEWIN Technologies Co., Ltd.	
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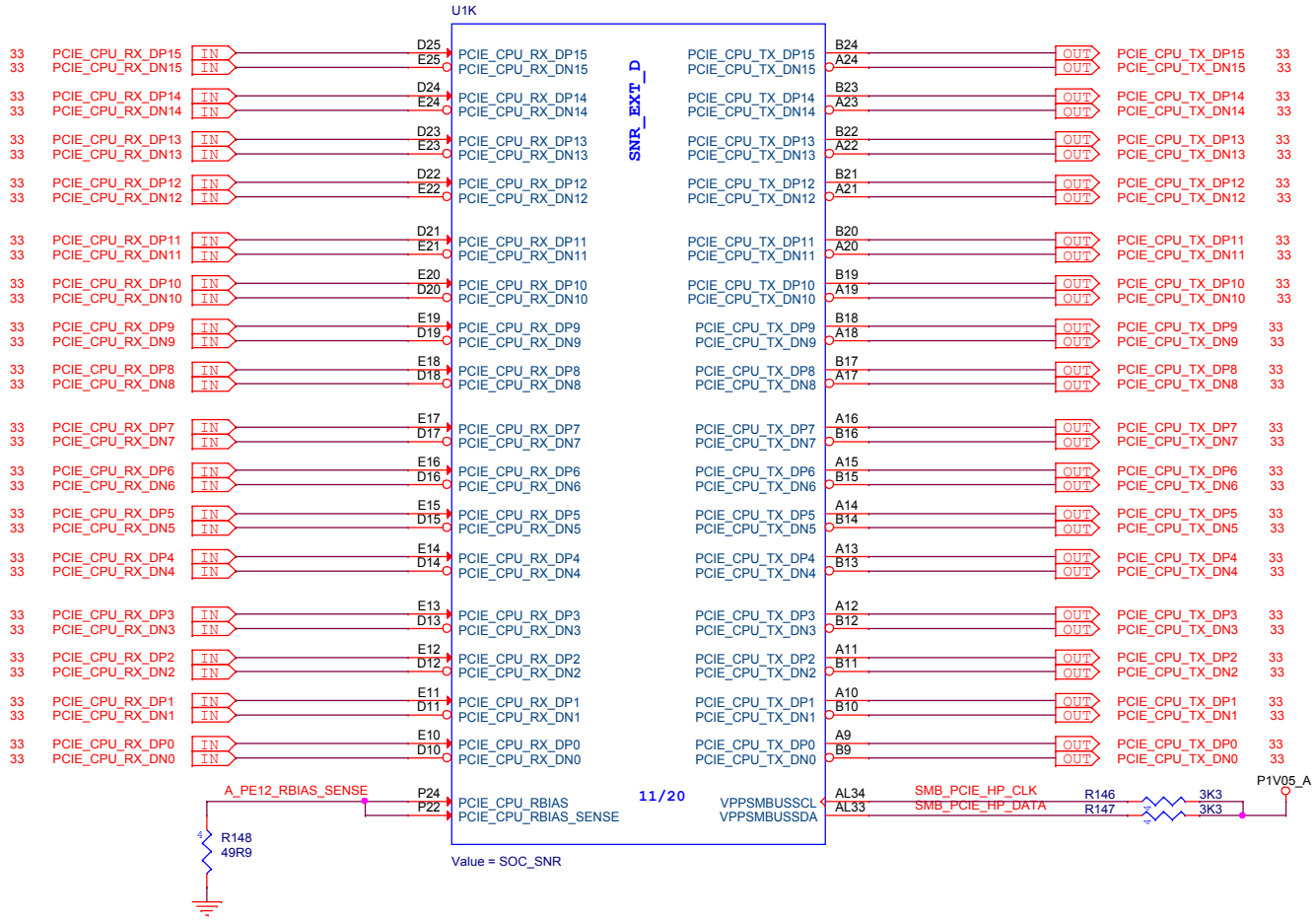

AEWIN Technologies Co., Ltd.			
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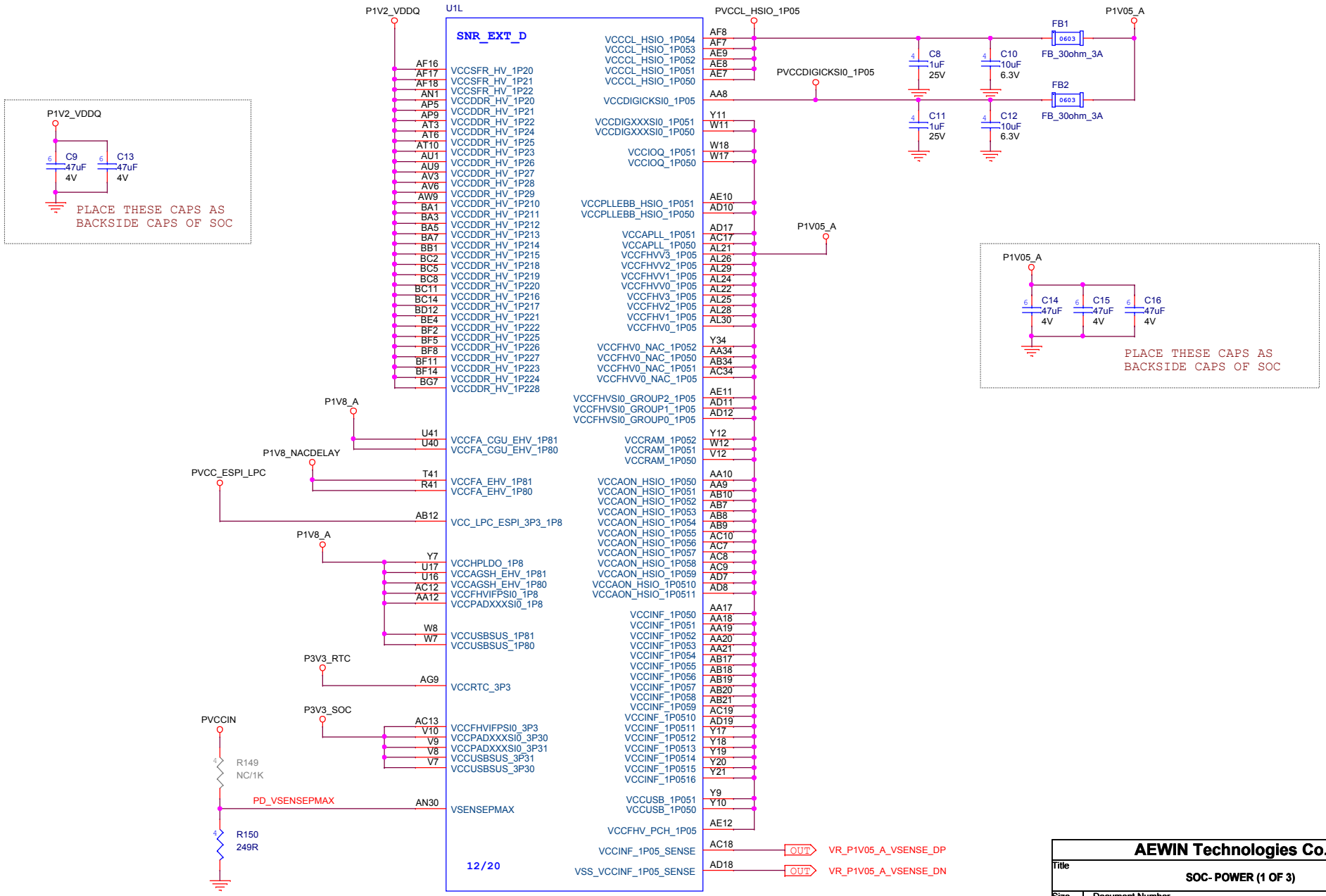

AEWIN Technologies Co., Ltd.			
Title: SOC- POWER (1 OF 3)			
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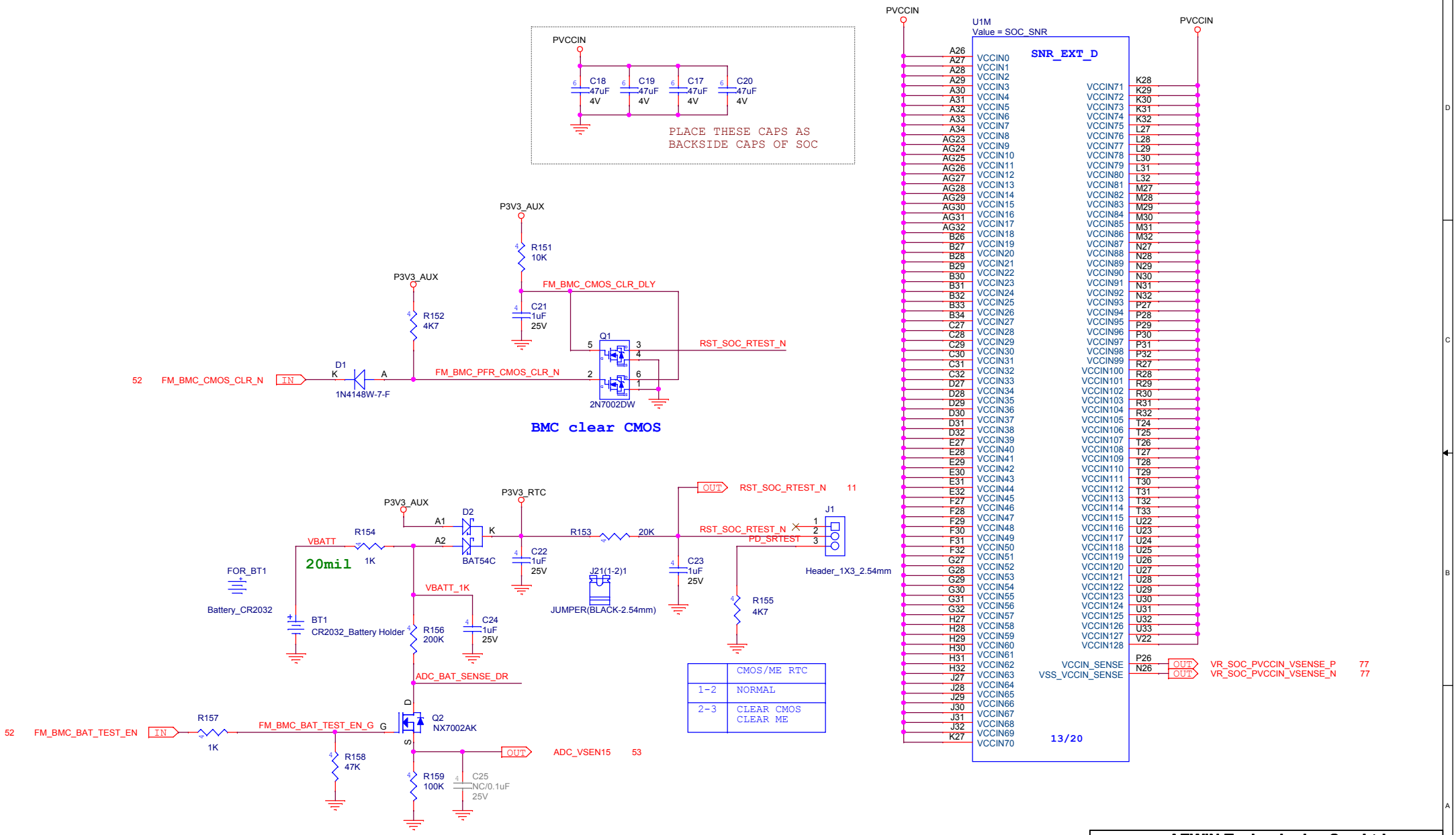

Title	SOC- POWER (2 OF 3)
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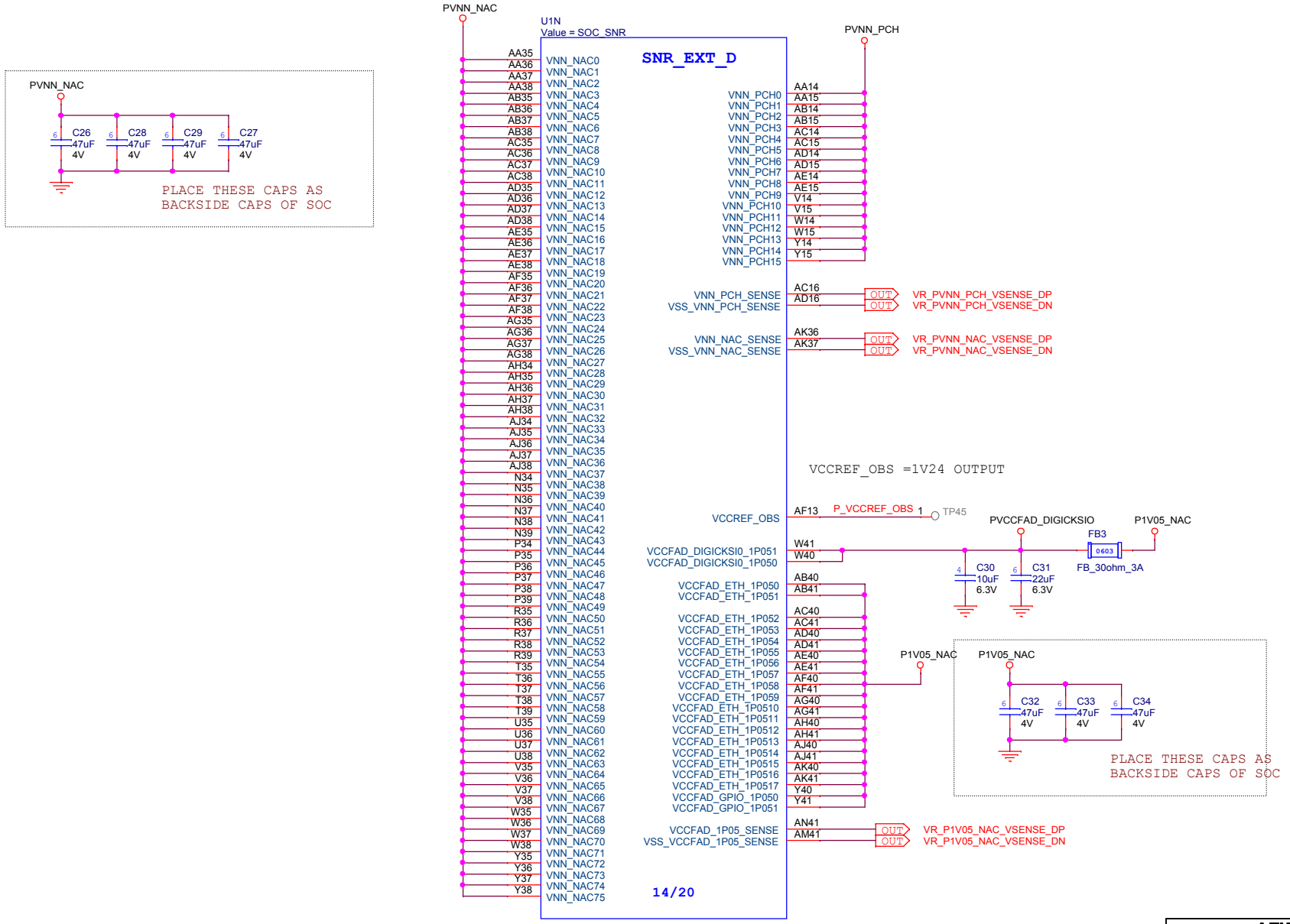
AEWIN Technologies Co., Ltd.



AEWIN Technologies Co., Ltd.			
Title: SOC- POWER (3 OF 3)			
Size	Document Number: CB-1737		Rev: A0
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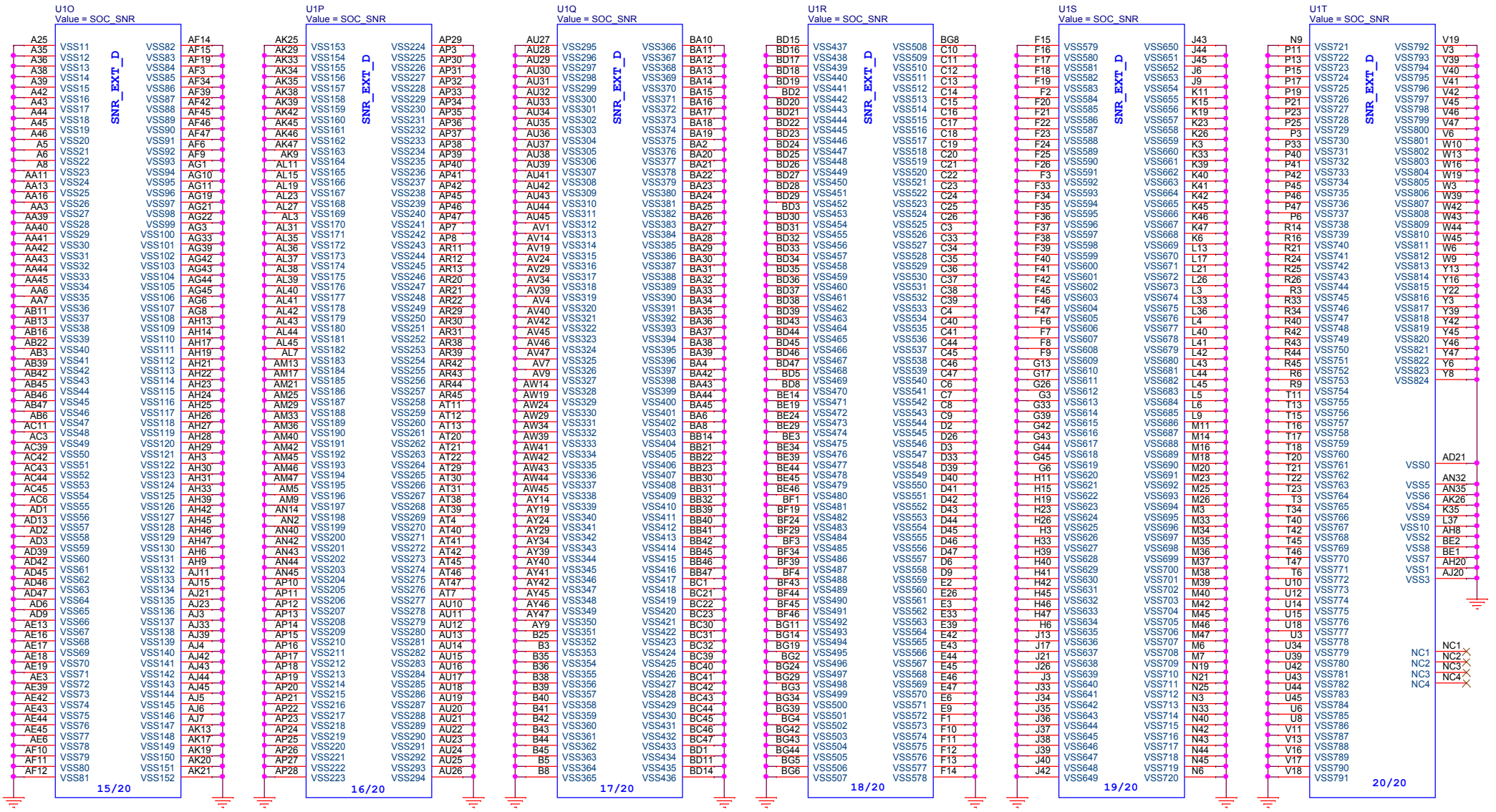

AEWIN Technologies Co., Ltd.	
Title	SOC- GND
Size	Document Number: CB-1737 — Rev: A0
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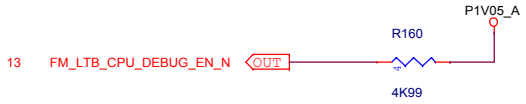
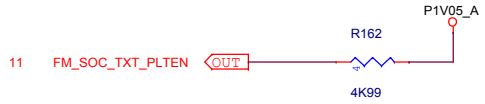
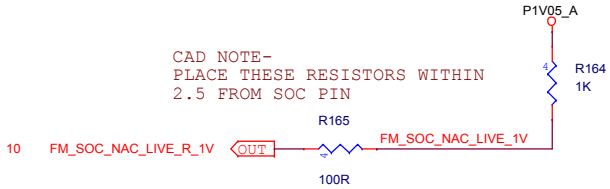


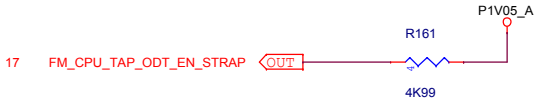
DEBUG ENABLE
0: DEBUG ENABLE.
1: DEBUG DISABLE (DEFAULT)



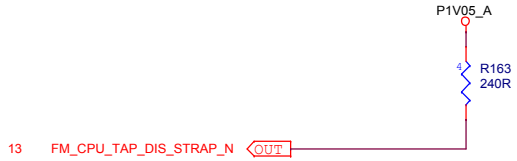
INTEL TXT ENABLE
0: TXT DISABLE
1: TXT ENABLE (DEFAULT)



NAC ALIVE
0: NAC NOT ALIVE.
1: NAC ALIVE ENABLE.(DEFAULT)



CPU_TAP_ODT_DIS_STRAP_N (ENABLE ON DIE TERMINATION)
0: DISABLE CPU JTAG TAP
1: ENABLE (DEFAULT)



CPU_TAP_DIS_STRAP_N
0: DISABLE CPU JTAG TAP
1: ENABLE CPU JTAG TAP (DEFAULT)

AEWIN Technologies Co., Ltd.		
Title: CPU STRAPS		
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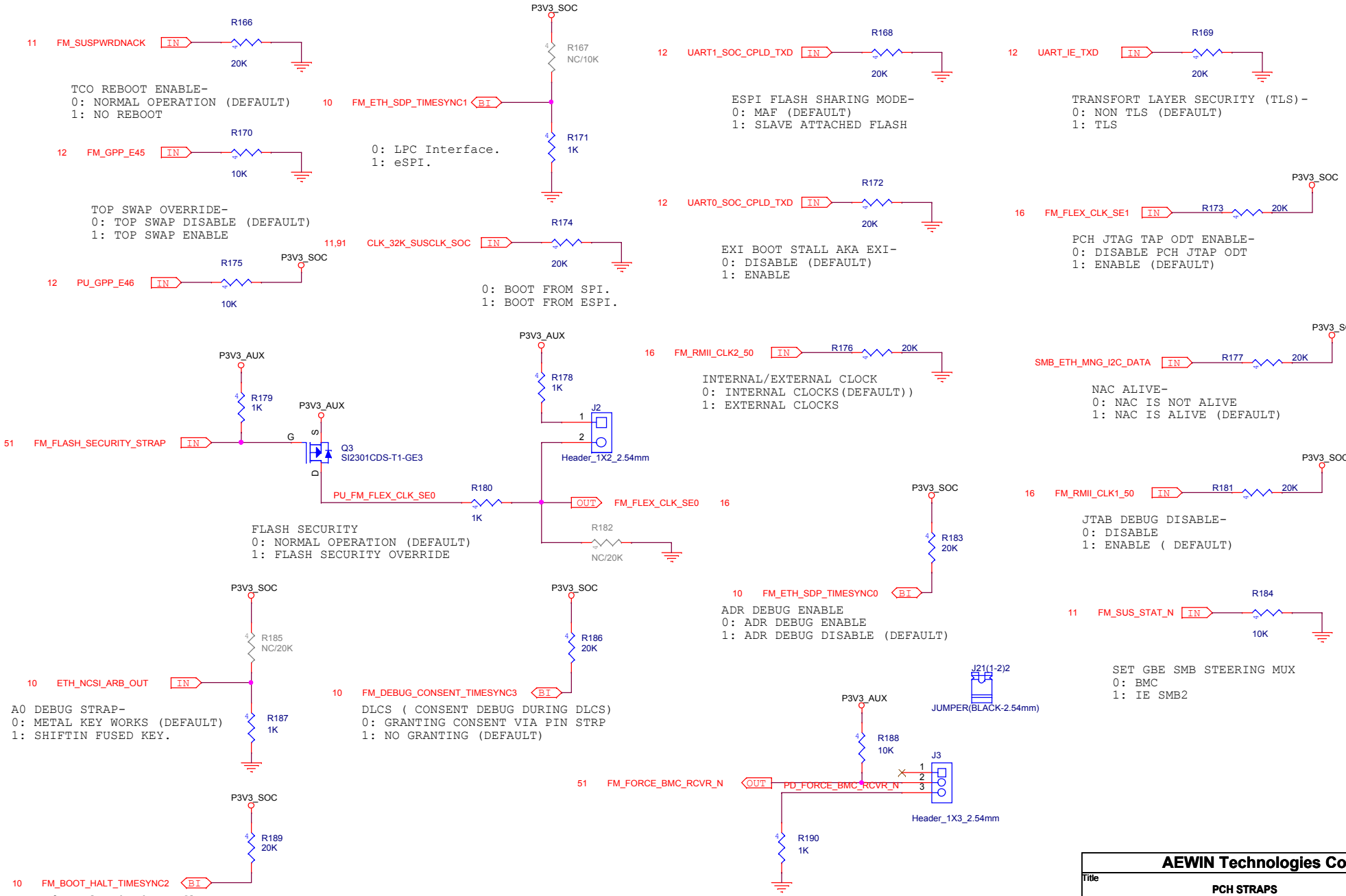

AEWIN Technologies Co., Ltd.		
Title: PCH STRAPS		
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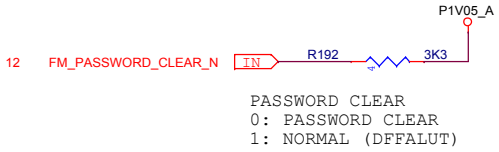
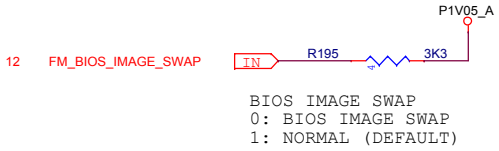
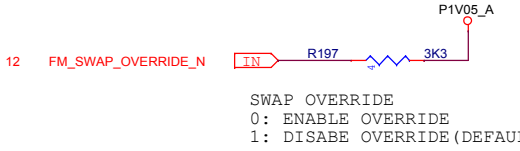


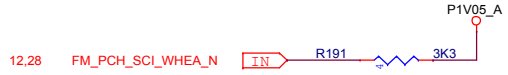
PASSWORD CLEAR
0: PASSWORD CLEAR
1: NORMAL (DFFALUT)

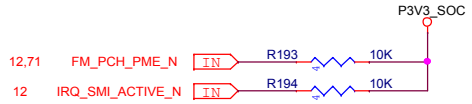


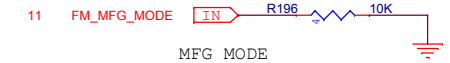
BIOS IMAGE SWAP
0: BIOS IMAGE SWAP
1: NORMAL (DEFAULT)



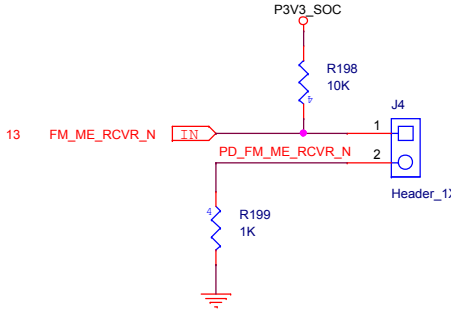
SWAP OVERRIDE
0: ENABLE OVERRIDE
1: DISABE OVERRIDE(DEFAULT)







MFG_MODE
0: NORMAL (DEFAULT)
1: MFG MODE



ME RECOVER (FM_ME_RCVR_N)
0: ME RECOVER
1: NORMAL (DFFALUT)

AEWIN Technologies Co., Ltd.		
Title: SOC PULL UP HDRS		
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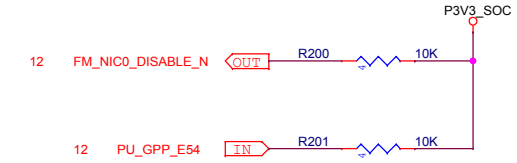
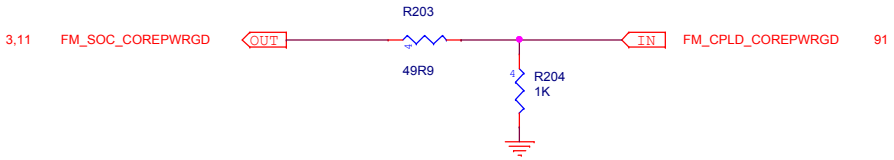
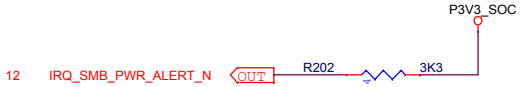
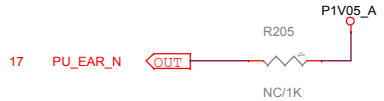


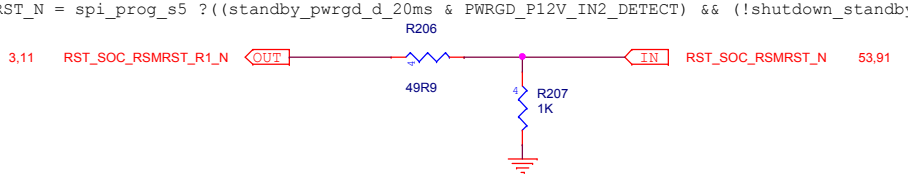

```
FM_CPLD_COREPWRGD =    all_pwrgd_core_rails_delay & FM_SLP_S3_N;
```

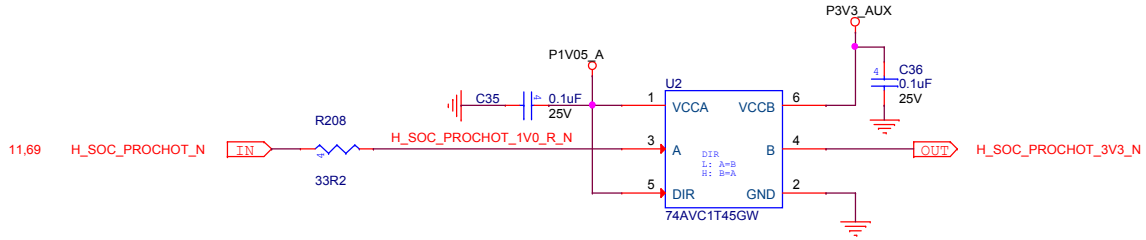







```
RST_SOC_RSMRST_N = spi_prog_s5 ?((standby_pwrgd_d_20ms & PWRGD_P12V_IN2_DETECT) && (!shutdown_standbyrails | !panic_time[5])):1'b0
```





AEWIN Technologies Co., Ltd.		
Title: SOC PU PD		
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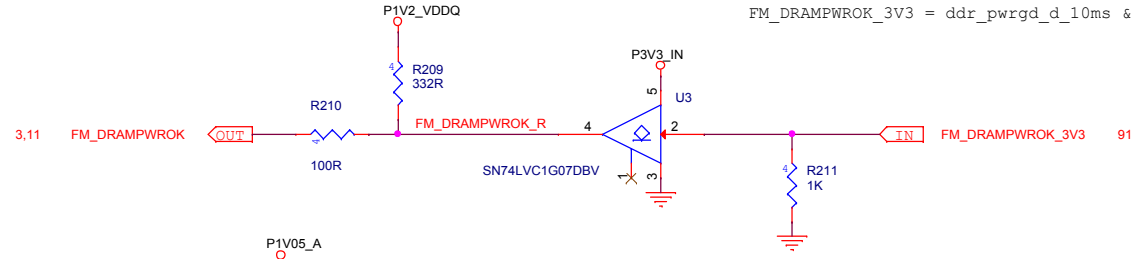
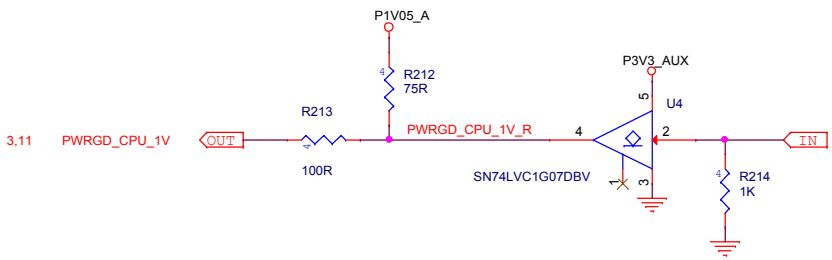
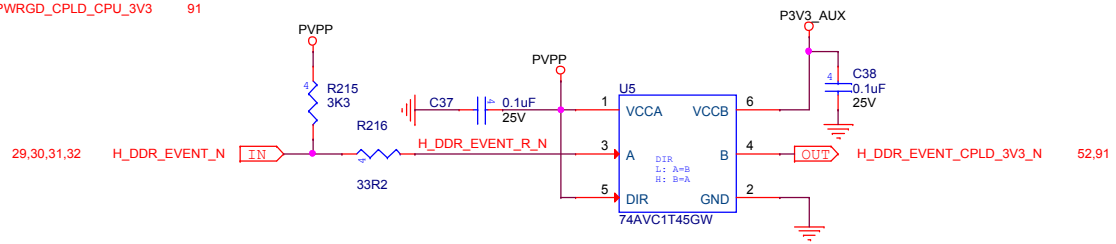
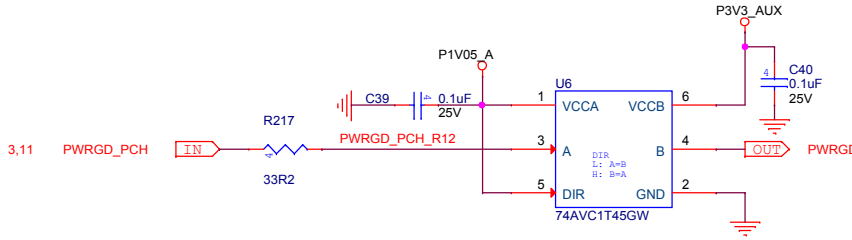
FM_DRAMPWROK_3V3 = ddr_pwrgd_d_10ms & PWRGD_PVPP & PWRGD_P1V2_VDDQ



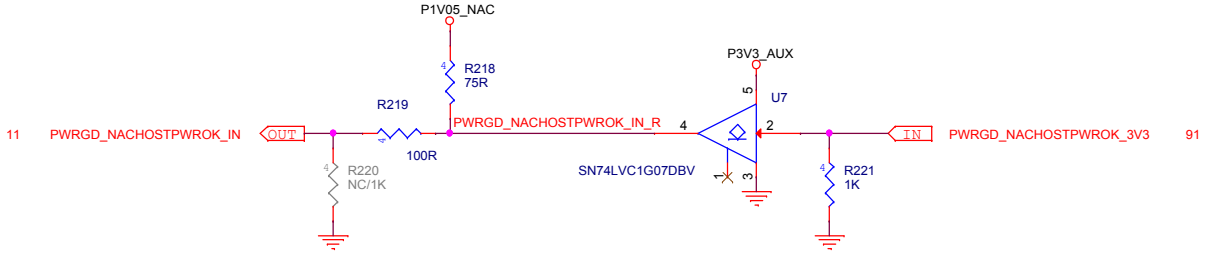
PWRGD_CPLD_CPU_3V3 = PWRGD_SOC_CPLD_CPU_3V3 & FM_SLP_S3_N;



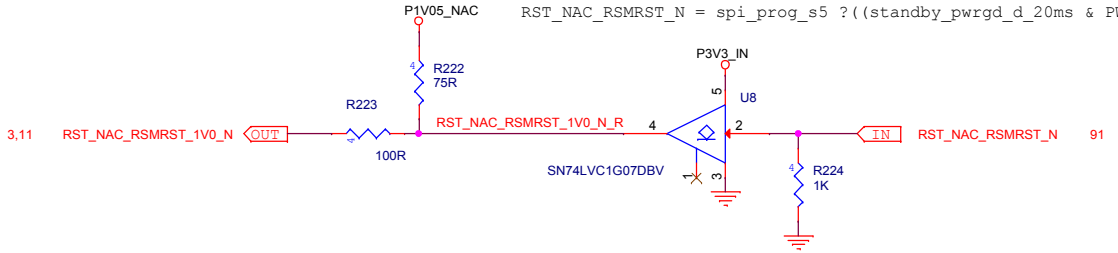




PWRGD_NACHOSTPWROK_3V3 = PWRGD_SOC_CPLD_CPU_3V3 & FM_SLP_S3_N



RST_NAC_RSMRST_N = spi_prog_s5 ?((standby_pwrgd_d_20ms & PWRGD_P12V_IN2_DETECT) && (!shutdown_standbyrails | !panic_time[5])):1'b0



AEWIN Technologies Co., Ltd.		
Title: **VOLTAGE TRANSLATOR 1**		
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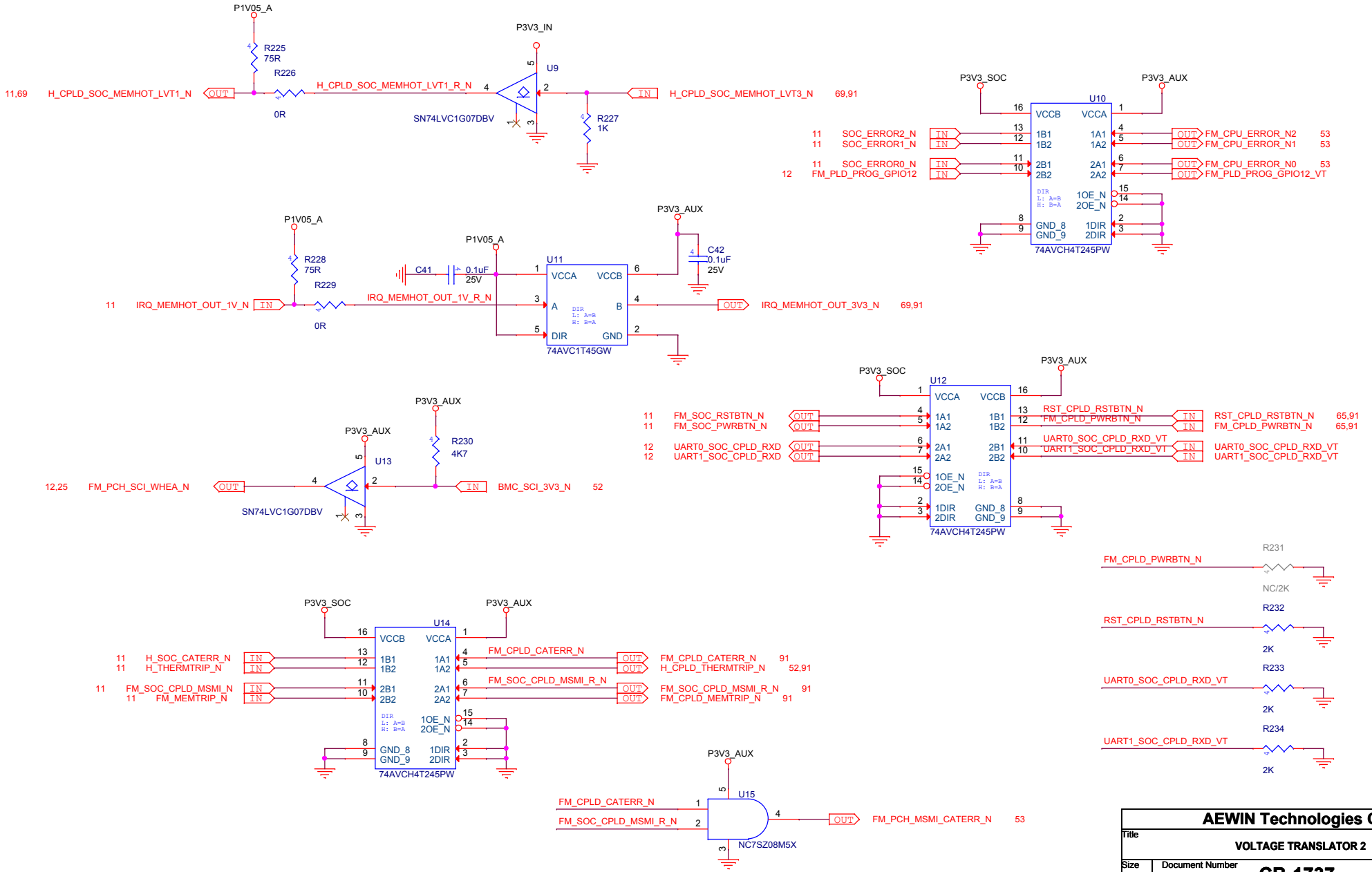
H_CPLD_SOC_MEMHOT_LVT3_N = H_DDR_EVENT_CPLD_3V3_N & FM_CPLD_MEMTRIP_N



