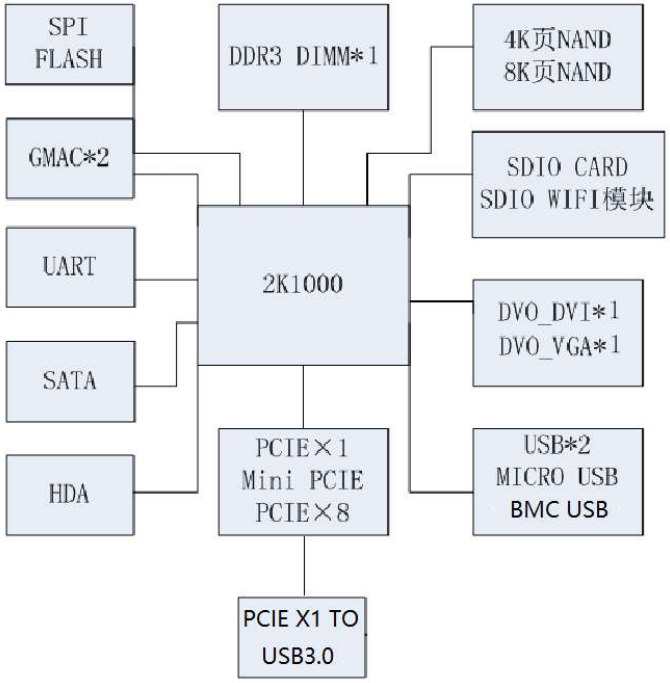
2K1000_PC_EVB

龙芯中科 LOONGSON TECHNOLOGY 龙芯中科技术有限公司
北京市海淀区祺祥路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 1 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	



I2C分组说明

设备	目前挂在	I2C地址
DIMM_SLOT0	I2C0	1010 000X
AT24C16	I2C0	1010 111X
RTC-DS1338Z	I2C0	1101 000X
2K 3V3&1V5 current	I2C1	1101 111X
2K PEST&VDD current	I2C1	1101 100X
DVO0	GPIO0 and GPIO1	
DVO1	CAN0_TX and CAN1_RX	

2K1000 GMAC1 PHY_RESETn: CAN1_RX(GPIO)

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北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
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北京市海淀区祾香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
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Drawn By Hejianxin		Checked By Fuxingjian	

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北京市海淀区祾香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 4 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	

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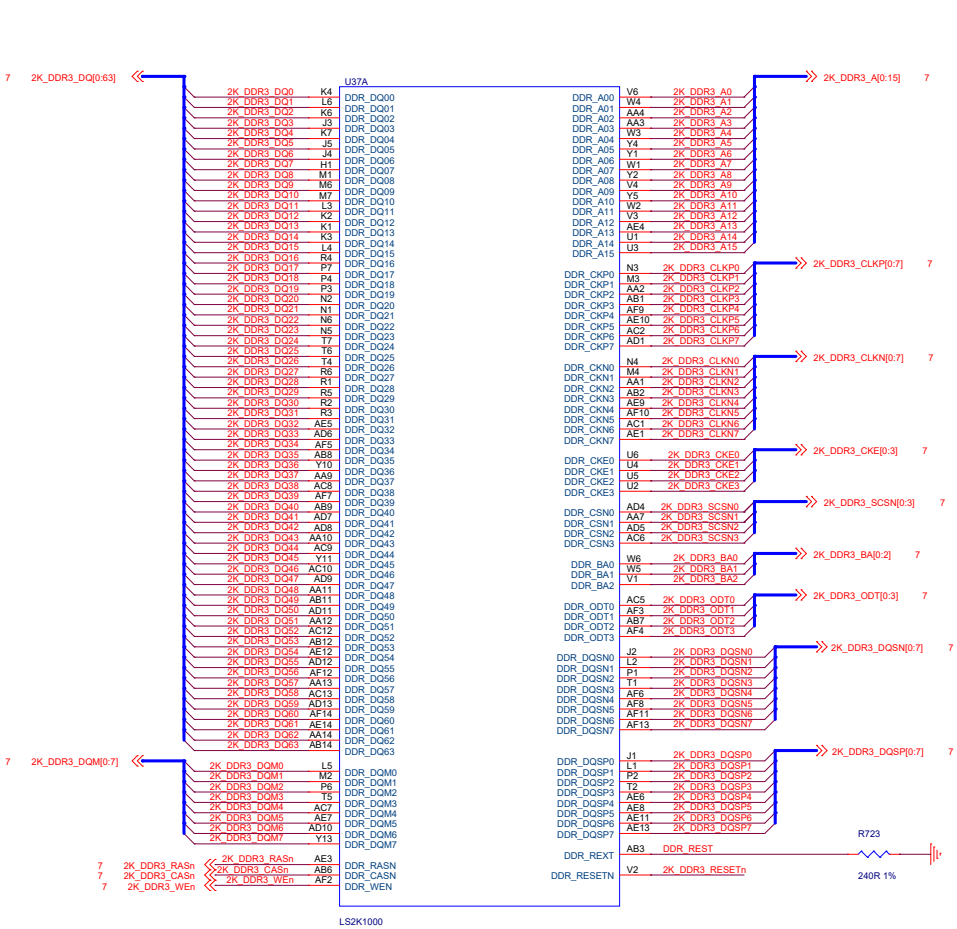
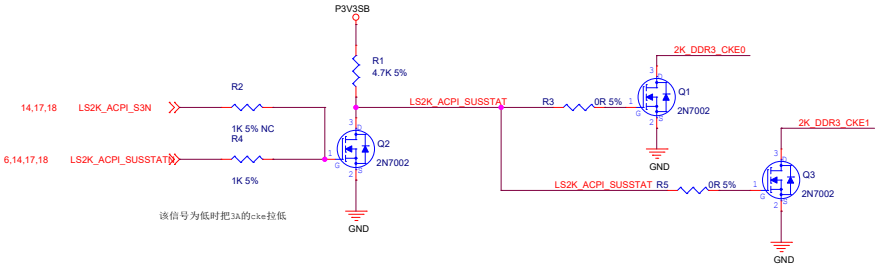
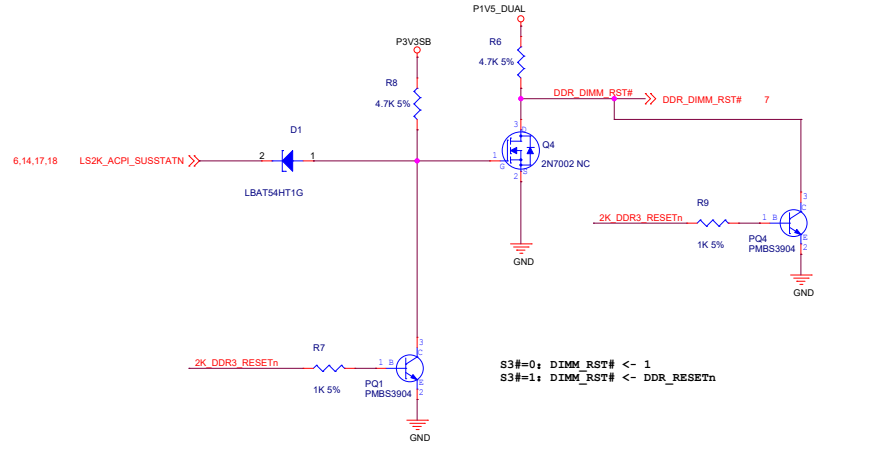
北京市海淀区祾香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 5 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	







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板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 6 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	

6 2K_DDR3_DQ[0:63] 6 2K_DDR3_DQM[0:7] 6 2K_DDR3_DQSN[0:7] 6 2K_DDR3_DQSP[0:7] 2K_DDR3_A[0:15] 6 2K_DDR3_BA[0:2] 6 2K_DDR3_CKE[0:3] 6 2K_DDR3_CLKN[0:7] 6 2K_DDR3_CLKP[0:7] 6

2K_DDR3_CASn 2K_DDR3_CASn 6 2K_DDR3_RASn 2K_DDR3_RASn 6 2K_DDR3_SCSN[0:3] 6 2K_DDR3_ODT[0:3] 6

2K_DDR3_WEn 2K_DDR3_WEn 6

U2A

DDR3_A

2K_DDR3_A0	188	A0	DQ63	234	2K_DDR3_DQ63
2K_DDR3_A1	181	A1	DQ62	233	2K_DDR3_DQ62
2K_DDR3_A2	61	A2	DQ61	228	2K_DDR3_DQ61
2K_DDR3_A3	180	A3	DQ60	227	2K_DDR3_DQ60
2K_DDR3_A4	59	A4	DQ59	115	2K_DDR3_DQ59
2K_DDR3_A5	58	A5	DQ58	114	2K_DDR3_DQ58
2K_DDR3_A6	178	A6	DQ57	109	2K_DDR3_DQ57
2K_DDR3_A7	56	A7	DQ56	108	2K_DDR3_DQ56
2K_DDR3_A8	177	A8	DQ55	225	2K_DDR3_DQ55
2K_DDR3_A9	175	A9	DQ54	224	2K_DDR3_DQ54
2K_DDR3_A10	70	A10/AP	DQ53	219	2K_DDR3_DQ53
2K_DDR3_A11	55	A11	DQ52	218	2K_DDR3_DQ52
2K_DDR3_A12	174	A12	DQ51	106	2K_DDR3_DQ51
2K_DDR3_A13	196	A13	DQ50	105	2K_DDR3_DQ50
2K_DDR3_A14	172	A14	DQ49	100	2K_DDR3_DQ49
2K_DDR3_A15	171	A15	DQ48	99	2K_DDR3_DQ48
			DQ47	216	2K_DDR3_DQ47
			DQ46	215	2K_DDR3_DQ46
			DQ45	210	2K_DDR3_DQ45
			DQ44	209	2K_DDR3_DQ44
2K_DDR3_CLKP1	63	CK1/NU	DQ43	97	2K_DDR3_DQ43
2K_DDR3_CLKN1	64	CK1/NU#	DQ42	96	2K_DDR3_DQ42
2K_DDR3_CLKP0	184	CK0	DQ41	91	2K_DDR3_DQ41
2K_DDR3_CLKN0	185	CK0#	DQ40	90	2K_DDR3_DQ40
			DQ39	207	2K_DDR3_DQ39
2K_DDR3_SCSN1	76	S1#	DQ38	206	2K_DDR3_DQ38
2K_DDR3_SCSN0	193	S0#	DQ37	201	2K_DDR3_DQ37
			DQ36	200	2K_DDR3_DQ36
2K_DDR3_ODT1	77	ODT1	DQ35	88	2K_DDR3_DQ35
2K_DDR3_ODT0	195	ODT0	DQ34	87	2K_DDR3_DQ34
			DQ33	82	2K_DDR3_DQ33
			DQ32	81	2K_DDR3_DQ32
			DQ31	156	2K_DDR3_DQ31
			DQ30	155	2K_DDR3_DQ30
2K_DDR3_WEn	73	WE#	DQ29	150	2K_DDR3_DQ29
2K_DDR3_RASn	192	RAS#	DQ28	149	2K_DDR3_DQ28
2K_DDR3_CASn	74	CAS#	DQ27	37	2K_DDR3_DQ27
			DQ26	36	2K_DDR3_DQ26
			DQ25	31	2K_DDR3_DQ25
			DQ24	30	2K_DDR3_DQ24
2K_DDR3_BA2	52	BA2	DQ23	147	2K_DDR3_DQ23
2K_DDR3_BA1	190	BA1	DQ22	146	2K_DDR3_DQ22
2K_DDR3_BA0	71	BA0	DQ21	141	2K_DDR3_DQ21
			DQ20	140	2K_DDR3_DQ20
			DQ19	28	2K_DDR3_DQ19
2K_DDR3_CKE1	169	CKE1	DQ18	27	2K_DDR3_DQ18
2K_DDR3_CKE0	50	CKE0	DQ17	22	2K_DDR3_DQ17
			DQ16	21	2K_DDR3_DQ16
			DQ15	138	2K_DDR3_DQ15
			DQ14	137	2K_DDR3_DQ14
			DQ13	132	2K_DDR3_DQ13
			DQ12	131	2K_DDR3_DQ12
			DQ11	19	2K_DDR3_DQ11
	119	SA2	DQ10	18	2K_DDR3_DQ10
	237	SA1	DQ9	13	2K_DDR3_DQ9
	117	SA0	DQ8	12	2K_DDR3_DQ8
			DQ7	129	2K_DDR3_DQ7
			DQ6	128	2K_DDR3_DQ6
			DQ5	123	2K_DDR3_DQ5
2K_DDR3_DQSP7	112	DQS7	DQ4	122	2K_DDR3_DQ4
2K_DDR3_DQSN7	111	DQS7#	DQ3	10	2K_DDR3_DQ3
2K_DDR3_DQSP6	103	DQS6	DQ2	9	2K_DDR3_DQ2
2K_DDR3_DQSN6	102	DQS6#	DQ1	4	2K_DDR3_DQ1
2K_DDR3_DQSP5	94	DQS5	DQ0	3	2K_DDR3_DQ0
2K_DDR3_DQSN5	93	DQS5#			
2K_DDR3_DQSP4	85	DQS4			
2K_DDR3_DQSN4	84	DQS4#			
2K_DDR3_DQSP3	34	DQS3	CB7	165	
2K_DDR3_DQSN3	33	DQS3#	CB6	164	
2K_DDR3_DQSP2	25	DQS2	CB5	159	
2K_DDR3_DQSN2	24	DQS2#	CB4	158	
2K_DDR3_DQSP1	16	DQS1	CB3	46	
2K_DDR3_DQSN1	15	DQS1#	CB2	45	
2K_DDR3_DQSP0	7	DQS0	CB1	40	
2K_DDR3_DQSN0	6	DQS0#	CB0	39	
2K_DDR3_DQM7	230	DM7/DQS16	DQS8	43	
2K_DDR3_DQM6	221	DM6/DQS15	DQS8#	42	
2K_DDR3_DQM5	212	DM5/DQS14			
2K_DDR3_DQM4	203	DM4/DQS13			
2K_DDR3_DQM3	152	DM3/DQS12	DM8/DQS17	161	
2K_DDR3_DQM2	143	DM2/DQS11			
2K_DDR3_DQM1	134	DM1/DQS10	VTT2	120	DIMM_VTT
2K_DDR3_DQM0	125	DM0/DQS9	VTT1	240	
LS2K_IIC0_SCL	118	SCL			
LS2K_IIC0_SDA	238	SDA			
			RESET#	168	DDR_DIMM_RST#
			S2_n/NC	79	
			NC/PAR_IN	68	
	162	DQS17#	NC/ERR_OUT	53	
	231	DQS16#	NC/TEST4	167	
	222	DQS15#			
	213	DQS14#	S3_n/NC	198	
	204	DQS13#	EVENT_n/NC	197	R11 4.7K 5% P3V3
	153	DQS12#	VTT/NC	49	
	144	DQS11#	VTT/NC1	48	DIMM_VTT
	135	DQS10#			
	126	NC/DQS9#			