AEWIN Technologies Co., Ltd.		
Title: VOLTAGE TRANSLATOR 2		
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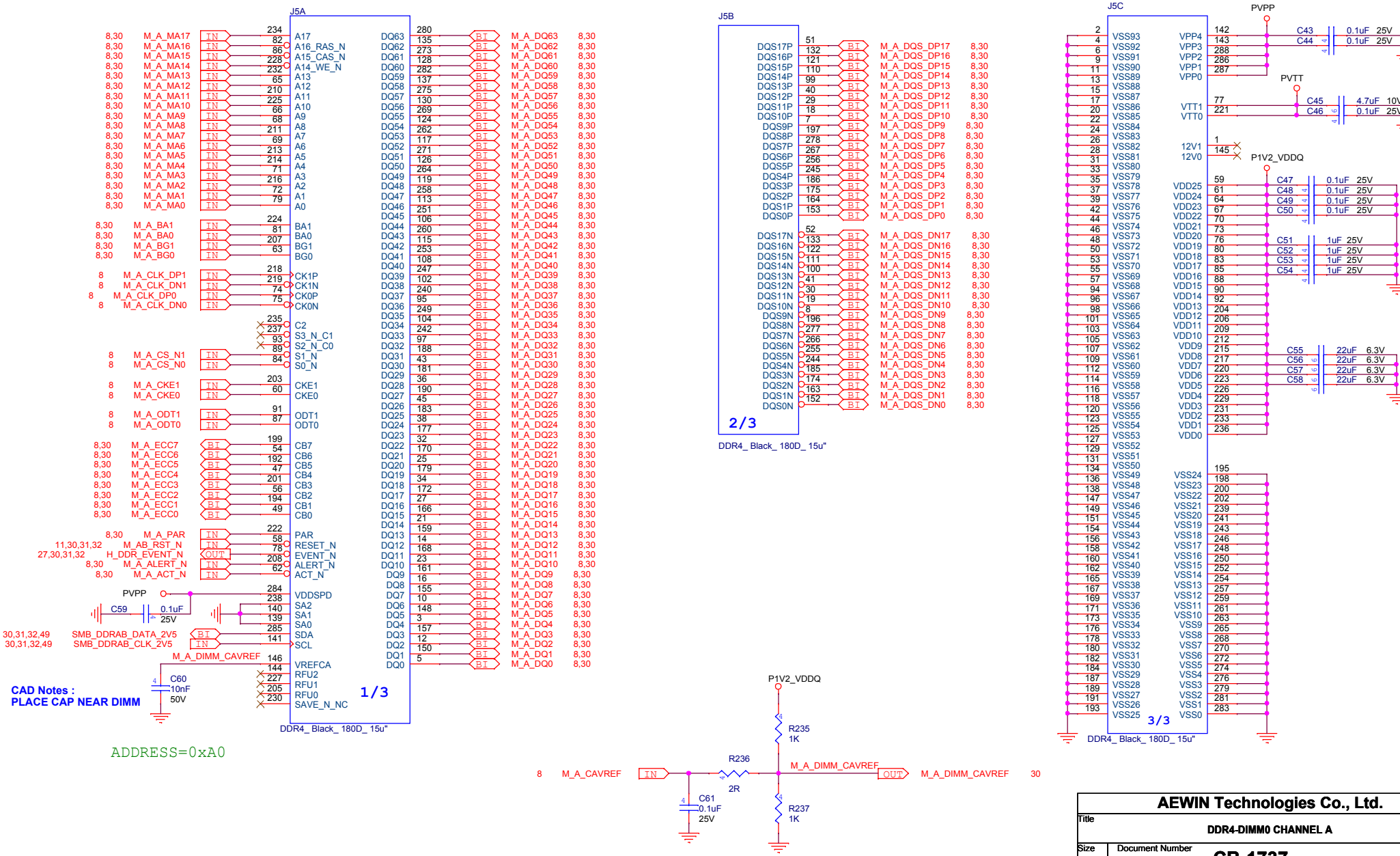

Title	AEWIN Technologies Co., Ltd.
	DDR4-DIMM0 CHANNEL A
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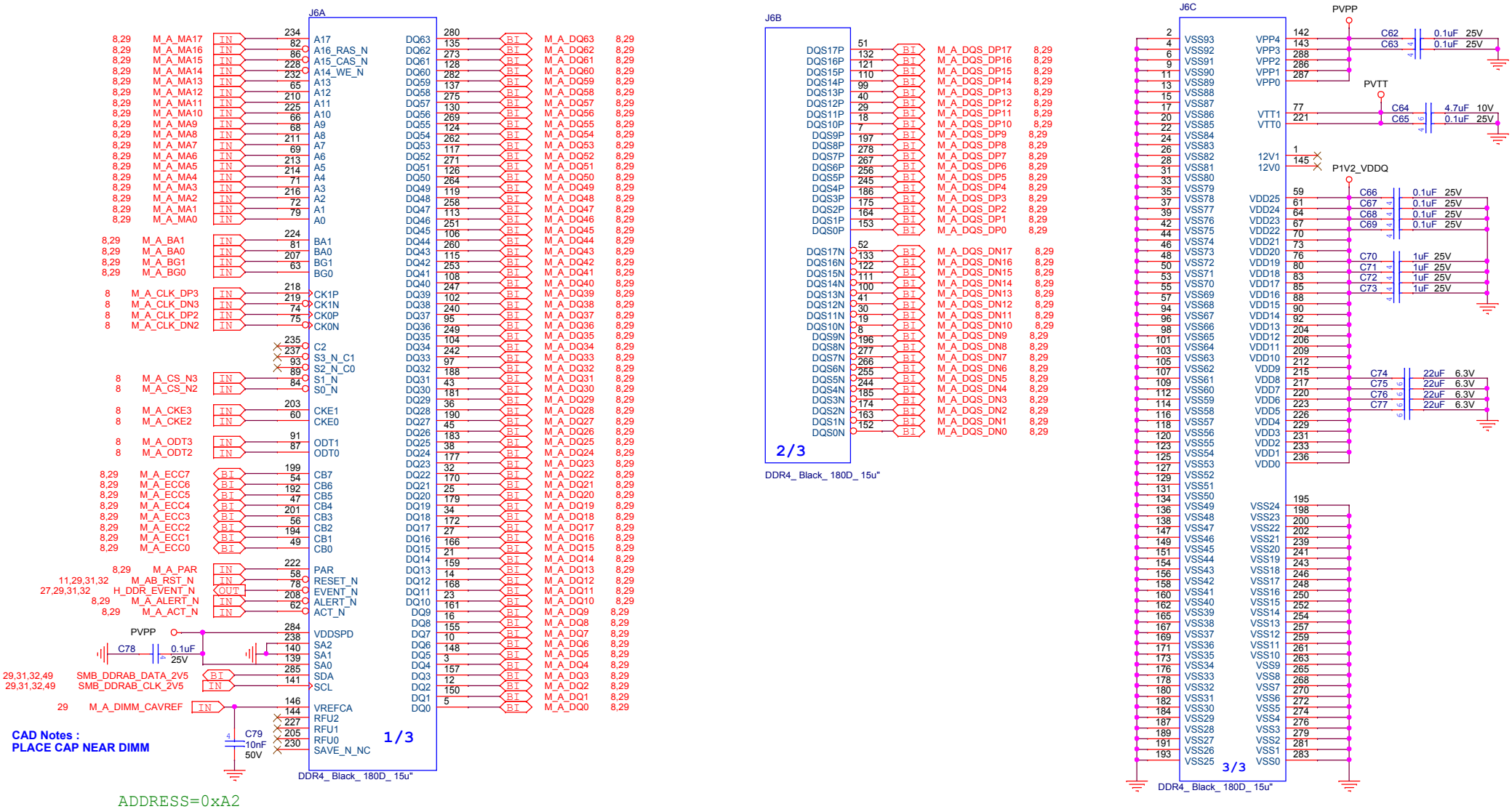

Title	AEWIN Technologies Co., Ltd.
	DDR4-DIMM1 CHANNEL A
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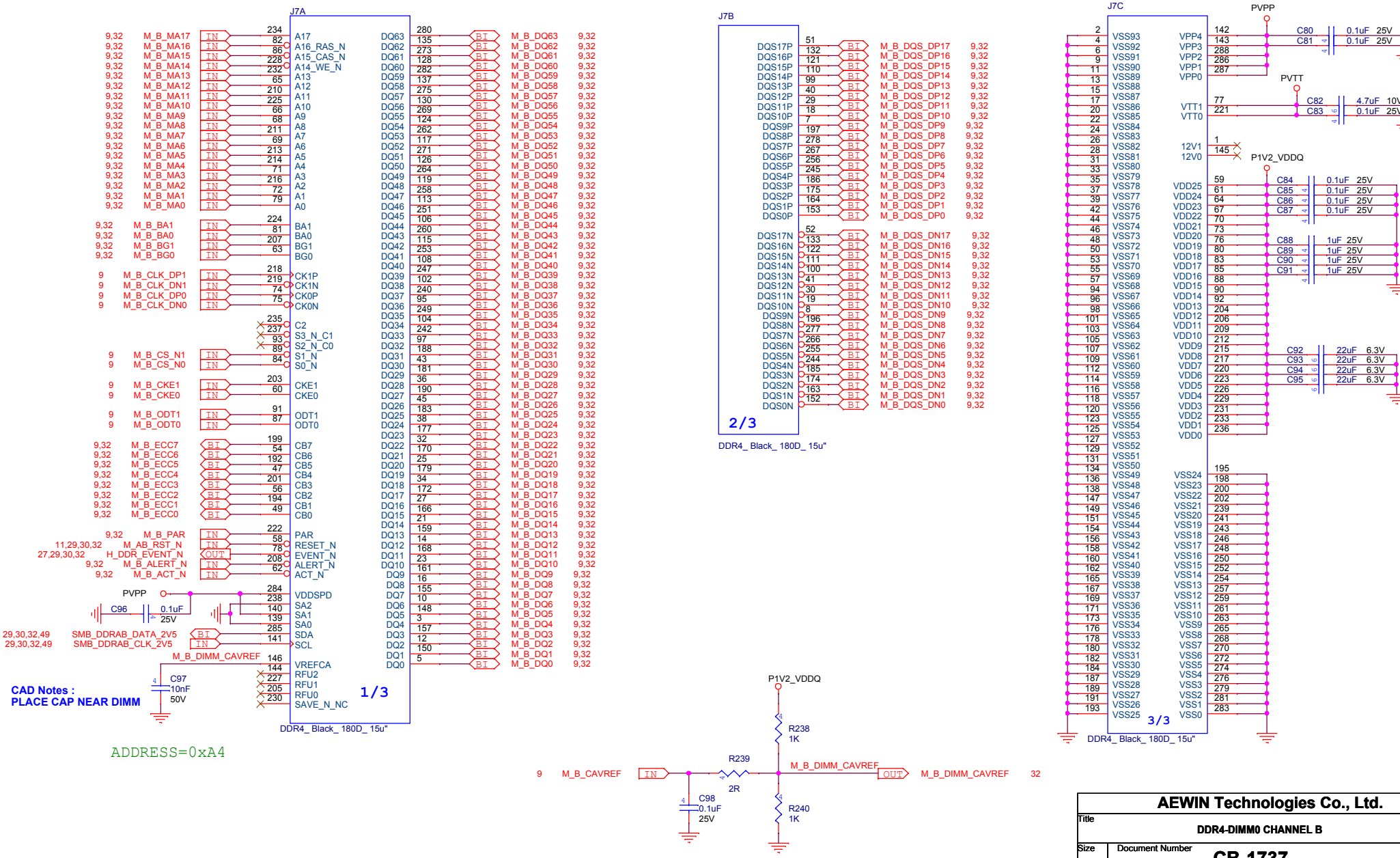

AEWIN Technologies Co., Ltd.	
Title	DDR4-DIMM0 CHANNEL B
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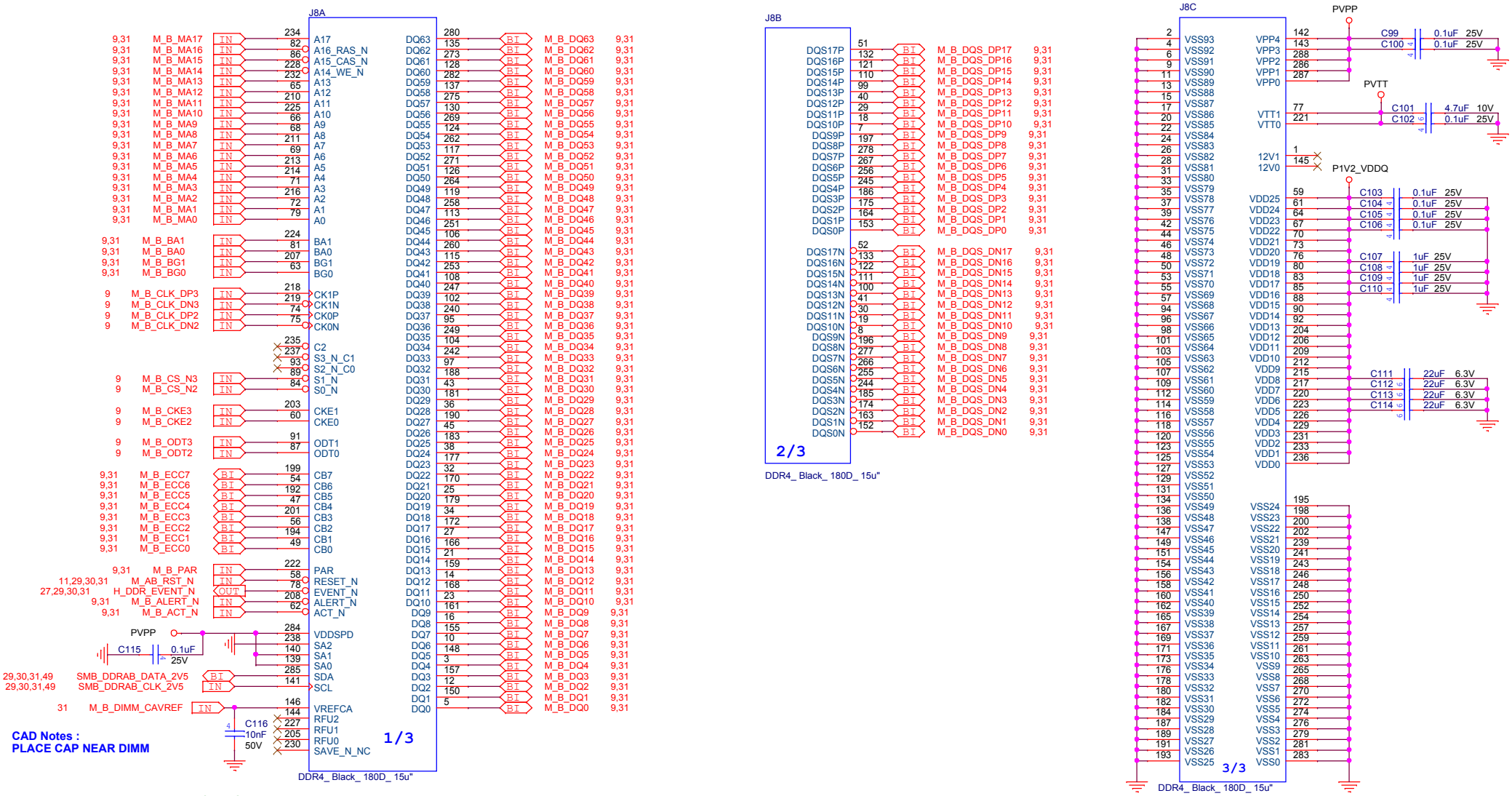

Company	AEWIN Technologies Co., Ltd.
Title	DDR4-DIMM1 CHANNEL B
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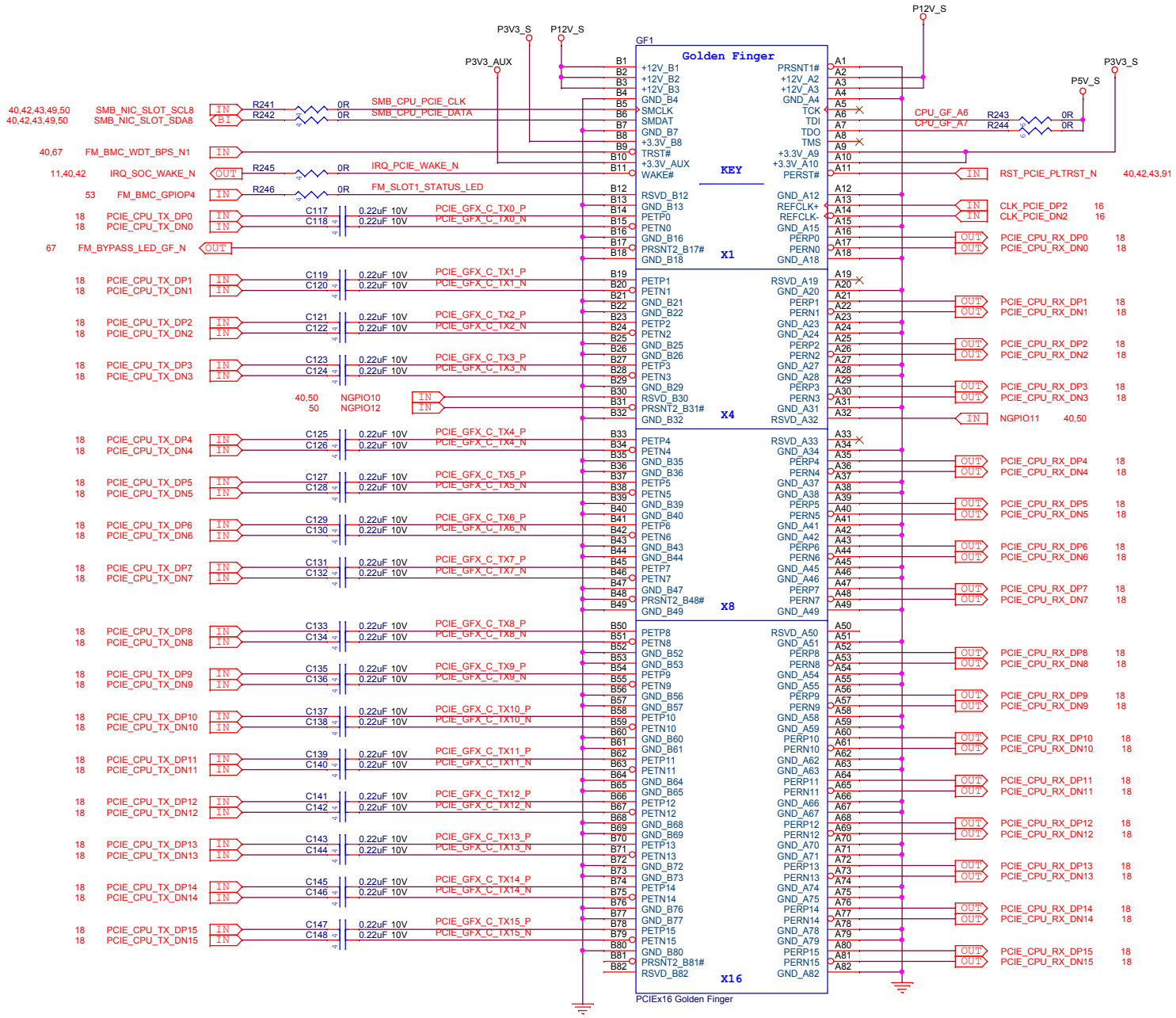

Company	AEWIN Technologies Co., Ltd.
Title	XX
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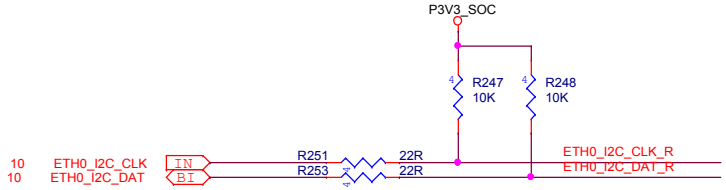
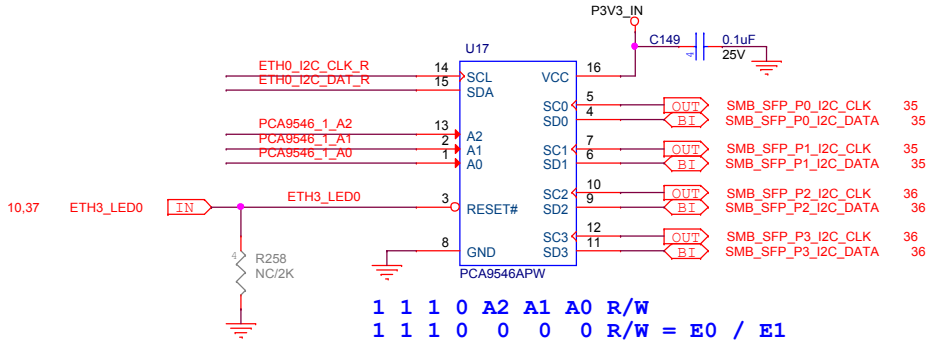
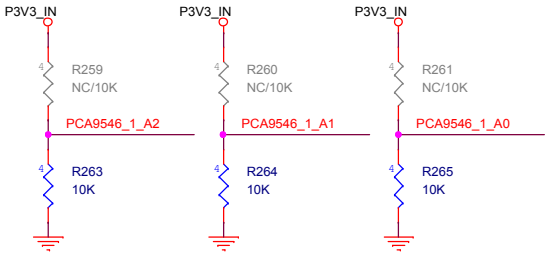
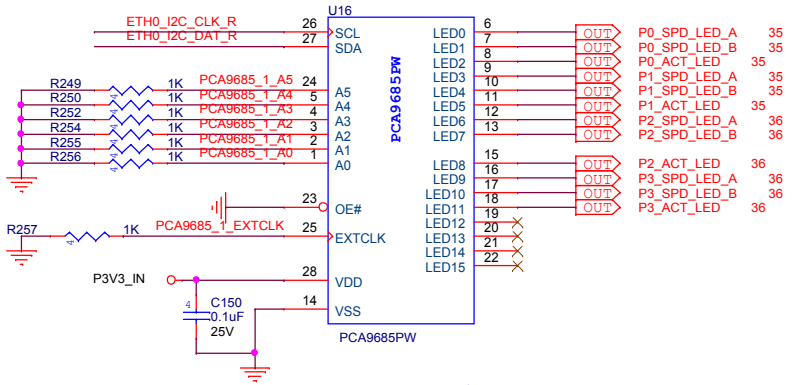




1 1 1 0 A2 A1 A0 R/W
1 1 1 0 0 0 0 R/W = E0 / E1
SMBUS ADDRESS: E0/E1





1 A5 A4 A3 A2 A1 A0 R/W
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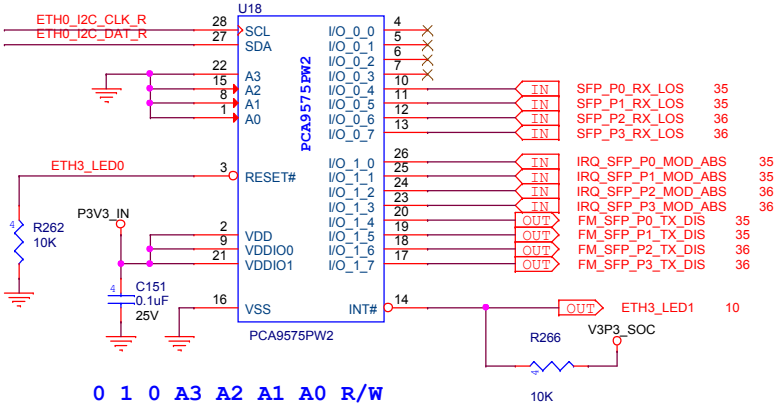

0 1 0 A3 A2 A1 A0 R/W
0 1 0 0 0 0 0 R/W = 40 / 41
SMBUS ADDRESS: 40/41

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Title: **SFP- LED EXPANDER**		
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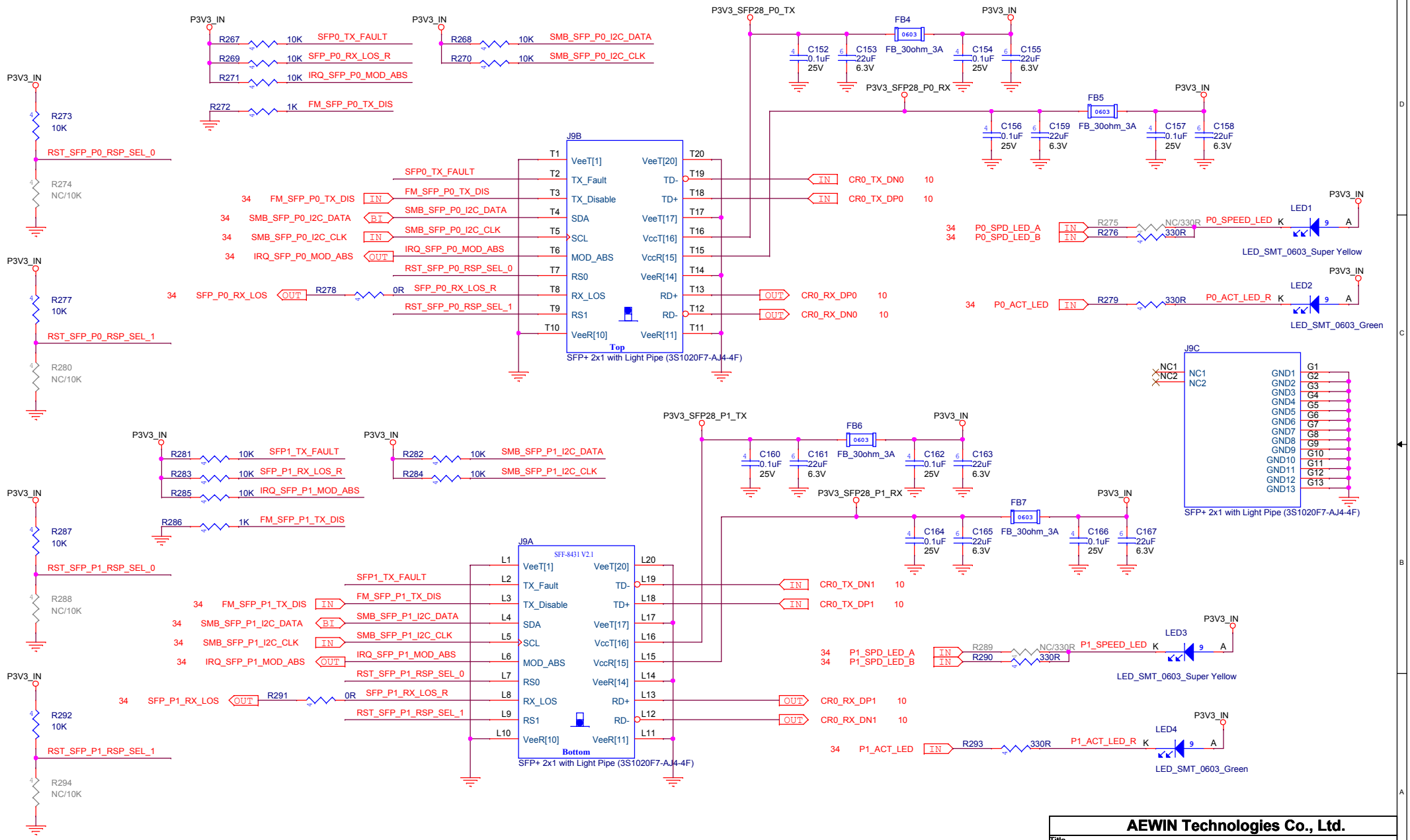

AEWIN Technologies Co., Ltd.		
Title: SFP- PORT0 & 1		
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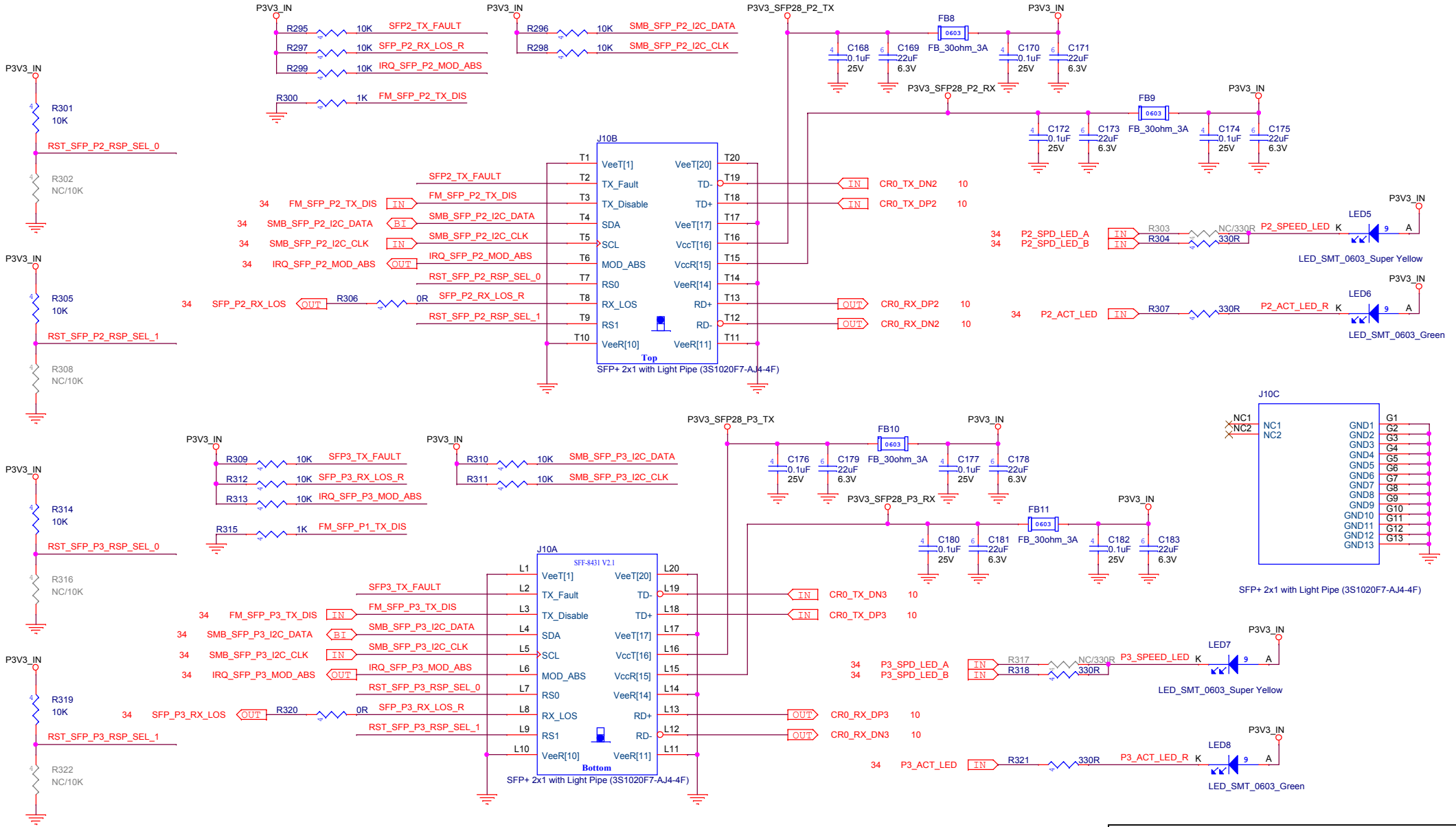

AEWIN Technologies Co., Ltd.		
Title: SFP- PORT2 &3		
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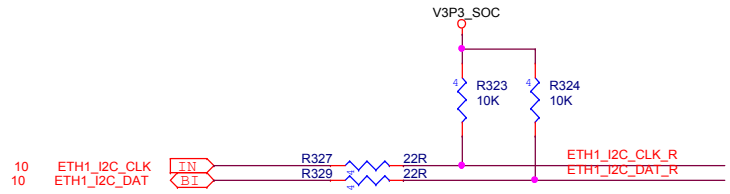

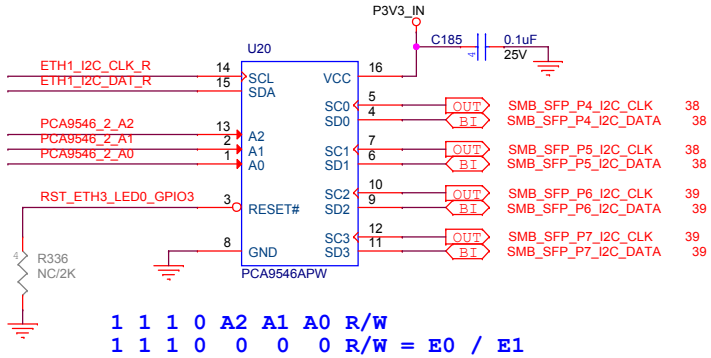

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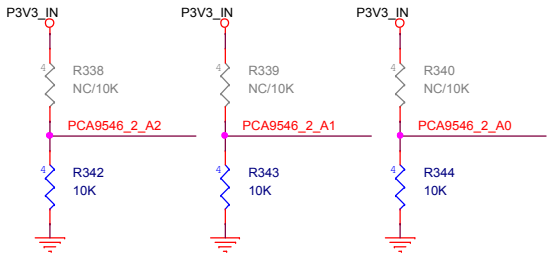
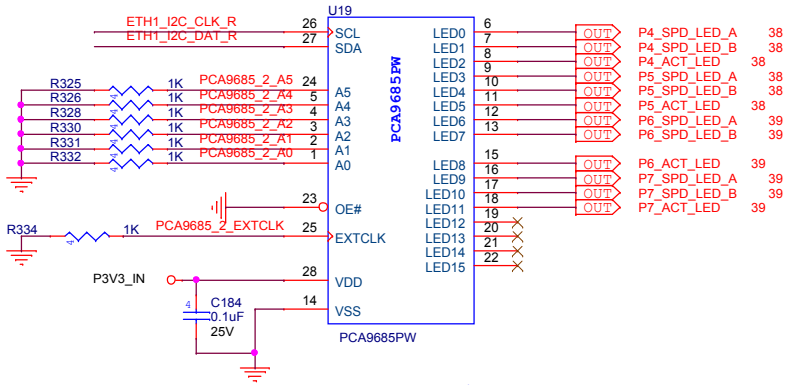
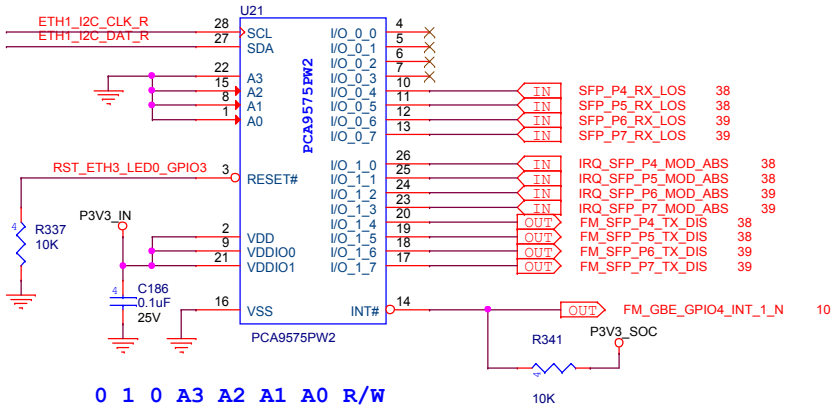
1 1 1 0 0 0 0 R/W = E0 / E1
SMBUS ADDRESS: E0/E1



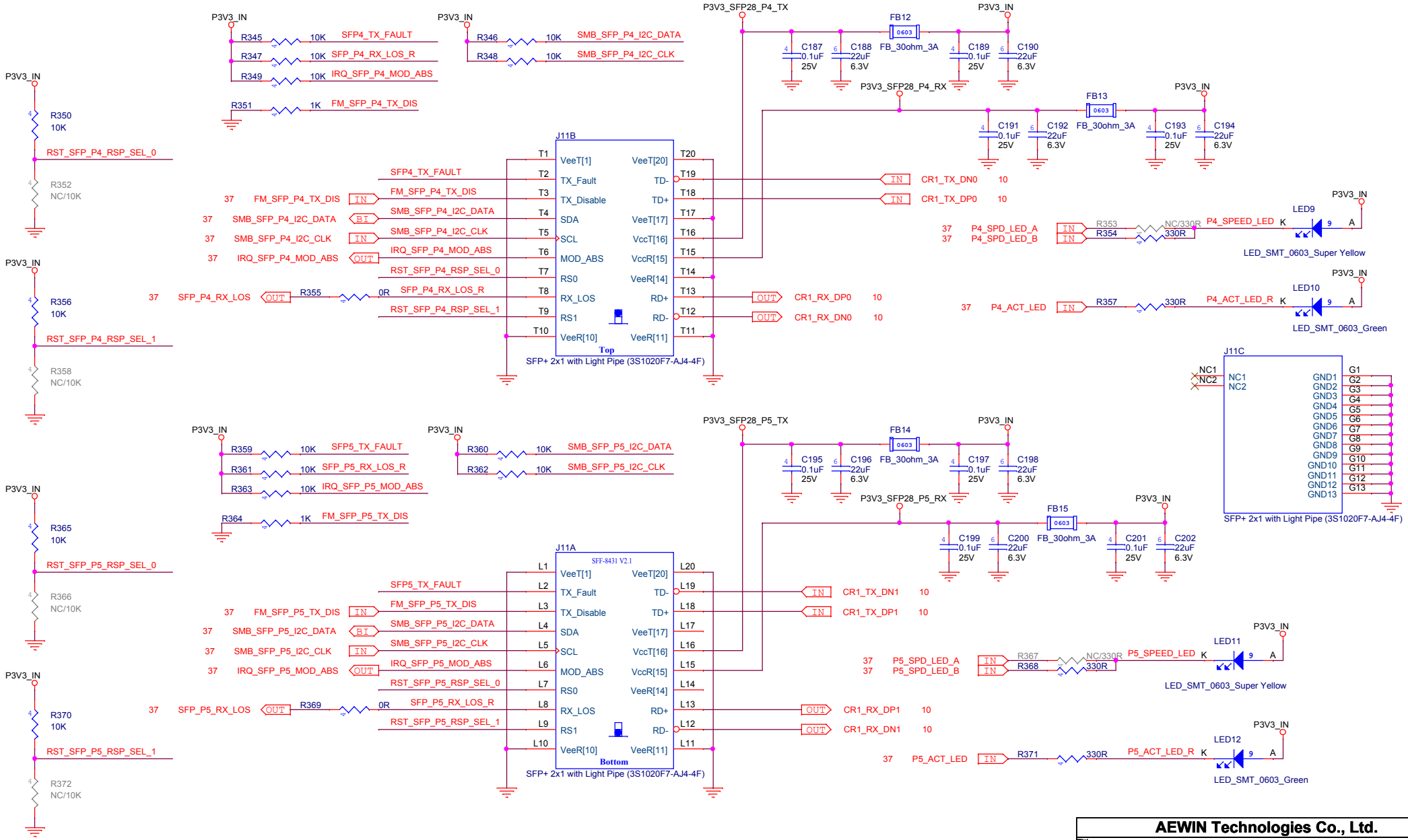


1 A5 A4 A3 A2 A1 A0 R/W
1 0 0 0 0 0 0 R/W = 80 / 81
SMBUS ADDRESS: 80/81

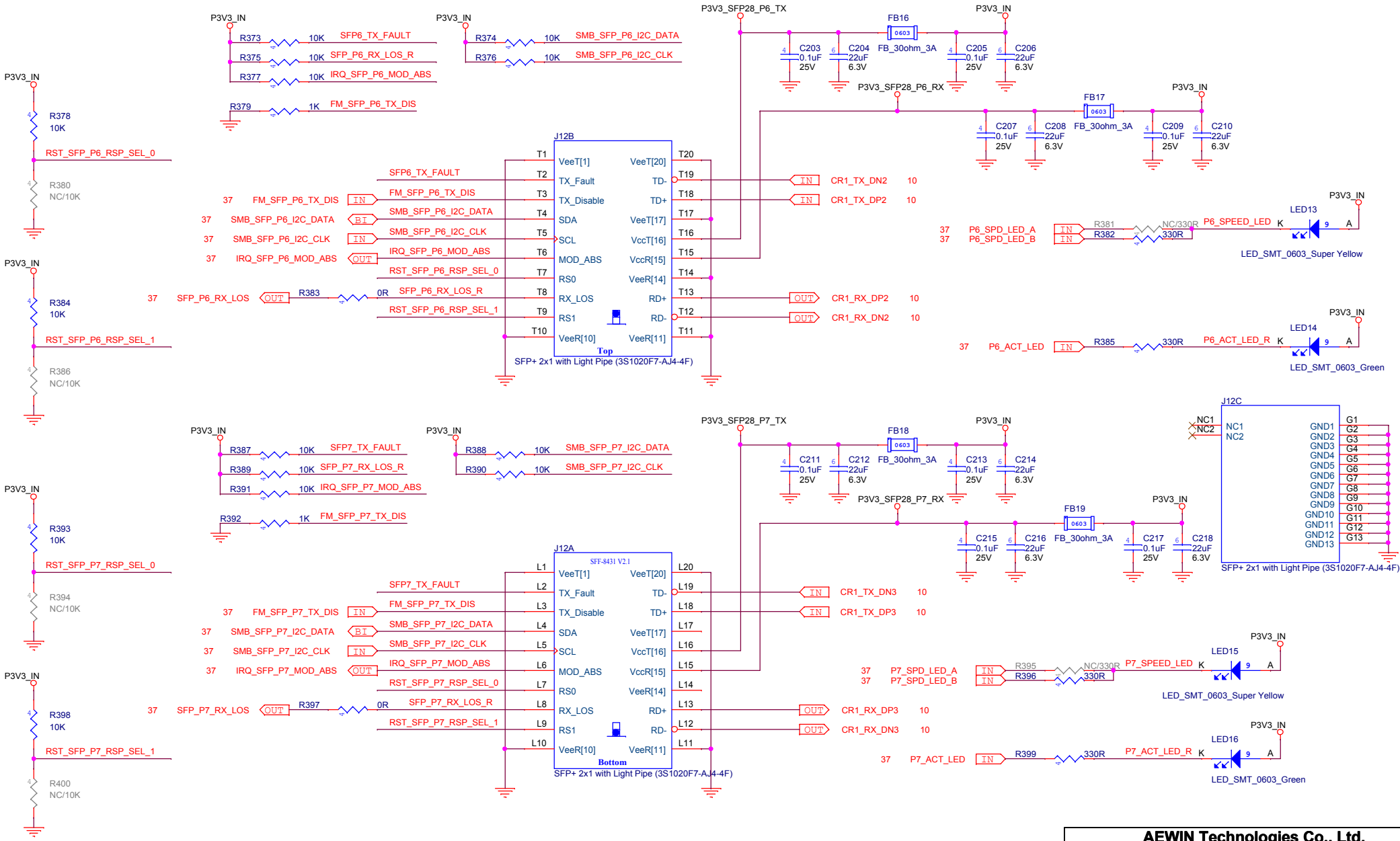


0 1 0 A3 A2 A1 A0 R/W
0 1 0 0 0 0 0 R/W = 40 / 41
SMBUS ADDRESS: 40/41

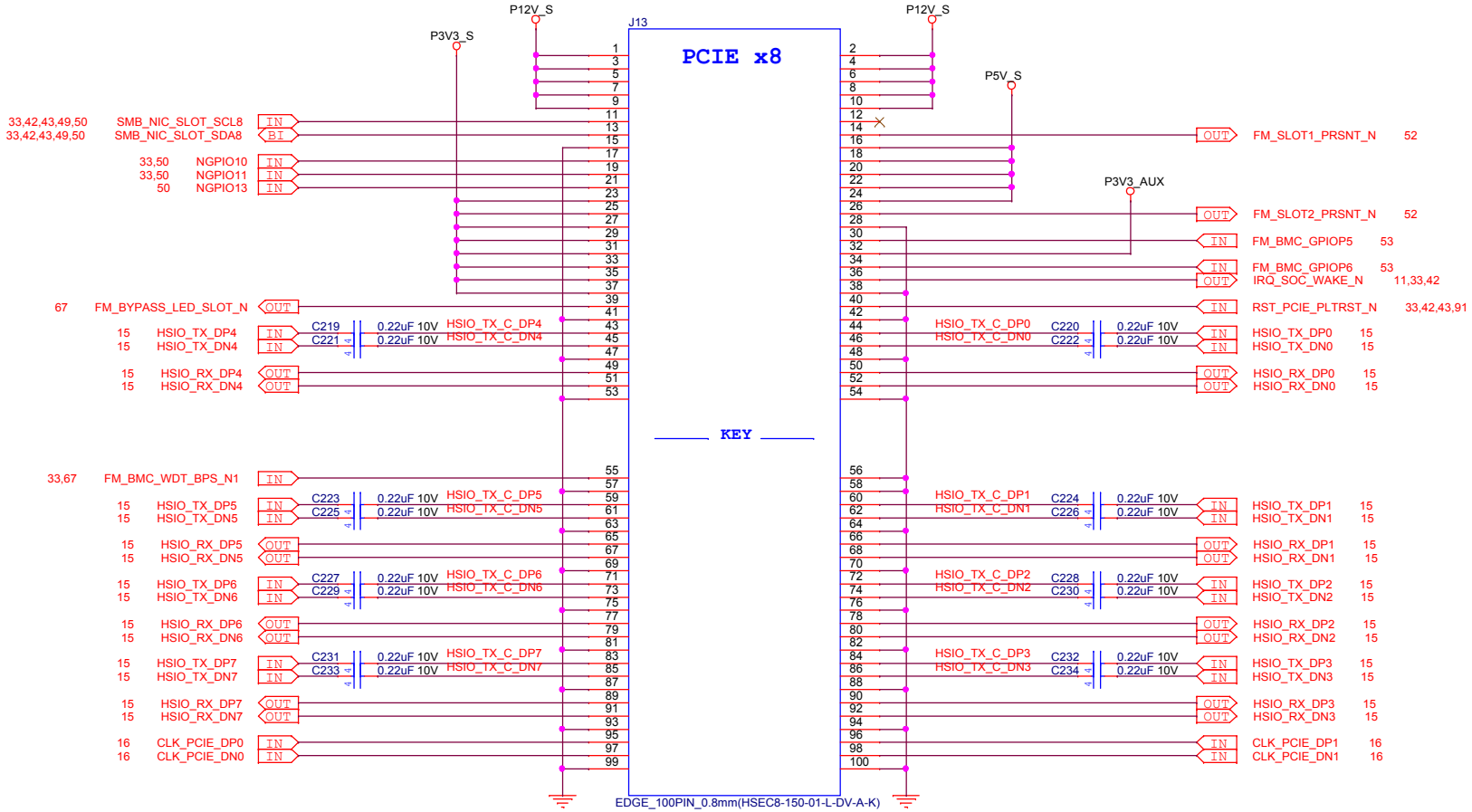
AEWIN Technologies Co., Ltd.		
Title: **SFP- LED EXPANDER 2**		
Size	Document Number: **CB-1737**	Rev: A0
Date: Thursday, August 19, 2021	Sheet 37 of 92	



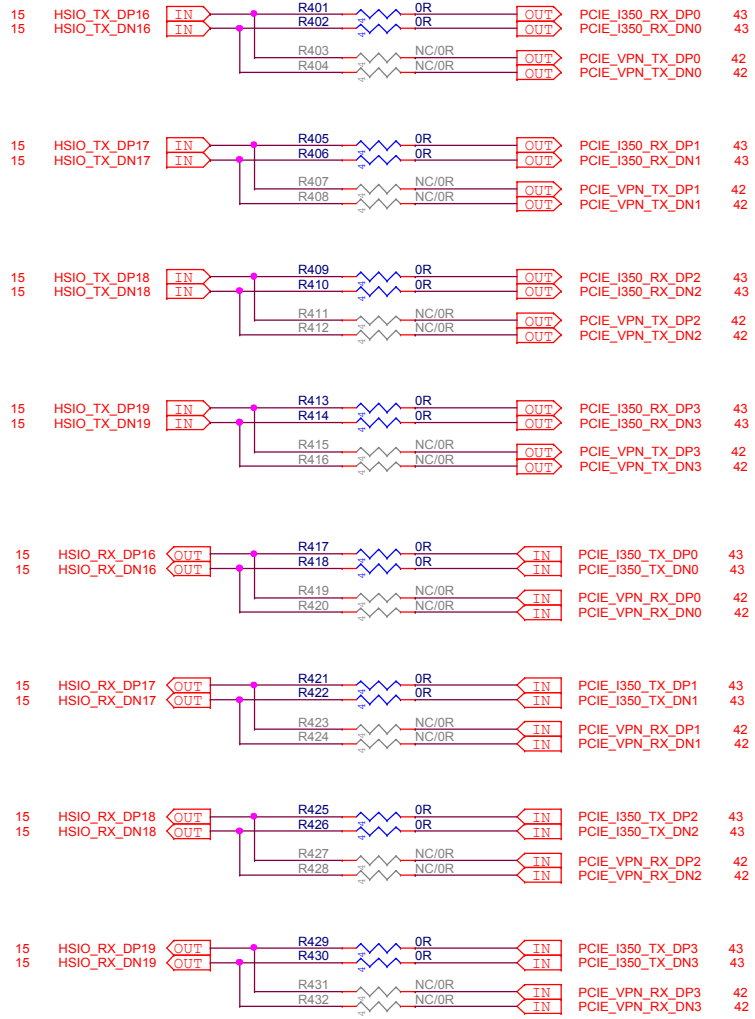
AEWIN Technologies Co., Ltd.		
Title: SFP- PORT4 &5		
Size	Document Number: CB-1737	Rev: A0
Date: Thursday, August 19, 2021	Sheet 38 of 92	



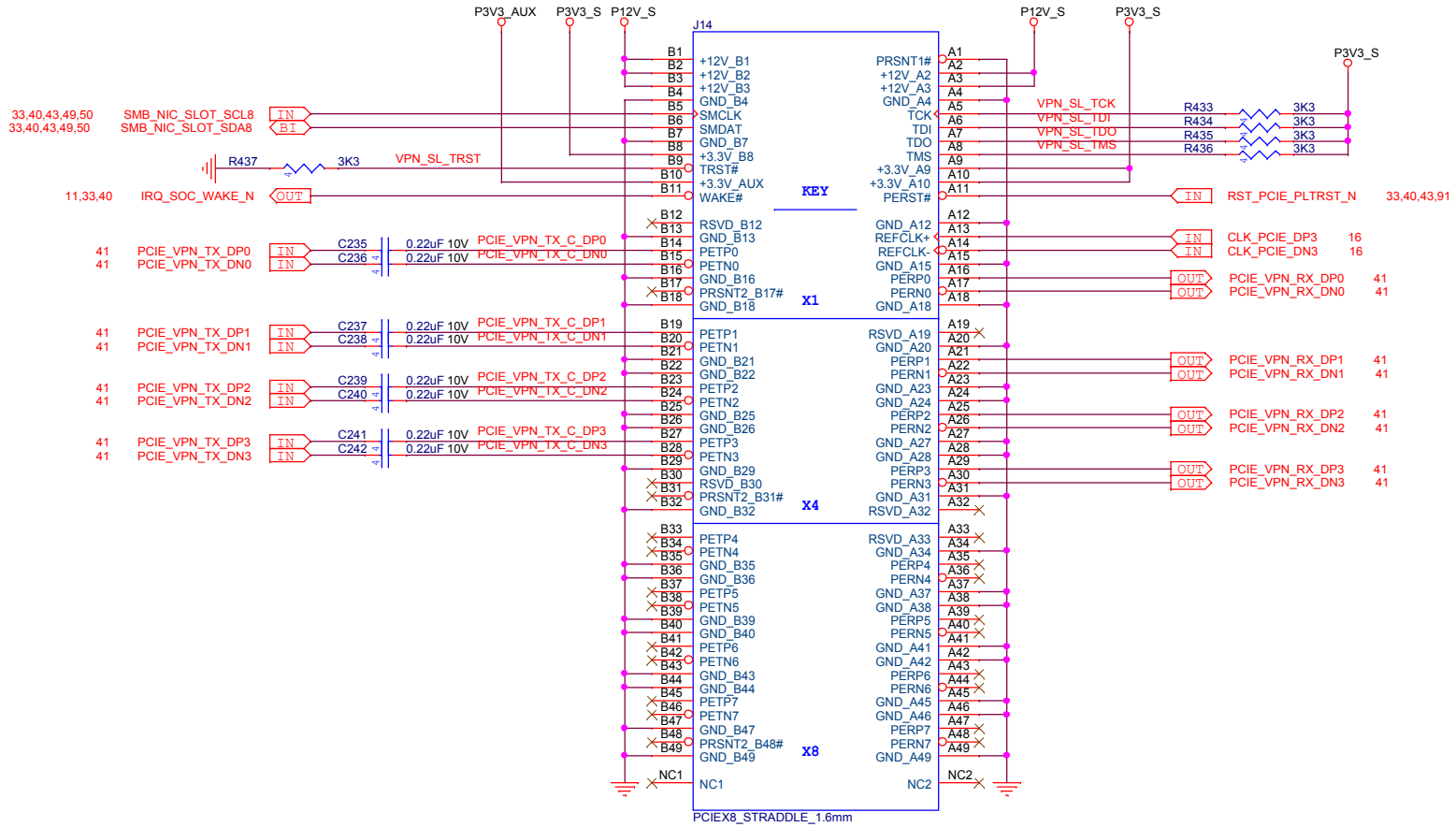
AEWIN Technologies Co., Ltd.		
Title: SFP- PORT6 &7		
Size	Document Number: CB-1737	Rev: A0
Date: Thursday, August 19, 2021	Sheet 39 of 92	



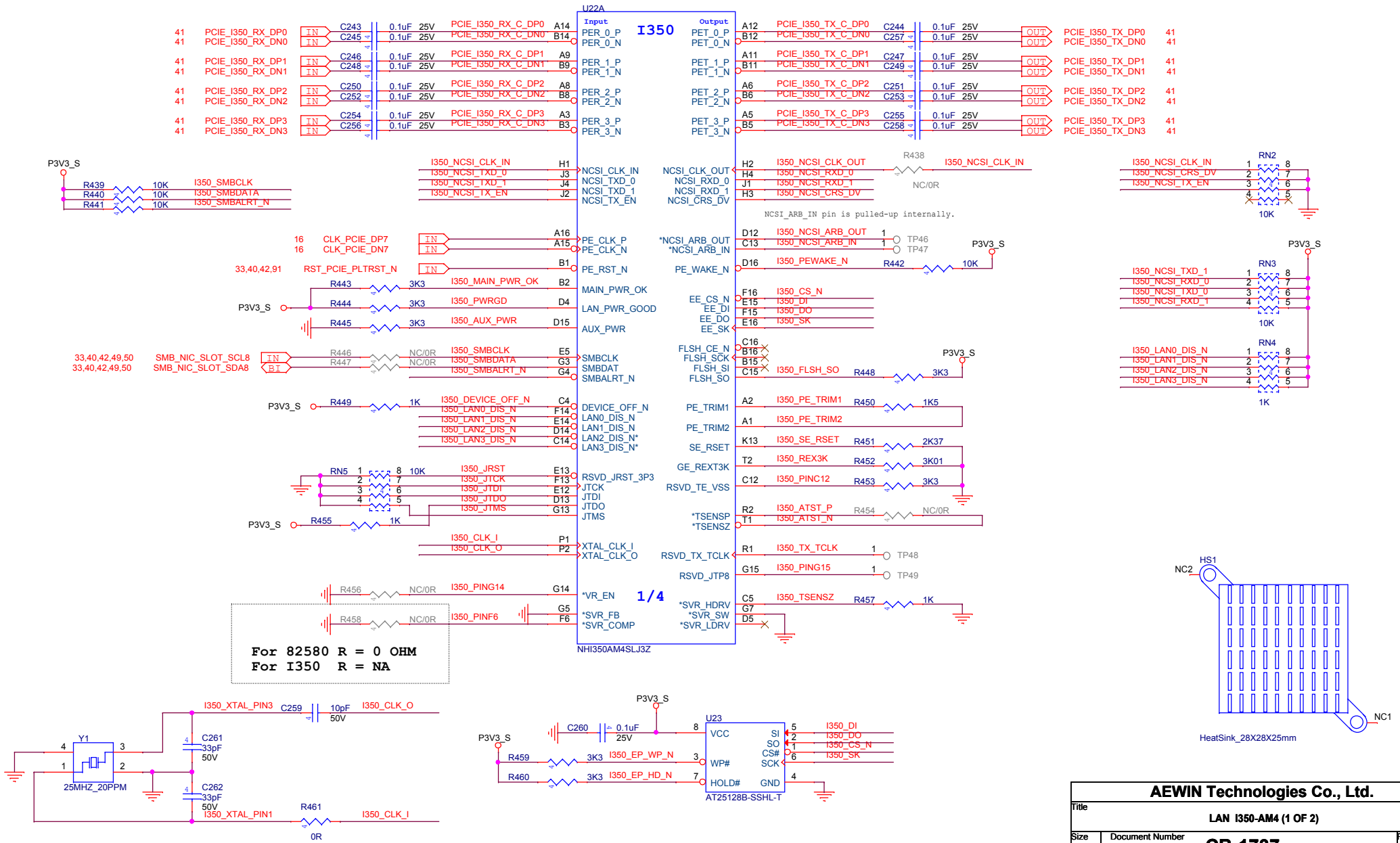
AEWIN Technologies Co., Ltd.		
Title: XX		
Size	Document Number: CB-1737	Rev: A0
Date: Thursday, August 19, 2021	Sheet 40 of 92	



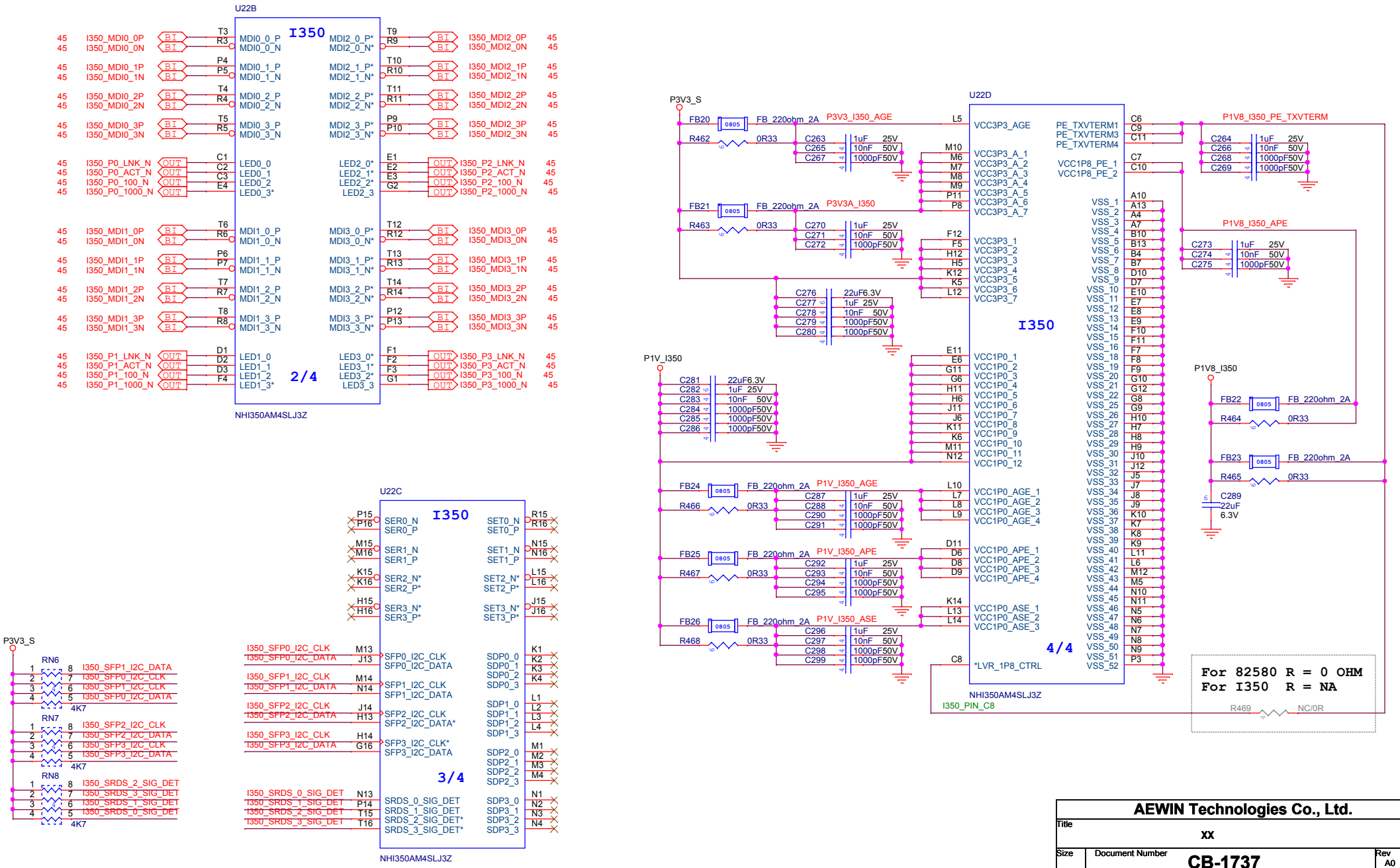
AEWIN Technologies Co., Ltd.		
Title: XX		
Size	Document Number: CB-1737	Rev: A0
Date: Thursday, August 19, 2021	Sheet 41 of 92	



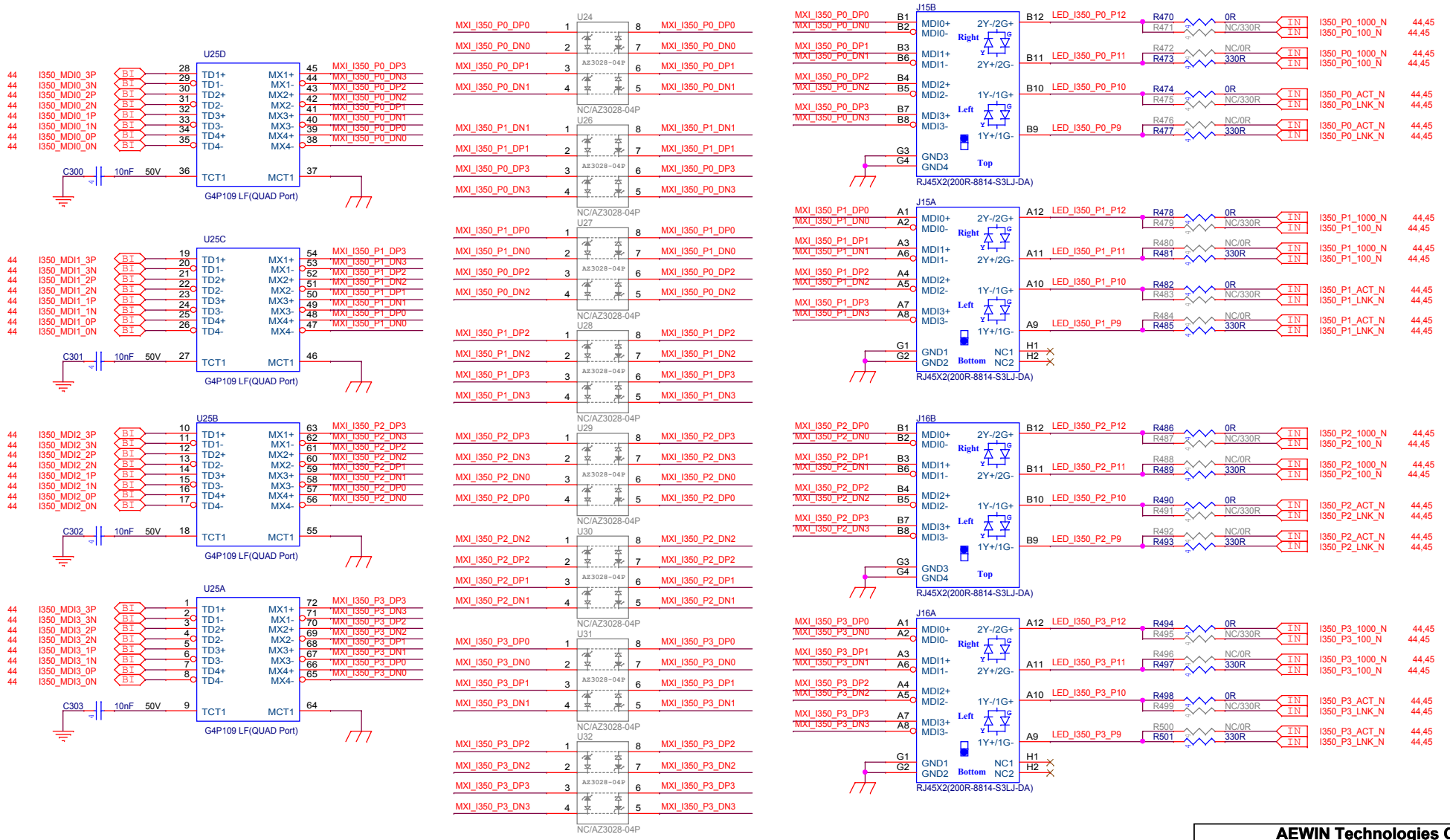
AEWIN Technologies Co., Ltd.		
Title: PCIE- SLOT (VPN)		
Size	Document Number: CB-1737	Rev: A0
Date: Thursday, August 19, 2021	Sheet 42 of 92	



AEWIN Technologies Co., Ltd.			
Title: LAN I350-AM4 (1 OF 2)			
Size	Document Number: CB-1737		Rev: A0
Date: Thursday, August 19, 2021	Sheet 43 of 92		



AEWIN Technologies Co., Ltd.			
Title: XX			
Size	Document Number: **CB-1737**		Rev: A0
Date: Thursday, August 19, 2021	Sheet 44 of 92		



Company	AEWIN Technologies Co., Ltd.
Title	xx
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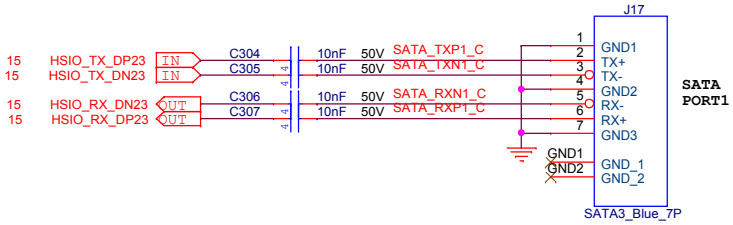
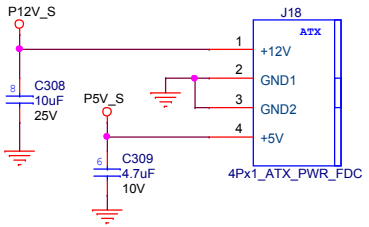
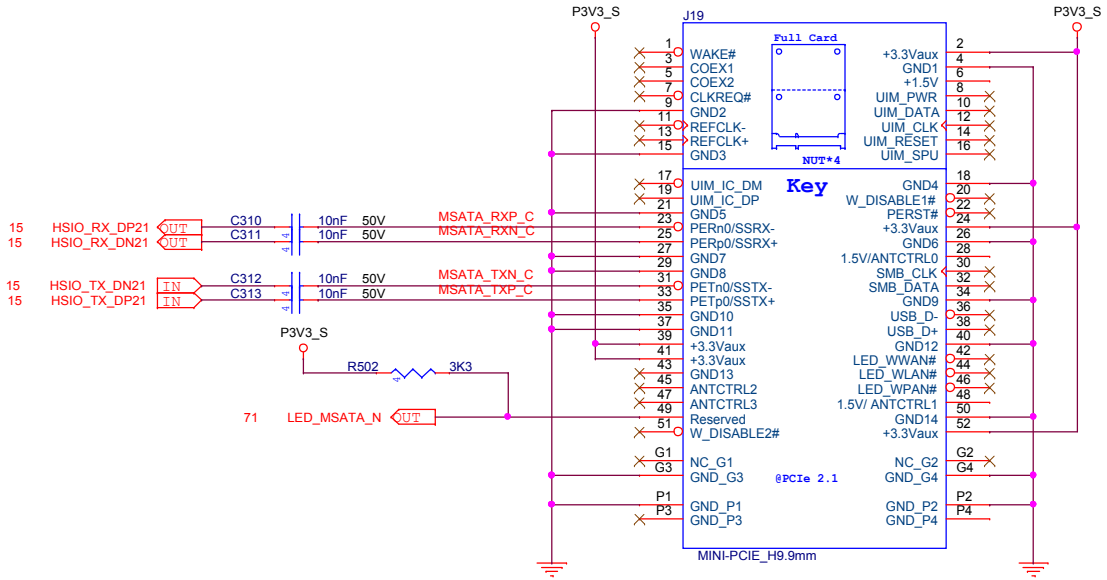




+12V
Spin up: 2A
Operation:0.46A



AEWIN Technologies Co., Ltd.		
Title: **SATA & MSATA**		
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AEWIN Technologies Co., Ltd.		
Title: EMMC (SOC)		
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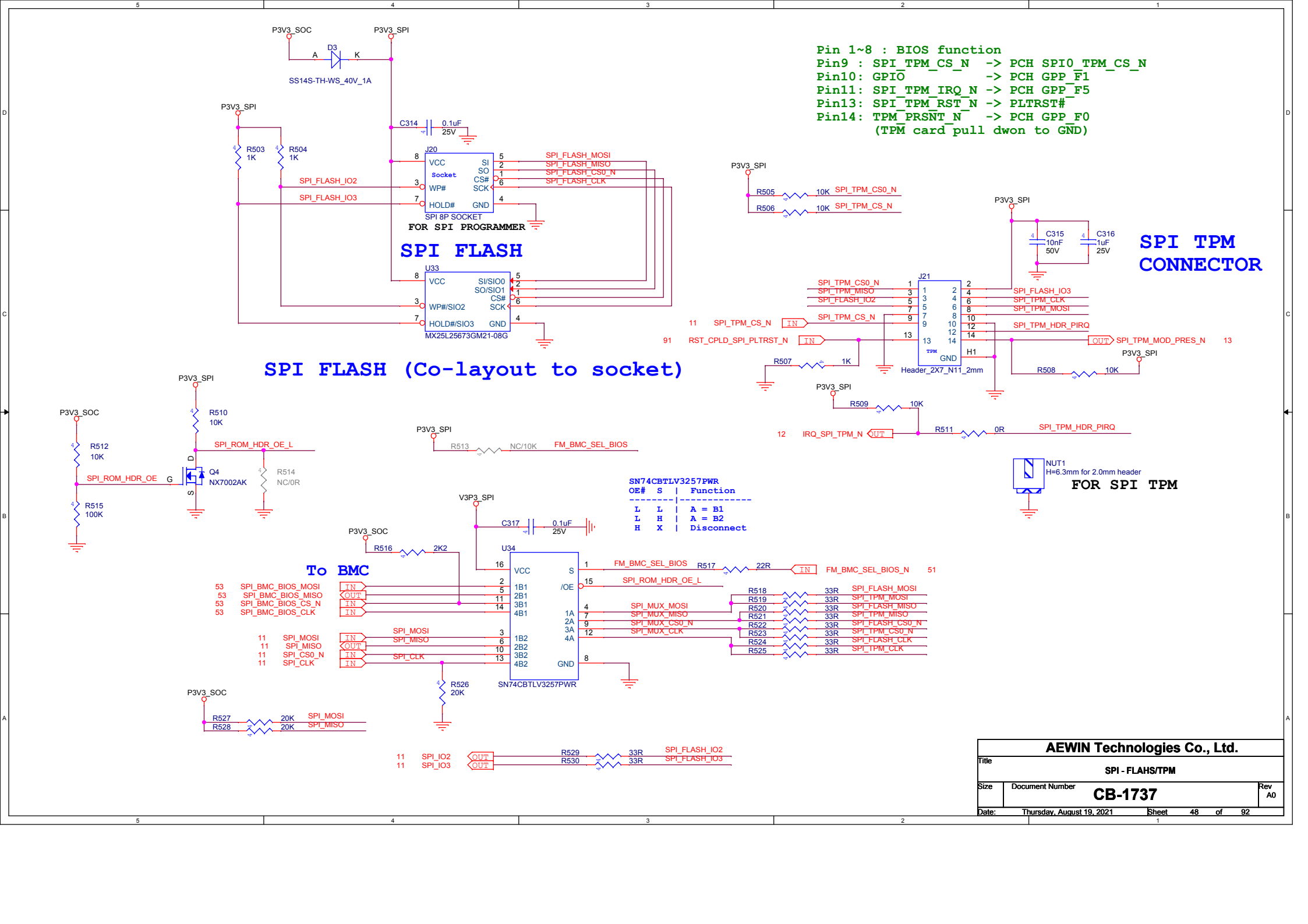
Pin 1~8 : BIOS function
Pin9 : SPI_TPM_CS_N -> PCH SPI0_TPM_CS_N
Pin10: GPIO -> PCH GPP_F1
Pin11: SPI_TPM_IRQ_N -> PCH GPP_F5
Pin13: SPI_TPM_RST_N -> PLTRST#
Pin14: TPM_PRSNT_N -> PCH GPP_F0
(TPM card pull dwon to GND)
SPI FLASH
SPI FLASH (Co-layout to socket)
SPI TPM CONNECTOR
FOR SPI PROGRAMMER
FOR SPI TPM
To BMC
SS14S-TH-WS_40V_1A
SPI 8P SOCKET
MX25L25673GM21-08G
Header_2X7_N11_2mm
SN74CBTLV3257PWR
OE# S | Function
L L | A = B1
L H | A = B2
H X | Disconnect
NUT1
H=6.3mm for 2.0mm header
AEWIN Technologies Co., Ltd.
SPI - FLAHS/TPM
CB-1737
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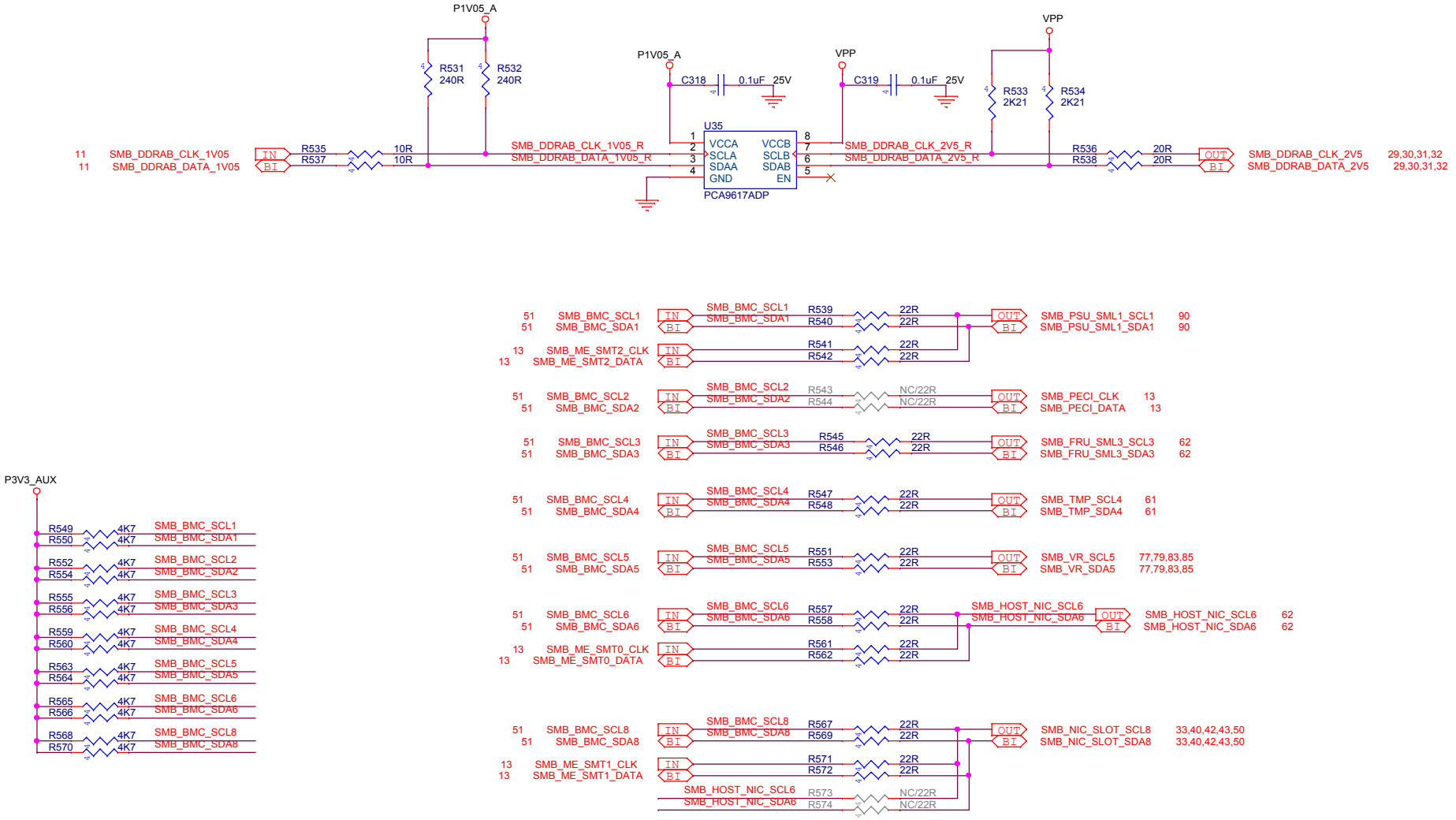

AEWIN Technologies Co., Ltd.		
Title: **SMBUS**		
Size	Document Number: **CB-1737**	Rev: A0
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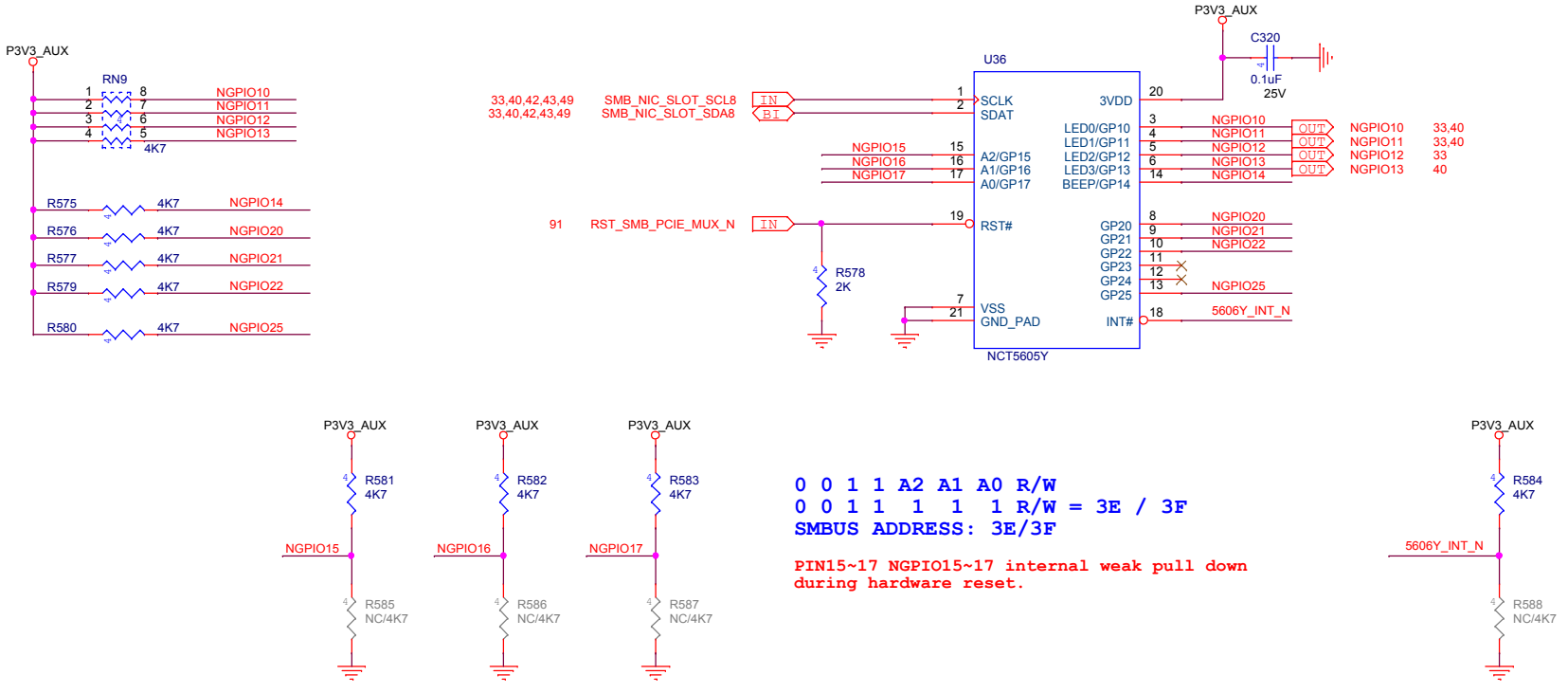

0 0 1 1 A2 A1 A0 R/W
0 0 1 1 1 1 1 R/W = 3E / 3F
SMBUS ADDRESS: 3E/3F

PIN15~17 NGPIO15~17 internal weak pull down during hardware reset.