DDR3 DIMM

14 LS2K_IIC0_SCL
14 LS2K_IIC0_SDA

DDR_DIMM_RST# 6

DIMM0_P1V5 DIMM0_P1V5

U2B

DDR3_B

	197	VDD1	VDD2	194	
	191	VDD3	VDD4	189	
	186	VDD5	VDD6	183	
	182	VDD7	VDD8	179	
	176	VDD9	VDD10	173	
	170	VDD11	VDD12	78	
	75	VDD13	VDD14	72	
	69	VDD15	VDD16	66	
	65	VDD17	VDD18	62	
	60	VDD19	VDD20	57	
	54	VDD21	VDD22	51	
	239	GND1	GND2	235	
	232	GND3	GND4	229	
	226	GND5	GND6	223	
	220	GND7	GND8	217	
	214	GND9	GND10	211	
	208	GND11	GND12	205	
	202	GND13	GND14	199	
	166	GND15	GND16	163	
	160	GND17	GND18	157	
	154	GND19	GND20	151	
	148	GND21	GND22	145	
	142	GND23	GND24	139	
	136	GND25	GND26	133	
	130	GND27	GND28	127	
	124	GND29	GND30	121	
			GND32	116	
	113	GND33	GND34	110	
	107	GND35	GND36	104	
	101	GND37	GND38	98	
	95	GND39	GND40	92	
	89	GND41	GND42	86	
	83	GND43	GND44	80	
	47	GND45	GND46	44	
	41	GND47	GND48	38	
	35	GND49	GND50	32	
	29	GND51	GND52	26	
	23	GND53	GND54	20	
	17	GND55	GND56	14	
	11	GND57	GND58	8	
	5	GND59	GND60	2	
DIMM0_VREFCA	67	VREFCA	VDDSPD	236	P3V3
DIMM0_VREFDQ	1	VREFDQ			C1 0.47UF 16V

DDR3 DIMM

V1.1
Delet DIMM slot1

DIMM_VTT

C7 0.1UF 16V C8 0.1UF 16V C9 0.1UF 16V C10 0.1UF 16V C11 22UF/6.3V C12 22UF/6.3V

DIMM_VTT距信号线距离30mil以上
线宽至少30mil

这8个电容
放在引脚附近

DIMM0_P1V5

C3 10uF C4 10pF C5 10pF C6 10pF

DIMM0_P1V5

C13 10uF C14 100pF C15 100pF C16 100pF

DIMM0_P1V5

CE1 470UF/16V CE2 470UF/16V C18 0.1UF 16V C19 0.1UF 16V C20 0.1UF 16V C21 0.1UF 16V C22 0.1UF 16V C23 0.1UF 16V C24 0.1UF 16V C28 0.1UF 16V

DIMM0_P1V5

R12 100 1% DIMM0_VREFDQ
R14 100 1% C29 0.1UF 16V

DIMM0_P1V5

R13 100 1% C17 0.1UF 16V DIMM0_VREFCA
R15 100 1%

DIMM0_VREFCA

C30 0.1UF 16V C31 0.01uF C32 0.1UF 16V C33 0.01uF
P1V5_DUAL

DIMM0_VREFCA

C25 0.1UF 16V C26 0.01uF C27 0.1UF 16V C34 0.01uF

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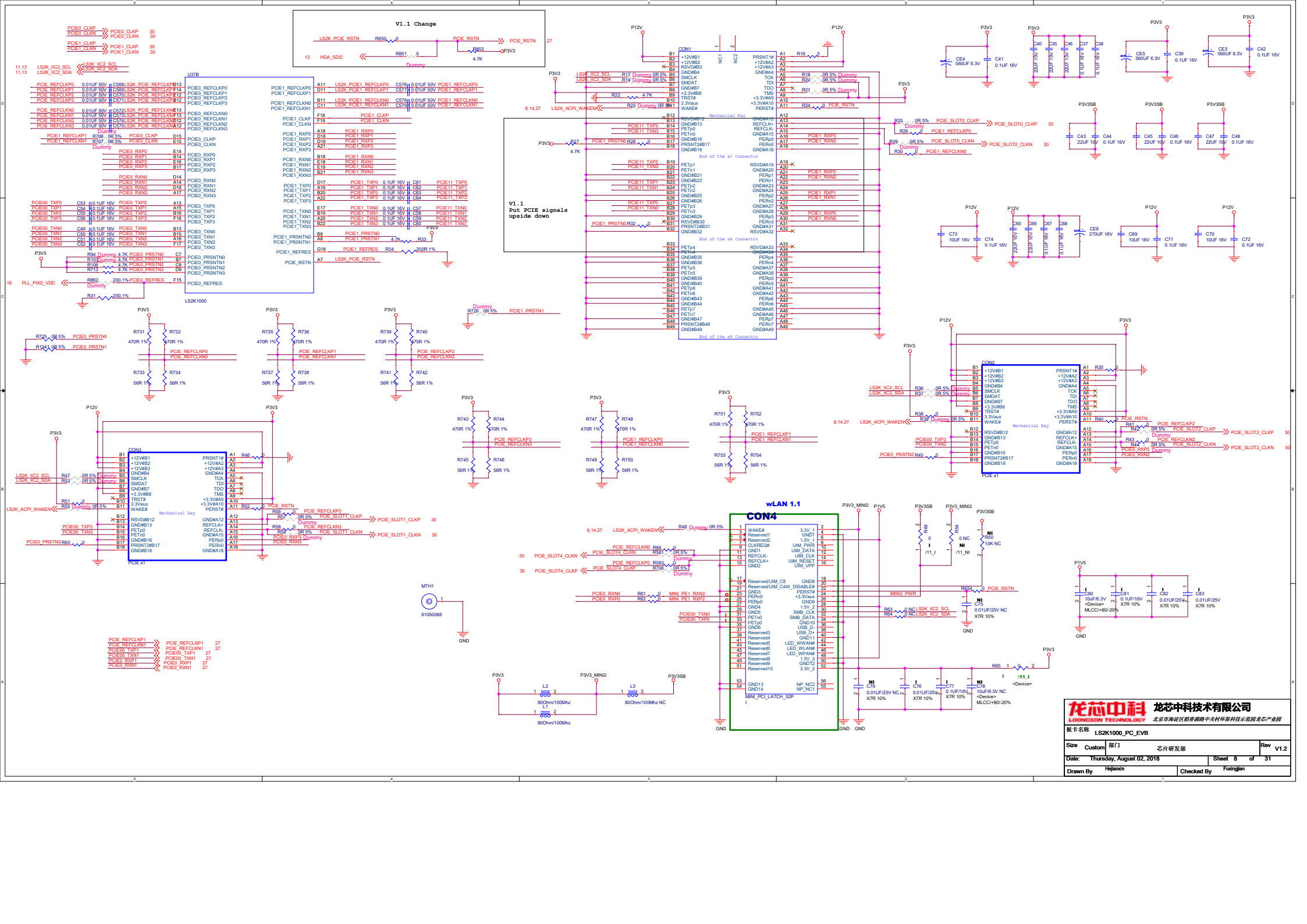
板卡名称	LS2K1000_PC_EVB
Size C	部门 芯片研发部 Rev V1.2
Date: Thursday, August 02, 2018	Sheet 7 of 31
Drawn By Hejianxin	Checked By Fuxingjian


V1.1 Change
LS2K_PCIE_RSTN
PCIE_RSTN
HDA_SDI2
Dummy
U37B
LS2K1000
PCIE0_REFCLKP0
PCIE0_REFCLKN0
PCIE0_REFCLKP1
PCIE0_REFCLKN1
PCIE0_REFCLKP2
PCIE0_REFCLKN2
PCIE0_REFCLKP3
PCIE0_REFCLKN3
PCIE0_CLKP
PCIE0_CLKN
PCIE0_RXP0
PCIE0_RXN0
PCIE0_RXP1
PCIE0_RXN1
PCIE0_RXP2
PCIE0_RXN2
PCIE0_RXP3
PCIE0_RXN3
PCIE0_TXP0
PCIE0_TXN0
PCIE0_TXP1
PCIE0_TXN1
PCIE0_TXP2
PCIE0_TXN2
PCIE0_TXP3
PCIE0_TXN3
PCIE0_PRSNTN0
PCIE0_PRSNTN1
PCIE0_PRSNTN2
PCIE0_PRSNTN3
PCIE0_REFRES
PLL_PIX0_VDD
PCIE1_REFCLKP0
PCIE1_REFCLKN0
PCIE1_REFCLKP1
PCIE1_REFCLKN1
PCIE1_CLKP
PCIE1_CLKN
PCIE1_RXP0
PCIE1_RXN0
PCIE1_RXP1
PCIE1_RXN1
PCIE1_RXP2
PCIE1_RXN2
PCIE1_RXP3
PCIE1_RXN3
PCIE1_TXP0
PCIE1_TXN0
PCIE1_TXP1
PCIE1_TXN1
PCIE1_TXP2
PCIE1_TXN2
PCIE1_TXP3
PCIE1_TXN3
PCIE1_PRSNTN0
PCIE1_PRSNTN1
PCIE1_REFRES
PCIE_RSTN
V1.1
Put PCIE signals
upside down
CON1
CON2
CON3
CON4
wLAN 1.1
PCIE x1
Mechanical Key
End of the x1 Connector
End of the x4 Connector
End of the x8 Connector
MINI_PCI_LATCH_52P
MTH1
61050068
L1
L2
L3
80Ohm/100Mhz
80Ohm/100Mhz NC
P12V
P3V3
P3V3SB
P3V3_MINI2
P1V5
GND
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LOONGSON TECHNOLOGY
北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园
板卡名称 LS2K1000_PC_EVB
Size Custom
部门 芯片研发部
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Date: Thursday, August 02, 2018
Sheet 8 of 31
Drawn By Hejianxin
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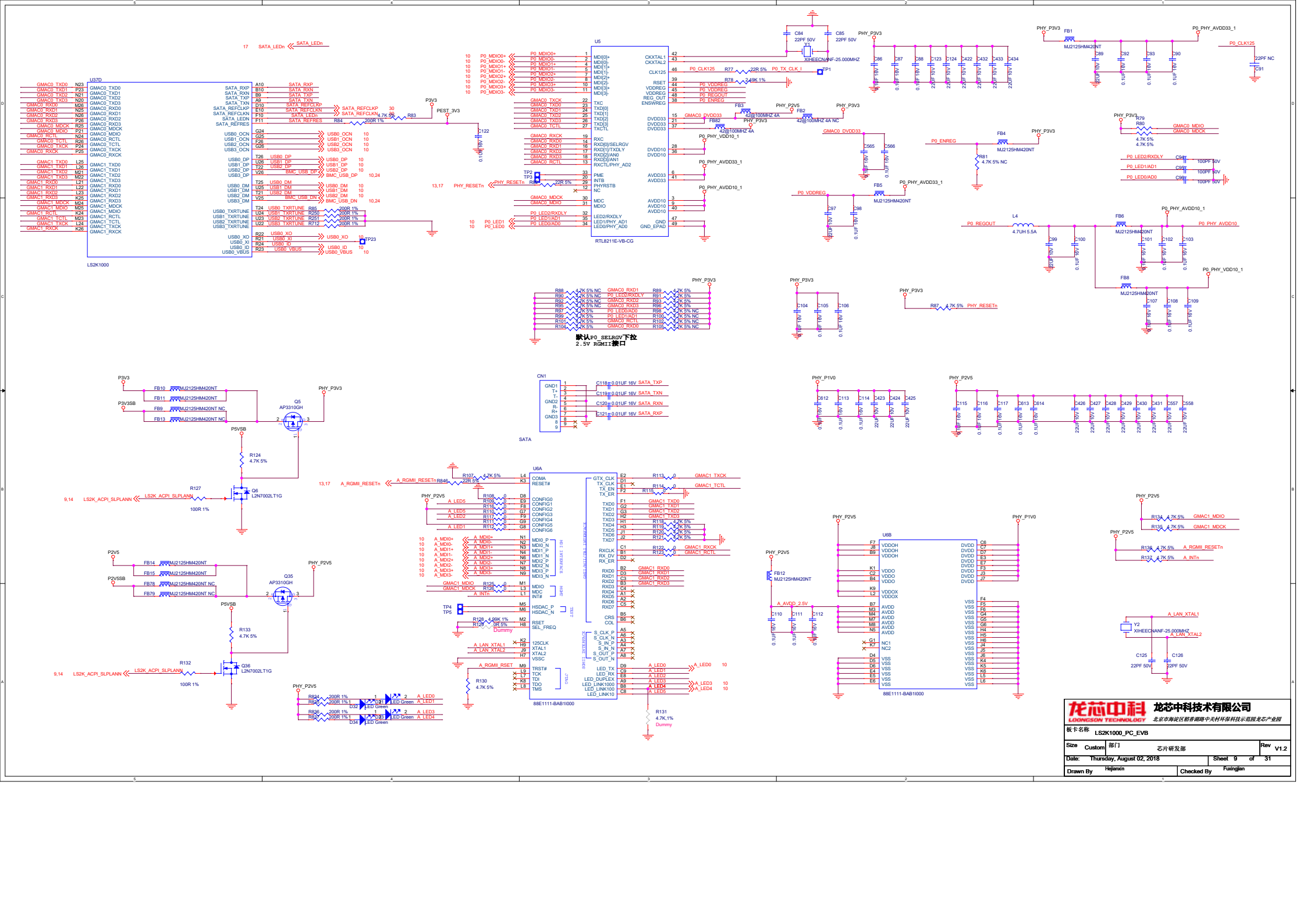
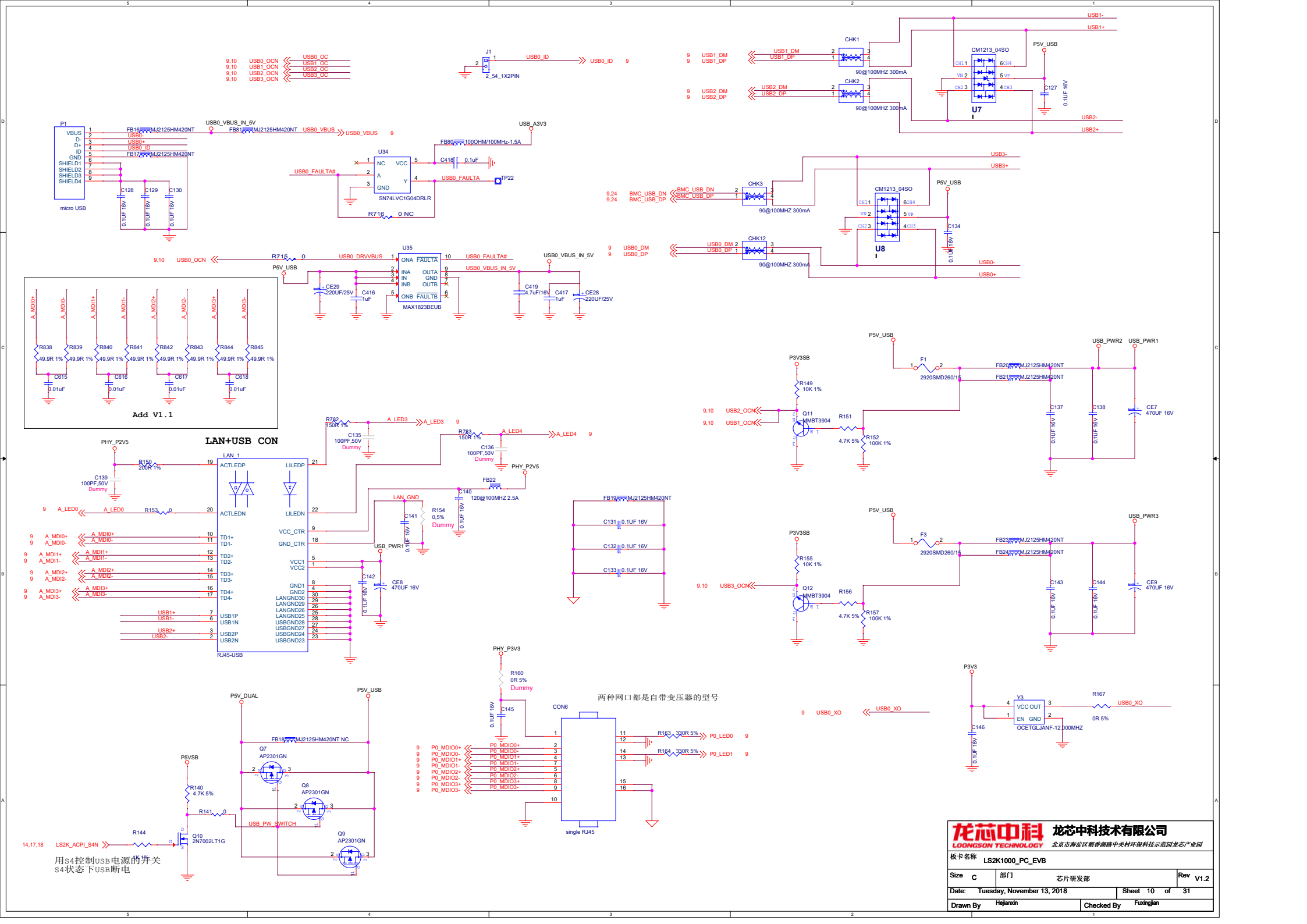

U37D
LS2K1000
U5
RTL8211E-VB-CG
XIHEECNANF-25.000MHZ
U6A
88E1111-BAB1000
U6B
88E1111-BAB1000
CN1
SATA
Q5
AP3310GH
Q6
L2N7002LT1G
Q35
AP3310GH
Q36
L2N7002LT1G
默认P0_SELRGV下拉
2.5V RGMII接口
龙芯中科技术有限公司
LOONGSON TECHNOLOGY
北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园
板卡名称 LS2K1000_PC_EVB
Size Custom
部门 芯片研发部
Rev V1.2
Date: Thursday, August 02, 2018
Sheet 9 of 31
Drawn By Hejianxin
Checked By Fuxinglan

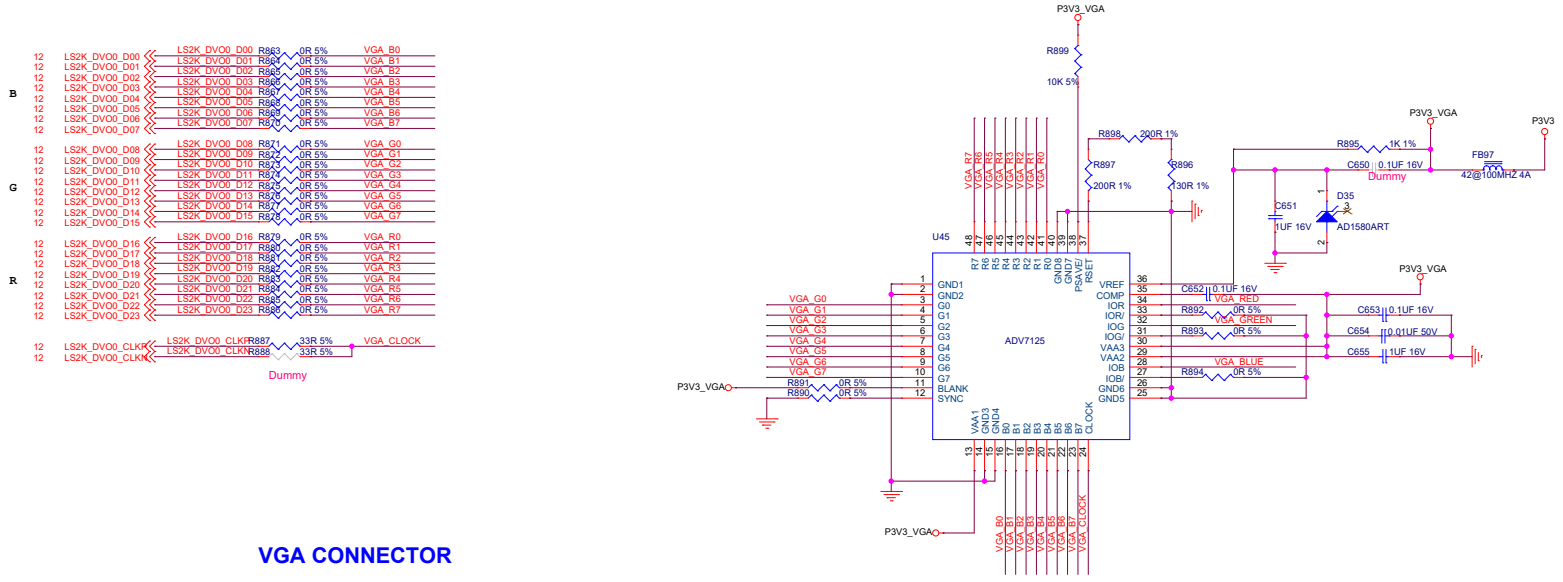


龙芯中科 LOONGSON TECHNOLOGY

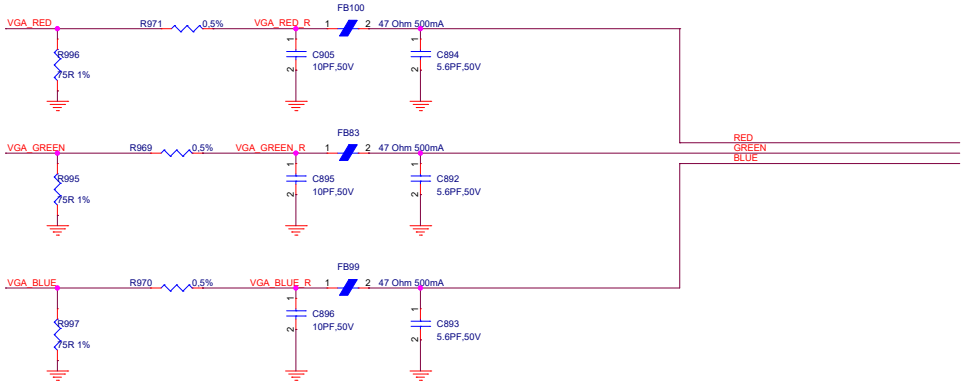
龙芯中科技术有限公司

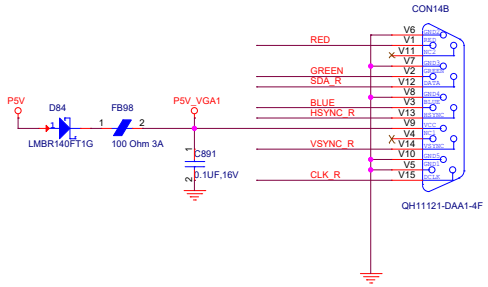
北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

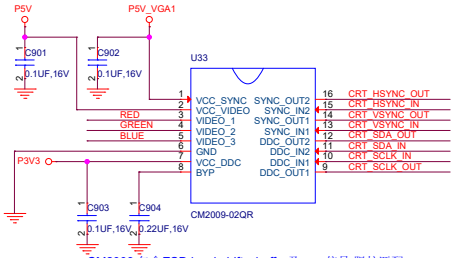
板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Tuesday, November 13, 2018		Sheet 10 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	