AEWIN Technologies Co., Ltd.		
Title: SMBUS GPIO		
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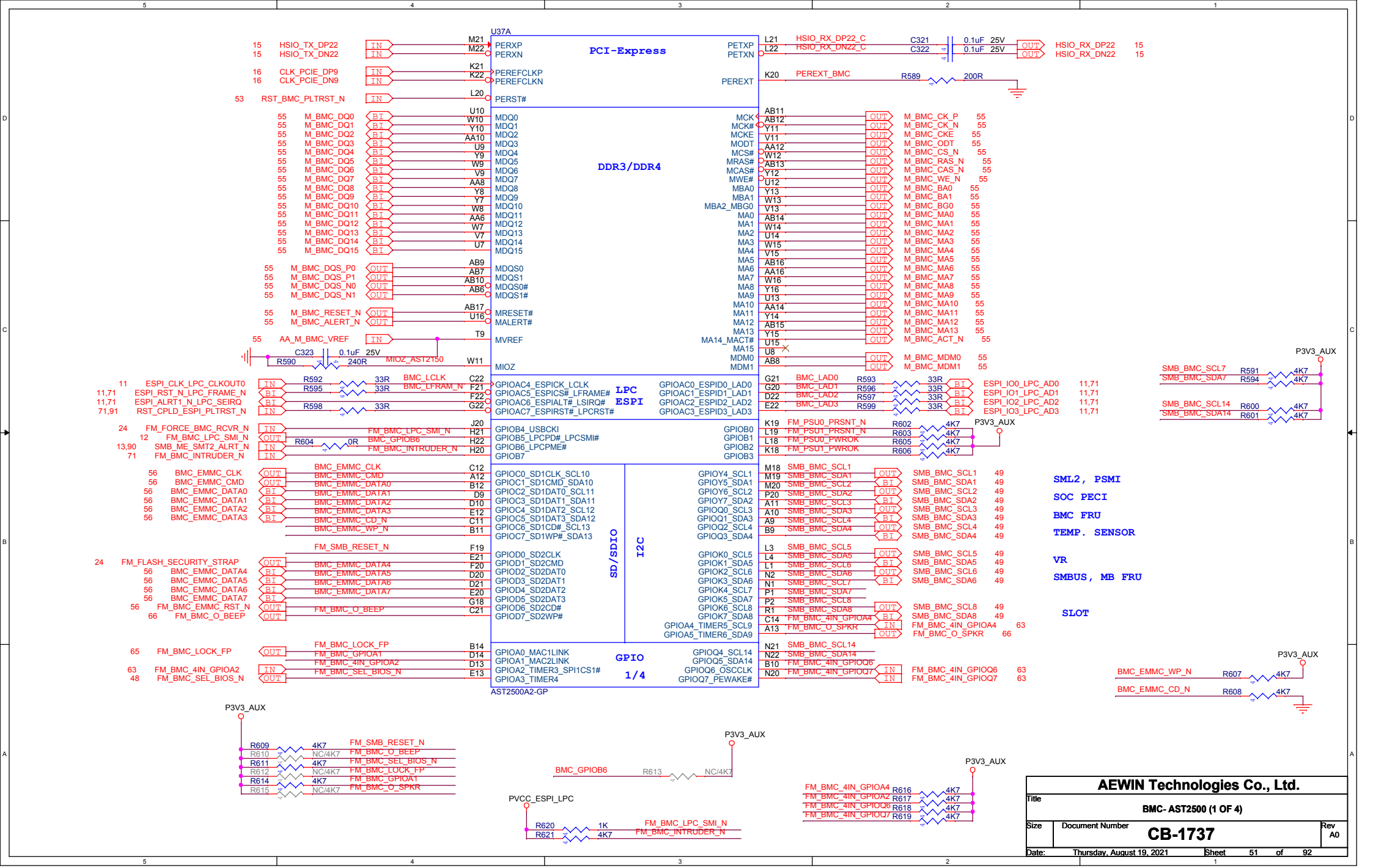
U37A
PCI-Express
PERXP
PERXN
PETXP
PETXN
PEREFCLKP
PEREFCLKN
PEREXT
PERST#
DDR3/DDR4
MDQ0
MDQ1
MDQ2
MDQ3
MDQ4
MDQ5
MDQ6
MDQ7
MDQ8
MDQ9
MDQ10
MDQ11
MDQ12
MDQ13
MDQ14
MDQ15
MDQS0
MDQS1
MDQS0#
MDQS1#
MRESET#
MALERT#
MVREF
MIOZ
MCK
MCK#
MCKE
MODT
MCS#
MRAS#
MCAS#
MWE#
MBA0
MBA1
MBA2_MBG0
MA0
MA1
MA2
MA3
MA4
MA5
MA6
MA7
MA8
MA9
MA10
MA11
MA12
MA13
MA14_MACT#
MA15
MDM0
MDM1
LPC ESPI
GPIOAC4_ESPICK_LCLK
GPIOAC5_ESPICS#_LFRAME#
GPIOAC6_ESPIALT#_LSIRQ#
GPIOAC7_ESPIRST#_LPCRST#
GPIOAC0_ESPID0_LAD0
GPIOAC1_ESPID1_LAD1
GPIOAC2_ESPID2_LAD2
GPIOAC3_ESPID3_LAD3
GPIOB4_USBCKI
GPIOB5_LPCPD#_LPCSMI#
GPIOB6_LPCPME#
GPIOB7
GPIOB0
GPIOB1
GPIOB2
GPIOB3
SD/SDIO
GPIOC0_SD1CLK_SCL10
GPIOC1_SD1CMD_SDA10
GPIOC2_SD1DAT0_SCL11
GPIOC3_SD1DAT1_SDA11
GPIOC4_SD1DAT2_SCL12
GPIOC5_SD1DAT3_SDA12
GPIOC6_SD1CD#_SCL13
GPIOC7_SD1WP#_SDA13
GPIOD0_SD2CLK
GPIOD1_SD2CMD
GPIOD2_SD2DAT0
GPIOD3_SD2DAT1
GPIOD4_SD2DAT2
GPIOD5_SD2DAT3
GPIOD6_SD2CD#
GPIOD7_SD2WP#
I2C
GPIOY4_SCL1
GPIOY5_SDA1
GPIOY6_SCL2
GPIOY7_SDA2
GPIOQ0_SCL3
GPIOQ1_SDA3
GPIOQ2_SCL4
GPIOQ3_SDA4
GPIOK0_SCL5
GPIOK1_SDA5
GPIOK2_SCL6
GPIOK3_SDA6
GPIOK4_SCL7
GPIOK5_SDA7
GPIOK6_SCL8
GPIOK7_SDA8
GPIOA4_TIMER5_SCL9
GPIOA5_TIMER6_SDA9
GPIO 1/4
GPIOA0_MAC1LINK
GPIOA1_MAC2LINK
GPIOA2_TIMER3_SPI1CS1#
GPIOA3_TIMER4
GPIOQ4_SCL14
GPIOQ5_SDA14
GPIOQ6_OSCCLK
GPIOQ7_PEWAKE#
AST2500A2-GP
SML2, PSMI
SOC PECI
BMC FRU
TEMP. SENSOR
VR
SMBUS, MB FRU
SLOT
P3V3_AUX
PVCC_ESPI_LPC
AEWIN Technologies Co., Ltd.
Title
BMC- AST2500 (1 OF 4)
Size
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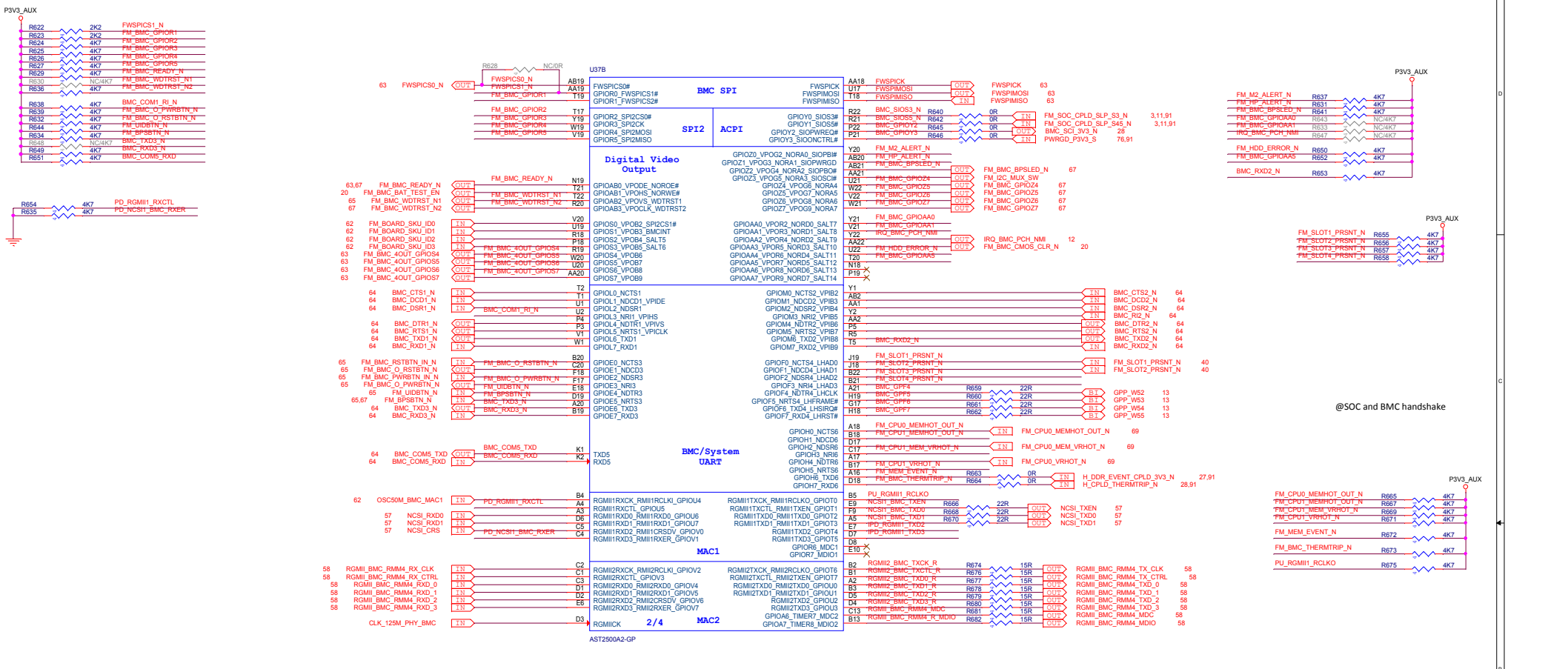

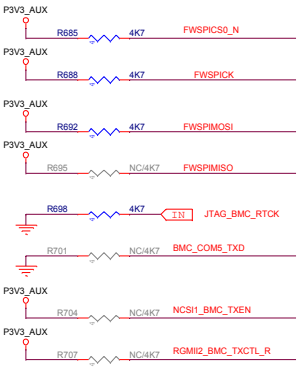

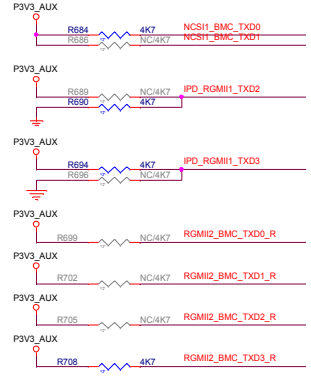

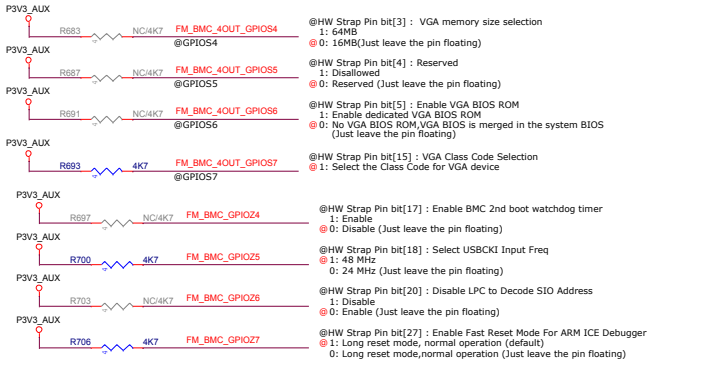

AEWIN Technologies Co., Ltd.	
Title	XX
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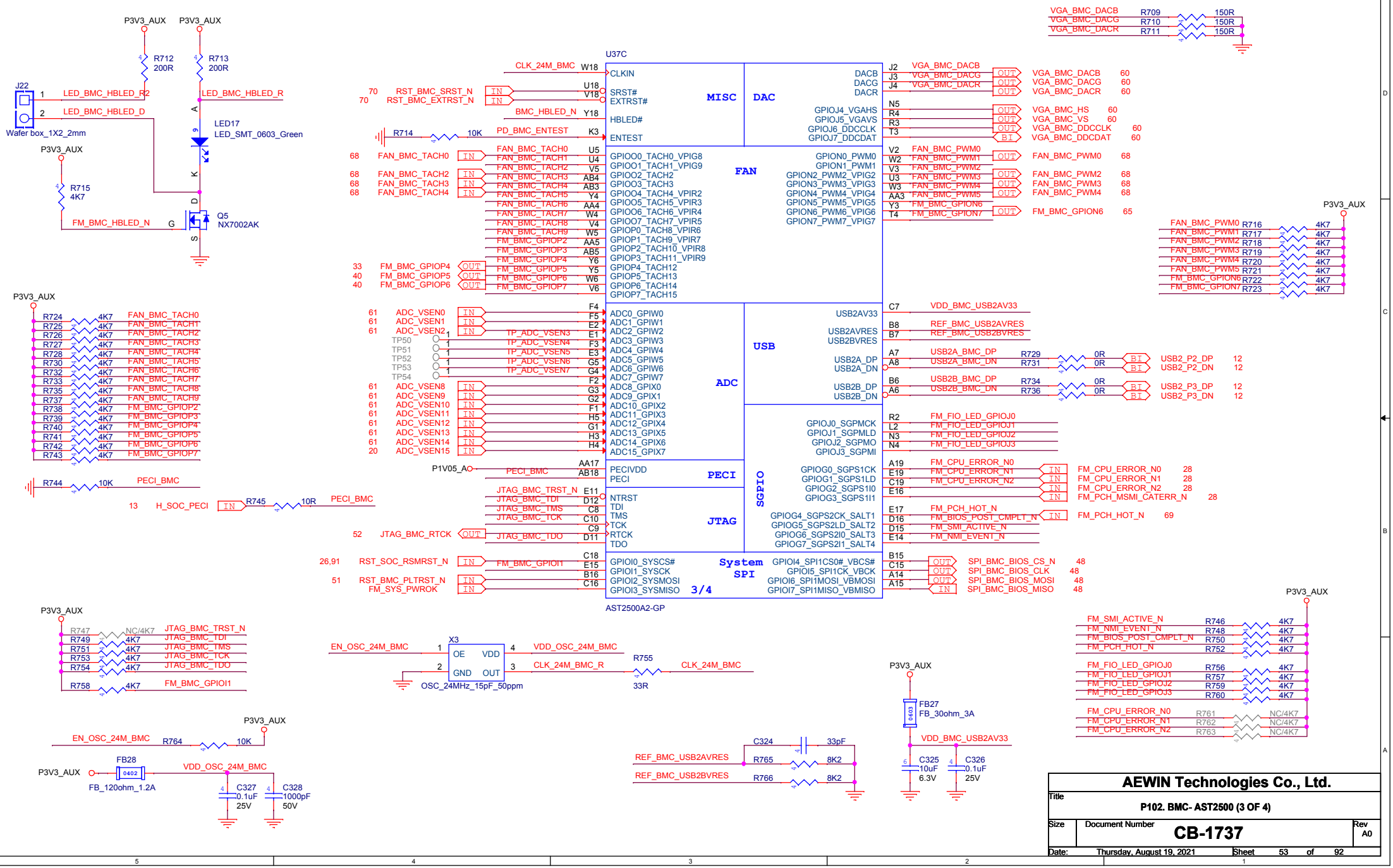
U37C
MISC
DAC
FAN
USB
ADC
PECI
JTAG
SGPIO
System SPI
3/4
AST2500A2-GP
J22
Wafer box_1X2_2mm
LED17
LED_SMT_0603_Green
Q5
NX7002AK
X3
OSC_24MHz_15pF_50ppm
FB27
FB_30ohm_3A
FB28
FB_120ohm_1.2A
AEWIN Technologies Co., Ltd.
P102. BMC- AST2500 (3 OF 4)
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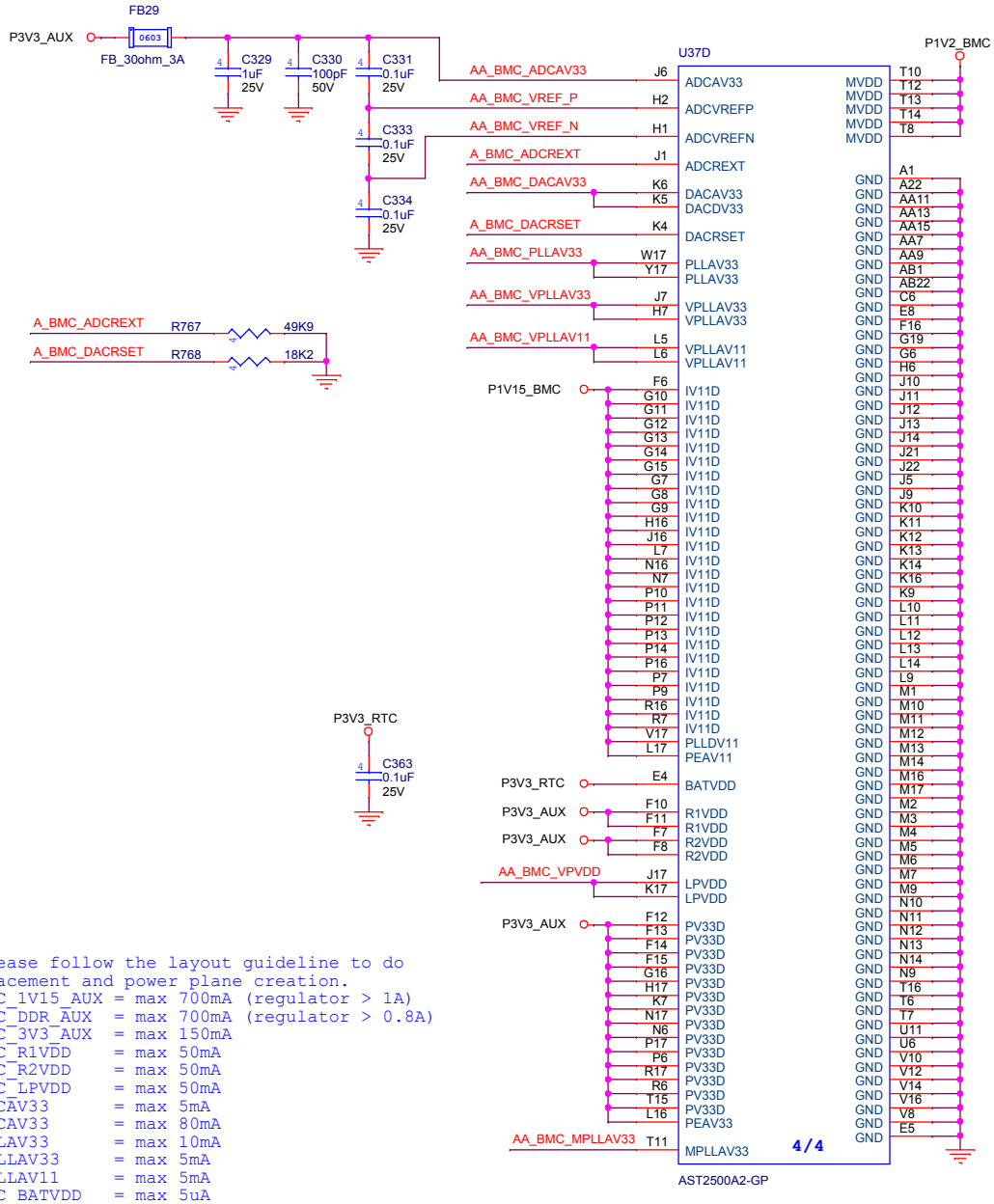
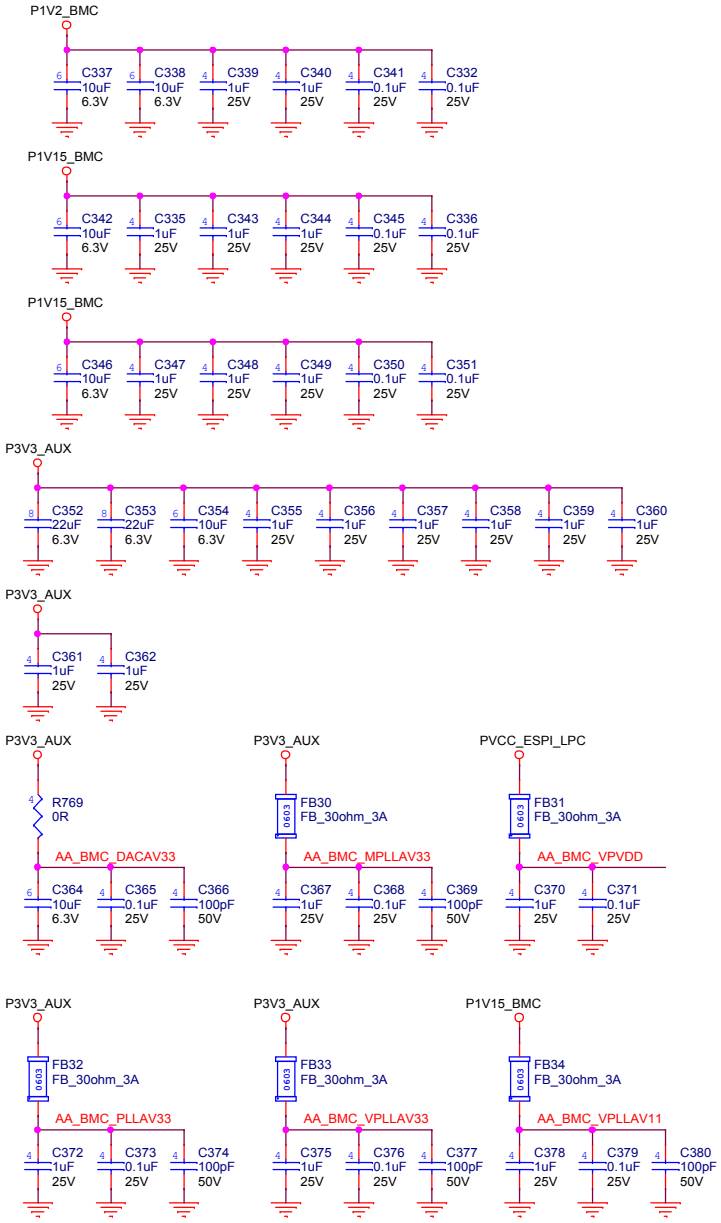


Please follow the layout guideline to do placement and power plane creation.

VCC_1V15_AUX	=	max 700mA (regulator > 1A)
VCC_DDR_AUX	=	max 700mA (regulator > 0.8A)
VCC_3V3_AUX	=	max 150mA
VCC_R1VDD	=	max 50mA
VCC_R2VDD	=	max 50mA
VCC_LPVDD	=	max 50mA
ADCAV33	=	max 5mA
DACAV33	=	max 80mA
PLLAV33	=	max 10mA
VPLLAV33	=	max 5mA
VPLLAV11	=	max 5mA
VCC_BATVDD	=	max 5uA



AEWIN Technologies Co., Ltd.			
Title: BMC- AST2500 (4 OF 4)			
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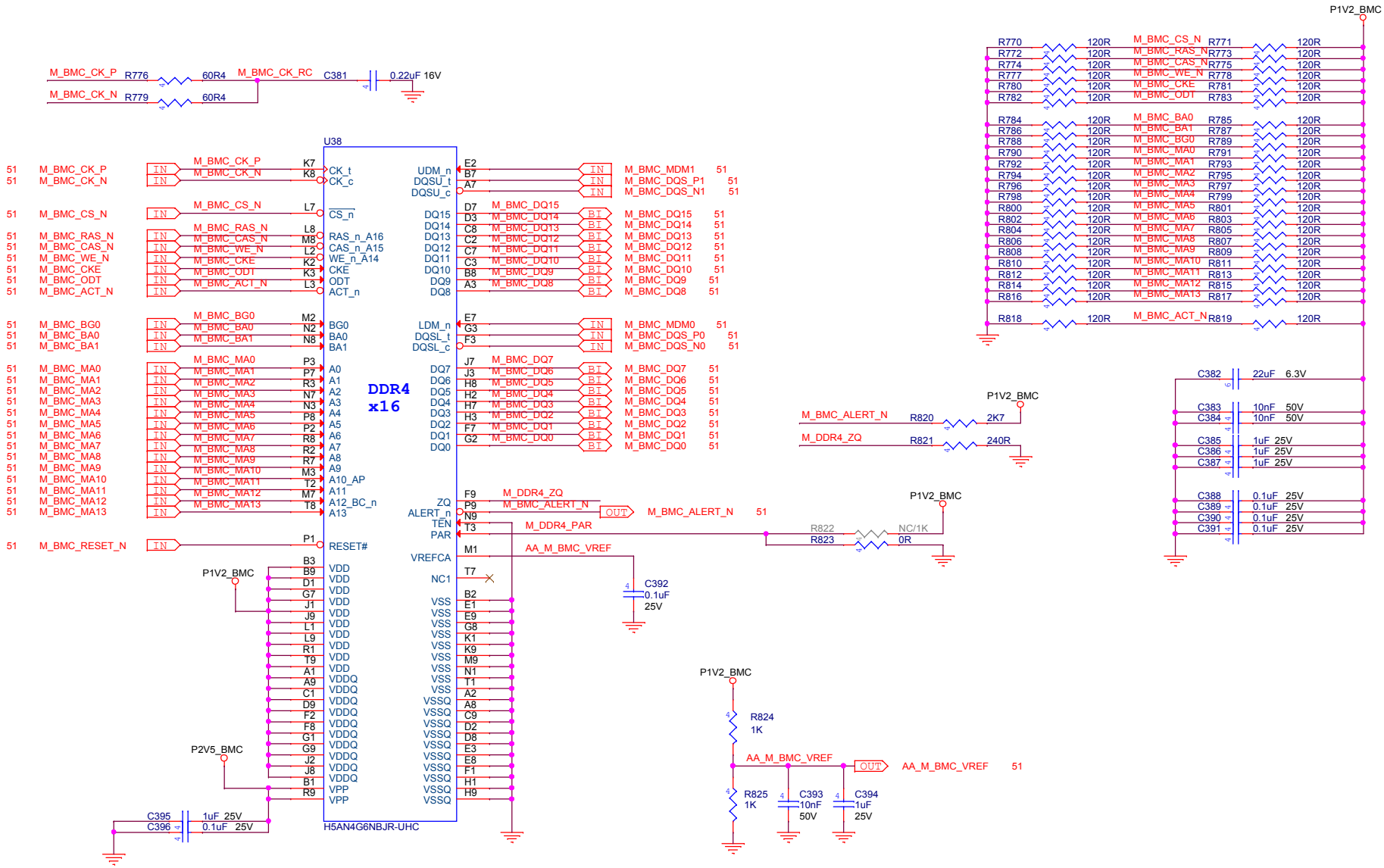

AEWIN Technologies Co., Ltd.		
Title: **BMC-DDR4**		
Size	Document Number: **CB-1737**	Rev: A0
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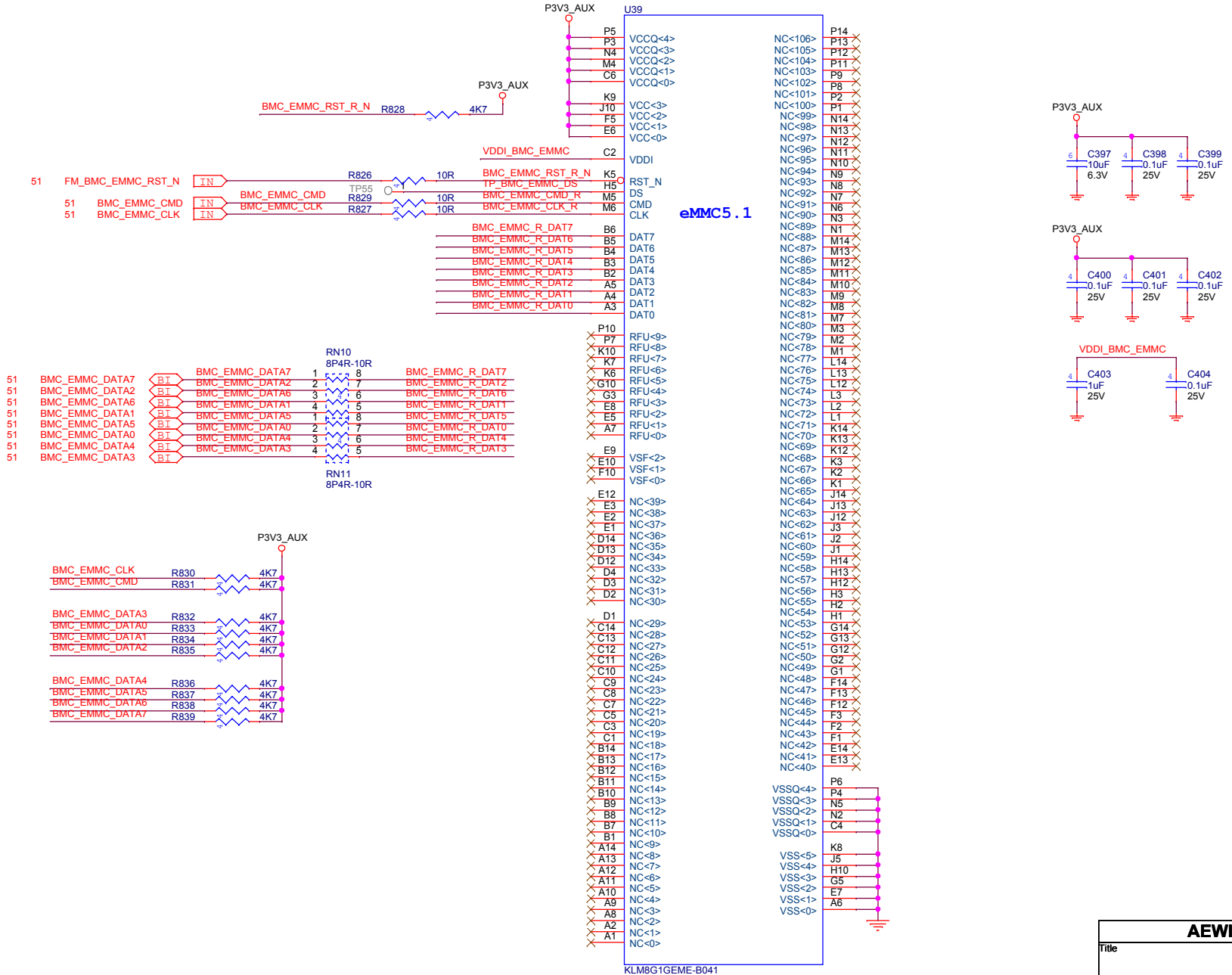

AEWIN Technologies Co., Ltd.		
Title: **BMC- EMMC**		
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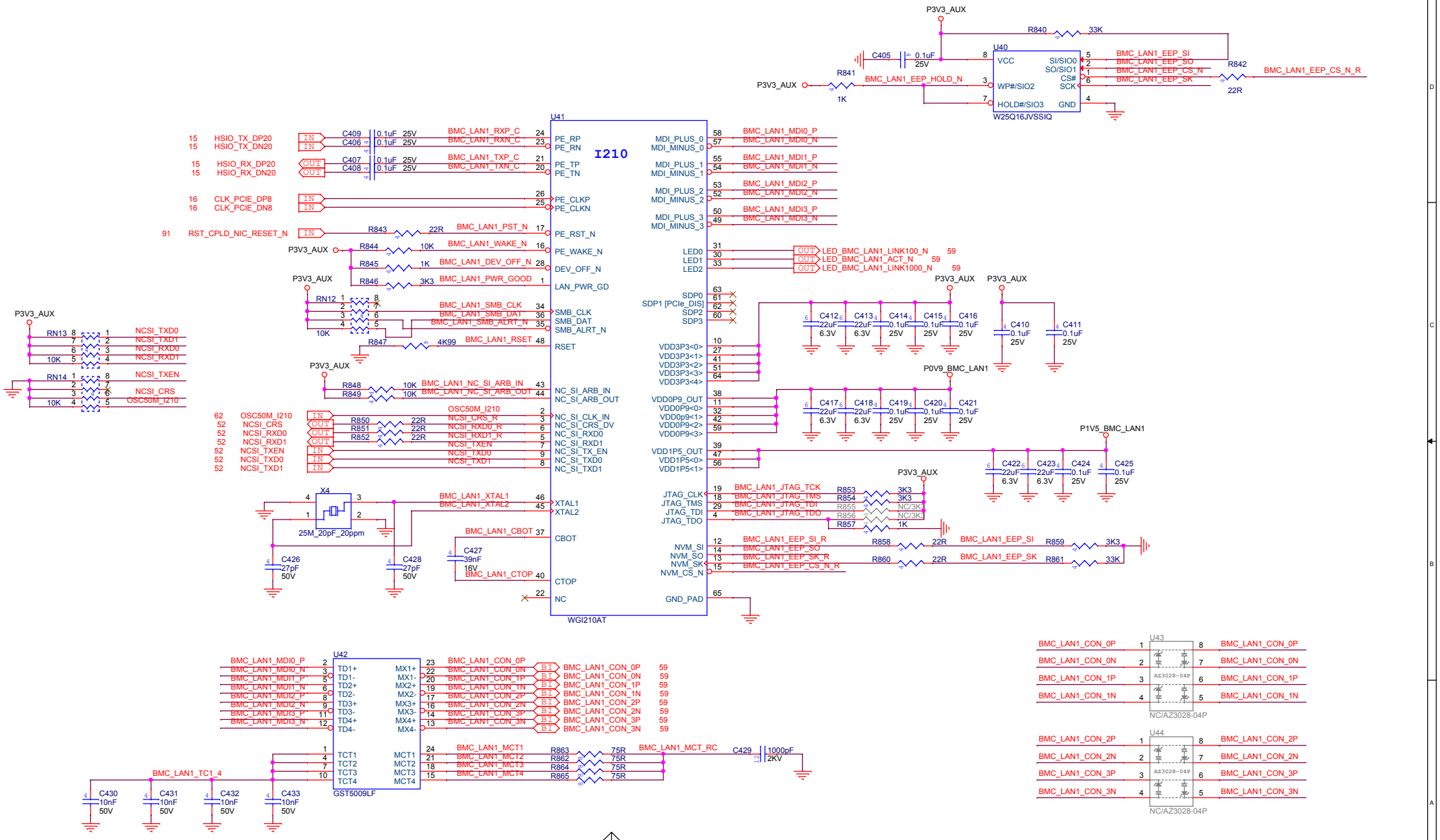

LED0->IF LINKED AT 100BASE-TX THEN LOW.
CONNECT LED0 TO CATHODE OF GREEN SPEED LED AND THE ANODE OF THE ORANGE SPEED LED.
LED1->IF LINK UP THEN LOW. IF LINK DOWN THEN HIGH. BLINK HIGH FOR ACTIVITY.
CONNECT LED1 TO THE CATHODE OF THE LINK/ACTIVITY LED.
CONNECT THE ANODE OF THE LINK/ACTIVITY LED TO VCC.
LED2->IF LINKED AT 1000BASE-T THEN LOW.
CONNECT LED2 TO CATHODE OF ORANGE SPEED LED AND THE ANODE OF THE GREEN SPEED LED.

AEWIN Technologies Co., Ltd.		
Title: **BMC-NCSI LAN**		
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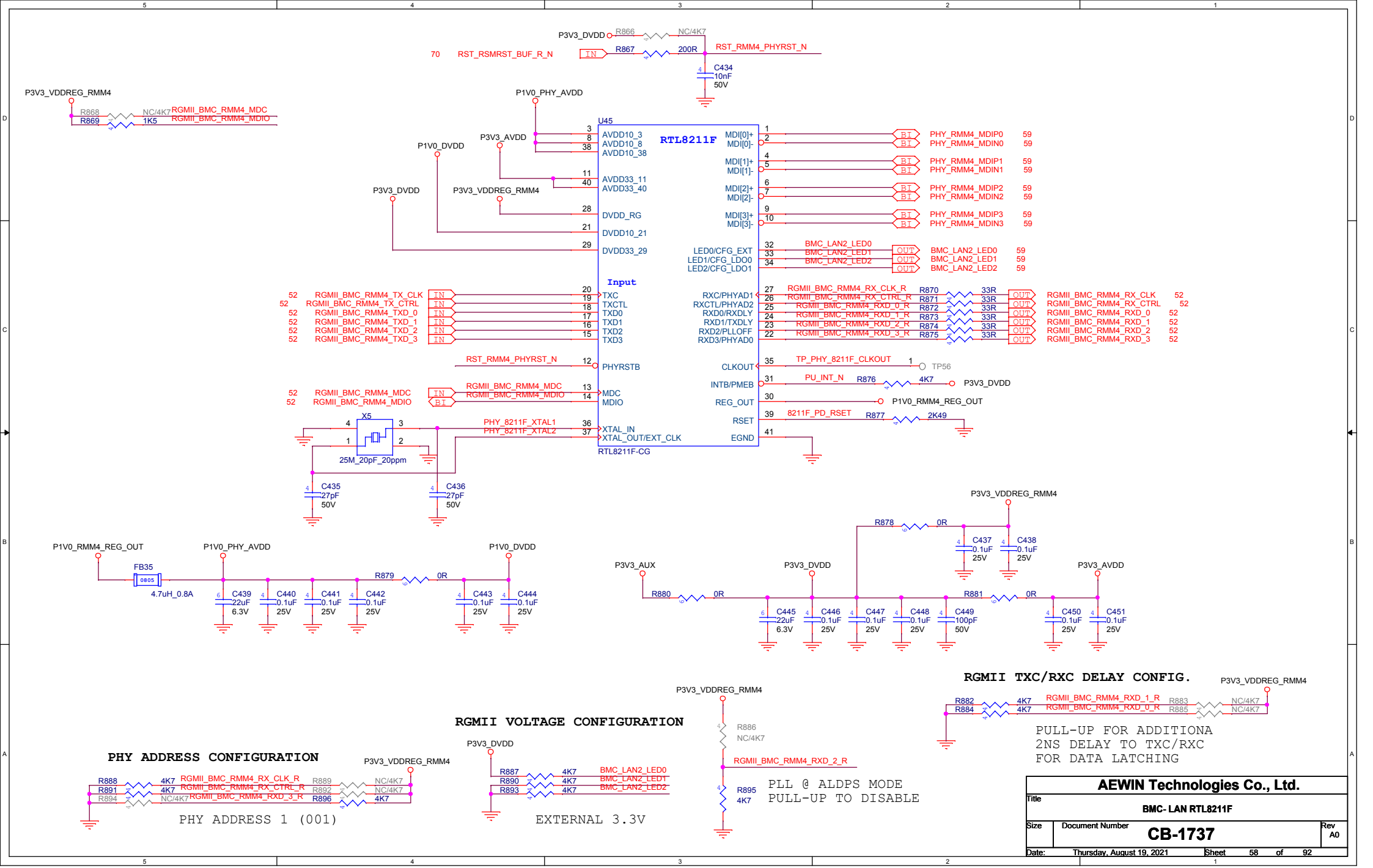
P3V3_DVDD
R866
NC/4K7
70
RST_RSMRST_BUF_R_N
IN
R867
200R
RST_RMM4_PHYRST_N
C434
10nF
50V
P3V3_VDDREG_RMM4
R868
NC/4K7
RGMII_BMC_RMM4_MDC
R869
1K5
RGMII_BMC_RMM4_MDIO
P1V0_PHY_AVDD
U45
RTL8211F
P3V3_AVDD
P1V0_DVDD
P3V3_DVDD
P3V3_VDDREG_RMM4
AVDD10_3
AVDD10_8
AVDD10_38
AVDD33_11
AVDD33_40
DVDD_RG
DVDD10_21
DVDD33_29
MDI[0]+
MDI[0]-
MDI[1]+
MDI[1]-
MDI[2]+
MDI[2]-
MDI[3]+
MDI[3]-
PHY_RMM4_MDIP0
PHY_RMM4_MDIN0
PHY_RMM4_MDIP1
PHY_RMM4_MDIN1
PHY_RMM4_MDIP2
PHY_RMM4_MDIN2
PHY_RMM4_MDIP3
PHY_RMM4_MDIN3
LED0/CFG_EXT
LED1/CFG_LDO0
LED2/CFG_LDO1
BMC_LAN2_LED0
BMC_LAN2_LED1
BMC_LAN2_LED2
Input
TXC
TXCTL
TXD0
TXD1
TXD2
TXD3
RGMII_BMC_RMM4_TX_CLK
RGMII_BMC_RMM4_TX_CTRL
RGMII_BMC_RMM4_TXD_0
RGMII_BMC_RMM4_TXD_1
RGMII_BMC_RMM4_TXD_2
RGMII_BMC_RMM4_TXD_3
RXC/PHYAD1
RXCTL/PHYAD2
RXD0/RXDLY
RXD1/TXDLY
RXD2/PLLOFF
RXD3/PHYAD0
RGMII_BMC_RMM4_RX_CLK_R
RGMII_BMC_RMM4_RX_CTRL_R
RGMII_BMC_RMM4_RXD_0_R
RGMII_BMC_RMM4_RXD_1_R
RGMII_BMC_RMM4_RXD_2_R
RGMII_BMC_RMM4_RXD_3_R
R870
R871
R872
R873
R874
R875
33R
RGMII_BMC_RMM4_RX_CLK
RGMII_BMC_RMM4_RX_CTRL
RGMII_BMC_RMM4_RXD_0
RGMII_BMC_RMM4_RXD_1
RGMII_BMC_RMM4_RXD_2
RGMII_BMC_RMM4_RXD_3
RST_RMM4_PHYRST_N
PHYRSTB
CLKOUT
TP_PHY_8211F_CLKOUT
TP56
INTB/PMEB
PU_INT_N
R876
4K7
REG_OUT
P1V0_RMM4_REG_OUT
RSET
8211F_PD_RSET
R877
2K49
EGND
RGMII_BMC_RMM4_MDC
RGMII_BMC_RMM4_MDIO
MDC
MDIO
X5
PHY_8211F_XTAL1
PHY_8211F_XTAL2
XTAL_IN
XTAL_OUT/EXT_CLK
25M_20pF_20ppm
C435
27pF
50V
C436
27pF
50V
RTL8211F-CG
P1V0_RMM4_REG_OUT
FB35
0805
4.7uH_0.8A
P1V0_PHY_AVDD
P1V0_DVDD
R879
0R
C439
22uF
6.3V
C440
0.1uF
25V
C441
0.1uF
25V
C442
0.1uF
25V
C443
0.1uF
25V
C444
0.1uF
25V
P3V3_VDDREG_RMM4
R878
0R
C437
0.1uF
25V
C438
0.1uF
25V
P3V3_AUX
P3V3_DVDD
P3V3_AVDD
R880
0R
R881
0R
C445
22uF
6.3V
C446
0.1uF
25V
C447
0.1uF
25V
C448
0.1uF
25V
C449
100pF
50V
C450
0.1uF
25V
C451
0.1uF
25V
RGMII TXC/RXC DELAY CONFIG.
P3V3_VDDREG_RMM4
R882
R884
4K7
4K7
RGMII_BMC_RMM4_RXD_1_R
RGMII_BMC_RMM4_RXD_0_R
R883
R885
NC/4K7
NC/4K7
PULL-UP FOR ADDITIONA
2NS DELAY TO TXC/RXC
FOR DATA LATCHING
RGMII VOLTAGE CONFIGURATION
P3V3_VDDREG_RMM4
R886
NC/4K7
RGMII_BMC_RMM4_RXD_2_R
R895
4K7
PLL @ ALDPS MODE
PULL-UP TO DISABLE
P3V3_DVDD
R887
R890
R893
4K7
4K7
4K7
BMC_LAN2_LED0
BMC_LAN2_LED1
BMC_LAN2_LED2
EXTERNAL 3.3V
PHY ADDRESS CONFIGURATION
P3V3_VDDREG_RMM4
R888
R891
R894
4K7
4K7
NC/4K7
RGMII_BMC_RMM4_RX_CLK_R
RGMII_BMC_RMM4_RX_CTRL_R
RGMII_BMC_RMM4_RXD_3_R
R889
R892
R896
NC/4K7
NC/4K7
4K7
PHY ADDRESS 1 (001)
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BMC- LAN RTL8211F
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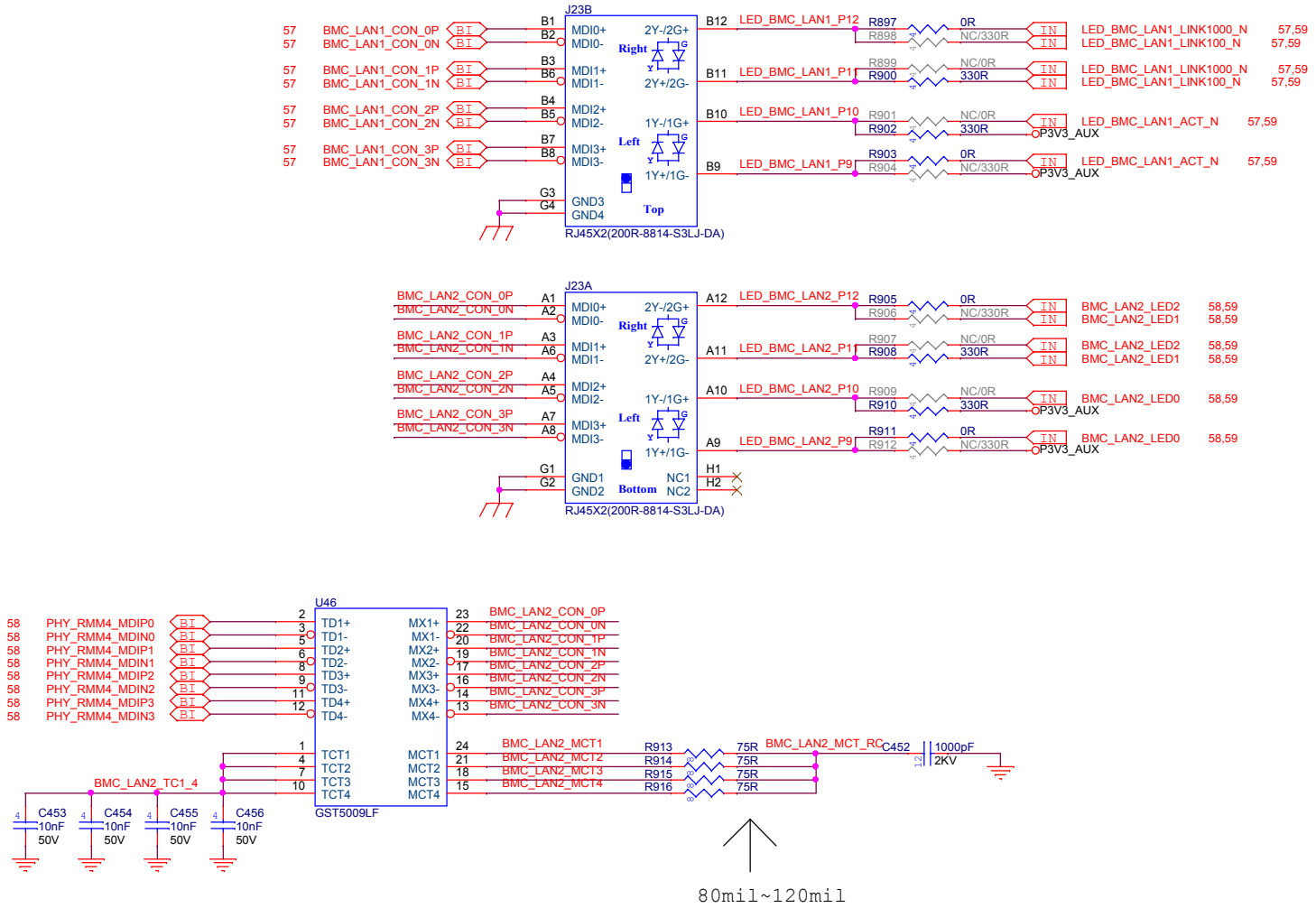

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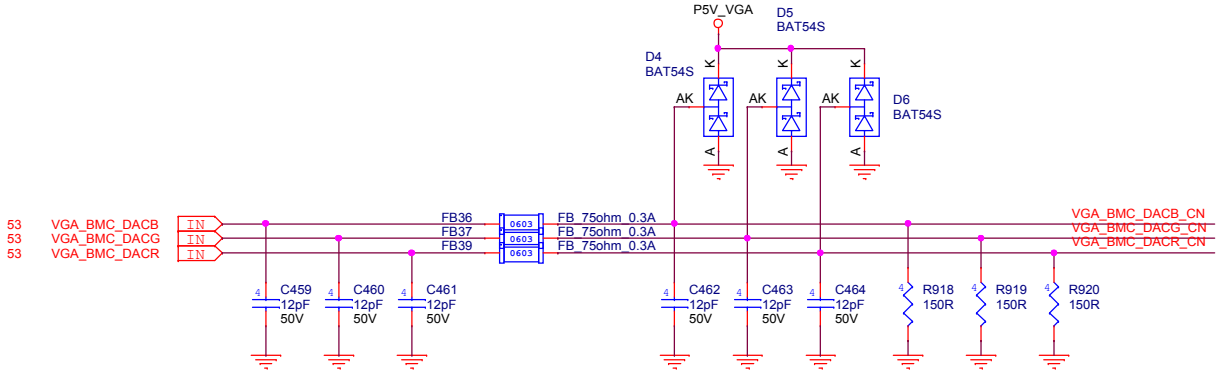
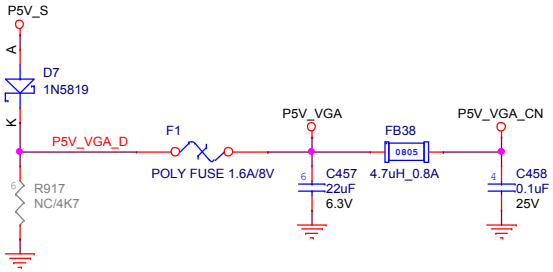
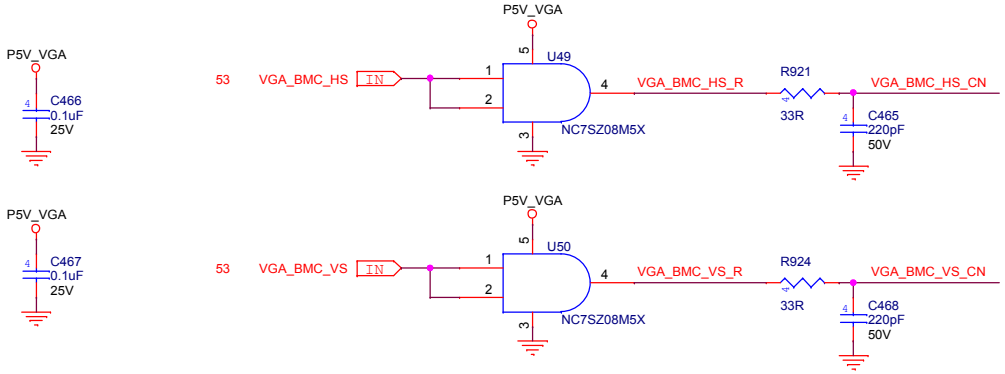
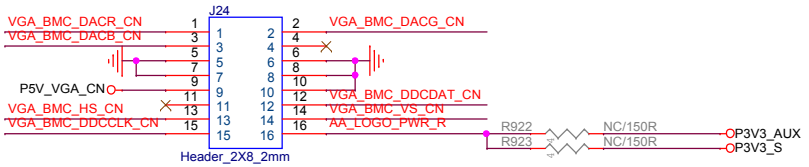
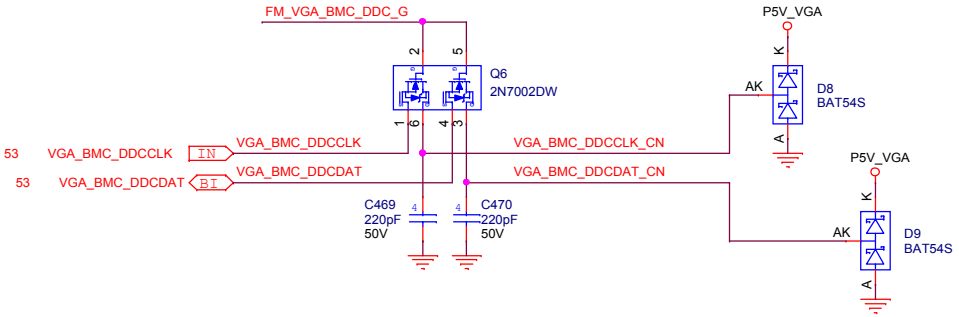
AEWIN Technologies Co., Ltd.

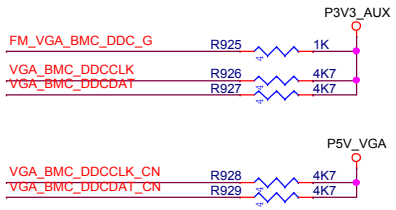












AEWIN Technologies Co., Ltd.		
Title: BMC- VGA		
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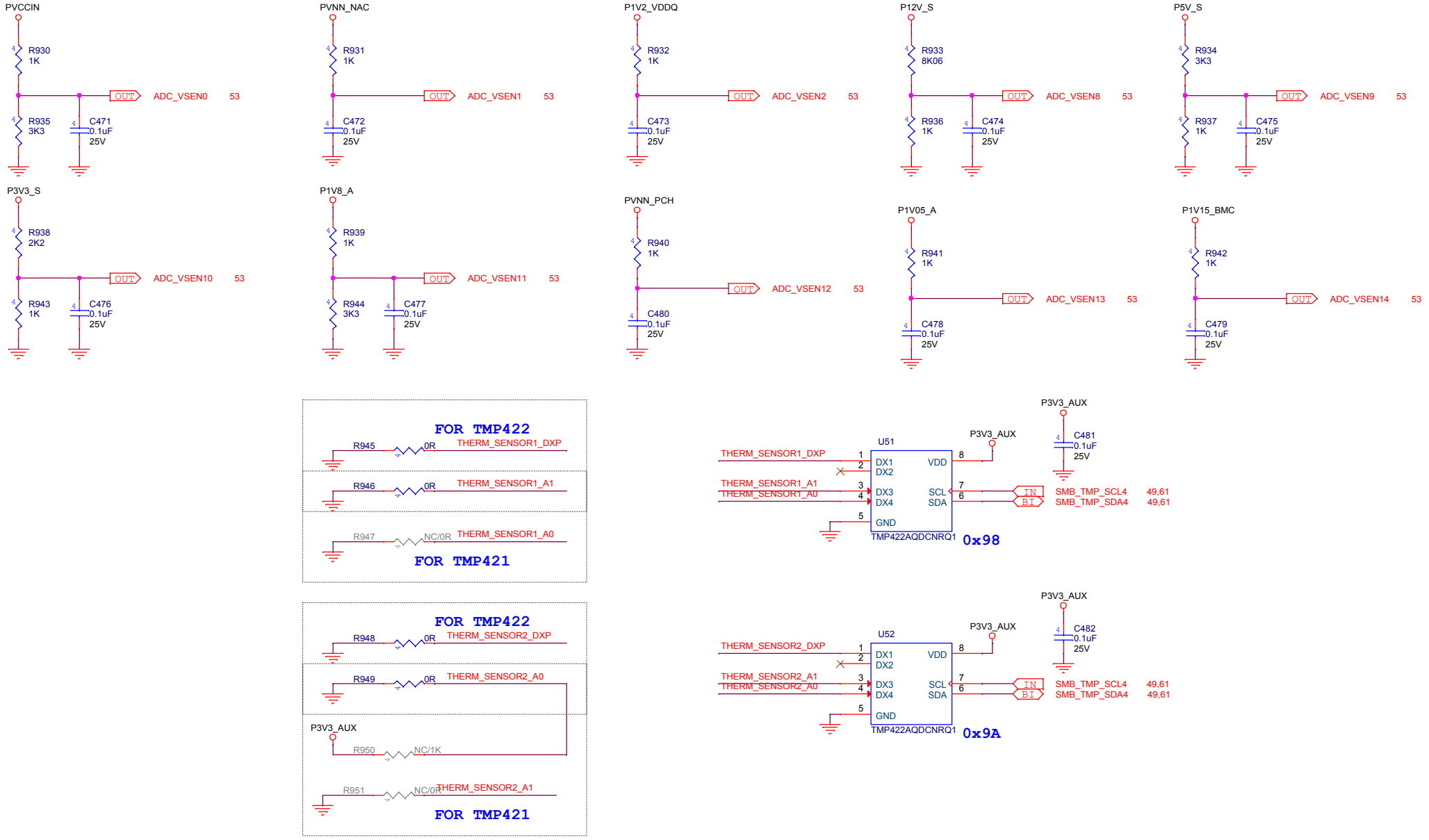

AEWIN Technologies Co., Ltd.		
Title: **BMC- HW MONITOR**		
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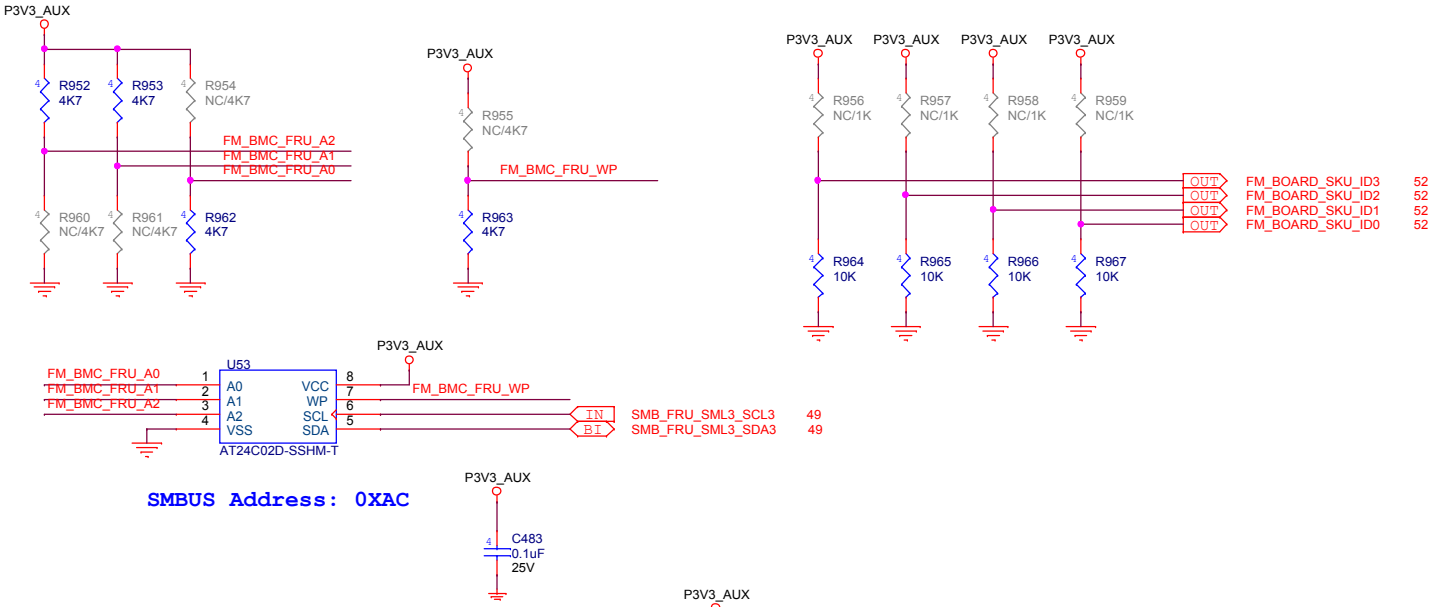
BMC FRU.



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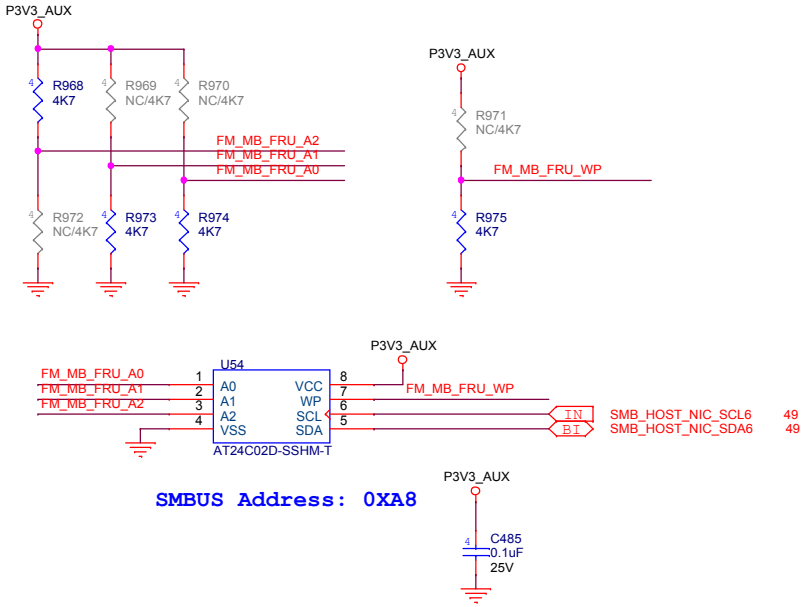
MB FRU.



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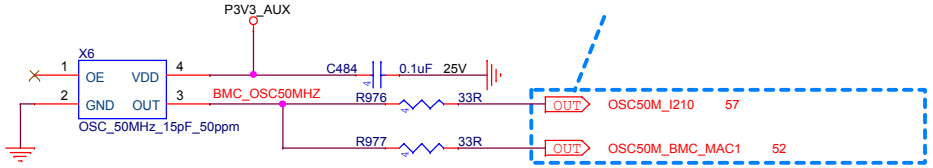
NCSI LAN CLK

Trace length : OSC50M_I210 = OSC50M_BMC_MAC1



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Title: MB & BMC FRU		
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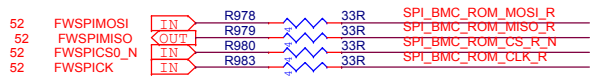

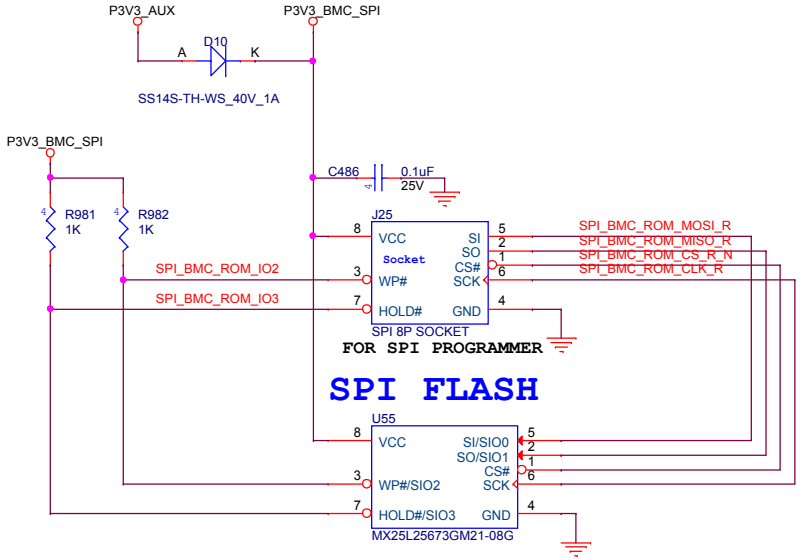

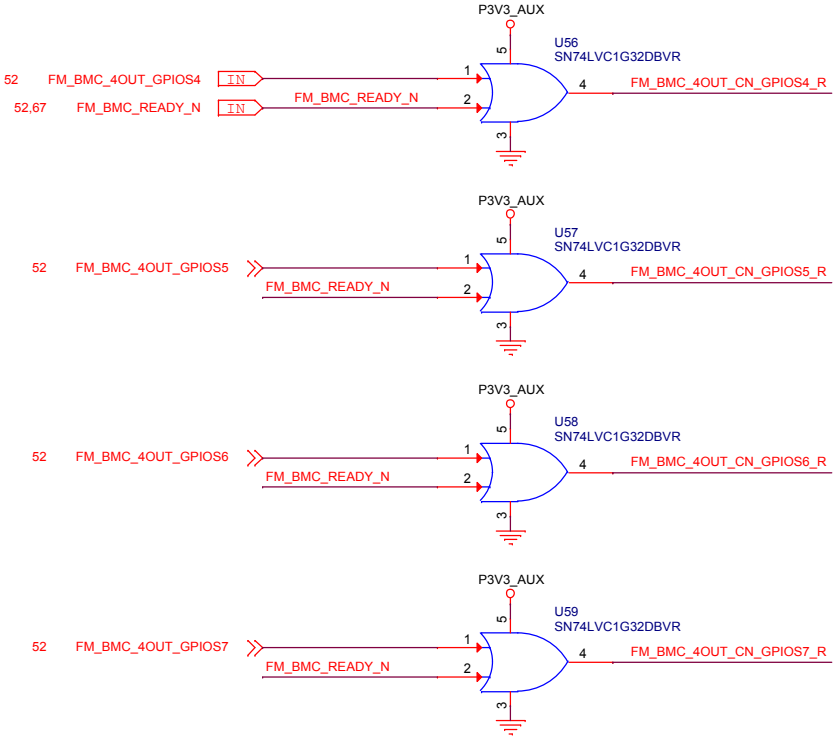

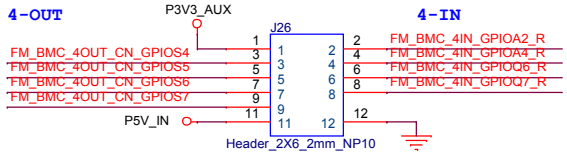

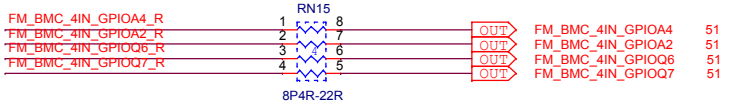

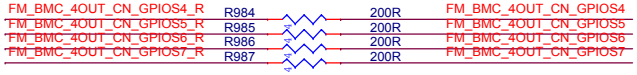

AEWIN Technologies Co., Ltd.		
Title: BMC- SPI & GPIO		
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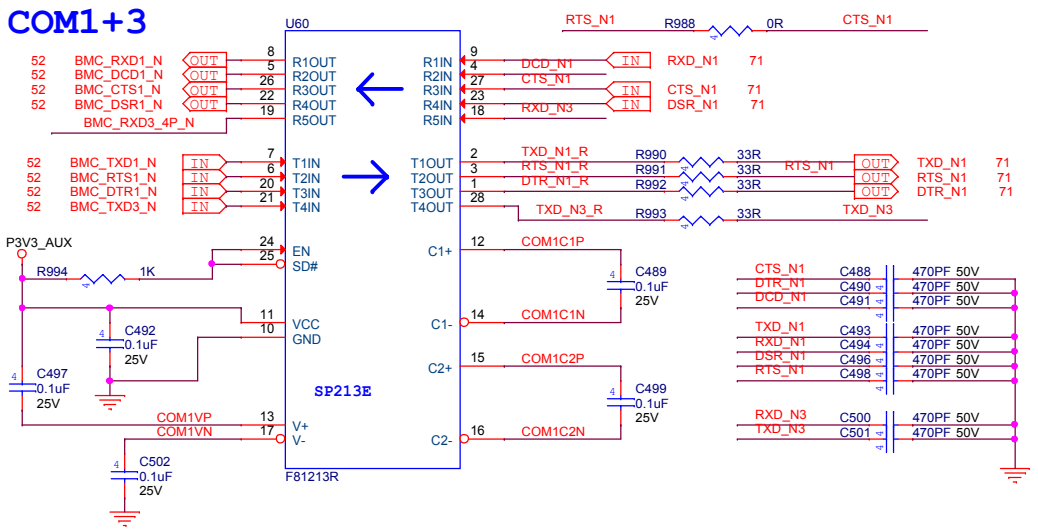
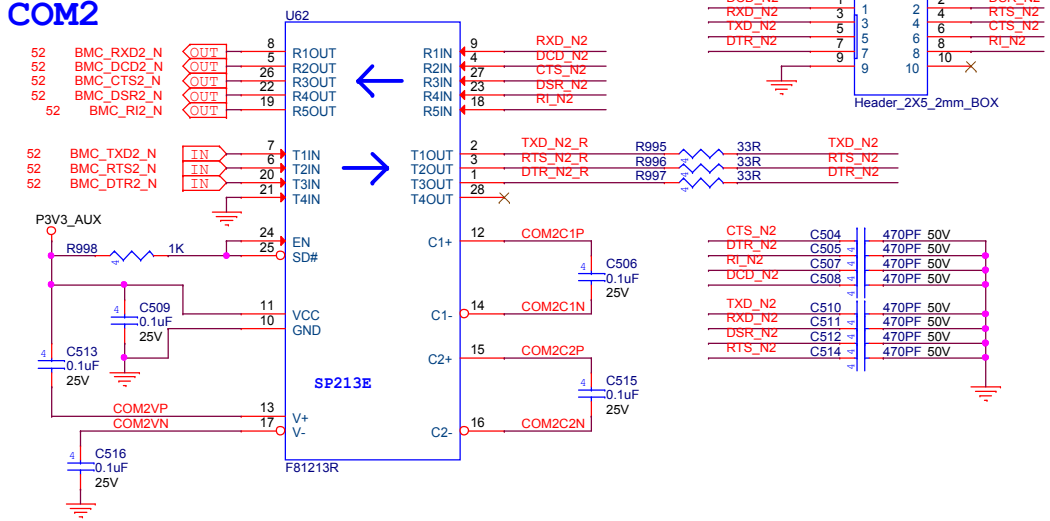
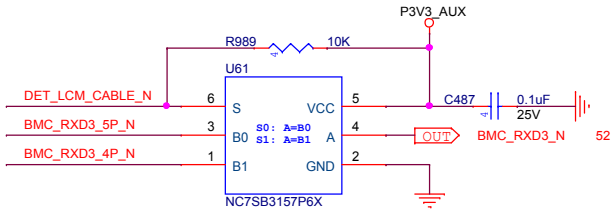
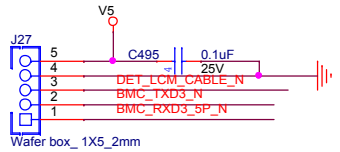
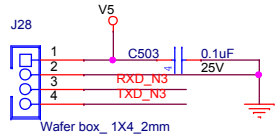


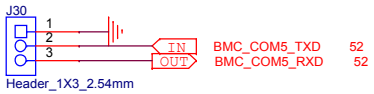








BMC debug port



AEWIN Technologies Co., Ltd.		
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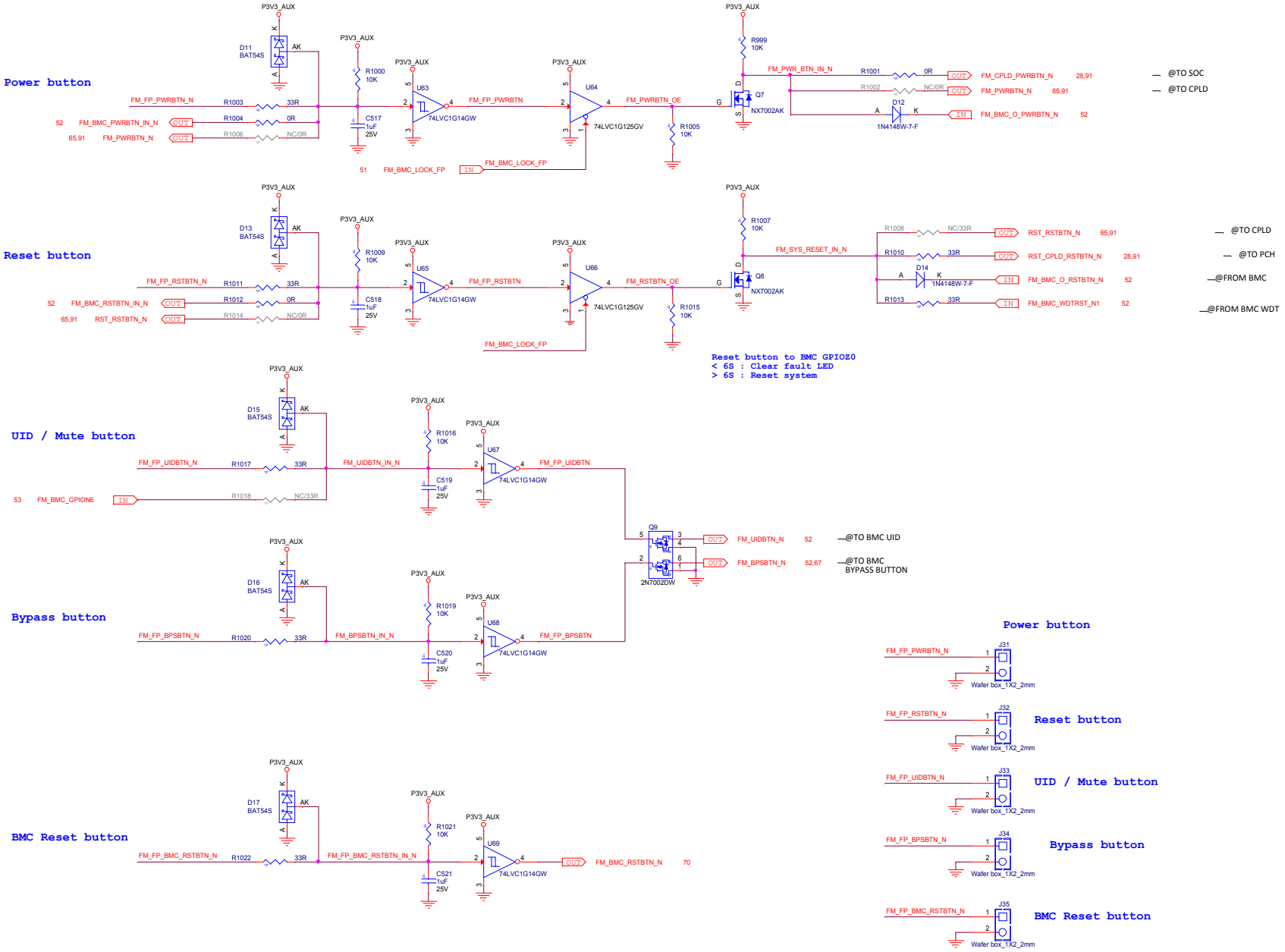