VGA CONNECTOR

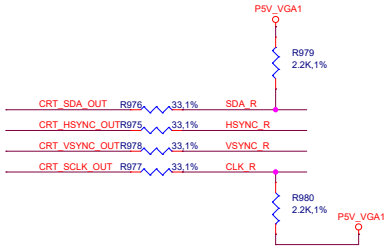


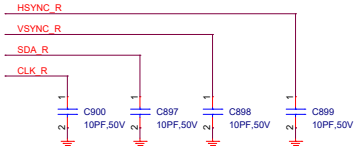




CM2009 包含ESD,level-shift，buffer及sync信号 阻抗匹配

PLACE AS CLOSE AS POSSIBLE TO VGA





龙芯中科 LOONGSON TECHNOLOGY	龙芯中科技术有限公司 北京市海淀区祺祥路中关村环保科技示范园龙芯产业园		
板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 11 of 31	
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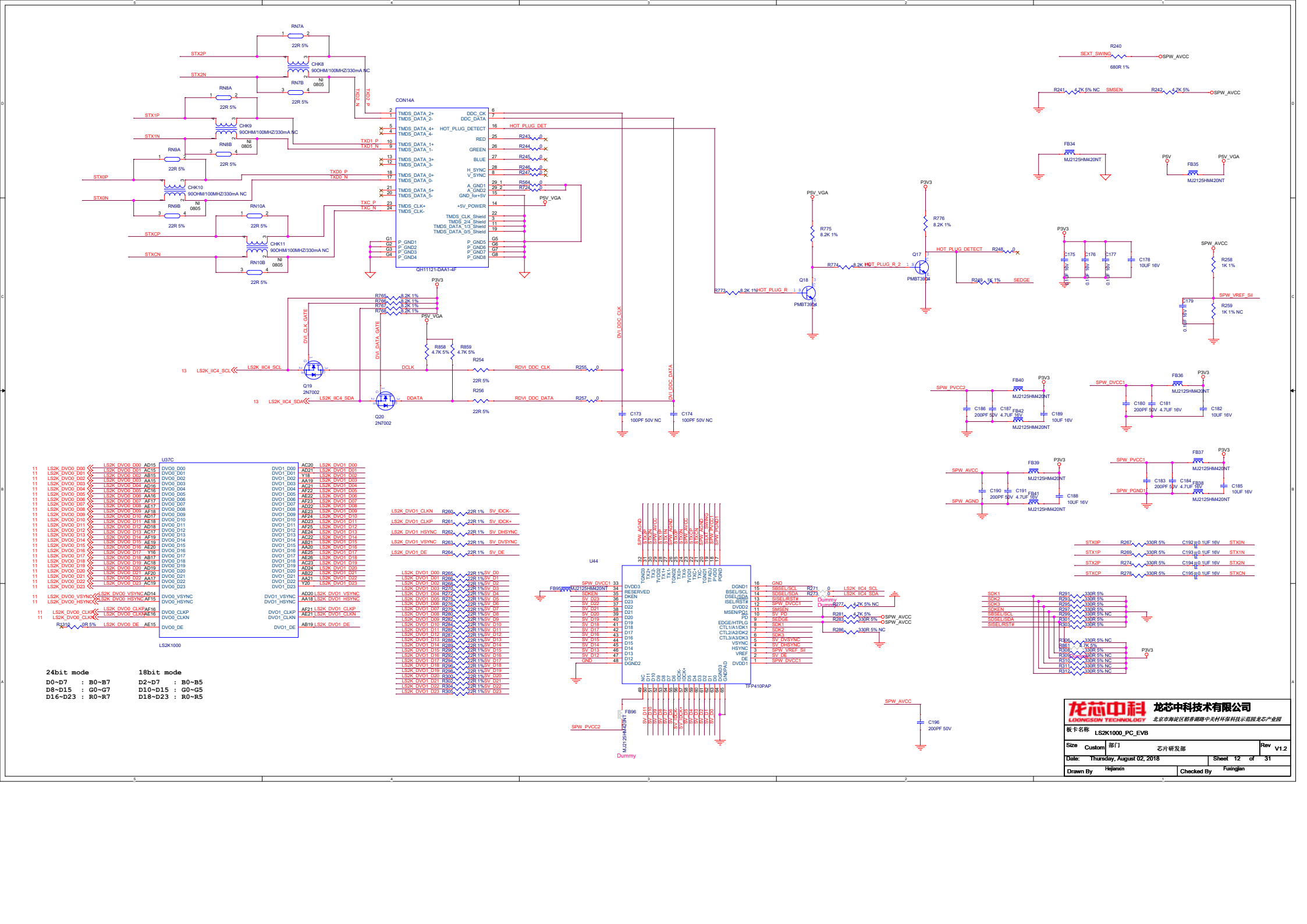
RN7A
22R 5%
STX2P
STX2N
CHK8
90OHM/100MHZ/330mA NC
RN7B
NI
0805
RN8A
22R 5%
STX1P
STX1N
CHK9
RN8B
RN9A
STX0P
STX0N
CHK10
RN9B
RN10A
STXCP
STXCN
CHK11
RN10B
TXD2_P
TXD2_N
TXD1_P
TXD1_N
TXD0_P
TXD0_N
TXC_P
TXC_N
CON14
TMDS_DATA_2+
TMDS_DATA_2-
TMDS_DATA_4+
TMDS_DATA_4-
TMDS_DATA_1+
TMDS_DATA_1-
TMDS_DATA_3+
TMDS_DATA_3-
TMDS_DATA_0+
TMDS_DATA_0-
TMDS_DATA_5+
TMDS_DATA_5-
TMDS_CLK+
TMDS_CLK-
DDC_CK
DDC_DATA
HOT_PLUG_DETECT
RED
GREEN
BLUE
H_SYNC
V_SYNC
A_GND1
A_GND2
GND_for+5V
+5V_POWER
TMDS_CLK_Shield
TMDS_2/4_Shield
TMDS_DATA_1/3_Shield
TMDS_DATA_0/5_Shield
P_GND1
P_GND2
P_GND3
P_GND4
P_GND5
P_GND6
P_GND7
P_GND8
QH11121-DAA1-4F
HOT_PLUG_DET
P5V_VGA
P3V3
R765
R766
R767
R768
8.2K 1%
DVI_CLK_GATE
DVI_DATA_GATE
DVI_DDC_CLK
DVI_DDC_DATA
R858
R859
4.7K 5%
LS2K_IIC4_SCL
LS2K_IIC4_SDA
DCLK
DDATA
R254
R256
22R 5%
RDVI_DDC_CLK
RDVI_DDC_DATA
R255
R257
Q19
2N7002
Q20
C173
100PF 50V NC
C174
R773
HOT_PLUG_R
R774
HOT_PLUG_R_2
R775
R776
Q17
Q18
PMBT3904
HOT_PLUG_DETECT
R248
R249
1K 1%
SEDGE
R240
SEXT_SWING
SPW_AVCC
680R 1%
R241
4.7K 5% NC
SMSEN
R242
4.7K 5%
FB34
MJ2125HM420NT
FB35
P5V
P5V_VGA
C175
C176
C177
C178
10UF 16V
0.1UF 16V
R258
1K 1%
SPW_VREF_SI
R259
1K 1% NC
C179
FB40
FB42
C186
200PF 50V
4.7UF 16V
C187
C189
FB36
C180
C181
C182
FB39
C190
C191
C188
FB37
FB38
C183
C184
C185
SPW_PVCC2
SPW_PVCC1
SPW_AVCC
SPW_AGND
SPW_PGND1
U37C
LS2K_DVO0_D00
LS2K_DVO0_D01
LS2K_DVO0_D02
LS2K_DVO0_D03
LS2K_DVO0_D04
LS2K_DVO0_D05
LS2K_DVO0_D06
LS2K_DVO0_D07
LS2K_DVO0_D08
LS2K_DVO0_D09
LS2K_DVO0_D10
LS2K_DVO0_D11
LS2K_DVO0_D12
LS2K_DVO0_D13
LS2K_DVO0_D14
LS2K_DVO0_D15
LS2K_DVO0_D16
LS2K_DVO0_D17
LS2K_DVO0_D18
LS2K_DVO0_D19
LS2K_DVO0_D20
LS2K_DVO0_D21
LS2K_DVO0_D22
LS2K_DVO0_D23
LS2K_DVO0_VSYNC
LS2K_DVO0_HSYNC
LS2K_DVO0_CLKP
LS2K_DVO0_CLKN
LS2K_DVO0_DE
R1310
0R 5%
DVO0_D00
DVO0_D01
DVO0_D02
DVO0_D03
DVO0_D04
DVO0_D05
DVO0_D06
DVO0_D07
DVO0_D08
DVO0_D09
DVO0_D10
DVO0_D11
DVO0_D12
DVO0_D13
DVO0_D14
DVO0_D15
DVO0_D16
DVO0_D17
DVO0_D18
DVO0_D19
DVO0_D20
DVO0_D21
DVO0_D22
DVO0_D23
DVO0_VSYNC
DVO0_HSYNC
DVO0_CLKP
DVO0_CLKN
DVO0_DE
LS2K1000
DVO1_D00
DVO1_D01
DVO1_D02
DVO1_D03
DVO1_D04
DVO1_D05
DVO1_D06
DVO1_D07
DVO1_D08
DVO1_D09
DVO1_D10
DVO1_D11
DVO1_D12
DVO1_D13
DVO1_D14
DVO1_D15
DVO1_D16
DVO1_D17
DVO1_D18
DVO1_D19
DVO1_D20
DVO1_D21
DVO1_D22
DVO1_D23
DVO1_VSYNC
DVO1_HSYNC
DVO1_CLKP
DVO1_CLKN
DVO1_DE
LS2K_DVO1_CLKN
LS2K_DVO1_CLKP
LS2K_DVO1_HSYNC
LS2K_DVO1_VSYNC
LS2K_DVO1_DE
SV_IDCK-
SV_IDCK+
SV_DHSYNC
SV_DVSYNC
SV_DE
SV_D0
SV_D1
SV_D2
SV_D3
SV_D4
SV_D5
SV_D6
SV_D7
SV_D8
SV_D9
SV_D10
SV_D11
SV_D12
SV_D13
SV_D14
SV_D15
SV_D16
SV_D17
SV_D18
SV_D19
SV_D20
SV_D21
SV_D22
SV_D23
24bit mode
D0~D7 : B0~B7
D8~D15 : G0~G7
D16~D23 : R0~R7
18bit mode
D2~D7 : B0~B5
D10~D15 : G0~G5
D18~D23 : R0~R5
U44
TFP410PAP
SPW_DVCC1
SDKEN
SV_D23
SV_D22
SV_D21
SV_D20
SV_D19
SV_D18
SV_D17
SV_D16
SV_D15
SV_D14
SV_D13
SV_D12
GND
DVDD3
RESERVED
DKEN
DGND1
BSEL/SCL
BSEL/SDA
DSEL/SDA
ISEL/RST#
DVDD2
MSEN/PD1
PD
EDGE/HTPLG
CTL1/A1/DK1
CTL2/A2/DK2
CTL3/A3/DK3
VSYNC
HSYNC
VREF
DE
DVDD1
SBSEL/SCL
SBSEL/SDA
DSEL/SDA
ISEL/RST#
SPW_DVCC1
SMSEN
SV_PD
SEDGE
SDK1
SDK2
SDK3
SV_DVSYNC
SV_DHSYNC
SPW_VREF_SI
SV_DE
SPW_DVCC1
R271
R273
Dummy
R277
4.7K 5% NC
R281
330R 5%
R286
330R 5% NC
LS2K_IIC4_SCL
LS2K_IIC4_SDA
SPW_AVCC
FB95
MJ2125HM420NT
FB96
SPW_PVCC2
C196
200PF 50V
SDK1
SDK2
SDK3
SDKEN
SBSEL/SCL
SBSEL/SDA
SISEL/RST#
R291
R292
R295
R297
R301
R306
R861
R308
R309
R310
R311
R312
330R 5%
330R 5% NC
4.7K 5%
STX0P
STX1P
STX2P
STXCP
R267
R269
R274
R278
C192
C193
C194
C195
0.1UF 16V
STX0N
STX1N
STX2N
STXCN
龙芯中科技术有限公司
LOONGSON TECHNOLOGY
北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园
板卡名称 LS2K1000_PC_EVB
Size Custom
部门 芯片研发部
Rev V1.2
Date: Thursday, August 02, 2018
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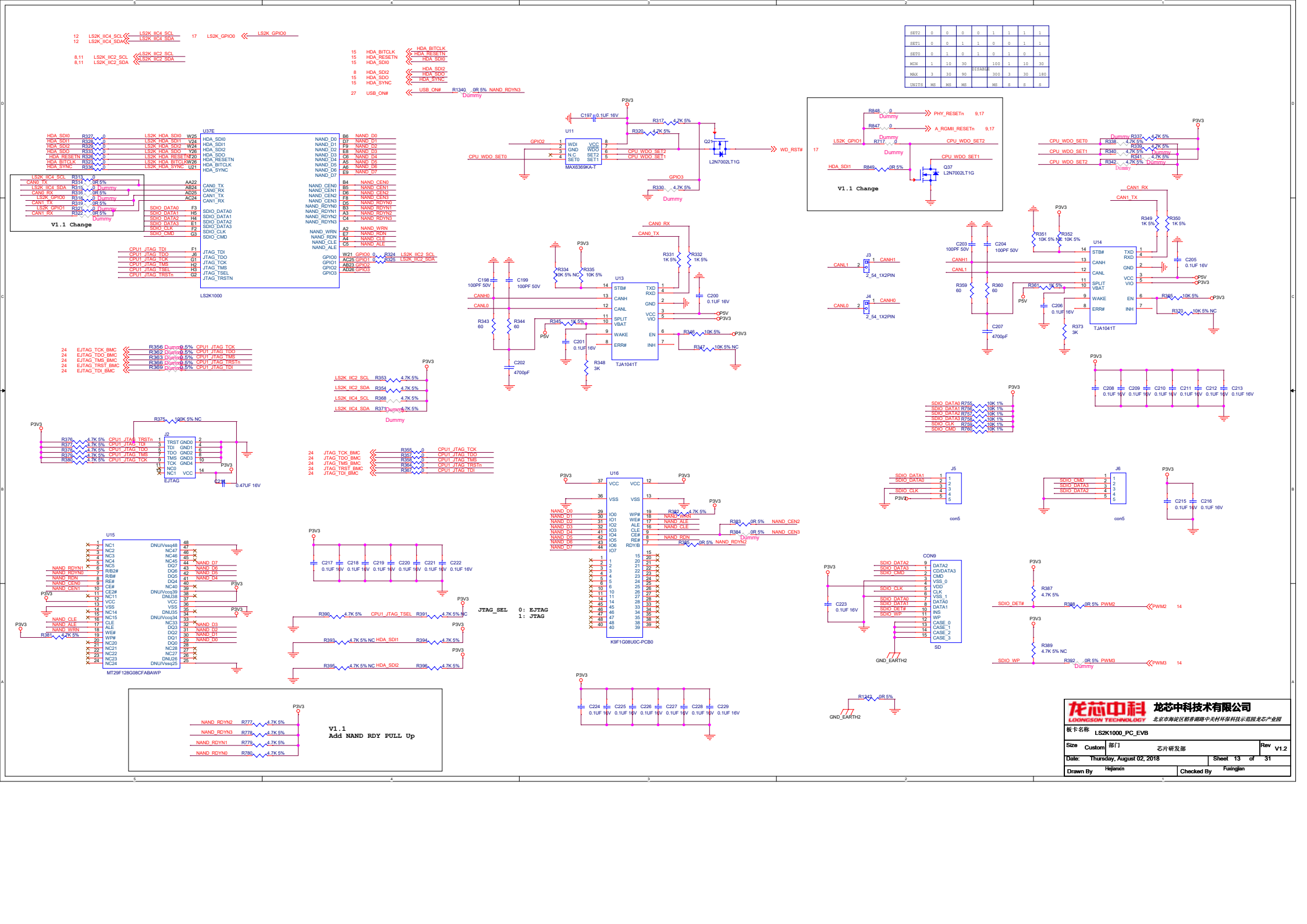
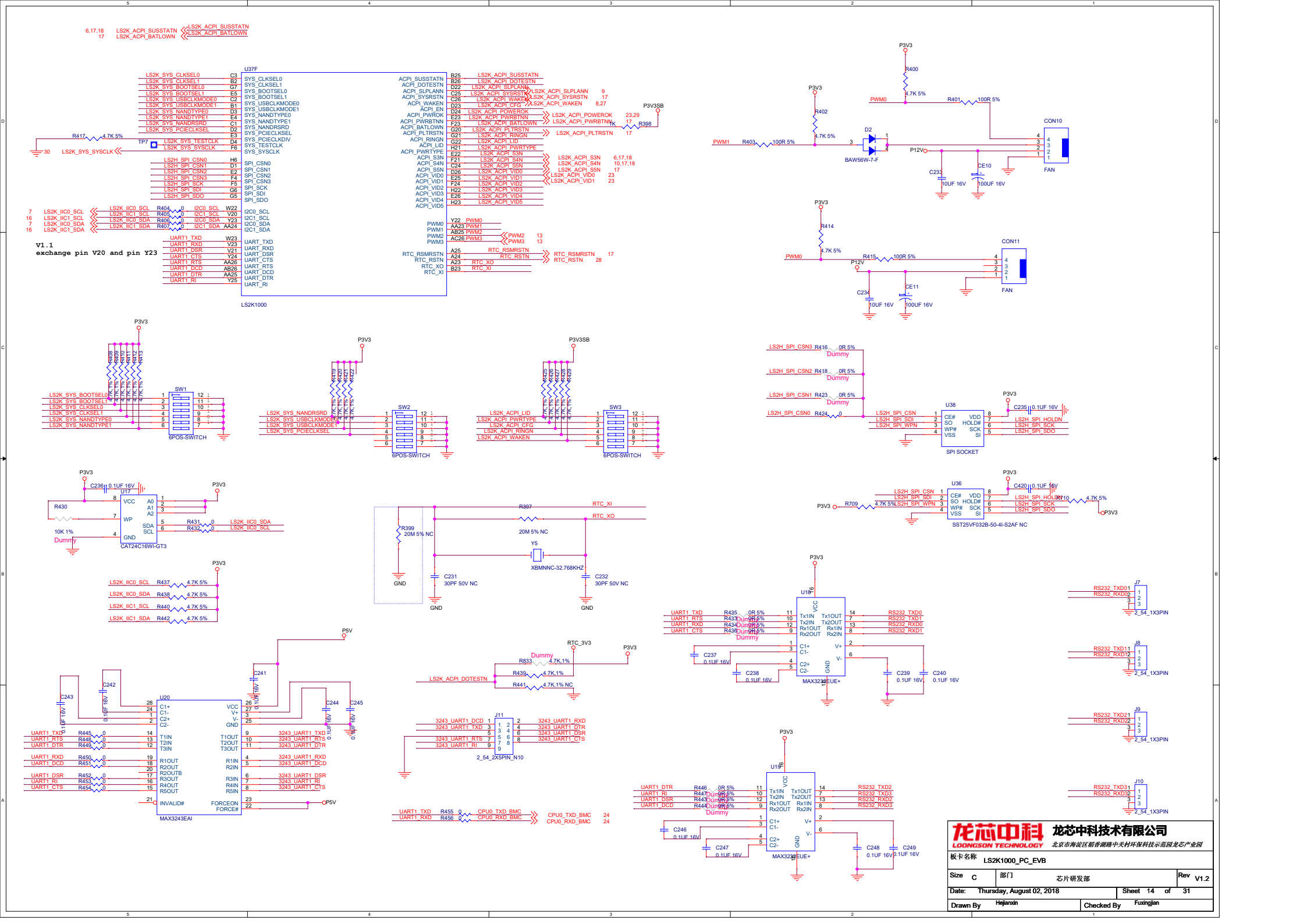
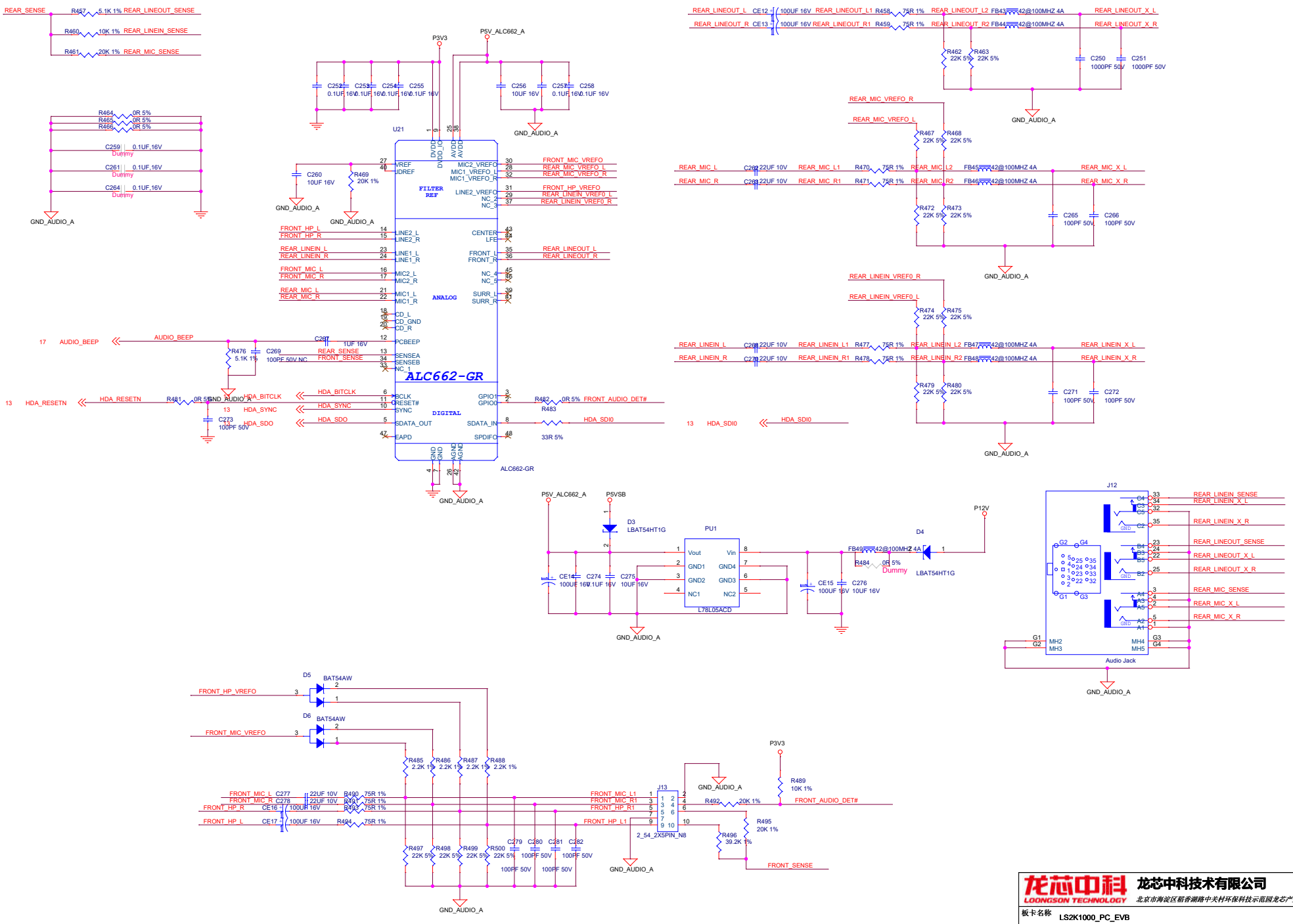
Drawn By Hejianxin
Checked By Fuxinglian