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Title: BMC- BUTTON		
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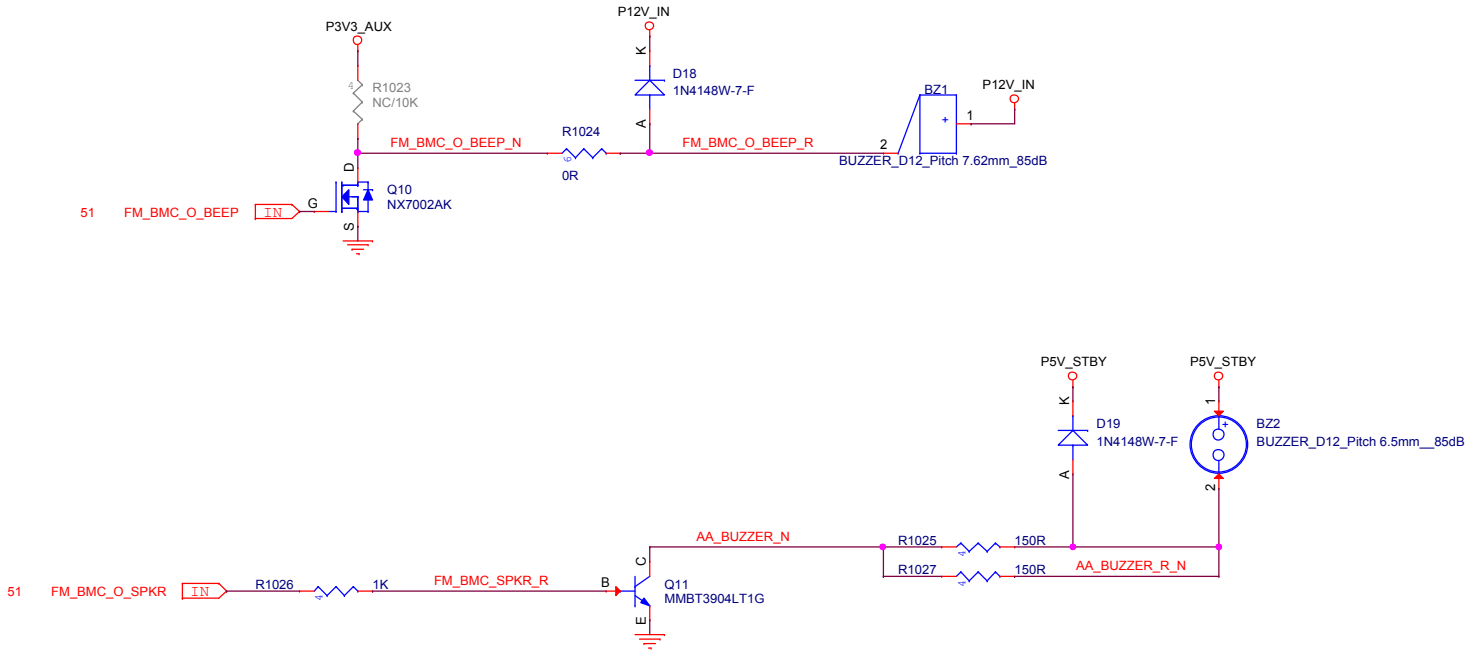

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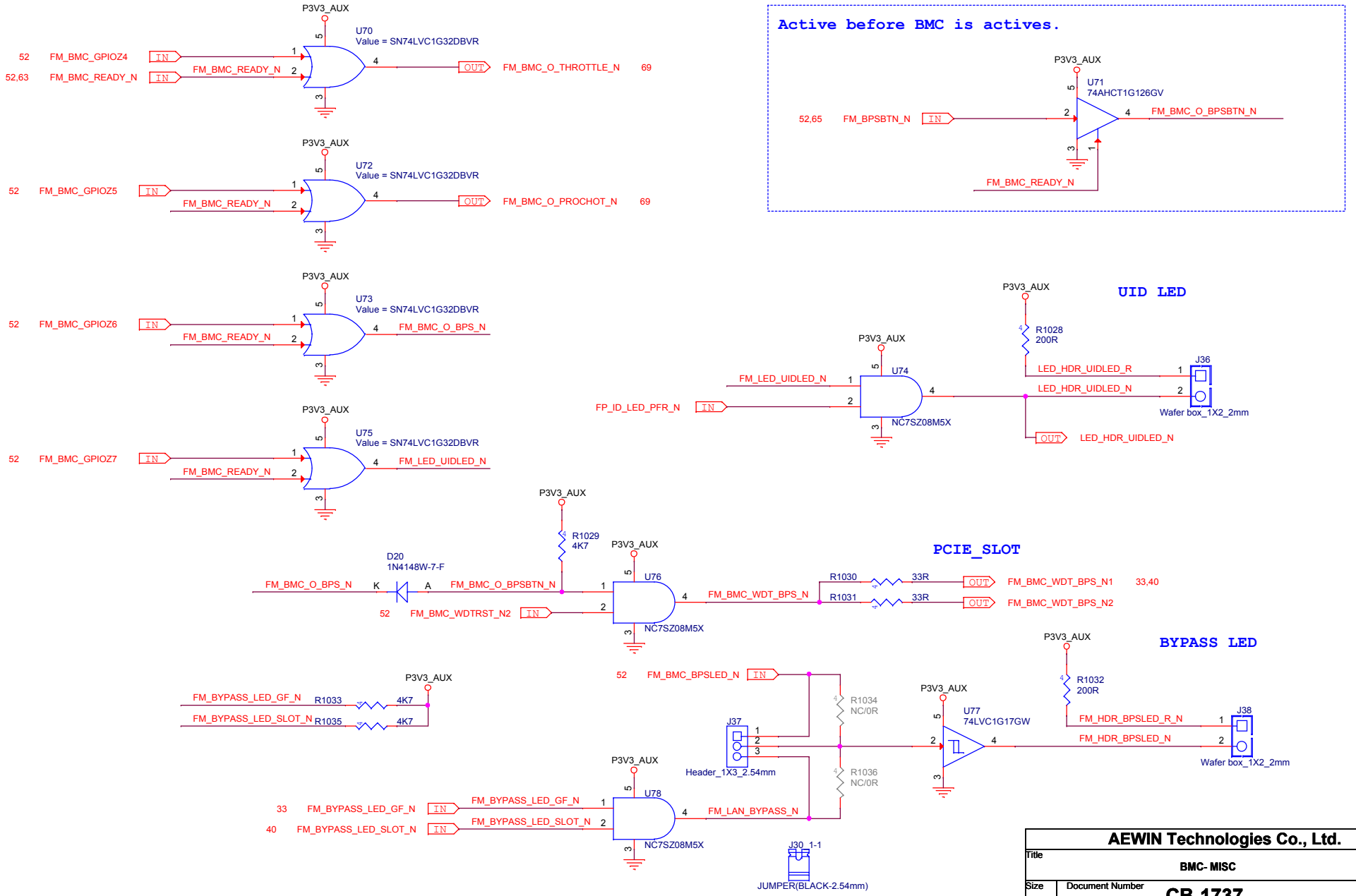

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Title: BMC- MISC		
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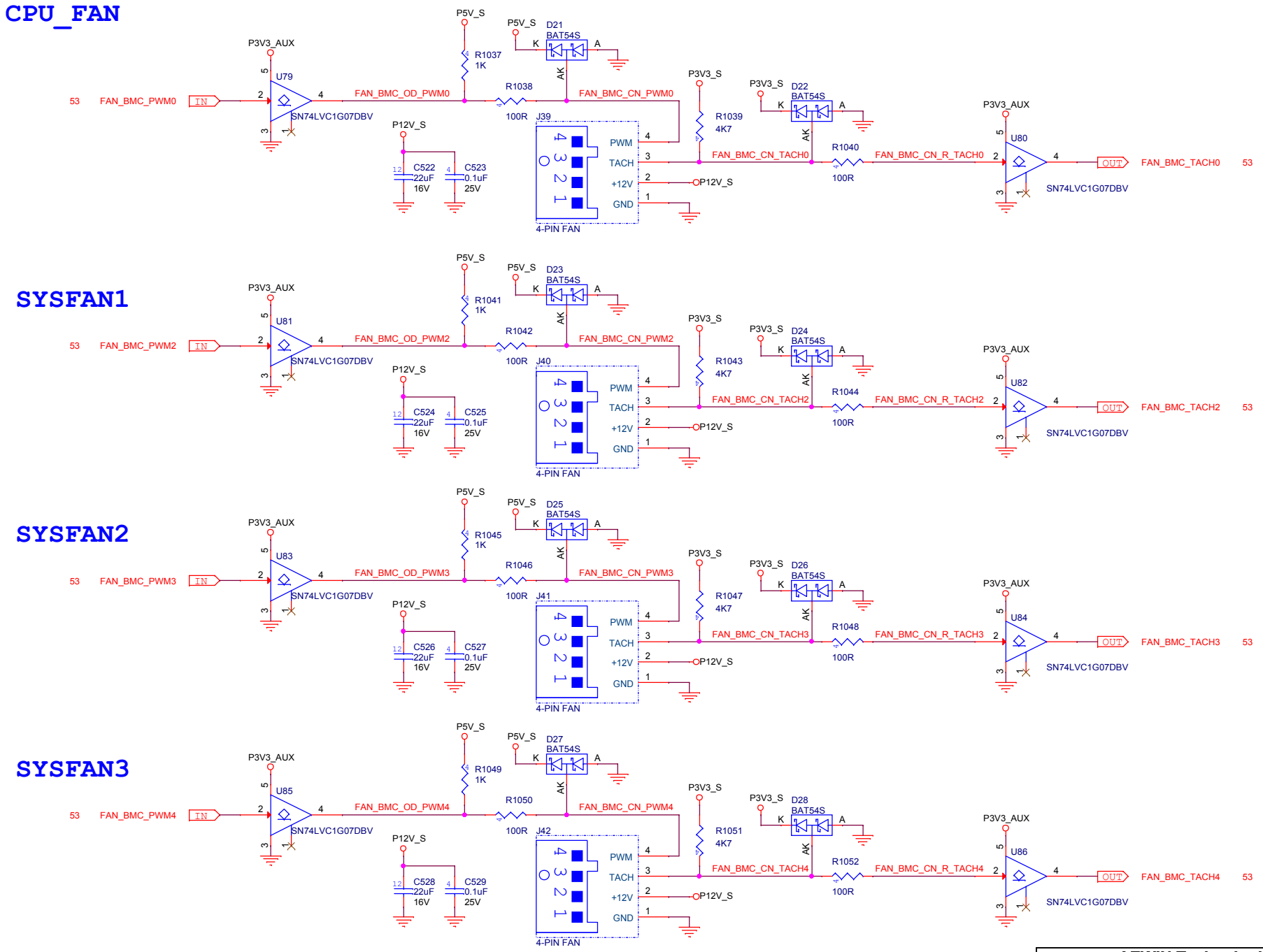

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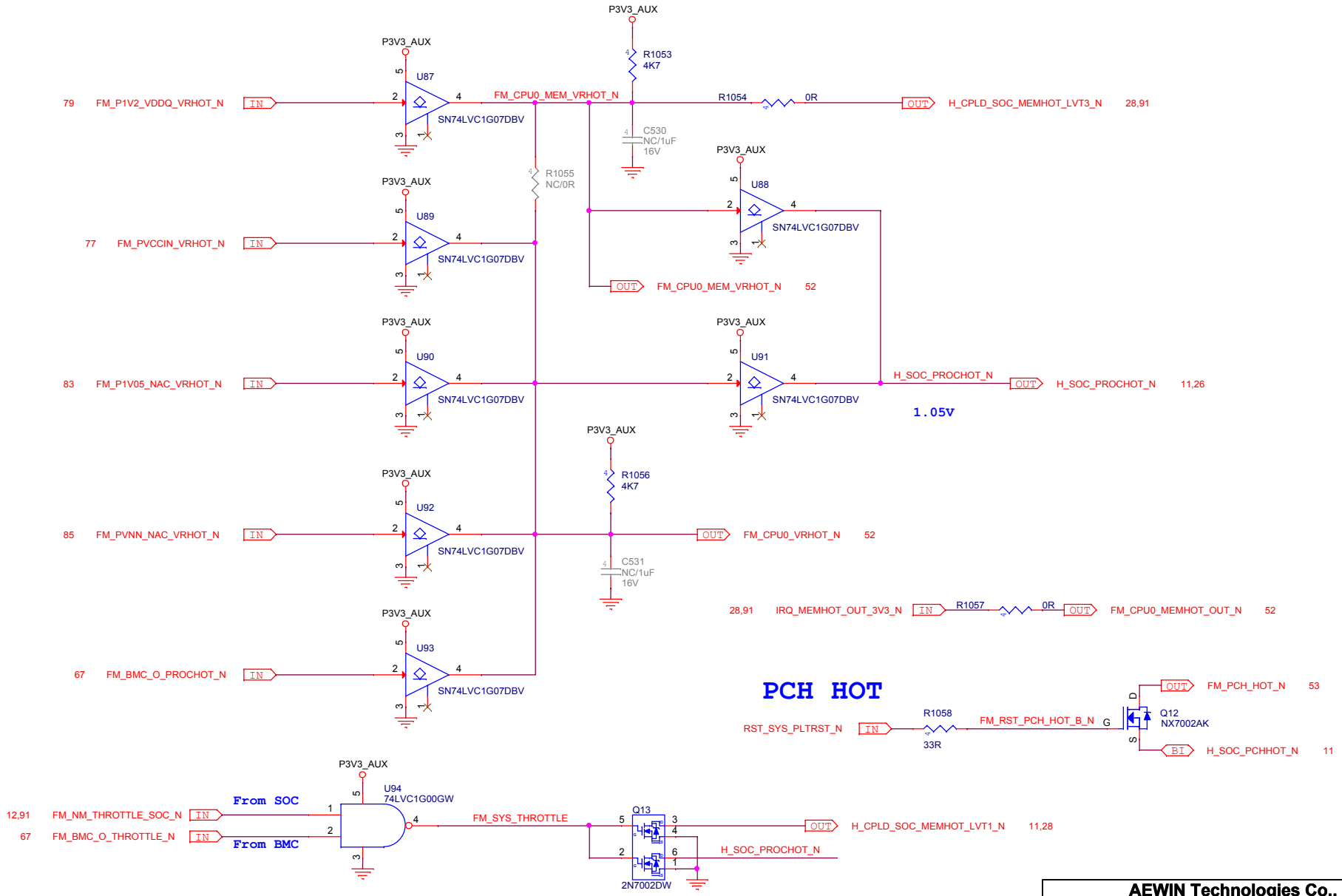

AEWIN Technologies Co., Ltd.		
Title: BMC_VRHOT		
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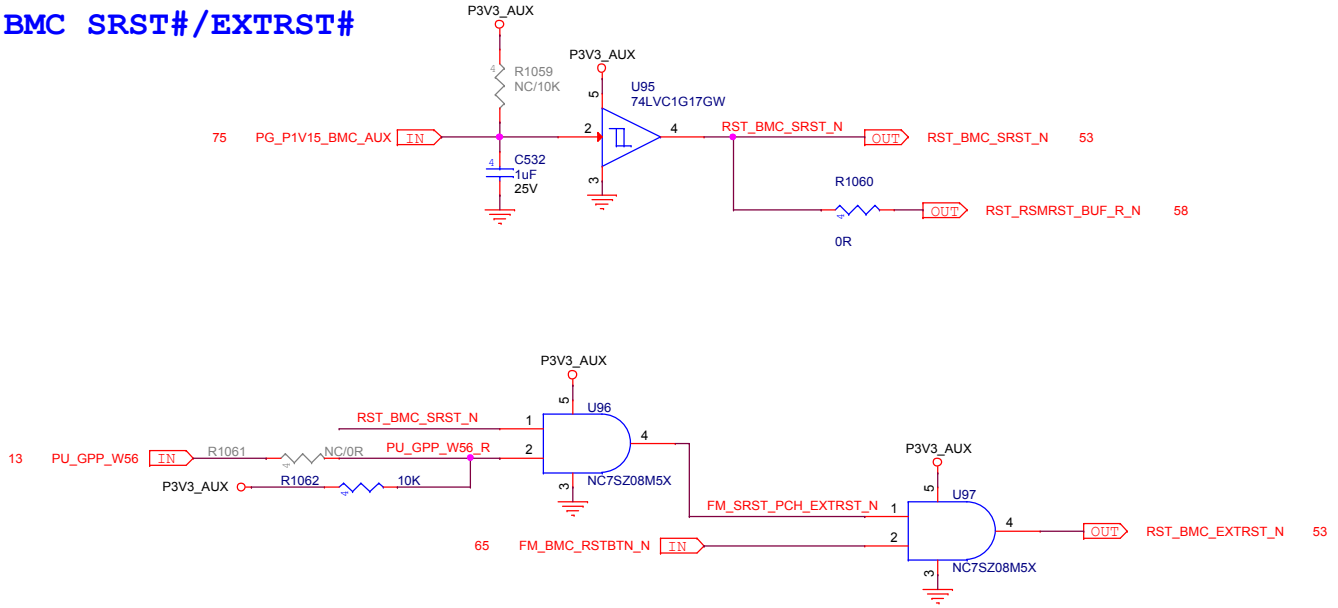
BMC SRST#/EXTRST#



AEWIN Technologies Co., Ltd.			
Title: BMC-RESET			
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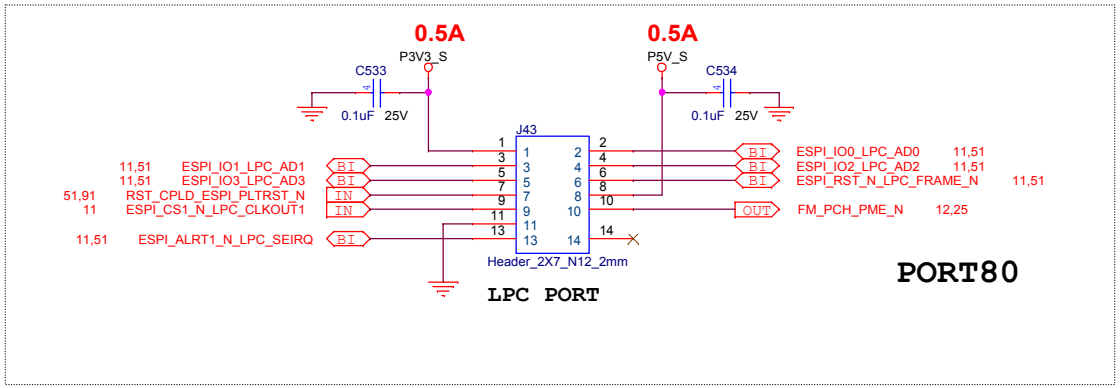

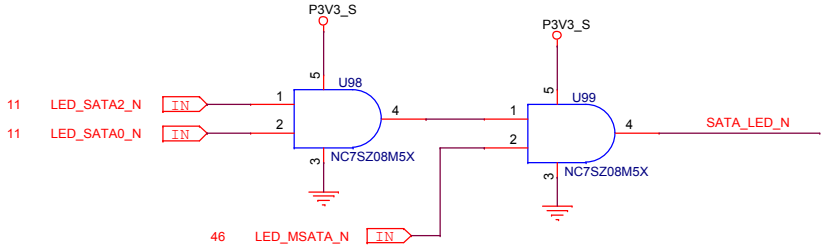

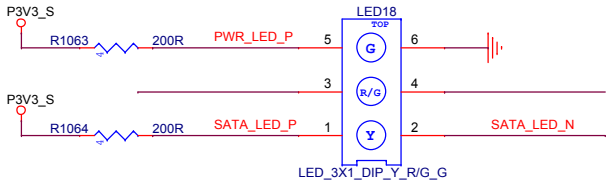

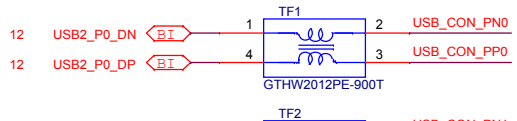

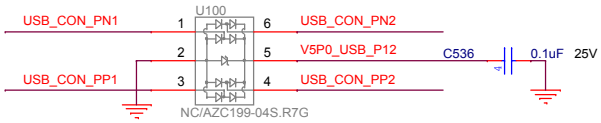

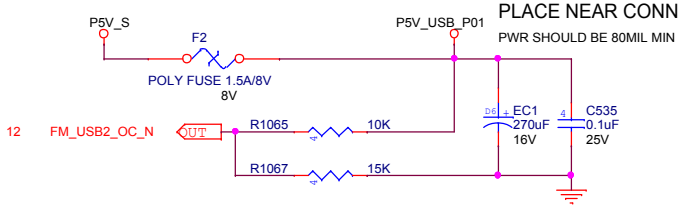

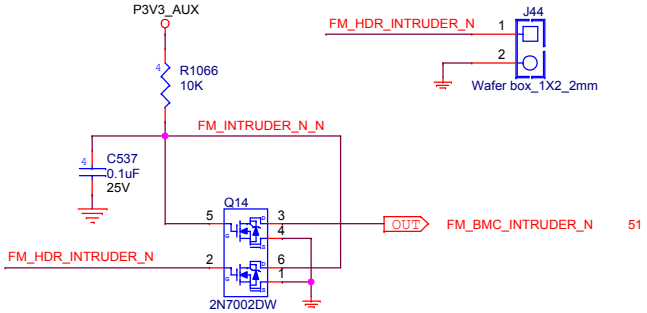

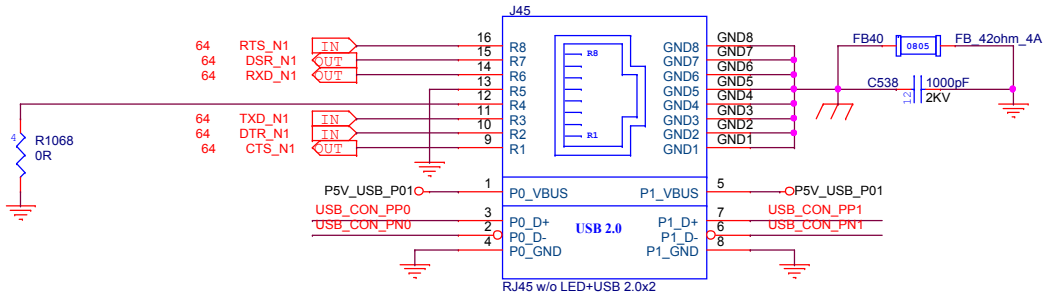

AEWIN Technologies Co., Ltd.		
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AEWIN Technologies Co., Ltd.		
Title: XX		
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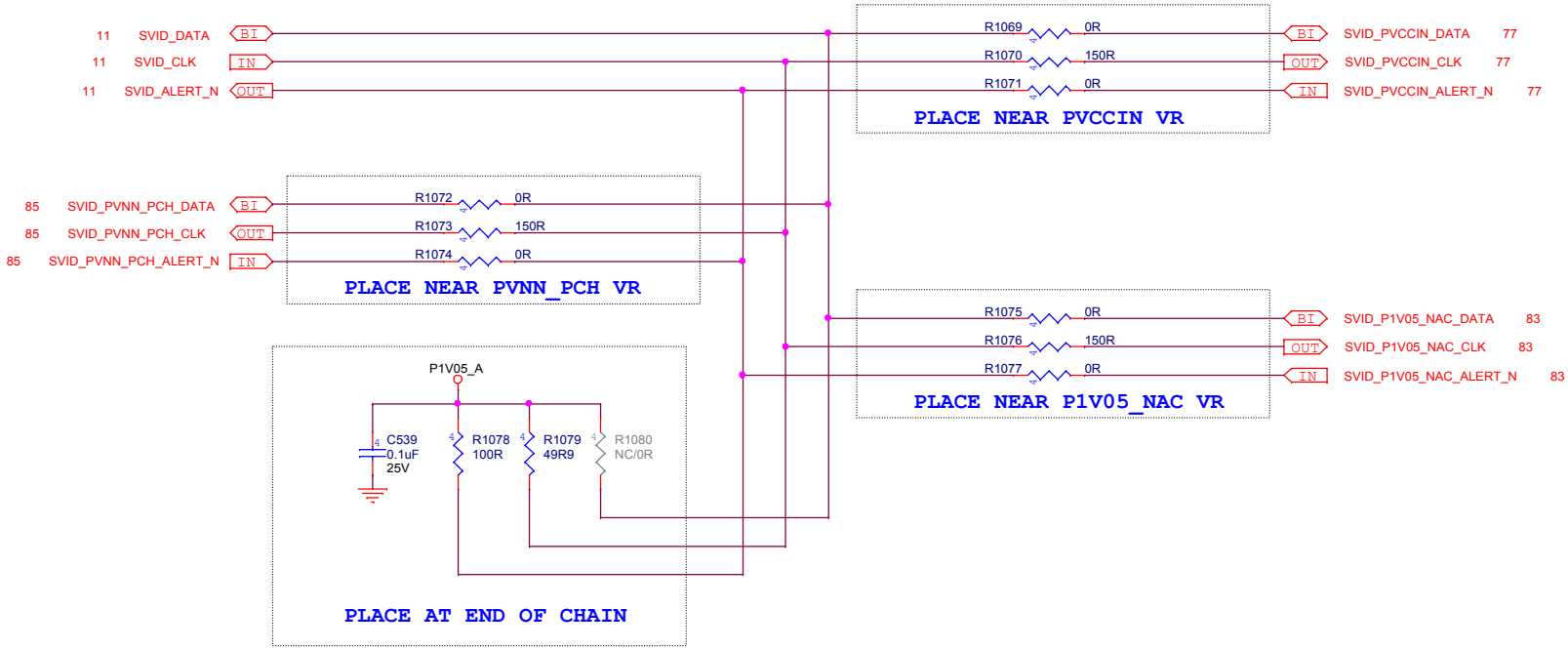

AEWIN Technologies Co., Ltd.		
Title: PWR - SVID BUS		
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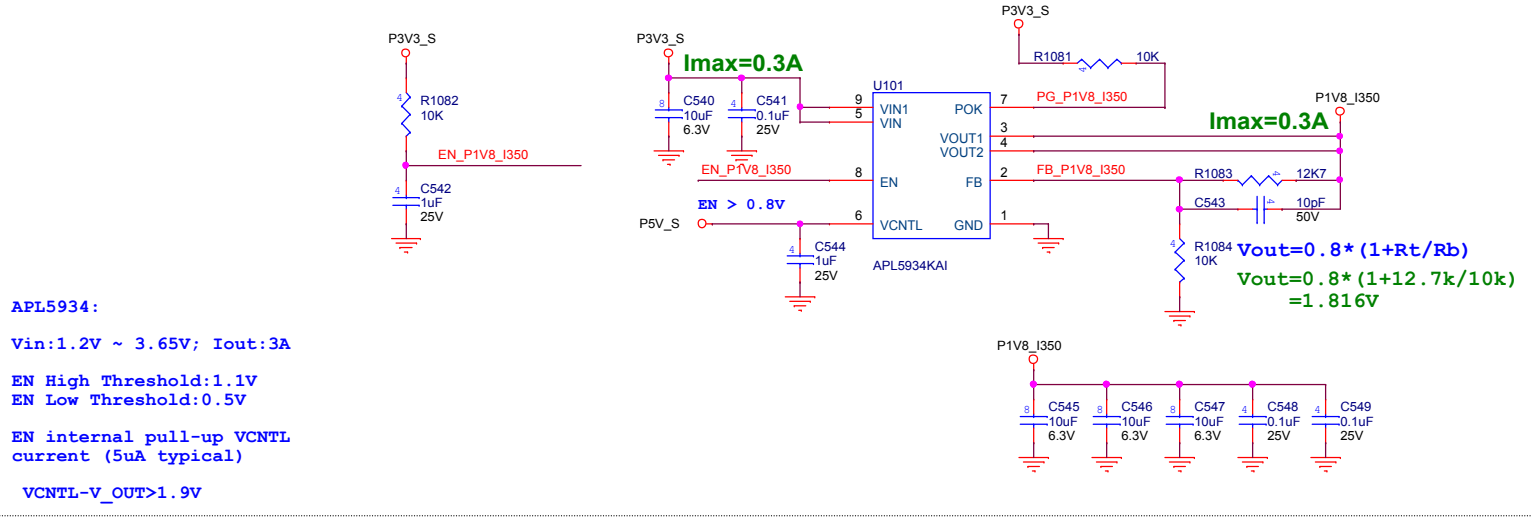


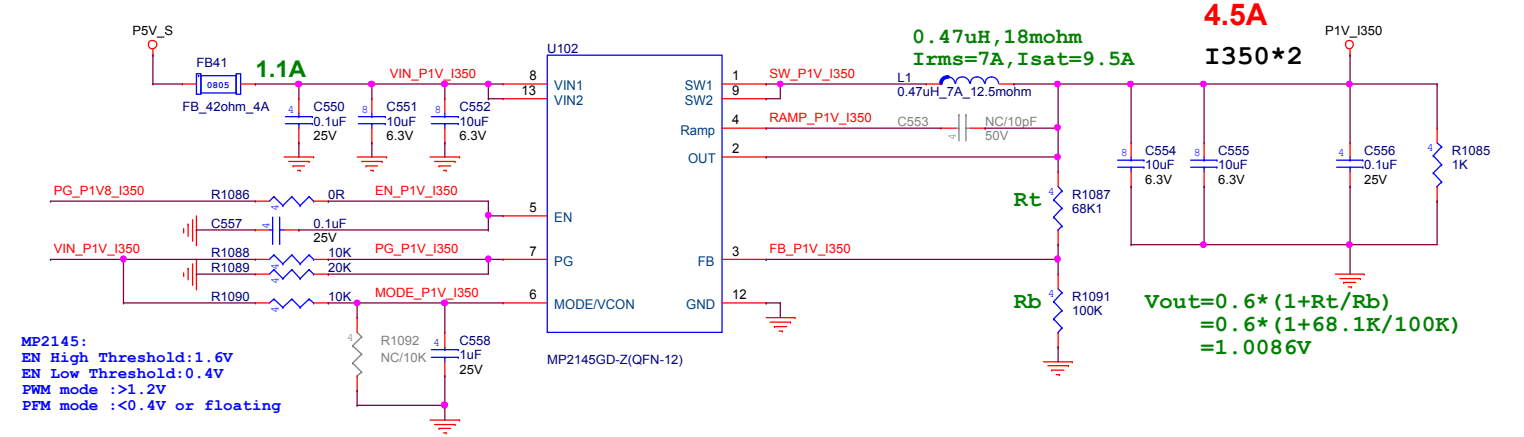
APL5934:

Vin:1.2V ~ 3.65V; Iout:3A

EN High Threshold:1.1V
EN Low Threshold:0.5V

EN internal pull-up VCNTL current (5uA typical)

VCNTL-V_OUT>1.9V



MP2145:
EN High Threshold:1.6V
EN Low Threshold:0.4V
PWM mode :>1.2V
PFM mode :<0.4V or floating

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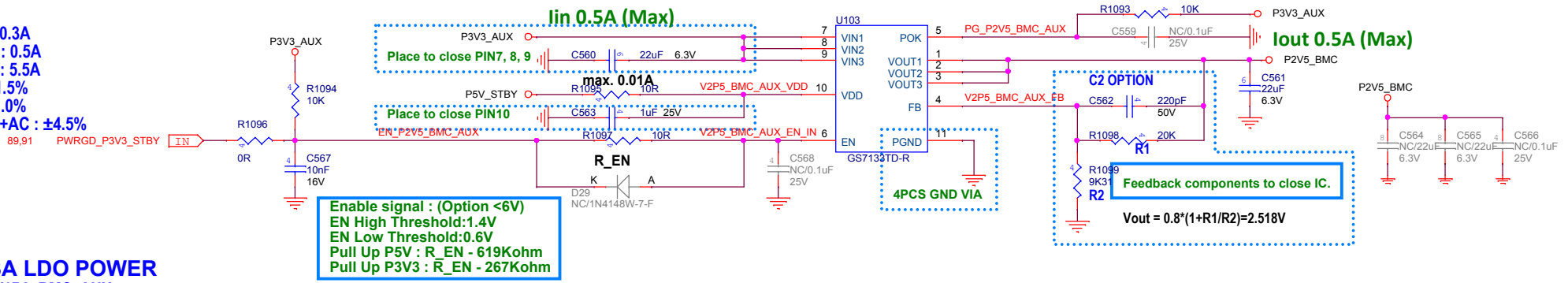
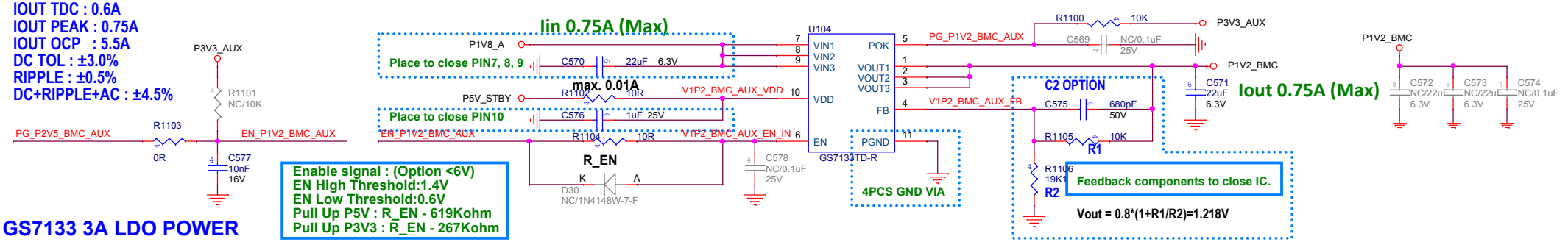
GS7133 3A LDO POWER

Power Rail : V2P5_BMC_AUX
VIN : 3.3V
Vout : 2.5V
IOUT TDC : 0.3A
IOUT PEAK : 0.5A
IOUT OCP : 5.5A
DC TOL : ±1.5%
RIPPLE : ±1.0%
DC+RIPPLE+AC : ±4.5%



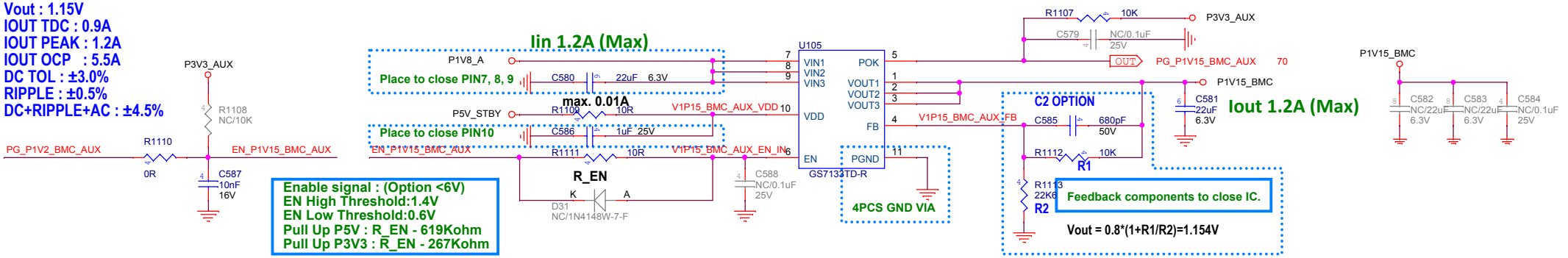
GS7133 3A LDO POWER

Power Rail : V1P2_BMC_AUX
VIN : 1.8V
Vout : 1.2V
IOUT TDC : 0.6A
IOUT PEAK : 0.75A
IOUT OCP : 5.5A
DC TOL : ±3.0%
RIPPLE : ±0.5%
DC+RIPPLE+AC : ±4.5%



GS7133 3A LDO POWER

Power Rail : V1P15_BMC_AUX
VIN : 1.8V
Vout : 1.15V
IOUT TDC : 0.9A
IOUT PEAK : 1.2A
IOUT OCP : 5.5A
DC TOL : ±3.0%
RIPPLE : ±0.5%
DC+RIPPLE+AC : ±4.5%



AEWIN Technologies Co., Ltd.		
Title: PWR- BMC		
Size	Document Number: CB-1737	Rev: A0
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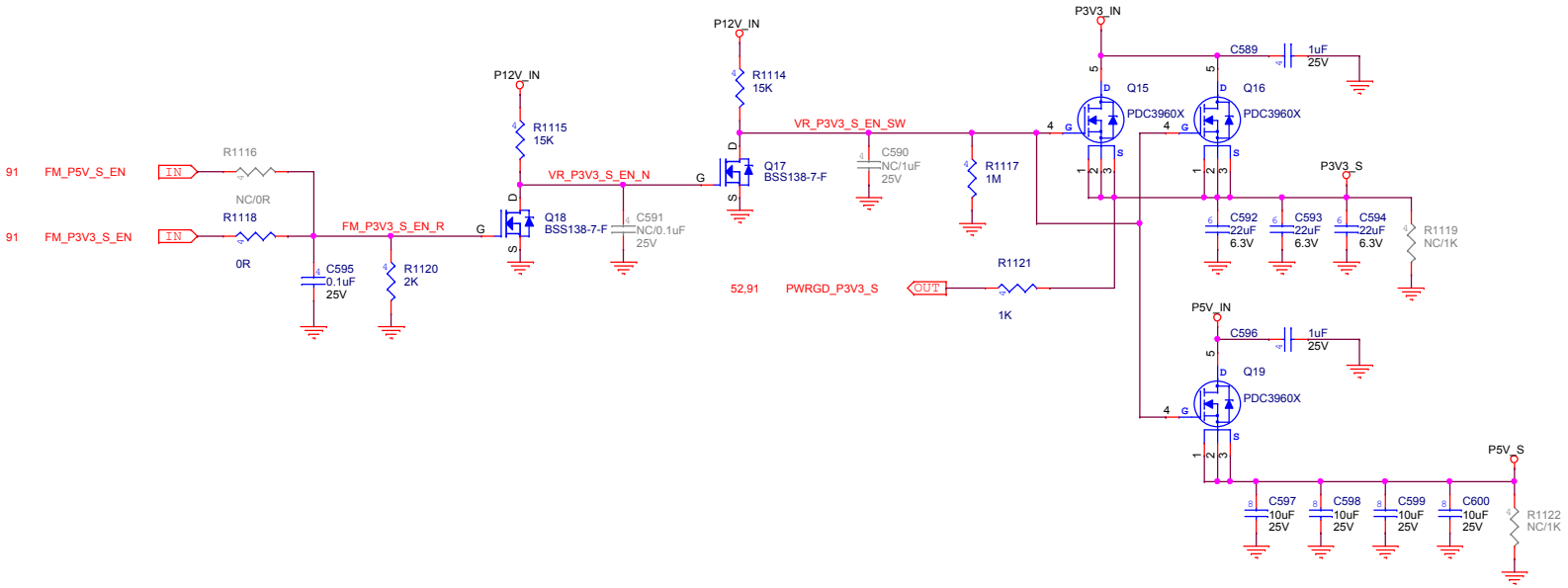