龙芯中科技术有限公司
LOONGSON TECHNOLOGY
北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

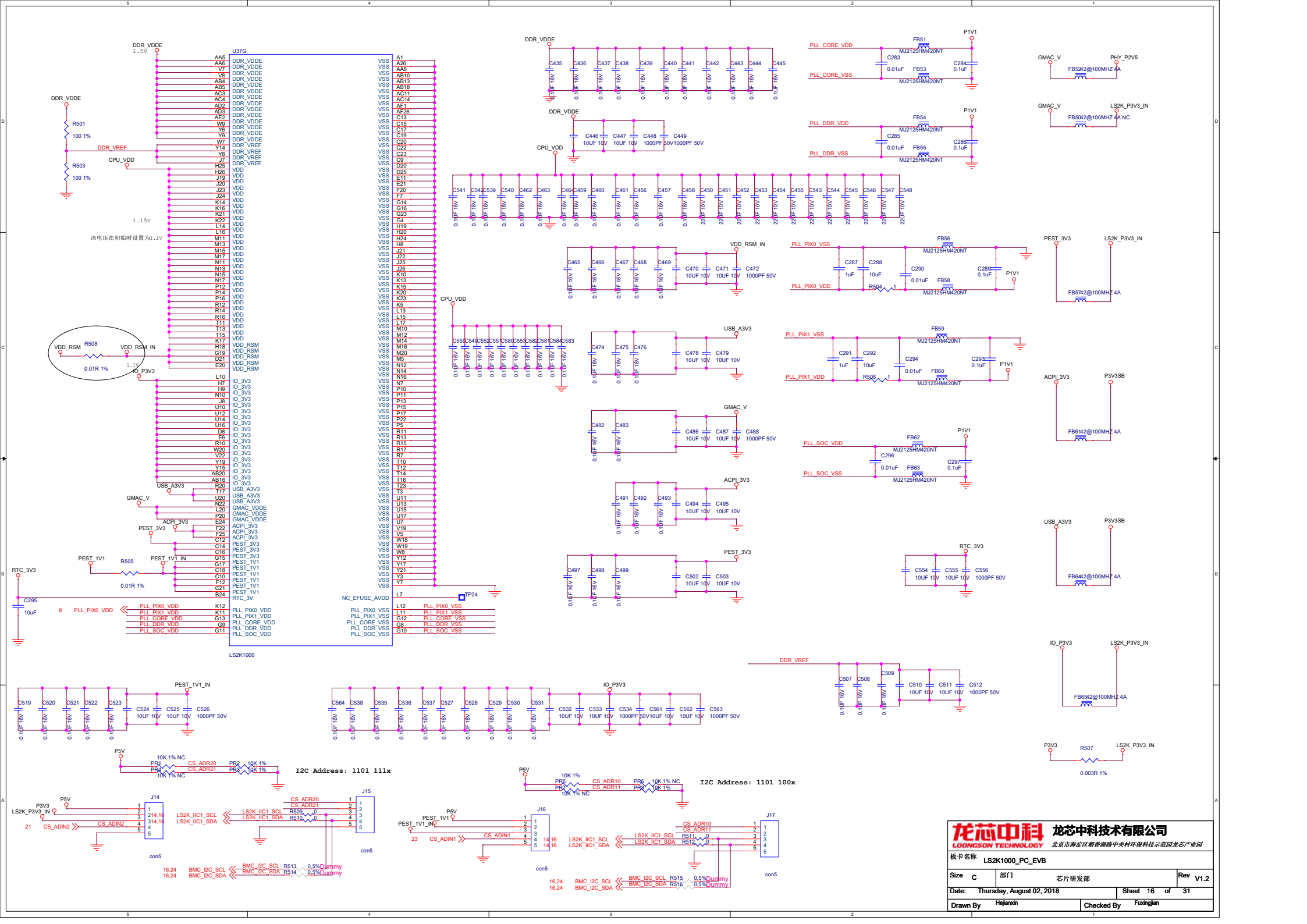
板卡名称	LS2K1000_PC_EVB		
Size	Custom	部门 芯片研发部	Rev V1.2
Date:	Thursday, August 02, 2018	Sheet 13 of 31	
Drawn By	Hejianxin	Checked By	Fuxingjian


U37F
LS2K1000
V1.1
exchange pin V20 and pin Y23
P3V3
P3V3SB
P5V
U17
CAT24C16WI-GT3
SW1
SW2
SW3
6POS-SWITCH
U38
SPI SOCKET
SST25VF032B-50-4I-S2AF NC
U20
MAX3243EAI
U19
MAX3232EUE+
CON10
CON11
FAN
D2
BAW56W-7-F
Y5
XBMNNC-32.768KHZ
J11
2_54_2X5PIN_N10
J7
J8
J9
J10
2_54_1X3PIN
龙芯中科技术有限公司
北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园
板卡名称 LS2K1000_PC_EVB
Size C
部门 芯片研发部
Rev V1.2
Date: Thursday, August 02, 2018
Sheet 14 of 31
Drawn By Hejianxin
Checked By Fuxingjian

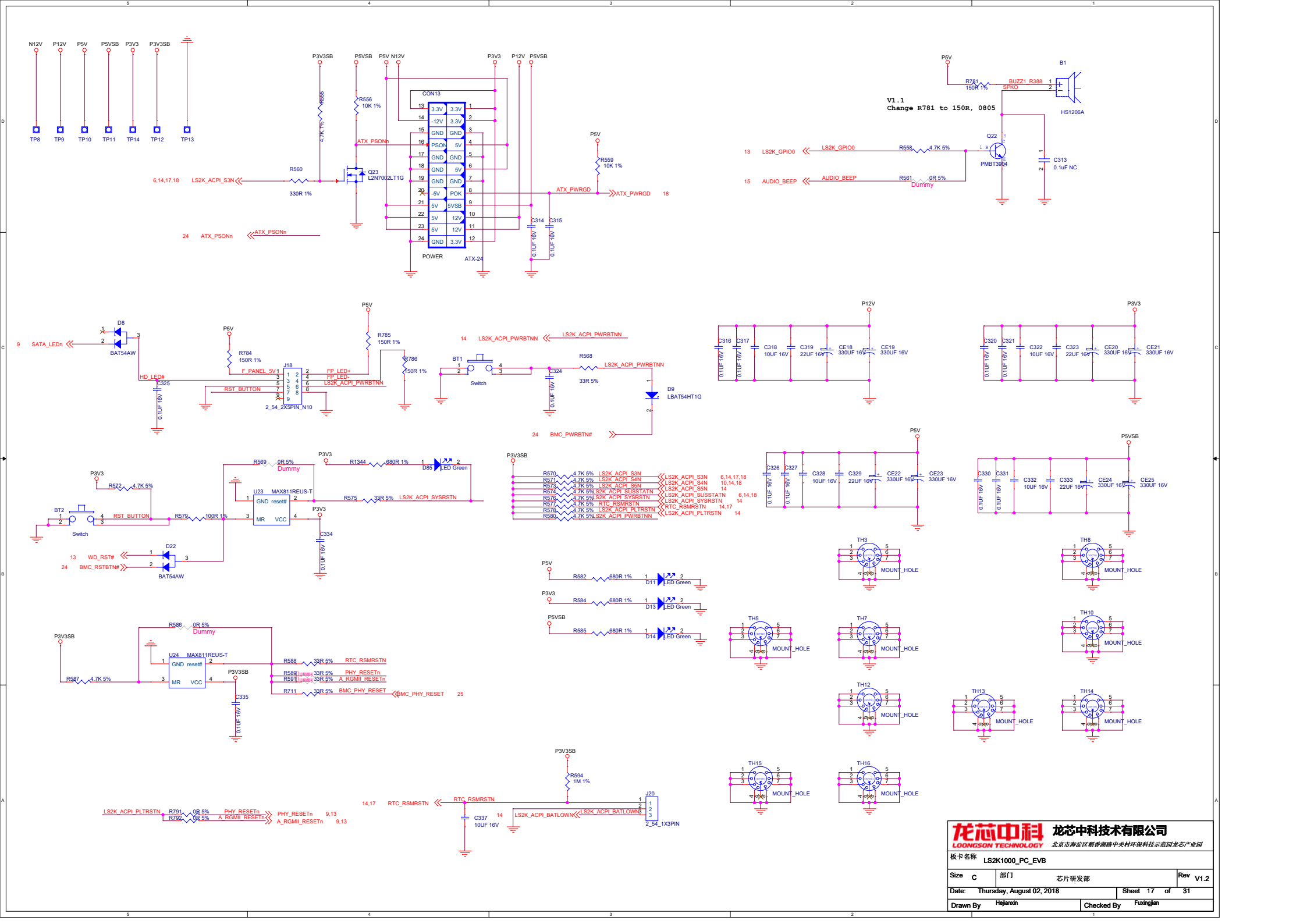


龙芯中科技术有限公司
北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 15 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	



龙芯中科 LOONGSON TECHNOLOGY	龙芯中科技术有限公司 北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园		
板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 16 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	

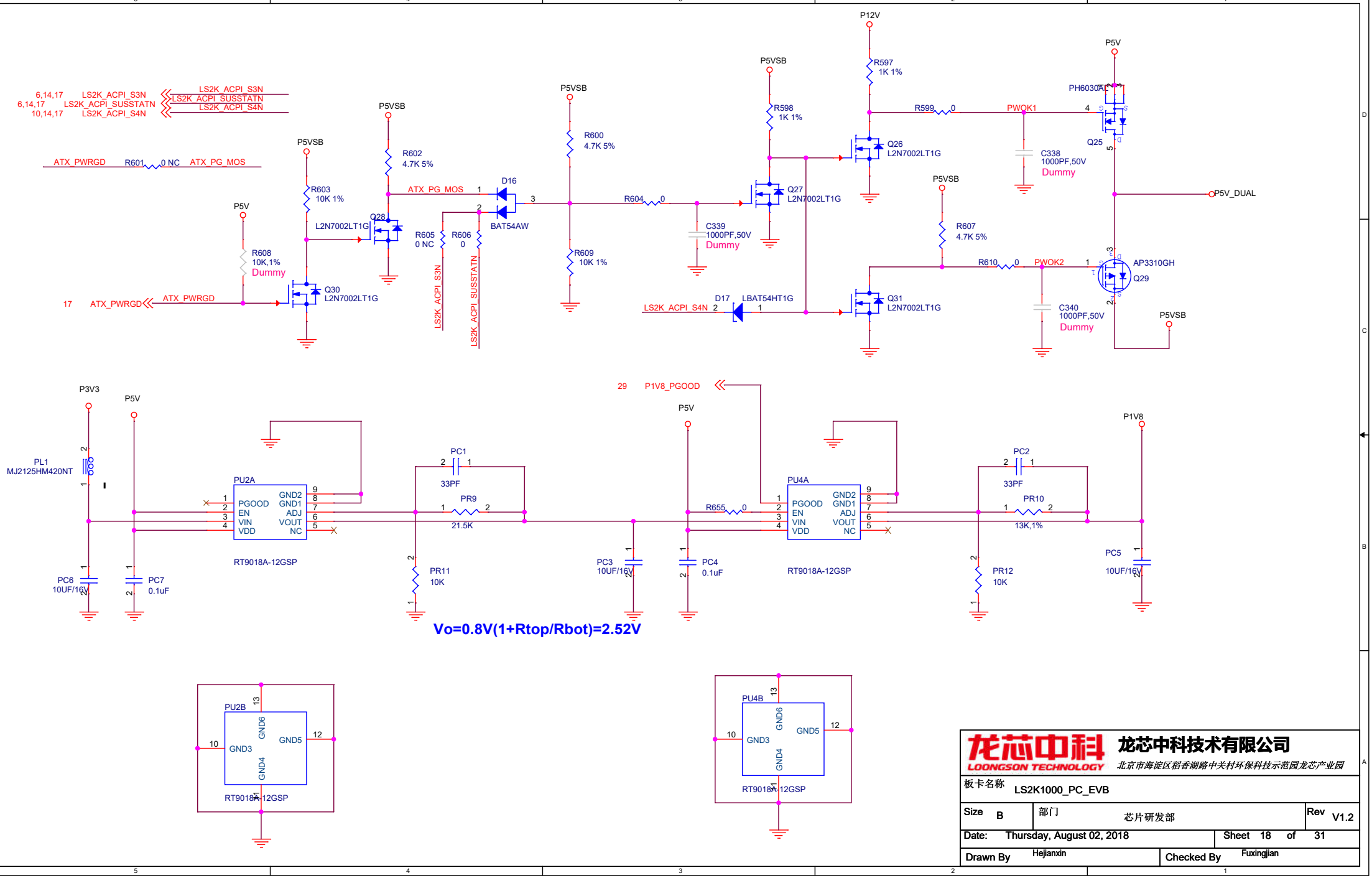


龙芯中科 LOONGSON TECHNOLOGY

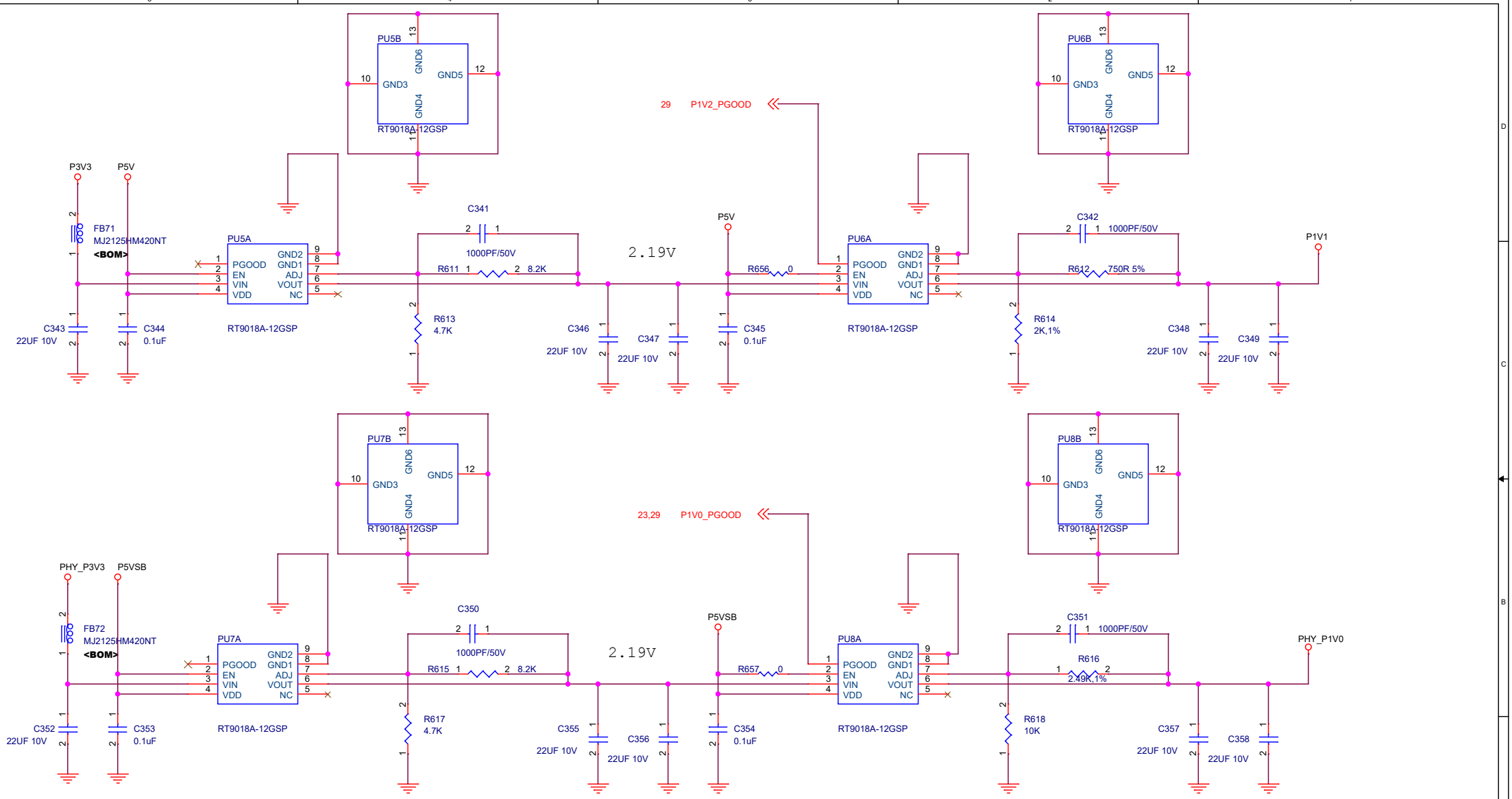
龙芯中科技术有限公司

北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 17 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	



龙芯中科 LOONGSON TECHNOLOGY	龙芯中科技术有限公司 北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园		
板卡名称	LS2K1000_PC_EVB		
Size B	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 18 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	



龙芯中科 LOONGSON TECHNOLOGY

龙芯中科技术有限公司

北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size B	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 19 of 31	
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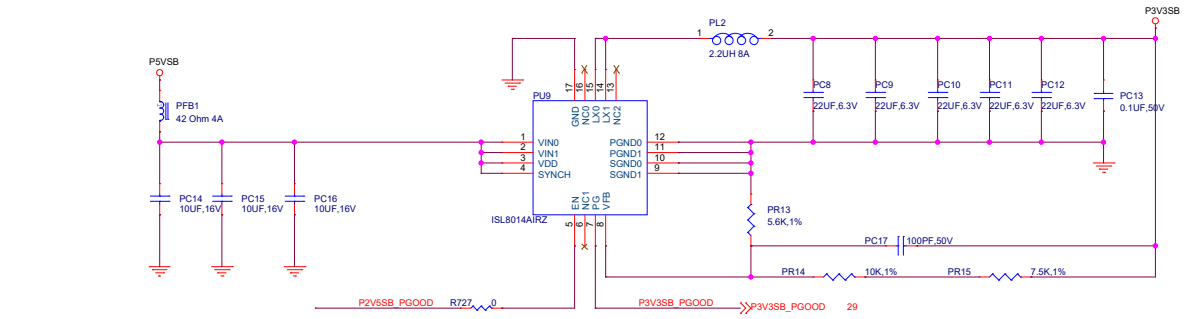
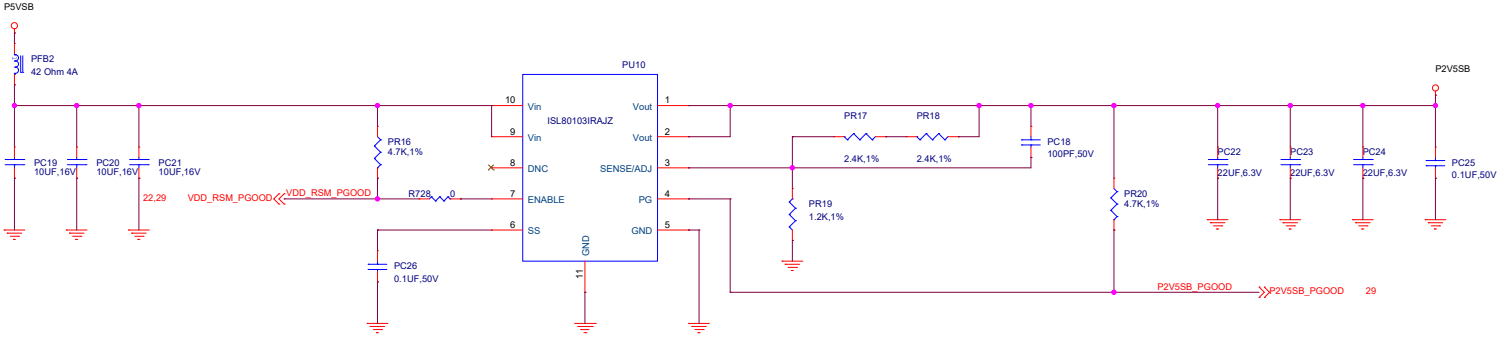
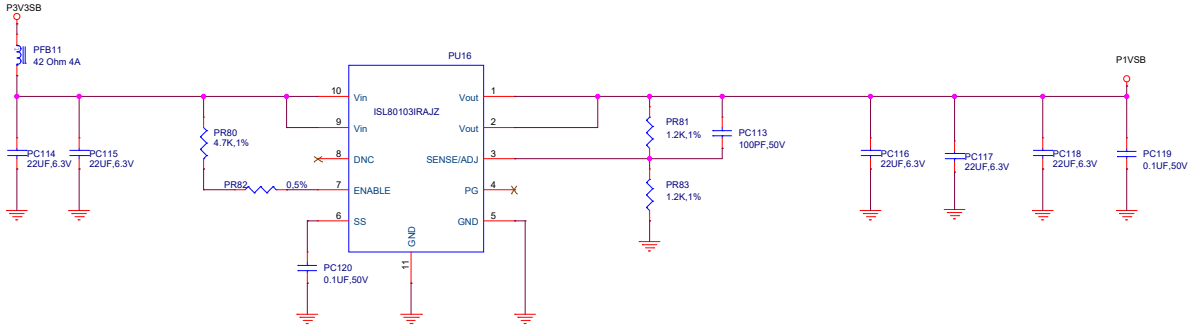




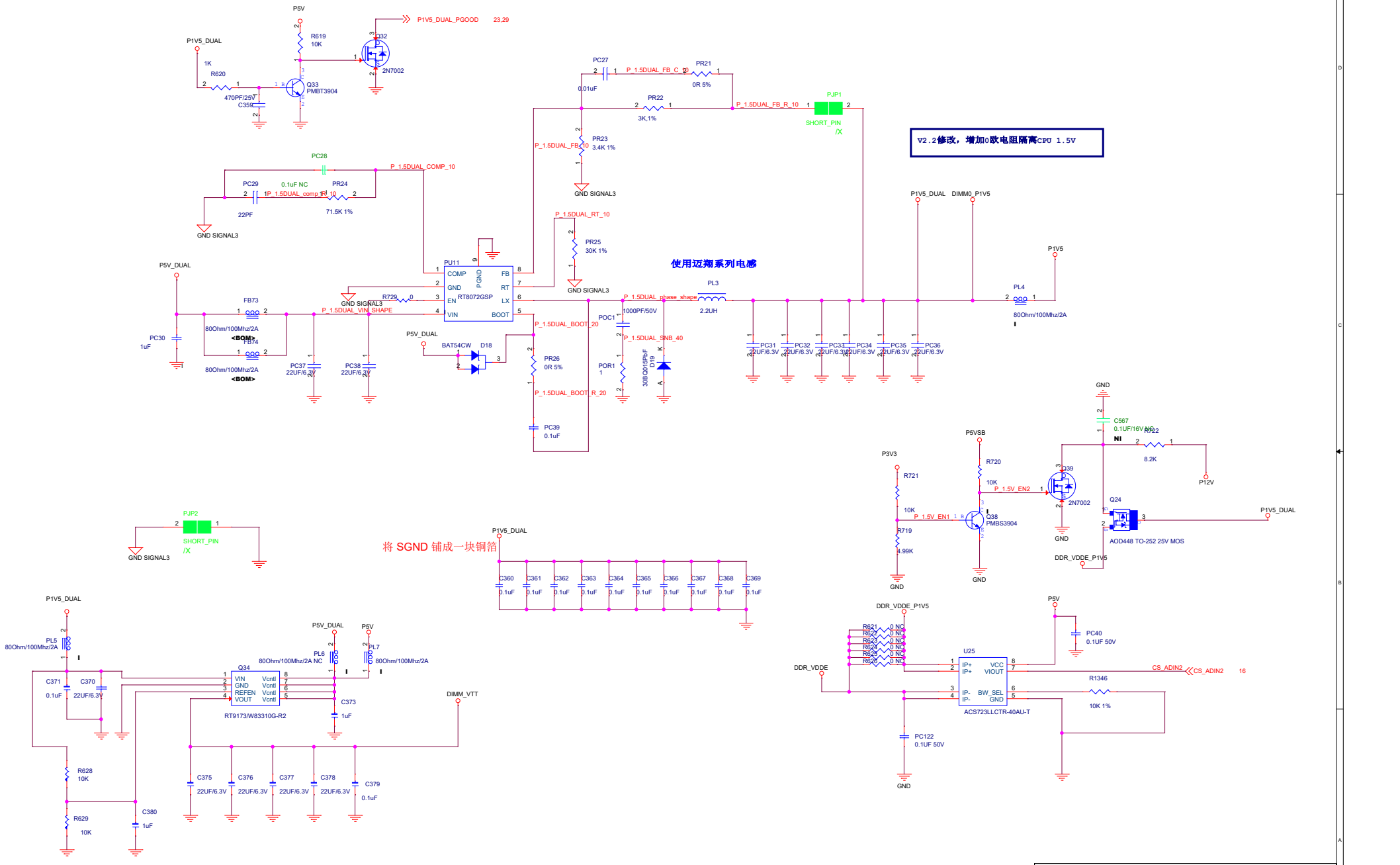


龙芯中科 LOONGSON TECHNOLOGY

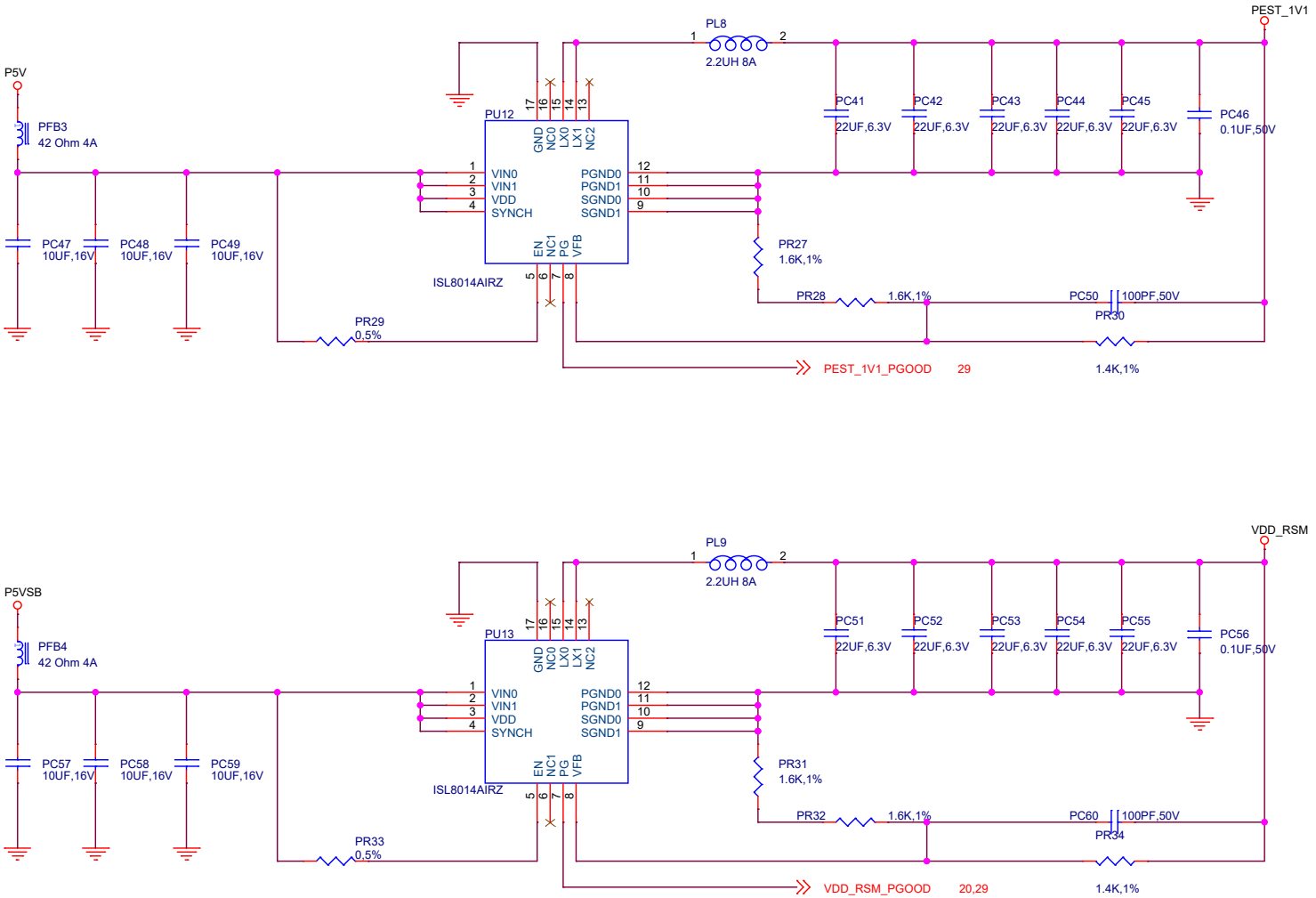
龙芯中科技术有限公司

北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 20 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	



龙芯中科 LOONGSON TECHNOLOGY	龙芯中科技术有限公司 北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园		
板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 21 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	