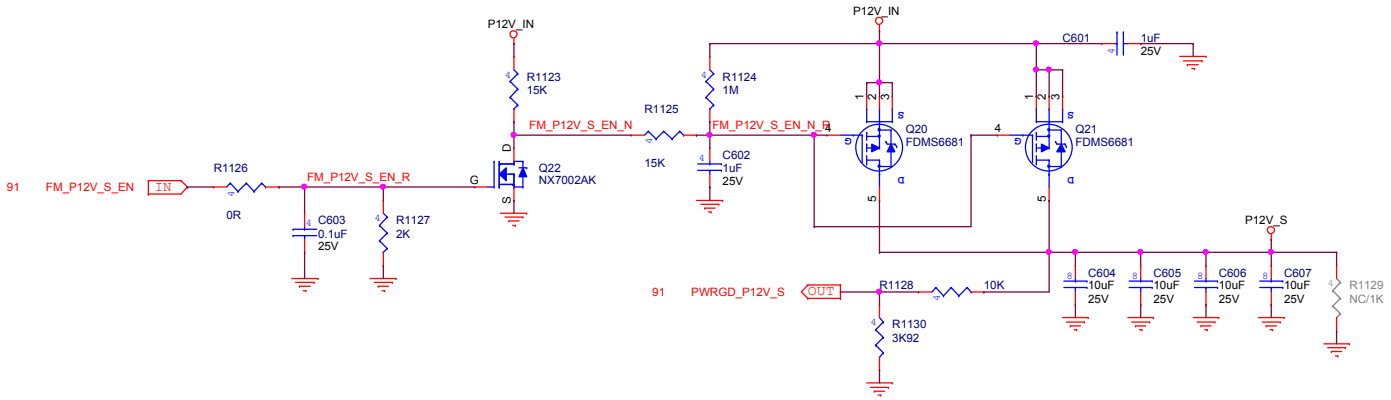

AEWIN Technologies Co., Ltd.		
Title: PWR- P3V3_S/P5V_S/P12V_S		
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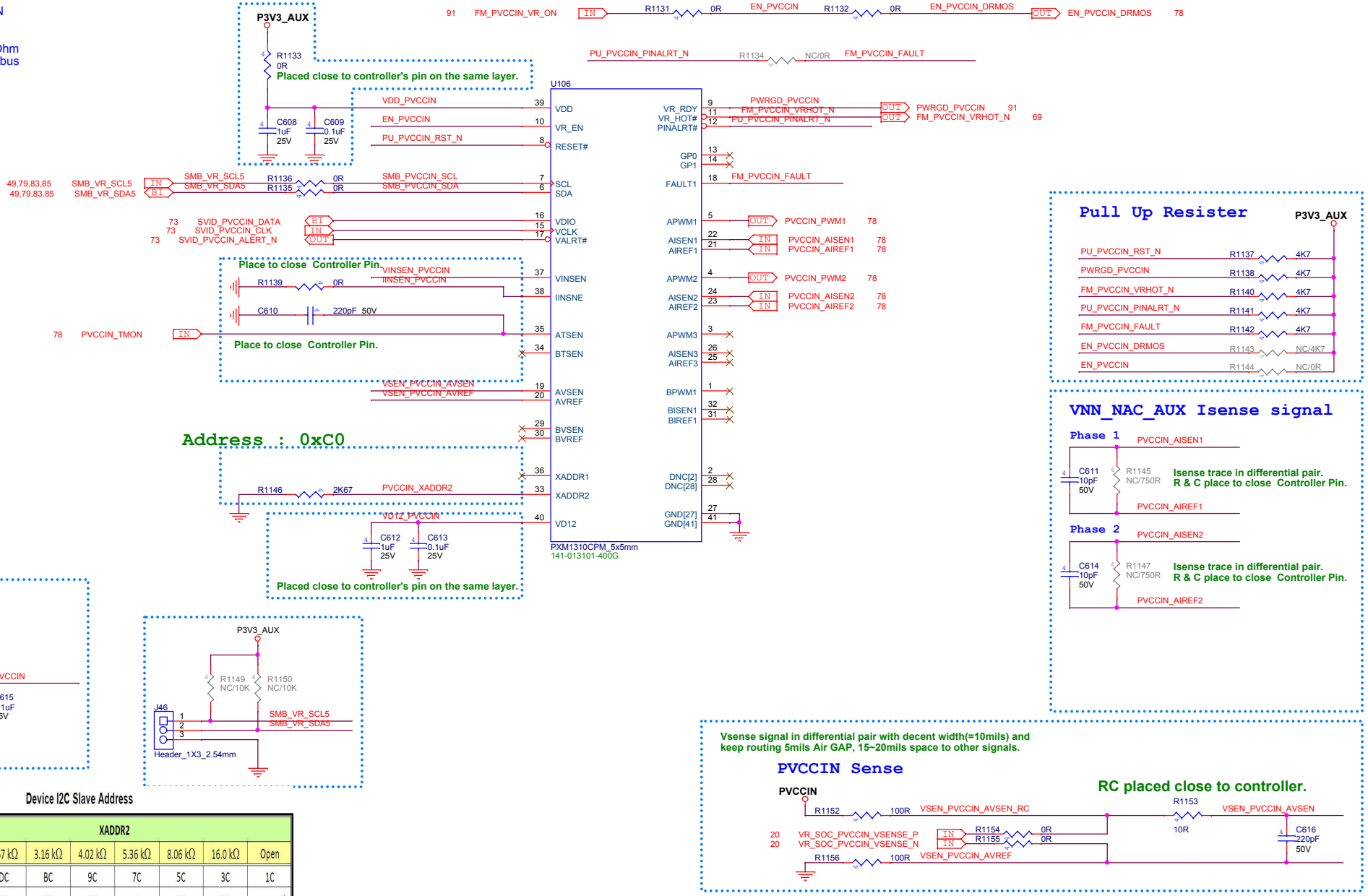
Power Rail : PVCCIN
Vout : SVID
Imax : 73 A
LoadLine : 2.00 mOhm
SVID : 0x00 @ bus 0
SMBus : 0xC0



Device I2C Slave Address

Resistor-to-GND (1%)		XADDR2							
		2.26 kΩ	2.67 kΩ	3.16 kΩ	4.02 kΩ	5.36 kΩ	8.06 kΩ	16.0 kΩ	Open
XADDR1	2.26 kΩ	FC	DC	BC	9C	7C	5C	3C	1C
	2.67 kΩ	F8	D8	B8	98	78	58	38	reserved
	3.16 kΩ	F4	D4	B4	94	74	54	34	14
	4.02 kΩ	F0	D0	B0	90	70	50	30	10
	5.36 kΩ	EC	CC	AC	8C	6C	4C	2C	0C
	8.06 kΩ	E8	C8	A8	88	68	48	28	08
	16.0 kΩ	E4	C4	A4	84	64	44	24	04
	Open	E0	C0	A0	80	60	40	20	reserved

AEWIN Technologies Co., Ltd.	
Title	PWR- PVCCIN (1/2)
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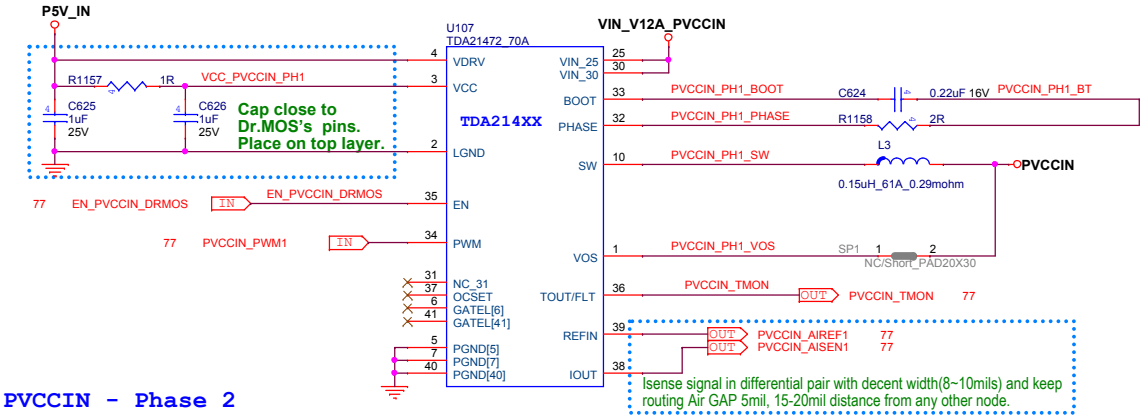
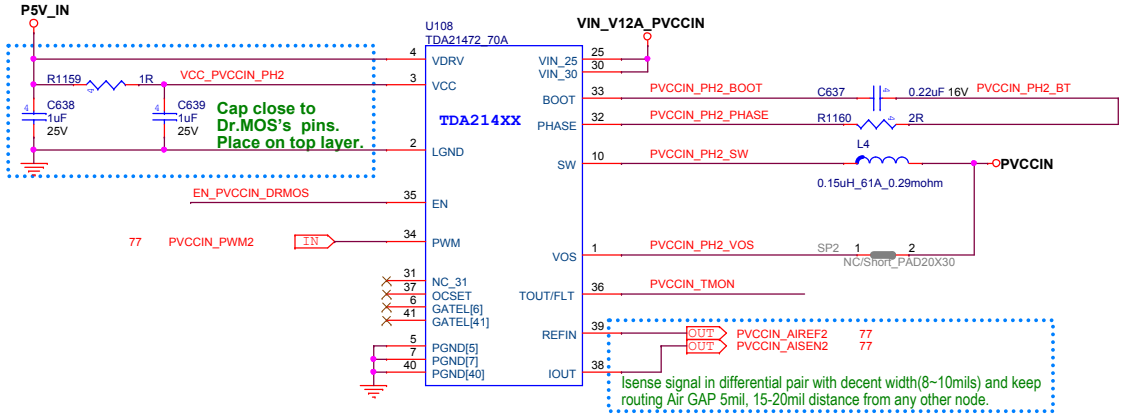
Power Rail : PVCCIN
Vout : SVID
Imax : 73A
SVID : 0x00@bus 0
SMBus : 0xC0

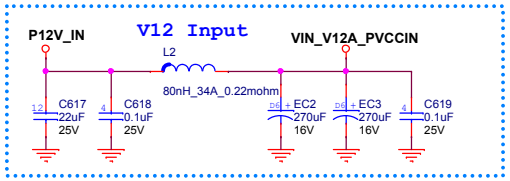
PVCCIN - Phase 1



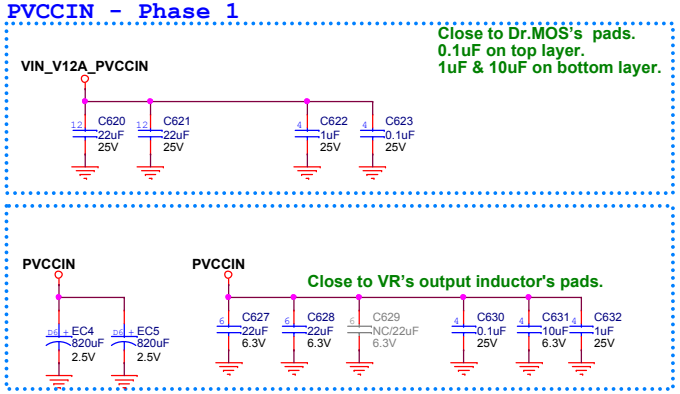
PVCCIN - Phase 2



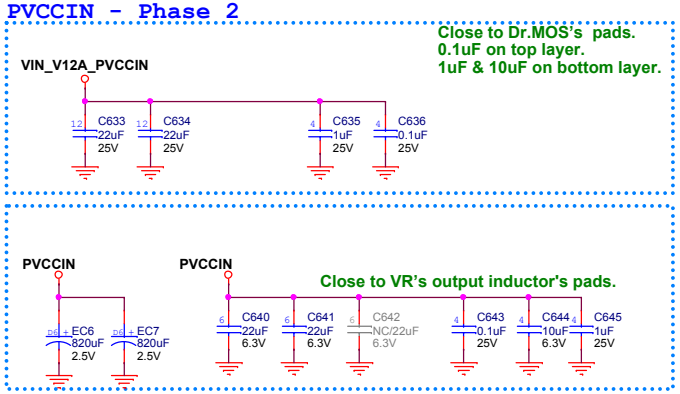
V12 Input



PVCCIN - Phase 1



PVCCIN - Phase 2



AEWIN Technologies Co., Ltd.		
Title: PWR- PVCCIN (2/2)		
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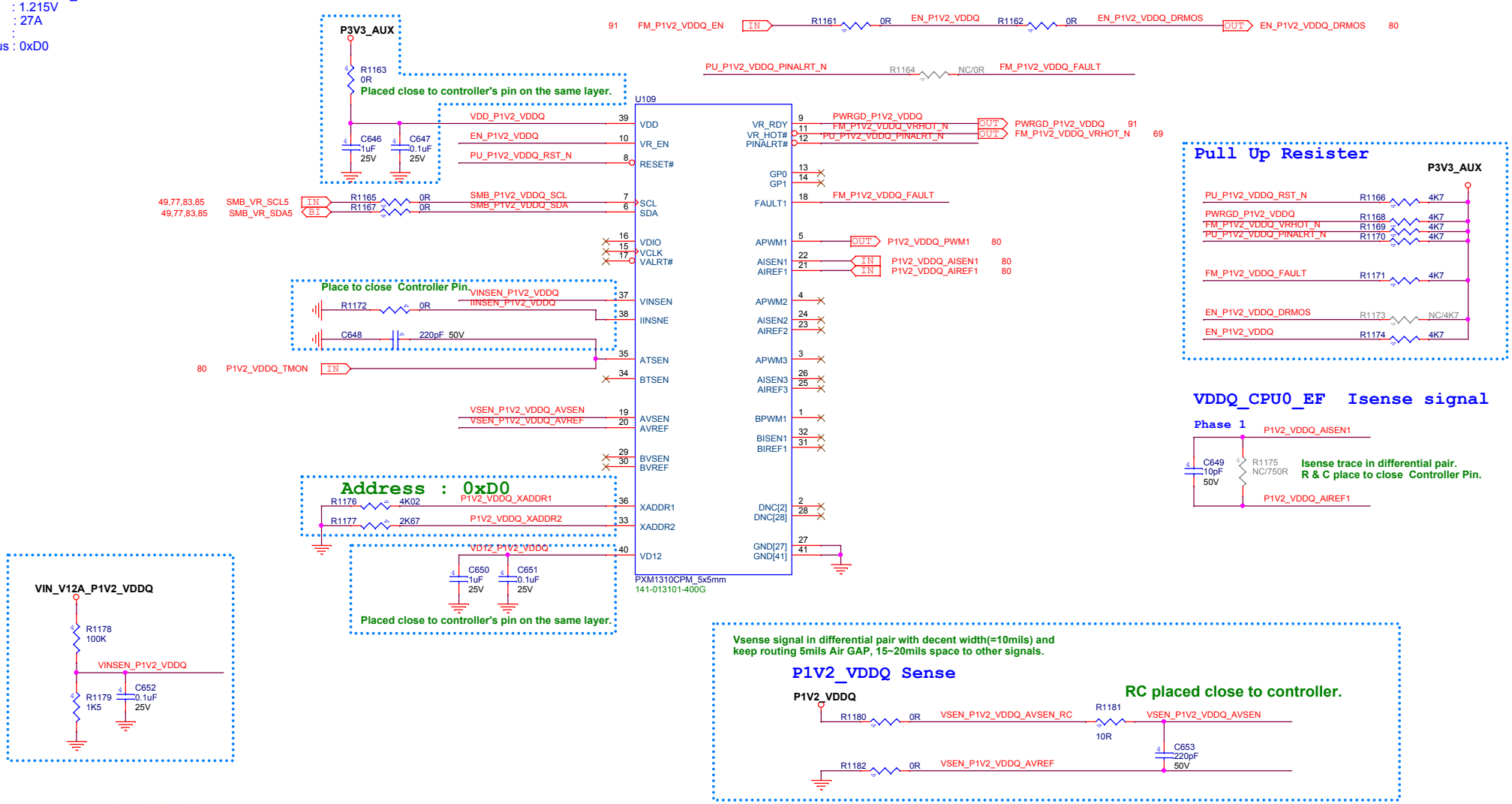
Power Rail : P1V2_VDDQ
Vout : 1.215V
Imax : 27A
SVID :
SMBus : 0xD0



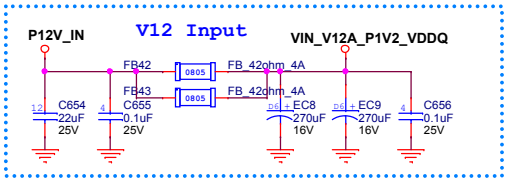
Device I2C Slave Address

Resistor-to-GND (1%)		XADDR2							
		2.26 kΩ	2.67 kΩ	3.16 kΩ	4.02 kΩ	5.36 kΩ	8.06 kΩ	16.0 kΩ	Open
XADDR1	2.26 kΩ	FC	DC	BC	9C	7C	5C	3C	1C
	2.67 kΩ	F8	D8	B8	98	78	58	38	reserved
	3.16 kΩ	F4	D4	B4	94	74	54	34	14
	4.02 kΩ	F0	D0	B0	90	70	50	30	10
	5.36 kΩ	EC	CC	AC	8C	6C	4C	2C	0C
	8.06 kΩ	E8	C8	A8	88	68	48	28	08
	16.0 kΩ	E4	C4	A4	84	64	44	24	04
	Open	E0	C0	A0	80	60	40	20	reserved

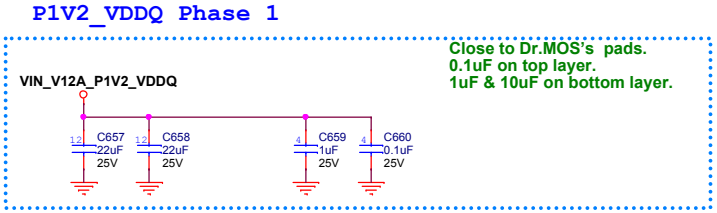
AEWIN Technologies Co., Ltd.		
Title: P1V2_VDDQ		
Size	Document Number: CB-1737	Rev: A0
Date: Thursday, August 19, 2021	Sheet 79 of 92	

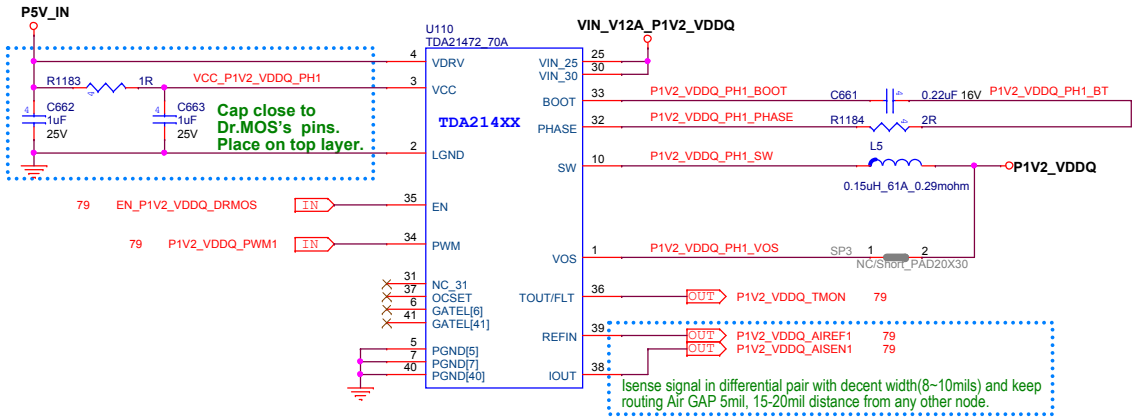
Power Rail : P1V2_VDDQ
Vout : 1.215V
Imax : 27A
SVID :
SMBus : 0xD0

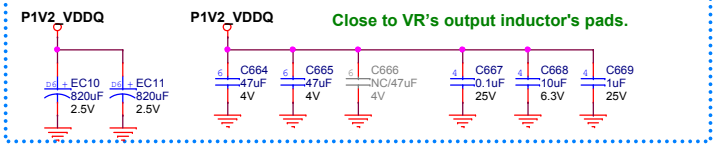
P1V2_VDDQ Phase 1



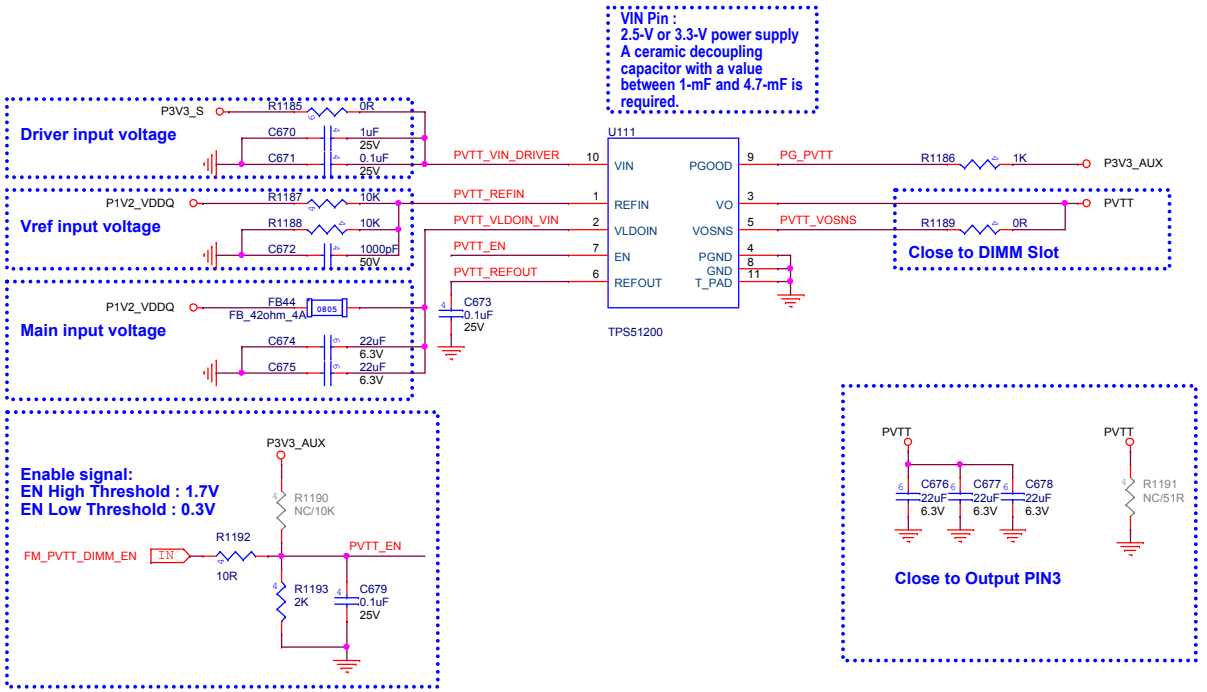
P1V2_VDDQ Phase 1







Power Rail : PVTT
Vout : 0.6V
Imax : 0.84A



AEWIN Technologies Co., Ltd.		
Title: PWR- P1V2_VDDQ & PVTT		
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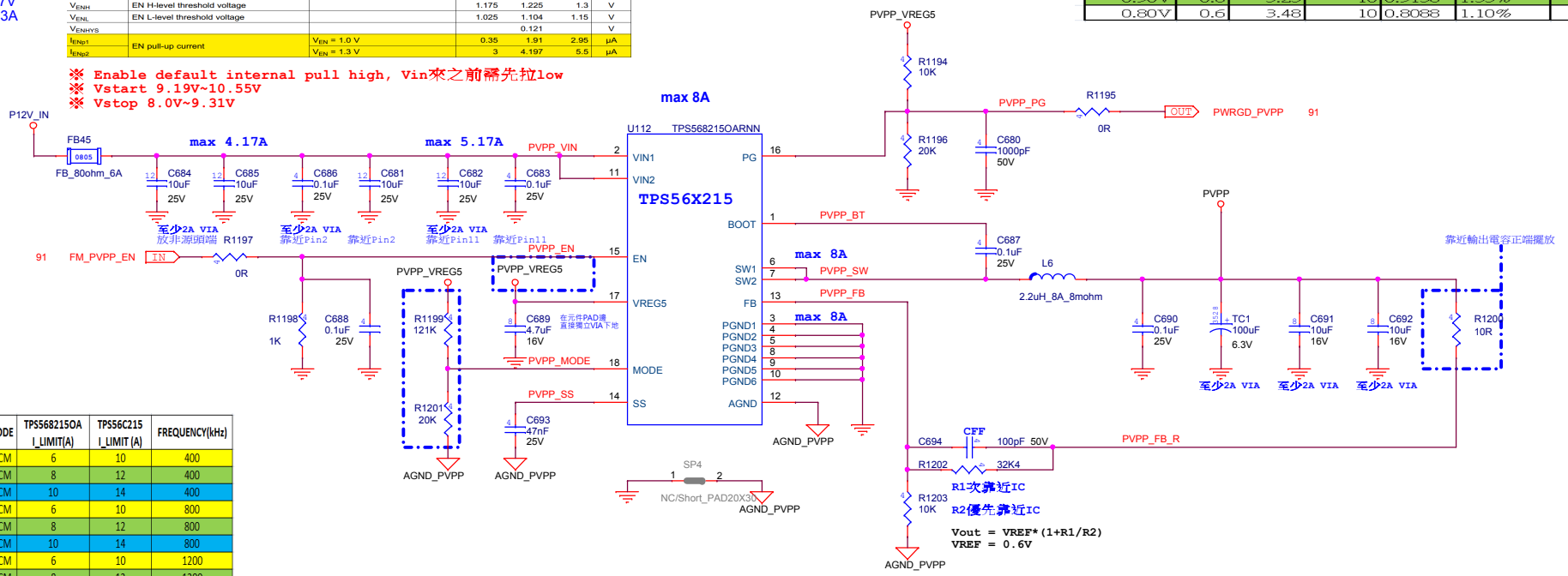
Power Rail : PVPP
Vout : 2.57V
Imax : 5.93A

LOGIC THRESHOLD						
V_{ENH}	EN H-level threshold voltage		1.175	1.225	1.3	V
V_{ENL}	EN L-level threshold voltage		1.025	1.104	1.15	V
V_{ENHYS}				0.121		V
I_{ENp1}	EN pull-up current	V_{EN} = 1.0 V	0.35	1.91	2.95	µA
I_{ENp2}		V_{EN} = 1.3 V	3	4.197	5.5	µA

※ Enable default internal pull high, Vin來之前需先拉low
※ Vstart 9.19V~10.55V
※ Vstop 8.0V~9.31V

TPS56C215/ TPS568215OA						
Vout_Set	Vref	R1_kΩ	R2_kΩ	Vout	Tolerance	CFF
5.00V	0.6	75	10	5.1	2.00%	220.0pF
3.30V	0.6	45.3	10	3.318	0.55%	220.0pF
2.50V	0.6	32.4	10	2.544	1.76%	100.0pF
1.80V	0.6	20.5	10	1.83	1.67%	100.0pF
1.50V	0.6	15.4	10	1.524	1.60%	100.0pF
1.20V	0.6	10.2	10	1.212	1.00%	0.0pF
1.05V	0.6	7.68	10	1.0608	1.03%	0.0pF
1.00V	0.6	6.98	10	1.0188	1.88%	0.0pF
0.95V	0.6	6.04	10	0.9624	1.31%	0.0pF
0.90V	0.6	5.23	10	0.9138	1.53%	0.0pF
0.80V	0.6	3.48	10	0.8088	1.10%	0.0pF



RM_L (kΩ)	RM_H (kΩ)	MODE	TPS568215OA I_LIMIT(A)	TPS56C215 I_LIMIT (A)	FREQUENCY(kHz)
5.1	301	FCCM	6	10	400
10	200	FCCM	8	12	400
20	237	FCCM	10	14	400
20	158	FCCM	6	10	800
20	121	FCCM	8	12	800
51	237	FCCM	10	14	800
51	200	FCCM	6	10	1200
51	180	FCCM	8	12	1200

AEWIN Technologies Co., Ltd.			
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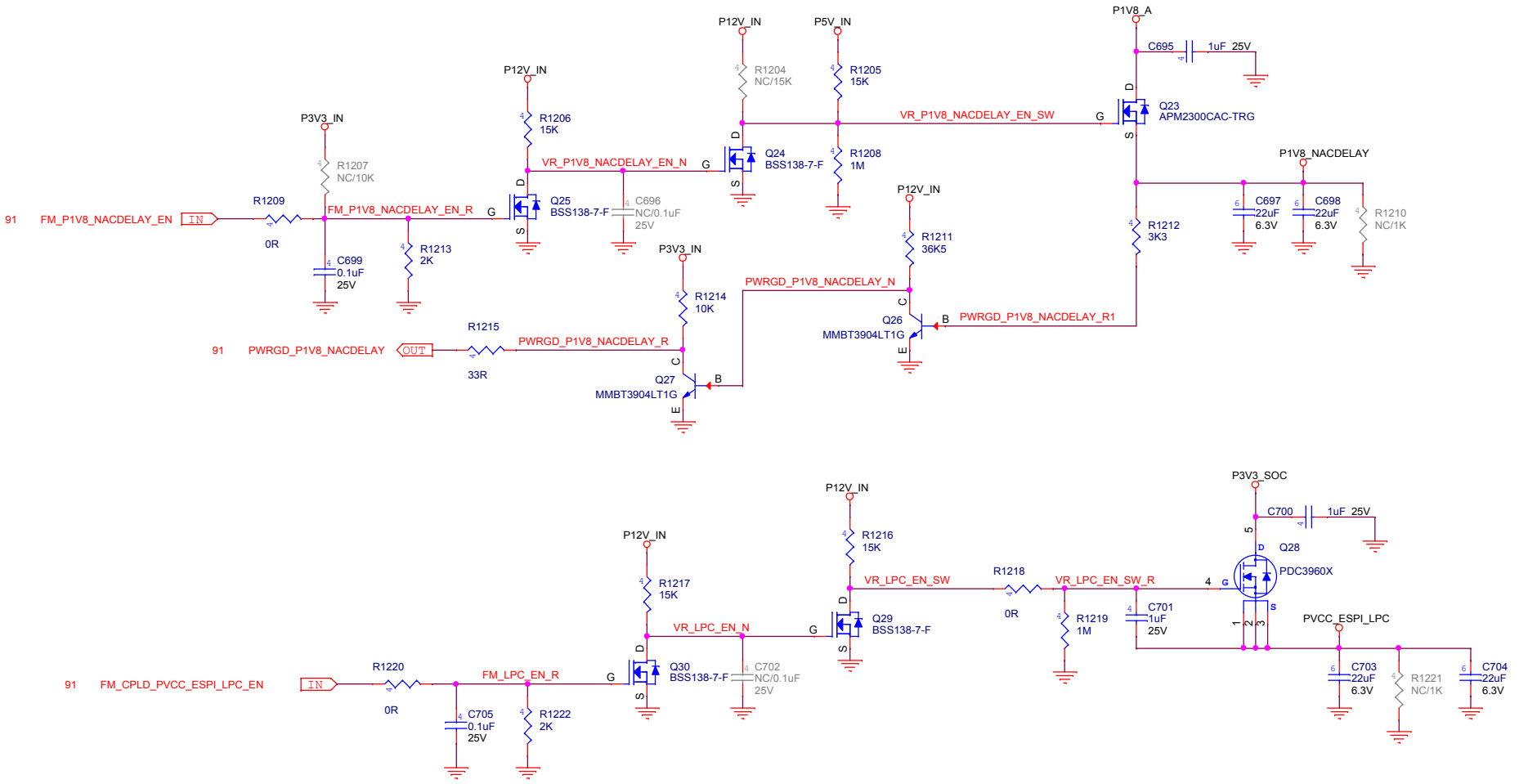

AEWIN Technologies Co., Ltd.		
Title: PWR- P1V8_NACDELAY		
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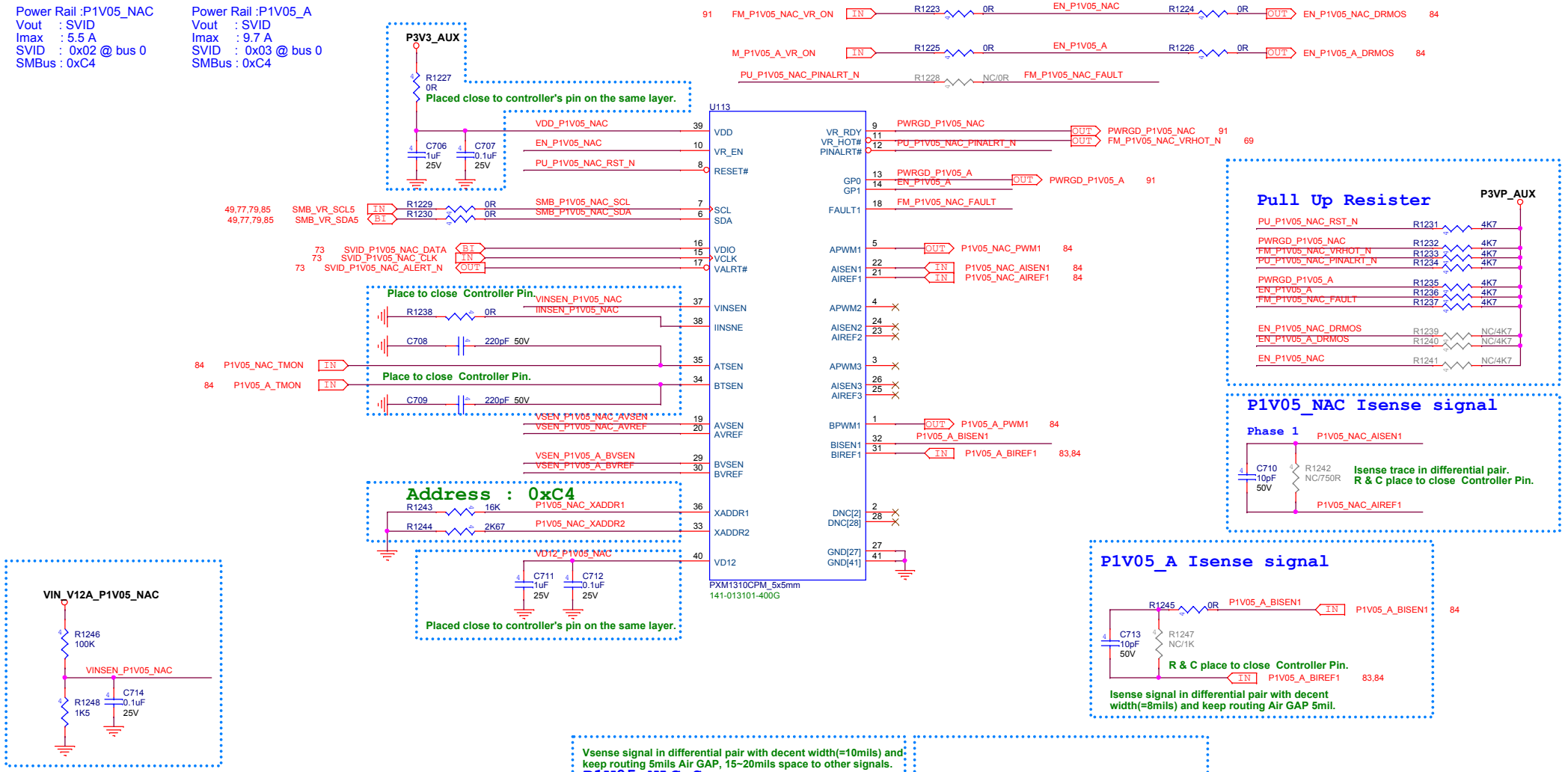
Power Rail :P1V05_NAC
Vout : SVID
Imax : 5.5 A
SVID : 0x02 @ bus 0
SMBus : 0xC4

Power Rail :P1V05_A
Vout : SVID
Imax : 9.7 A
SVID : 0x03 @ bus 0
SMBus : 0xC4



Device I2C Slave Address

Resistor-to-GND (1%)	XADDR2							
XADDR1	2.26 kΩ	2.67 kΩ	3.16 kΩ	4.02 kΩ	5.36 kΩ	8.06 kΩ	16.0 kΩ	Open
2.26 kΩ	FC	DC	BC	9C	7C	5C	3C	1C
2.67 kΩ	F8	D8	B8	98	78	58	38	reserved
3.16 kΩ	F4	D4	B4	94	74	54	34	14
4.02 kΩ	F0	D0	B0	90	70	50	30	10
5.36 kΩ	EC	CC	AC	8C	6C	4C	2C	0C
8.06 kΩ	E8	C8	A8	88	68	48	28	08
16.0 kΩ	E4	C4	A4	84	64	44	24	04
Open	E0	C0	A0	80	60	40	20	reserved

AEWIN Technologies Co., Ltd.			
Title	PWR- P1V05A_NAC (1/2)		
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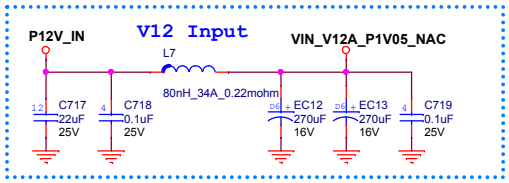
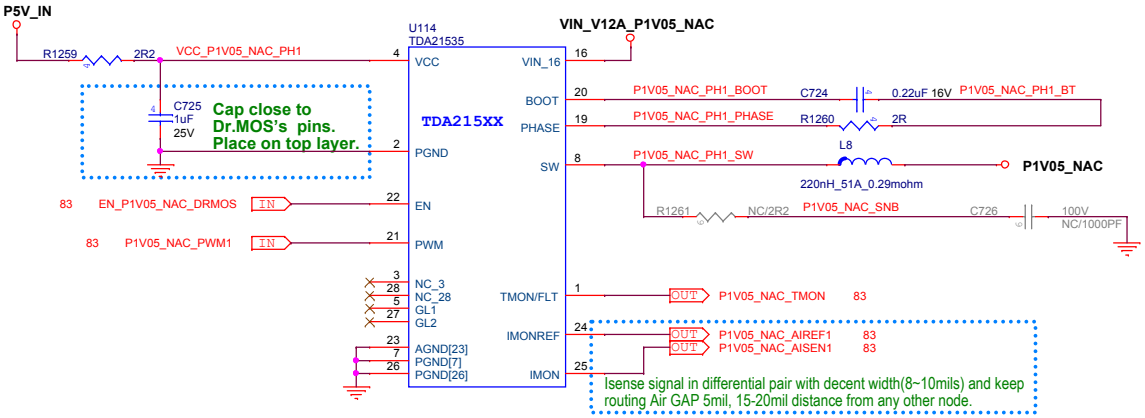
Power Rail :P1V05_NAC
Vout : SVID
Imax : 5.5 A
SVID : 0x02 @ bus 0
SMBus : 0xC4