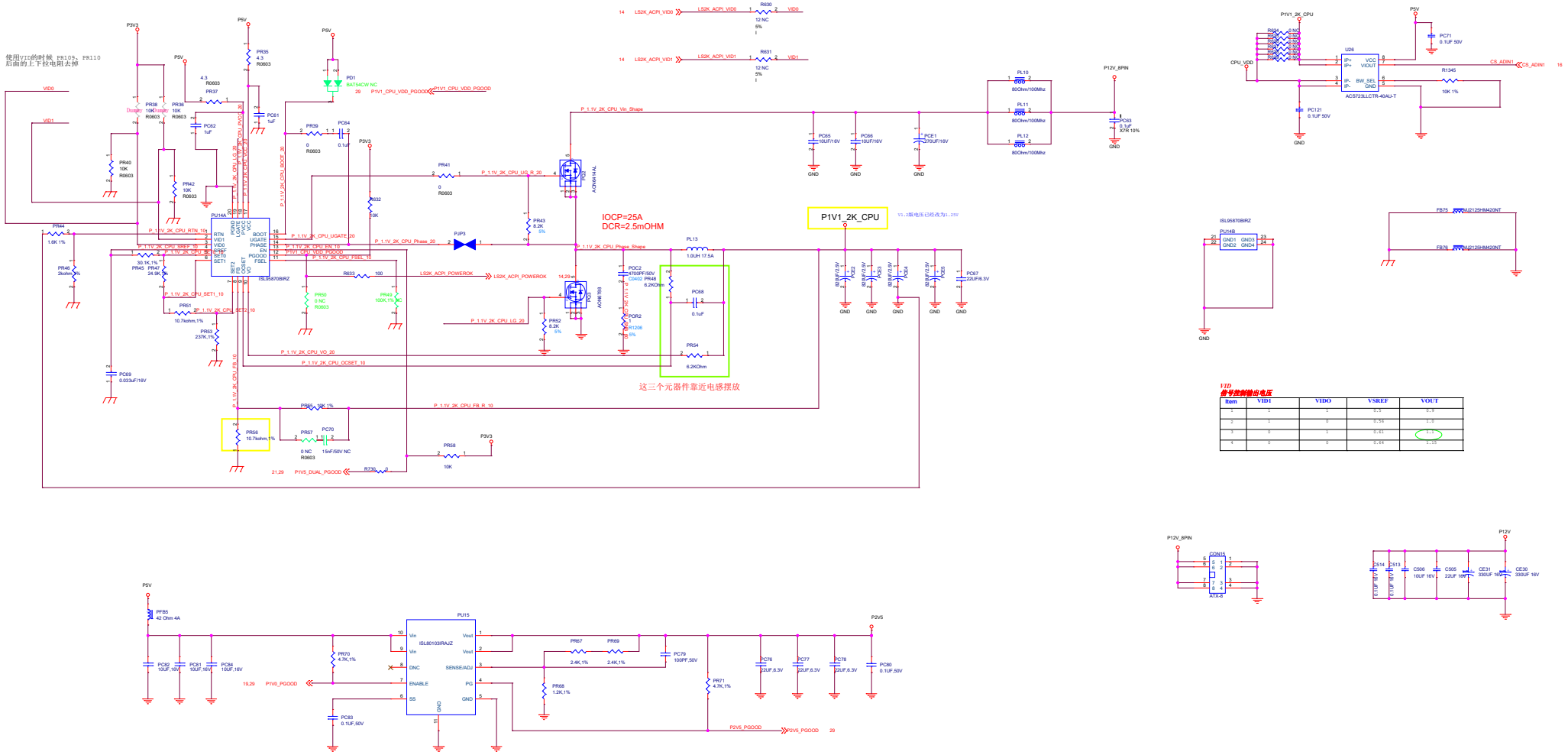


龙芯中科 LOONGSON TECHNOLOGY

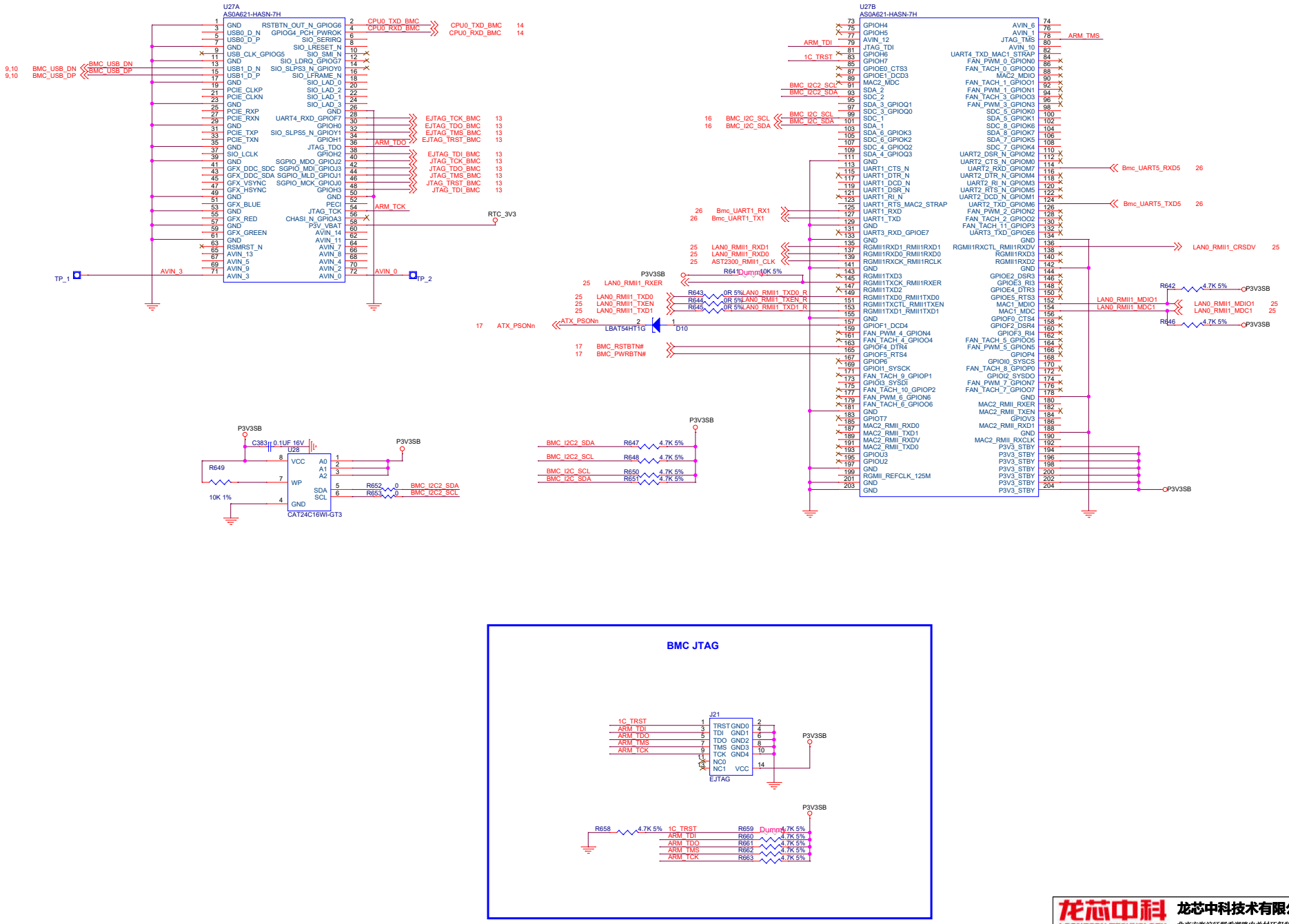
龙芯中科技术有限公司

北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size B	部门 芯片研发部		Rev V1.2
Date: Thursday, August 02, 2018		Sheet 22 of 31	
Drawn By Hejianxin		Checked By Fuxingjian	



龙芯中科 LOONGSON TECHNOLOGY	龙芯中科技术有限公司 北京市海淀区西小口路中关村环保科技示范园龙芯产业园
板卡名称	LS2K1000_PC_EVB
Size D	部门 芯片研发部 Rev V1.2
Date: Thursday, August 02, 2018	Sheet 23 of 31
Drawn By Hejianin	Checked By Fuxinglan



龙芯中科 LOONGSON TECHNOLOGY	龙芯中科技术有限公司 北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园		
板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
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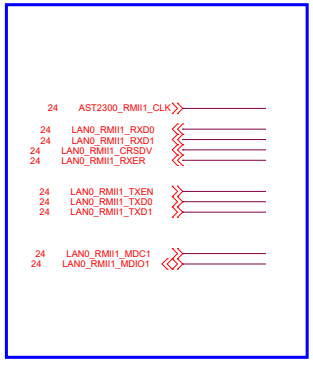
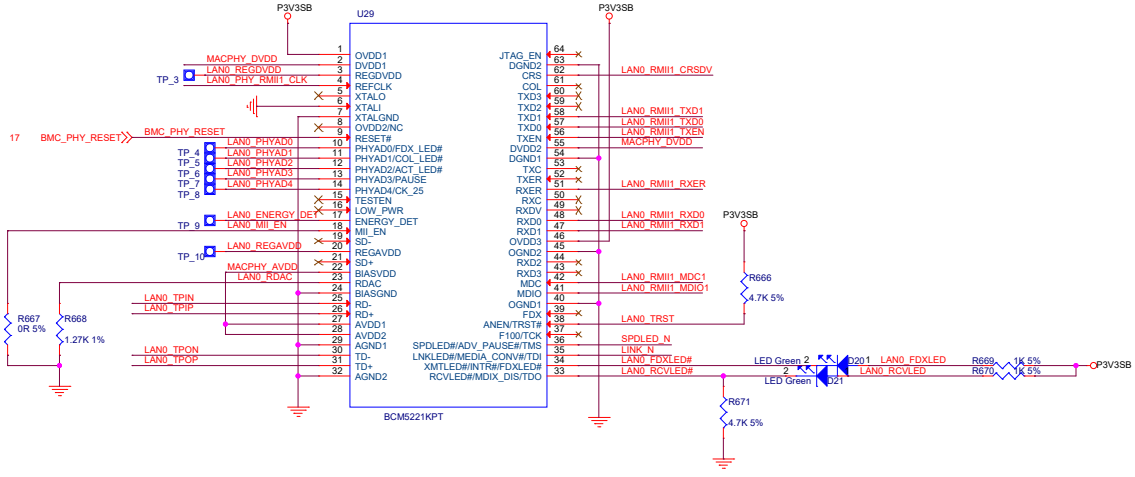
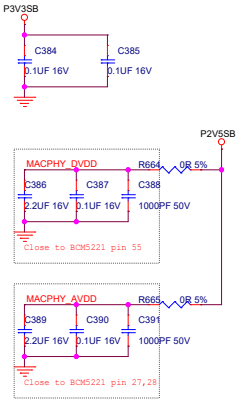
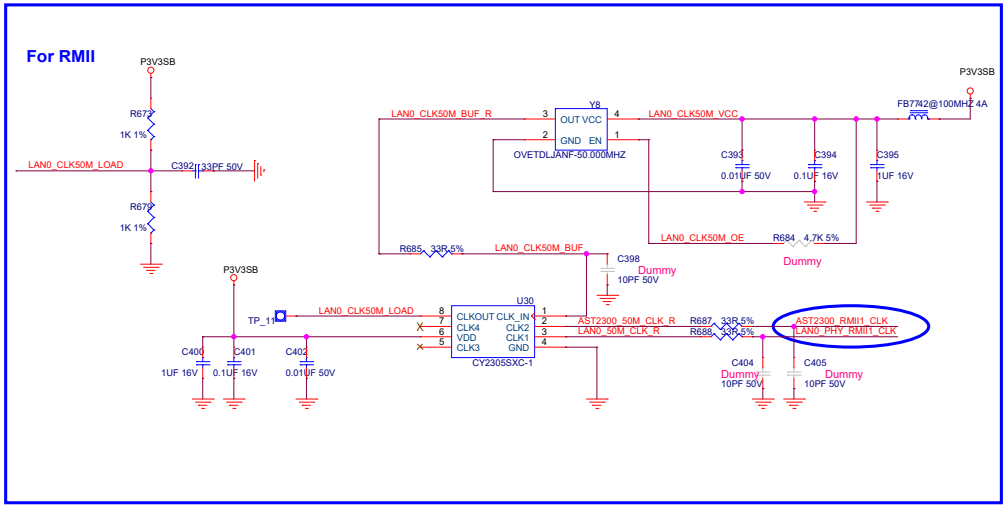
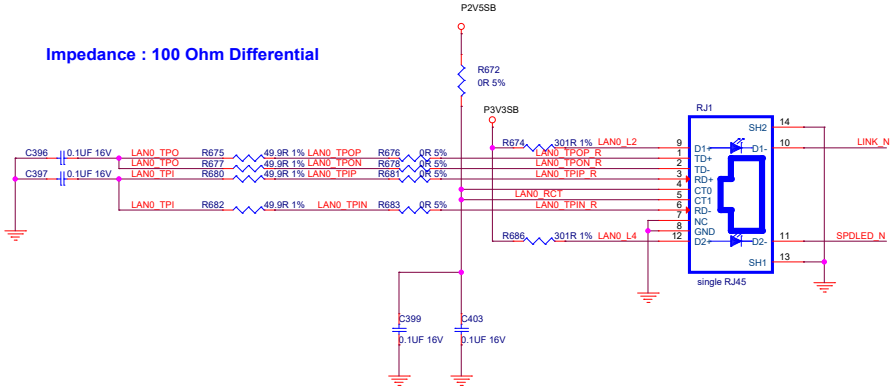
Drawn By Hejianxin		Checked By Fuxingjian	











龙芯中科 LOONGSON TECHNOLOGY	龙芯中科技术有限公司 北京市海淀区祁香湖路中关村环保科技示范园龙芯产业园		
板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
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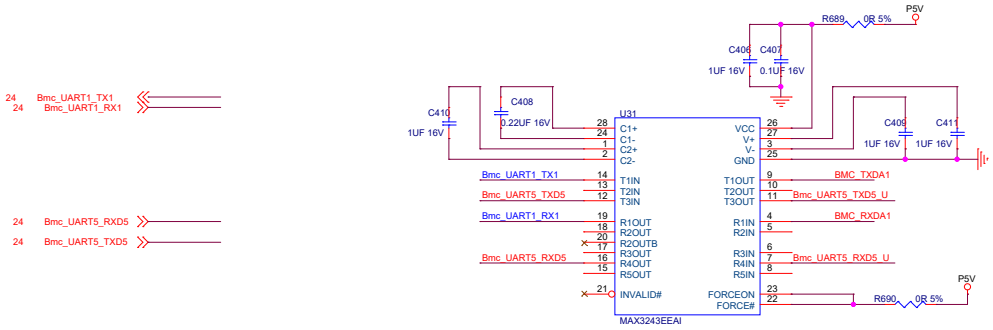
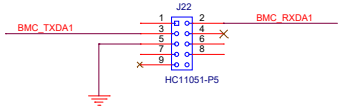
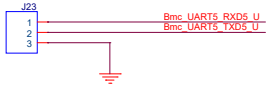