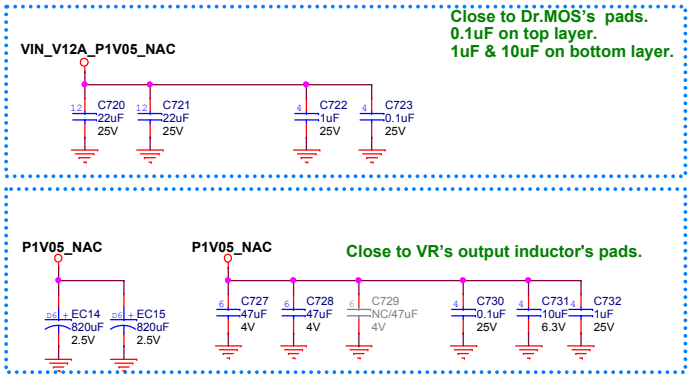
Power Rail :P1V05_A
Vout : SVID
Imax : 9.7 A
SVID : 0x03 @ bus 0
SMBus : 0xC4



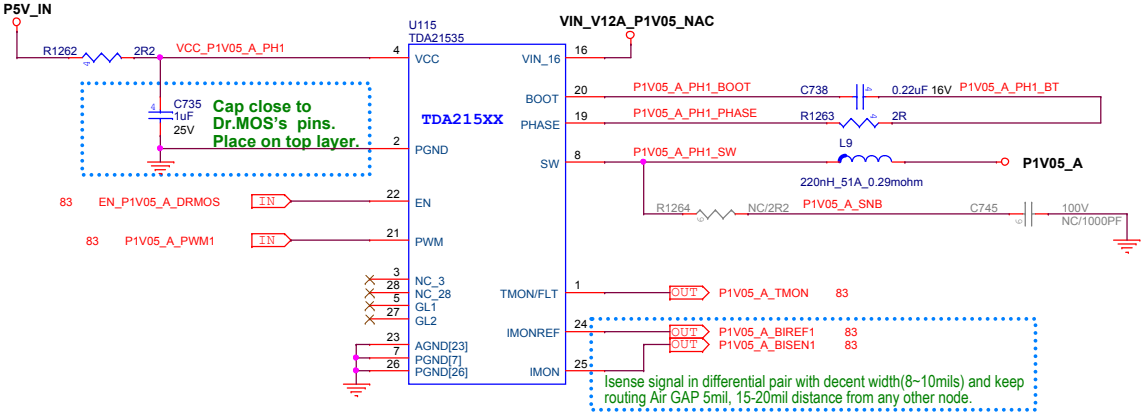
P1V05_NAC Phase 1



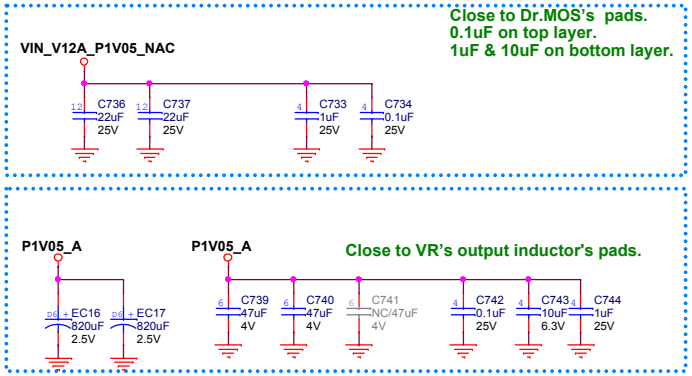
P1V05_NAC Phase 1



P1V05_A Phase 1



P1V05_A Phase 1



AEWIN Technologies Co., Ltd.		
Title: PWR- V1P05A_NAC (2/2)		
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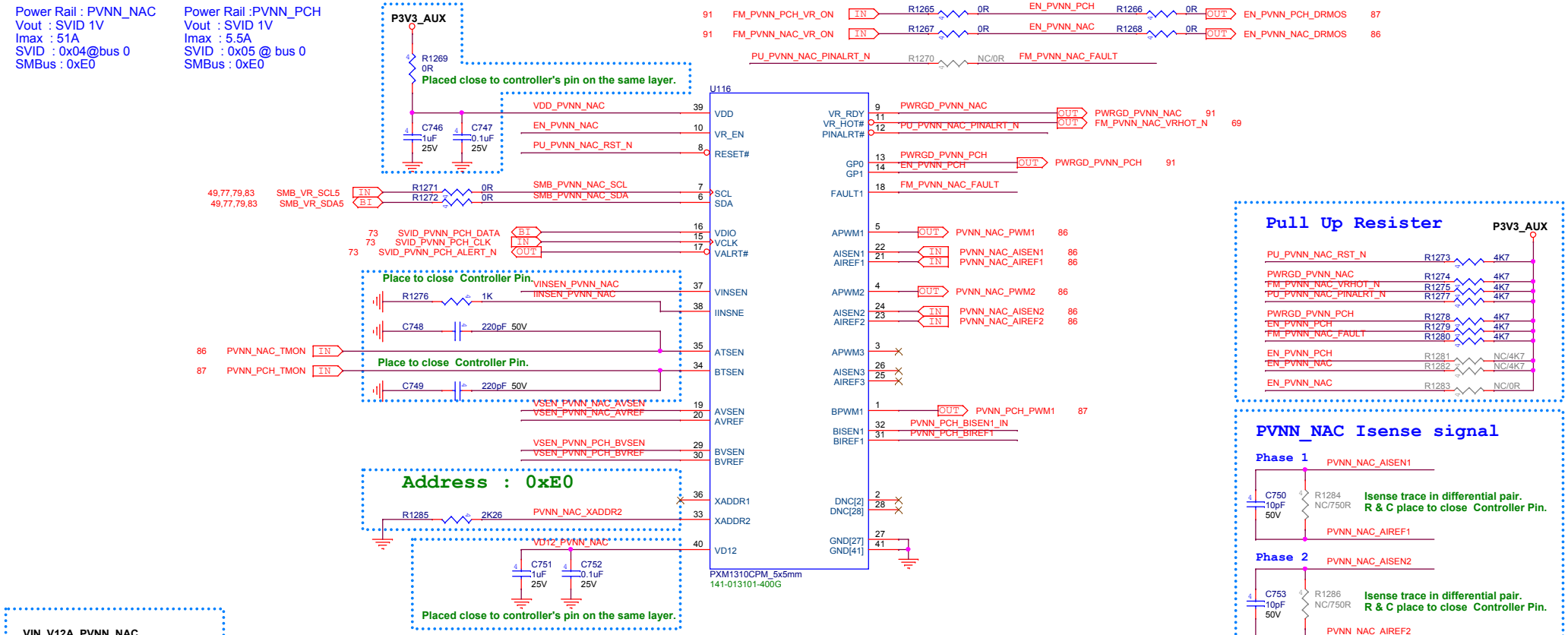
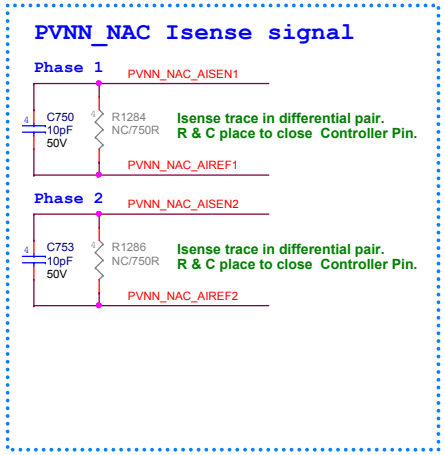
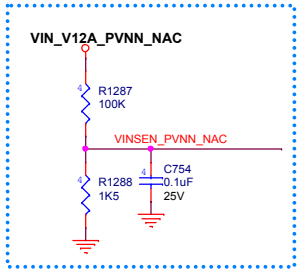
Power Rail : PVNN_NAC
Vout : SVID 1V
Imax : 51A
SVID : 0x04@bus 0
SMBus : 0xE0

Power Rail :PVNN_PCH
Vout : SVID 1V
Imax : 5.5A
SVID : 0x05 @ bus 0
SMBus : 0xE0

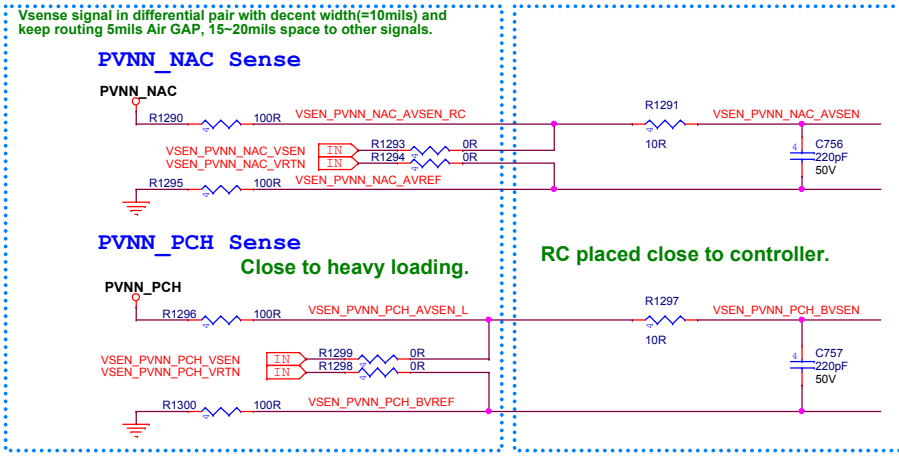


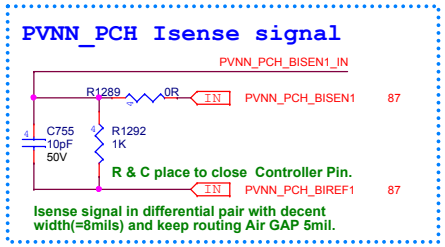




Device I2C Slave Address

Resistor-to-GND (1%)	XADDR2							
XADDR1	2.26 kΩ	2.67 kΩ	3.16 kΩ	4.02 kΩ	5.36 kΩ	8.06 kΩ	16.0 kΩ	Open
2.26 kΩ	FC	DC	BC	9C	7C	5C	3C	1C
2.67 kΩ	F8	D8	B8	98	78	58	38	reserved
3.16 kΩ	F4	D4	B4	94	74	54	34	14
4.02 kΩ	F0	D0	B0	90	70	50	30	10
5.36 kΩ	EC	CC	AC	8C	6C	4C	2C	0C
8.06 kΩ	E8	C8	A8	88	68	48	28	08
16.0 kΩ	E4	C4	A4	84	64	44	24	04
Open	E0	C0	A0	80	60	40	20	reserved





AEWIN Technologies Co., Ltd.			
Title	PWR- VNN_PCH & VNN_NAC		
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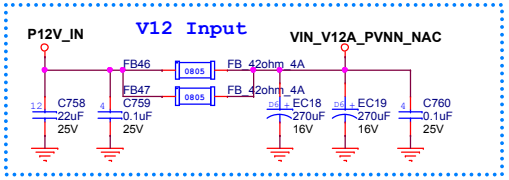
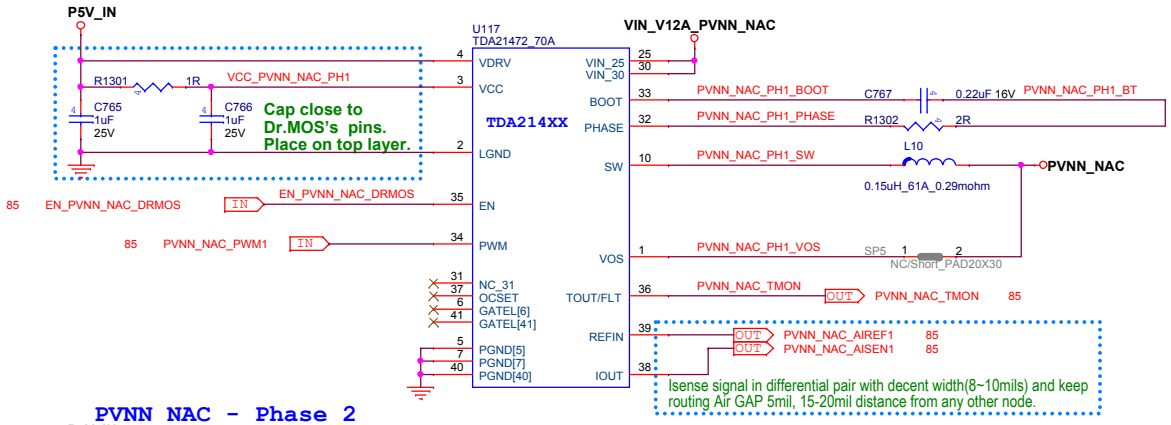
Power Rail : PVNN_NAC
Vout : SVID 1V
Imax : 51A
SVID : 0x04@bus 0
SMBus : 0xE0

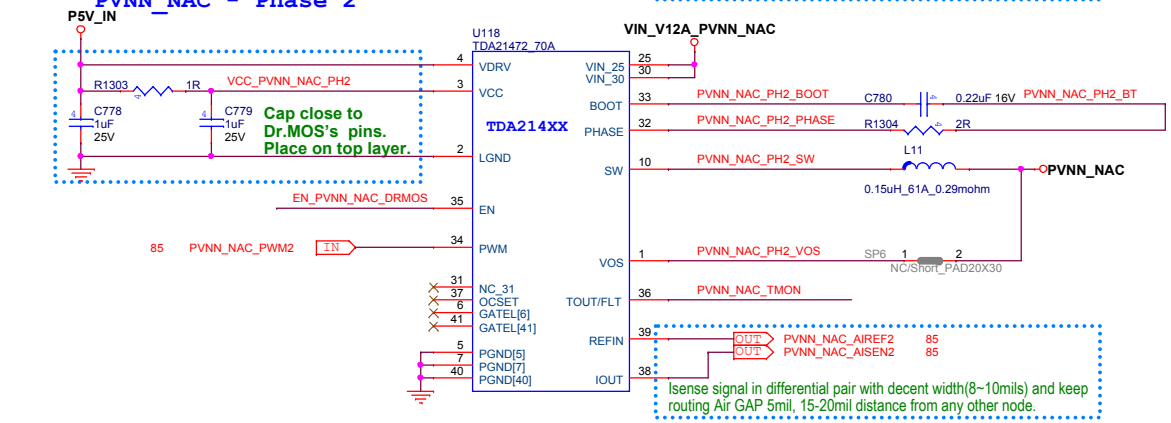
V12 Input



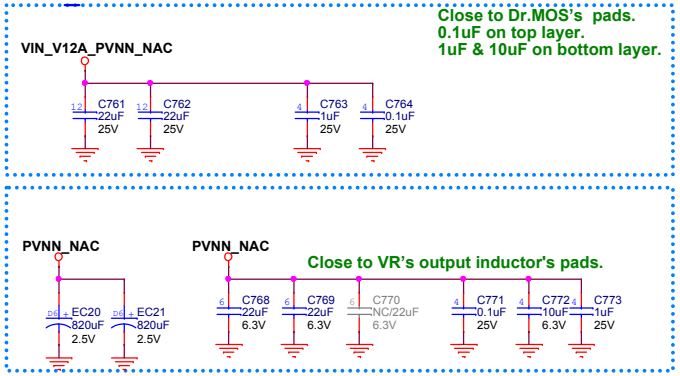
PVNN_NAC - Phase 1



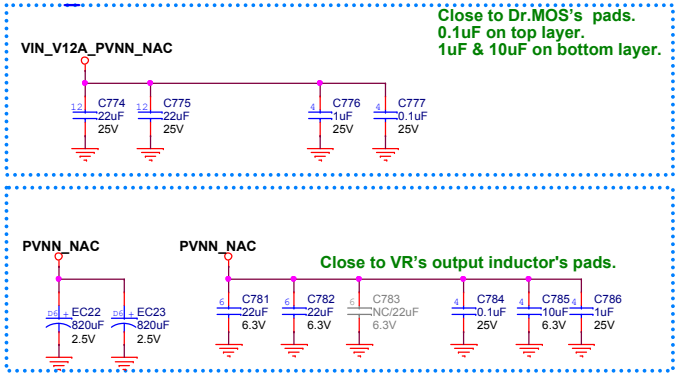
PVNN_NAC - Phase 2



PVNN_NAC - Phase 1



PVNN_NAC - Phase 2



AEWIN Technologies Co., Ltd.		
Title: PWR- VNN_PCH_NAC (2/3)		
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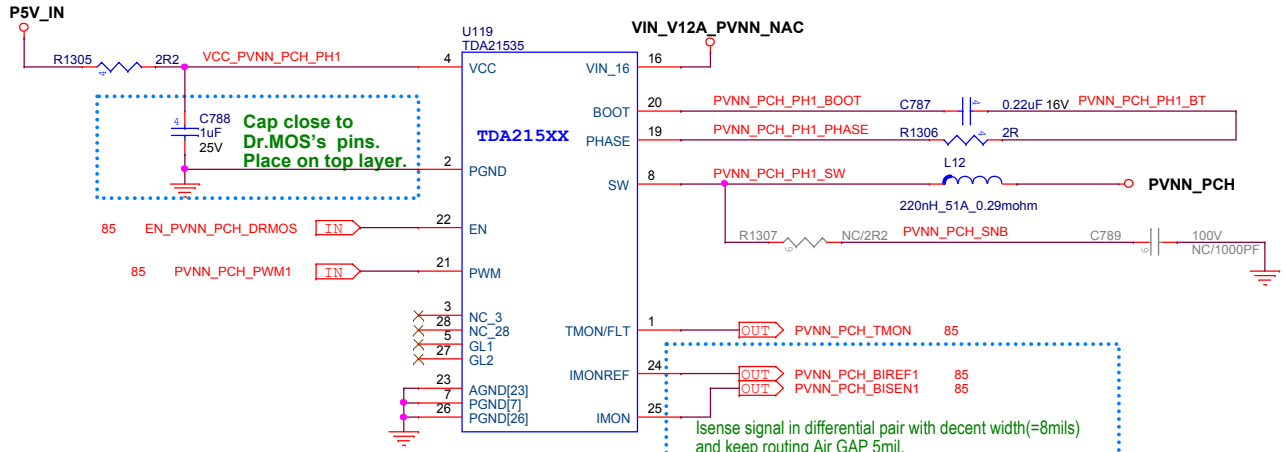
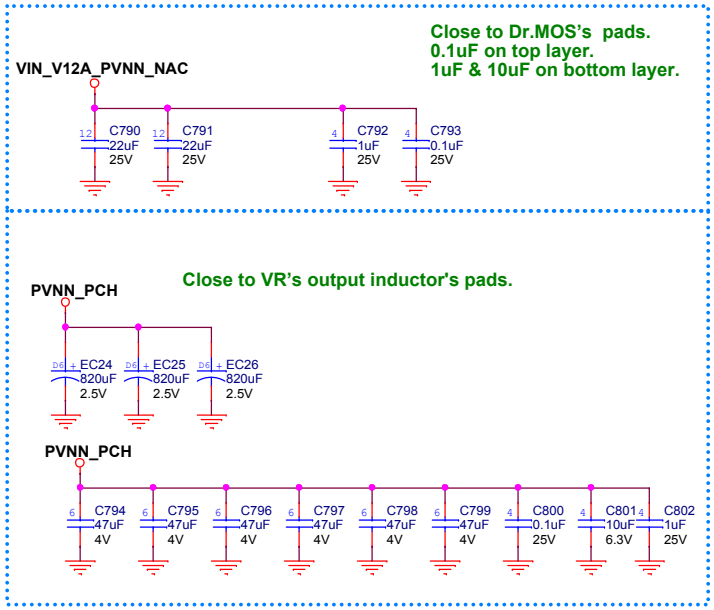
Power Rail :PVNN_PCH
Vout : SVID 1V
Imax : 5.5A
SVID : 0x05 @ bus 0
SMBus : 0xE0

PVNN_PCH Phase 1



PVNN_PCH Phase 1



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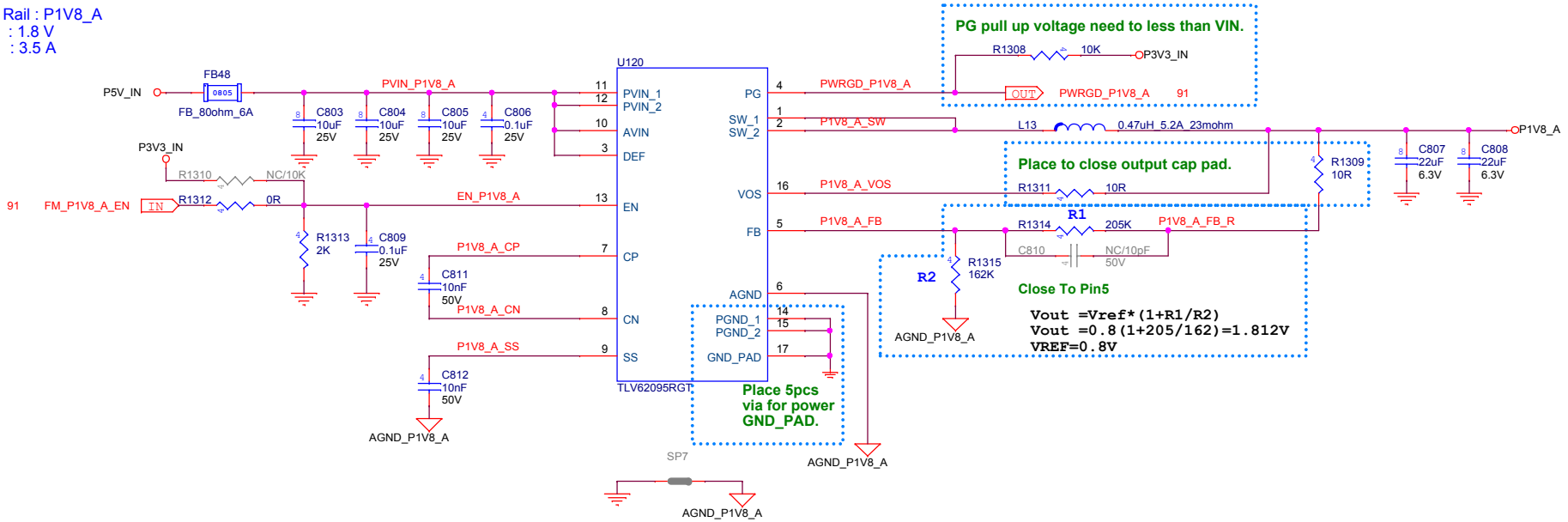
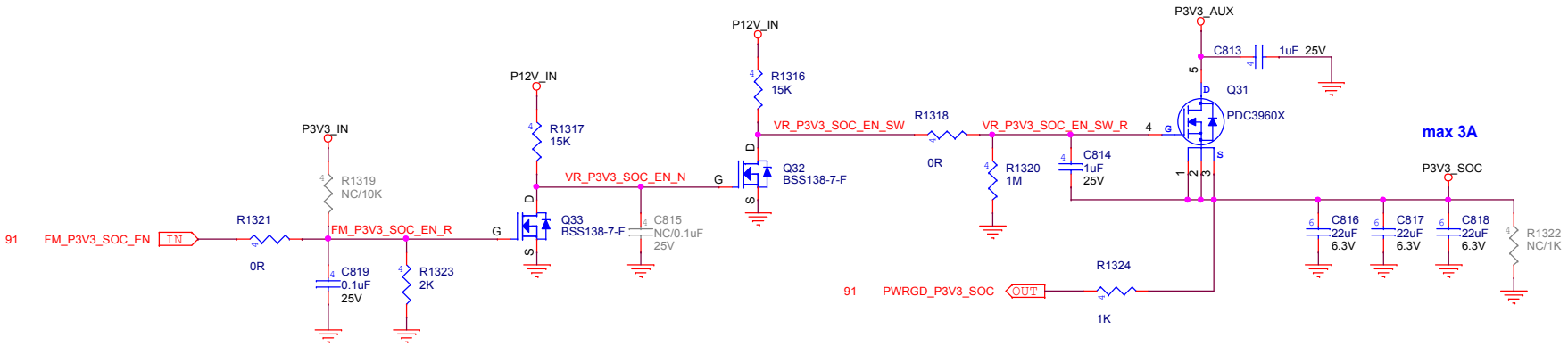
Power Rail : P1V8_A
Vout : 1.8 V
Imax : 3.5 A





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Title: PWR- V1P8_A & V1P5_A		
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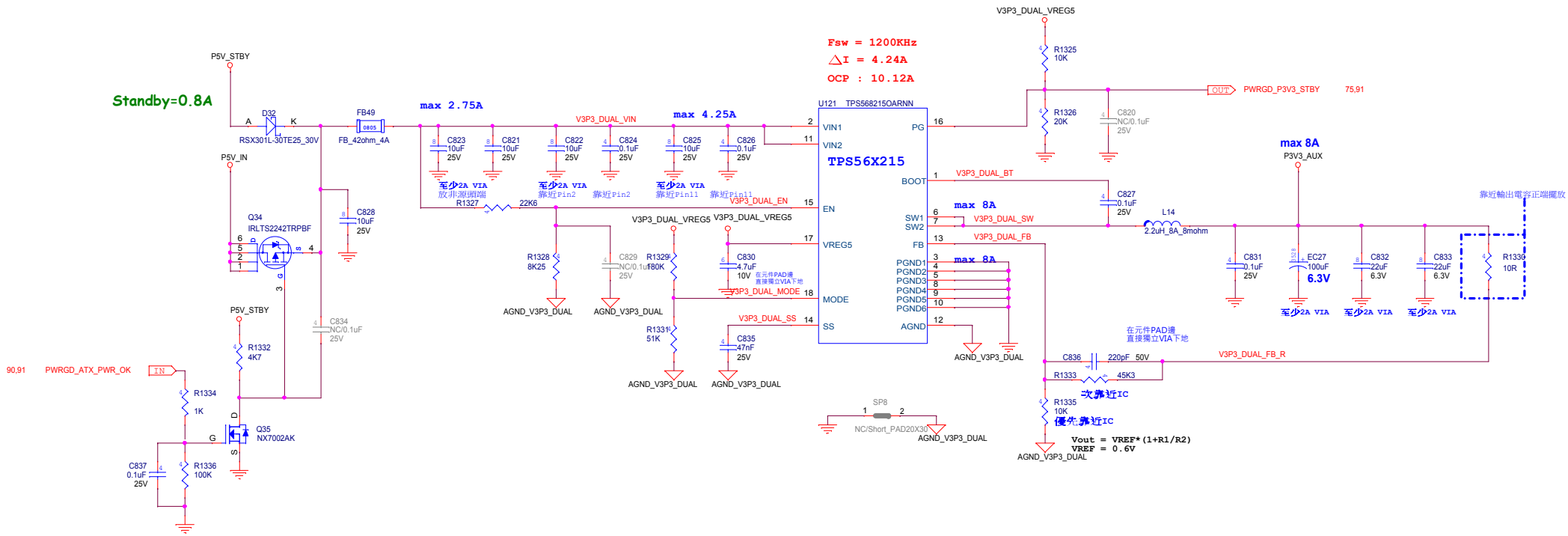

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Title	PWR- P3V3_AUX		
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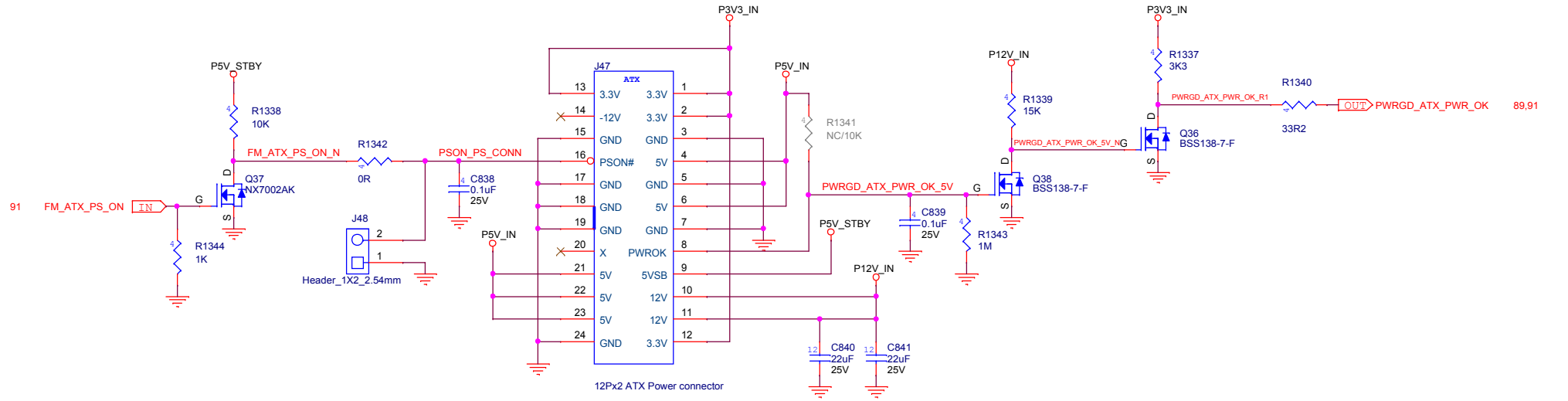

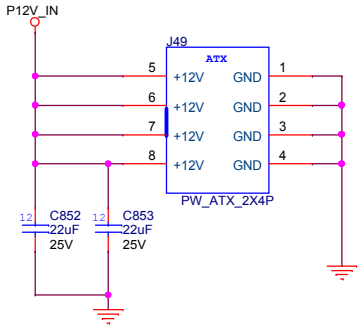

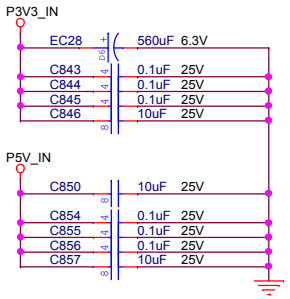

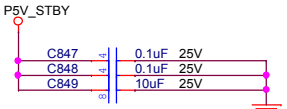

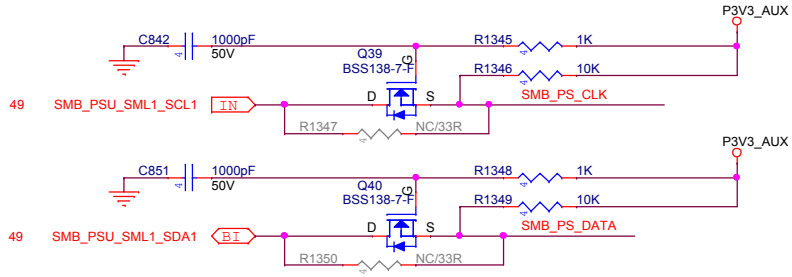

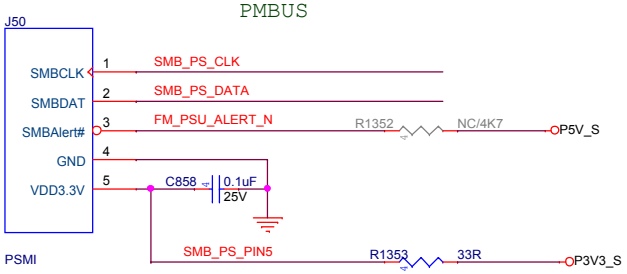

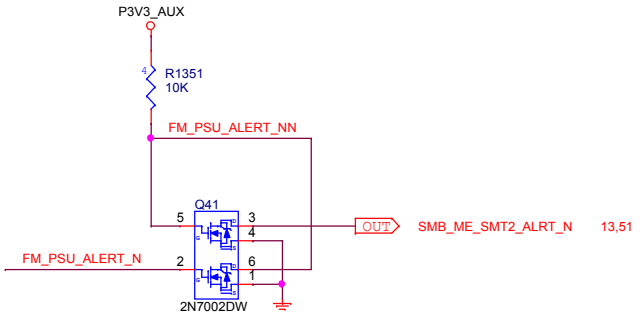

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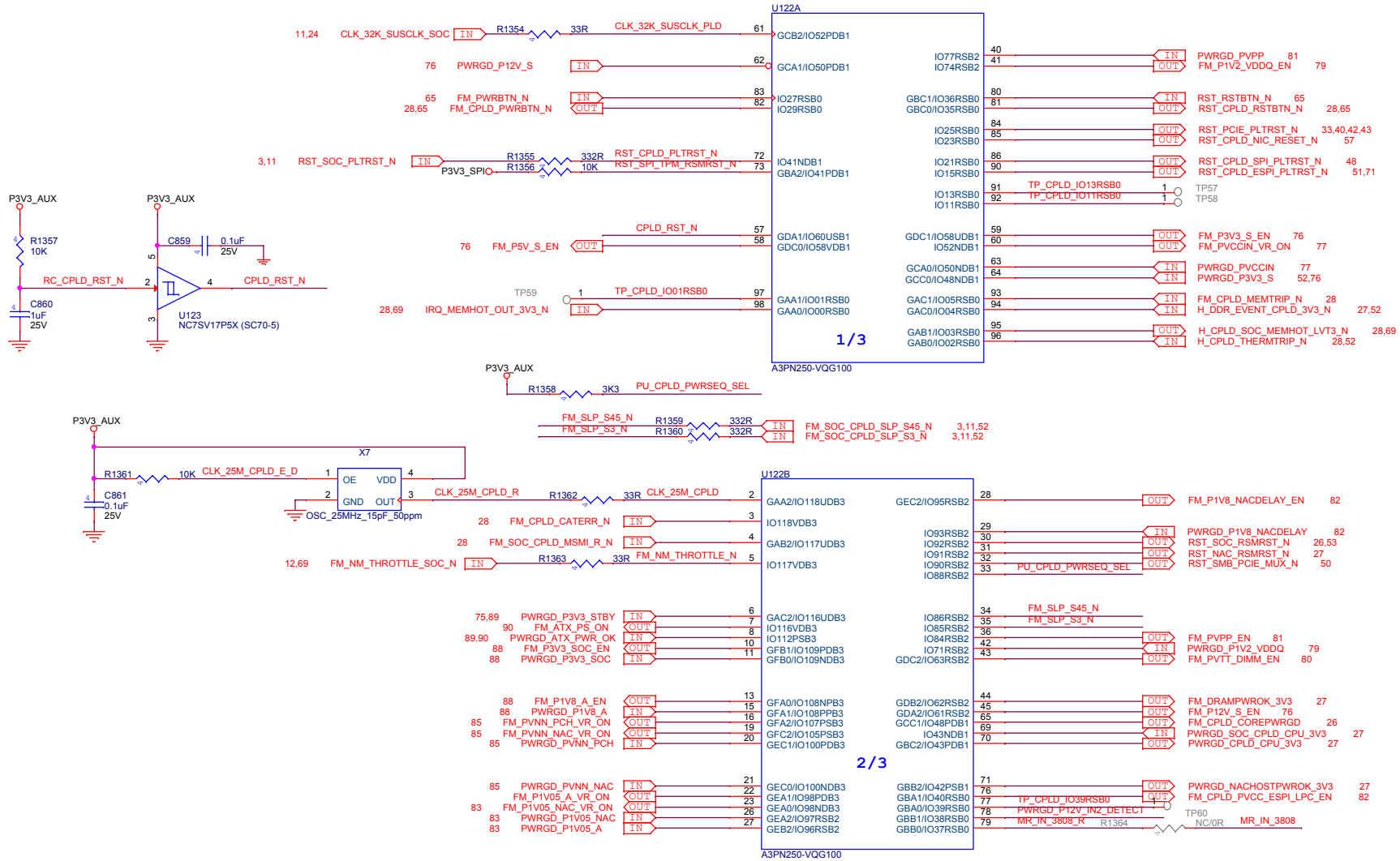

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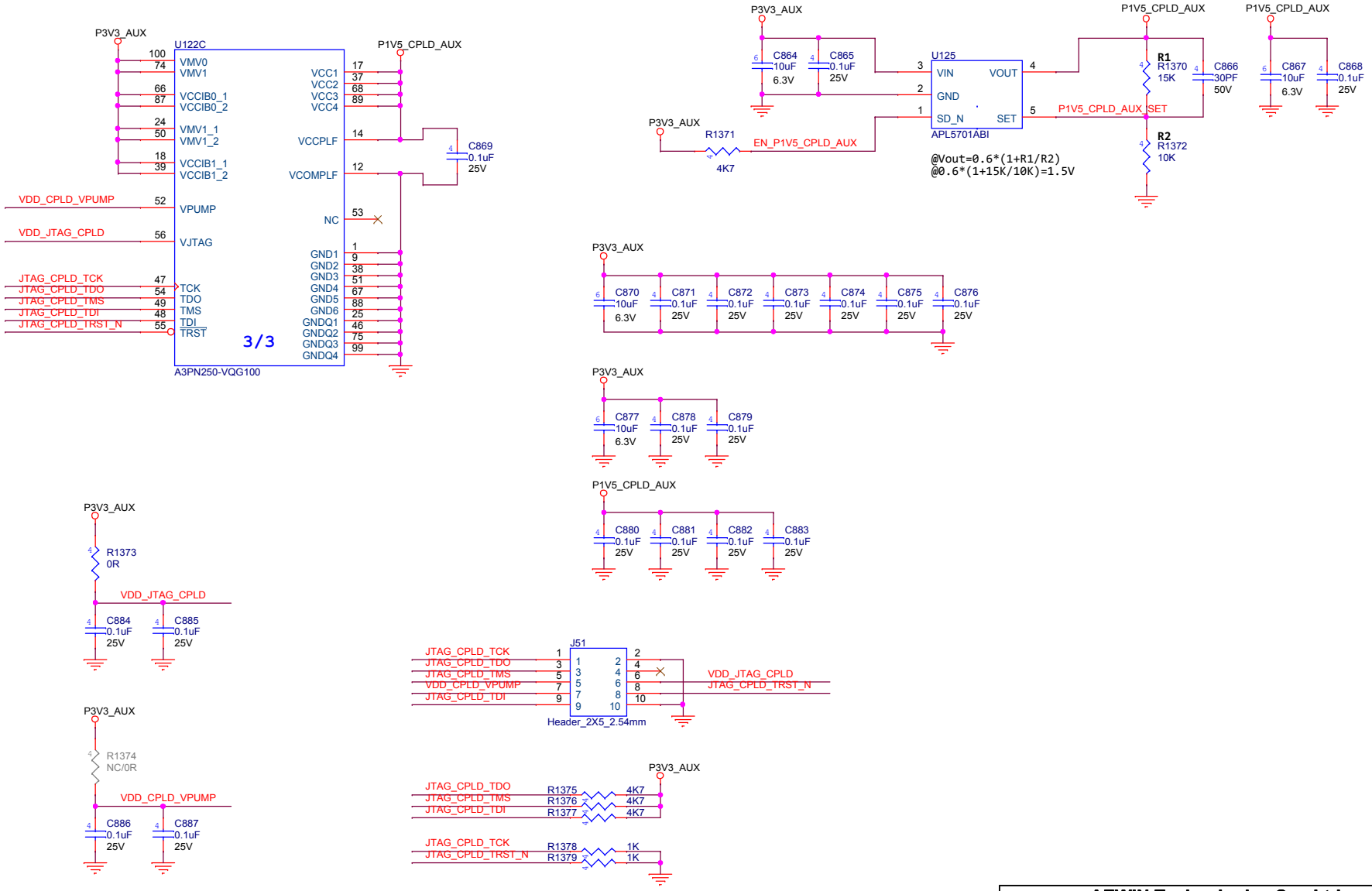

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