BMC COM1



BMC COM2



龙芯中科 LOONGSON TECHNOLOGY	龙芯中科技术有限公司 北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园		
板卡名称	LS2K1000_PC_EVB		
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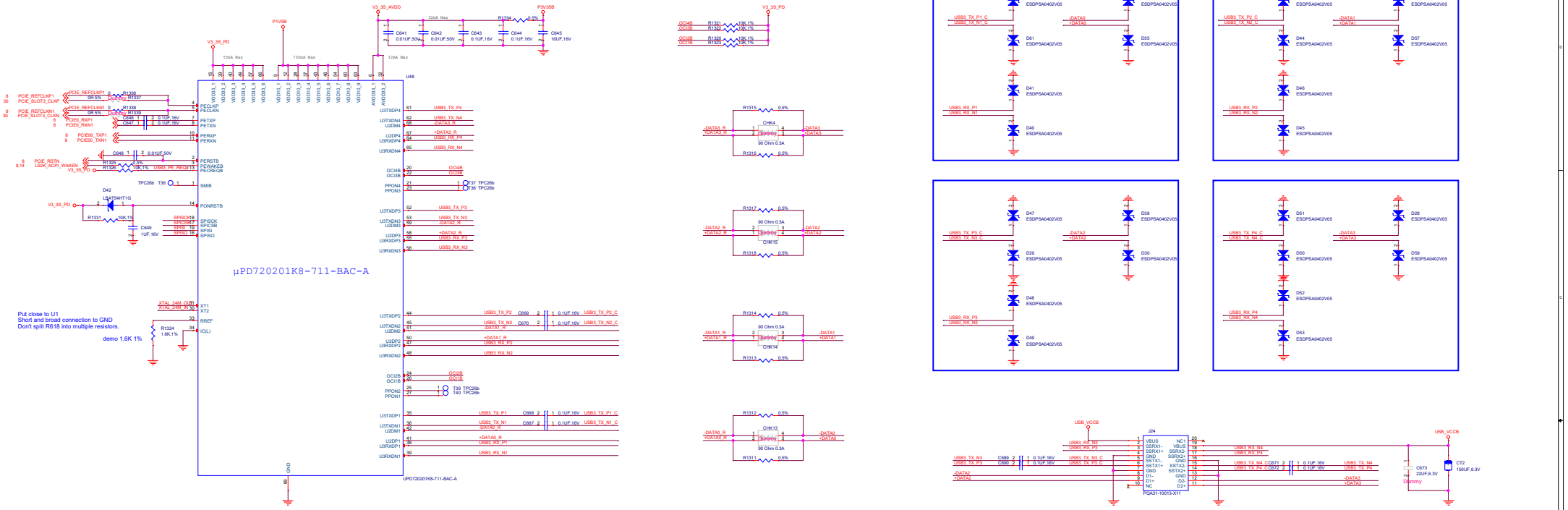
µPD720201K8-711-BAC-A
Put close to U1
Short and broad connection to GND
Don't split R618 into multiple resistors.
demo 1.6K 1%
Put close to U17
Do check with crystal vendor
if the value of C671, C672and R623
are all appropriate.
CL=8pF
LEFT SIDE USB3.0 PORT X2
Low Active 2A
Low Active 2A
Note:
1. Every Power trace (3.3V_Dual, 1.05V, A3.3V, 3.3V, 3.3VAUX, 12V, 5V, VCCCH1-4) should be broad.
2. 2nd layer of this entire circuit should be grounded.
3. Every high speed signal trace (USB SS/HS, PCI Express) should be wired as shortly as possible.
4. Capacitors C100-116 should be located next to U1,
and connected to GND tightly -- by tracing shortly and broadly.
5. For signal traces, routing priority is as follows:
USB SS > PCI Express > (SATA) > USB HS > (DDR > Ether > PCI, PATA > Other legacy)
6. At any crossing for every trace except ground,
sufficient area of ground plane between each other should be put.
7. Follow the basic of transmission trace pair when routing any signal trace.
> Remove any impairment or discontinuity.
> Keep same length by each other.
> Keep same width and spacing.
8.The differential impedance of nominal value is as follows.
> USB 3.0 / 2.0 --- 90ohm
> PCI express Gen 1 (2.5GT/s) --- 100ohm PCI express Gen 2.(5GT/s) --- 85ohm
PCB trace impedance would be a non-continues value by its design rules.
The differential impedance adopt the nearest value that can be manufactured at PCB
For more information please refer to "USB3.0 Board Design Guide" in design kit.
龙芯中科技术有限公司
LOONGSON TECHNOLOGY
北京市海淀区西小口路66号中关村环保科技示范园龙芯产业园
板卡名称 LS2K1000_PC_EVB
Size D
部门 芯片研发部
Rev V1.2
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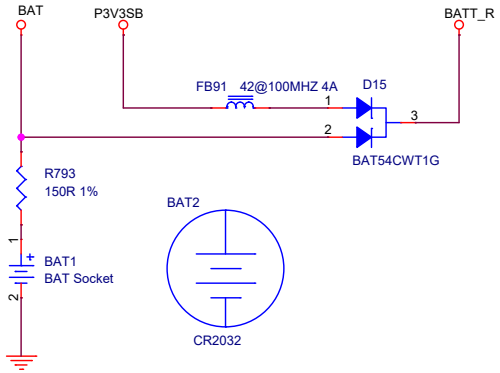
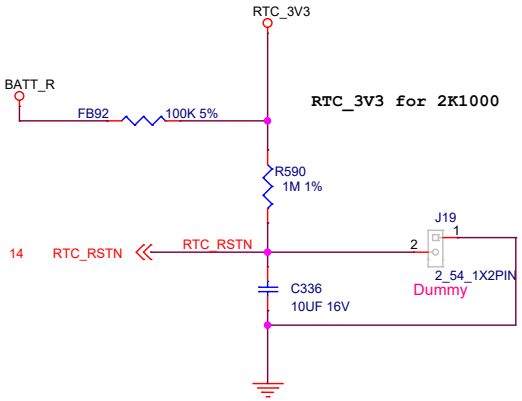
Drawn By Hejianan
Checked By Fuxinjian





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北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size B	部门 芯片研发部		Rev V1.2
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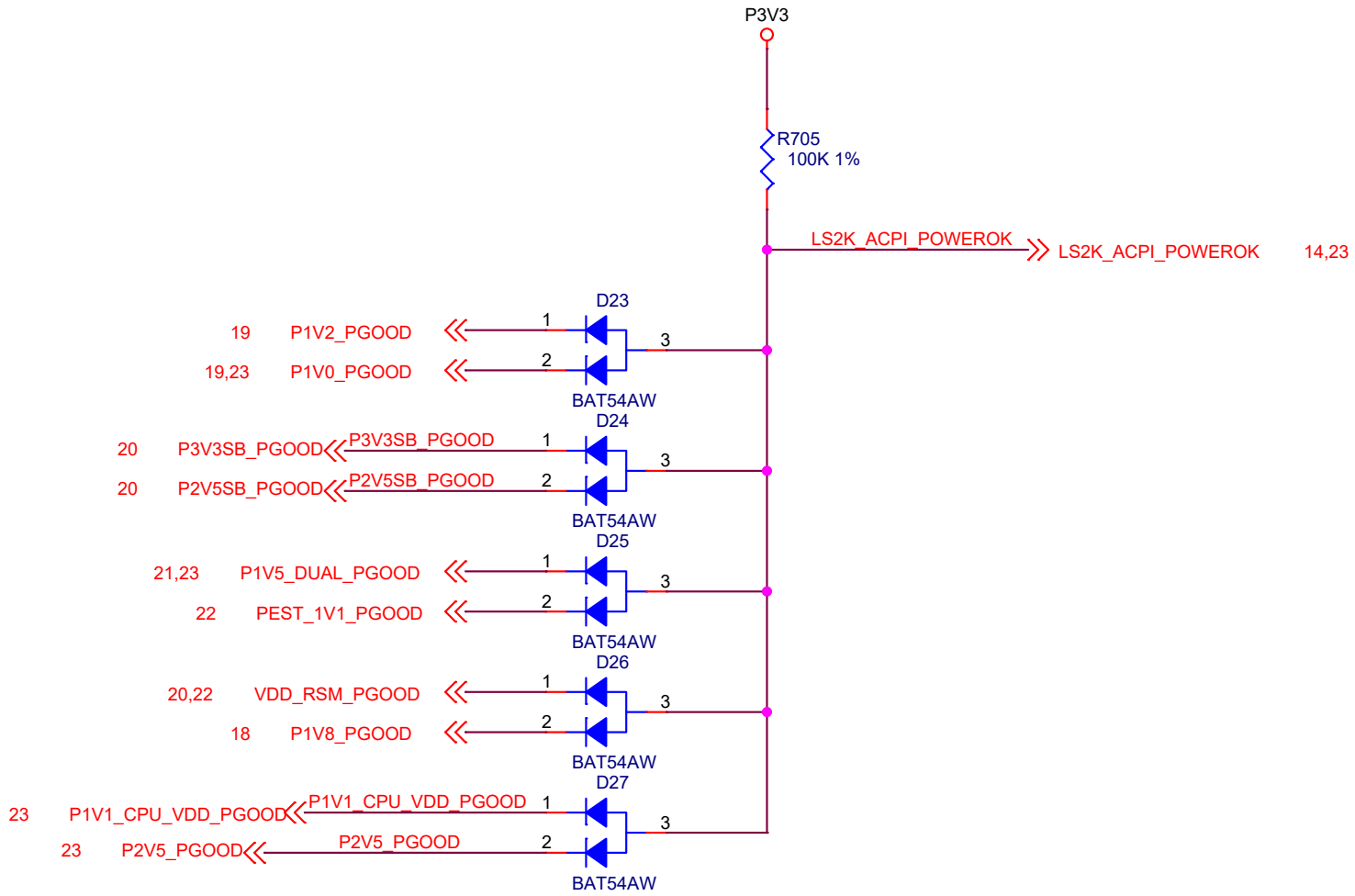

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北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size A	部门 芯片研发部		Rev V1.2
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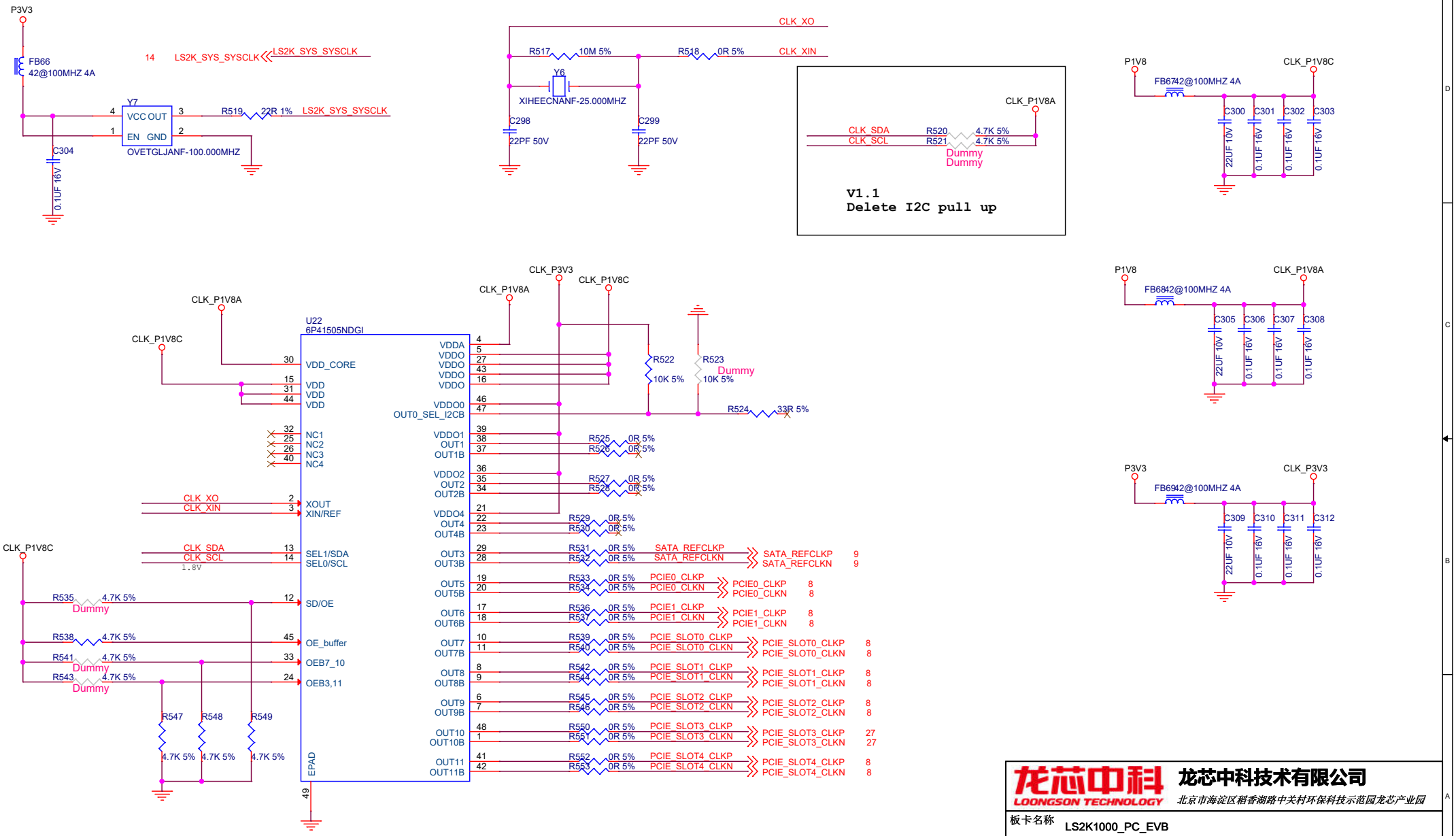
P3V3
FB66
42@100MHZ 4A
14
LS2K_SYS_SYSCLK
LS2K_SYS_SYSCLK
Y7
VCC OUT
EN GND
OVETGLJANF-100.000MHZ
R519
22R 1%
LS2K_SYS_SYSCLK
C304
0.1UF 16V
CLK_XO
R517
10M 5%
R518
0R 5%
CLK_XIN
Y6
XIHEECNANF-25.000MHZ
C298
22PF 50V
C299
22PF 50V
CLK_P1V8A
CLK_SDA
CLK_SCL
R520
4.7K 5%
R521
4.7K 5%
Dummy
Dummy
V1.1
Delete I2C pull up
P1V8
CLK_P1V8C
FB6742@100MHZ 4A
C300
C301
C302
C303
22UF 10V
0.1UF 16V
0.1UF 16V
0.1UF 16V
P1V8
CLK_P1V8A
FB6842@100MHZ 4A
C305
C306
C307
C308
22UF 10V
0.1UF 16V
0.1UF 16V
0.1UF 16V
P3V3
CLK_P3V3
FB6942@100MHZ 4A
C309
C310
C311
C312
22UF 10V
0.1UF 16V
0.1UF 16V
0.1UF 16V
CLK_P3V3
CLK_P1V8A
CLK_P1V8C
CLK_P1V8A
CLK_P1V8C
U22
6P41505NDGI
VDD_CORE
VDD
VDD
VDD
NC1
NC2
NC3
NC4
CLK_XO
CLK_XIN
XOUT
XIN/REF
CLK_P1V8C
CLK_SDA
CLK_SCL
1.8V
SEL1/SDA
SEL0/SCL
SD/OE
OE_buffer
OEB7_10
OEB3,11
EPAD
R535
4.7K 5%
Dummy
R538
4.7K 5%
R541
4.7K 5%
Dummy
R543
4.7K 5%
Dummy
R547
R548
R549
4.7K 5%
4.7K 5%
4.7K 5%
VDDA
VDDO
VDDO
VDDO
VDDO
VDDO0
OUT0_SEL_I2CB
VDDO1
OUT1
OUT1B
VDDO2
OUT2
OUT2B
VDDO4
OUT4
OUT4B
OUT3
OUT3B
OUT5
OUT5B
OUT6
OUT6B
OUT7
OUT7B
OUT8
OUT8B
OUT9
OUT9B
OUT10
OUT10B
OUT11
OUT11B
R522
10K 5%
R523
Dummy
10K 5%
R524
33R 5%
R525
0R 5%
R526
0R 5%
R527
0R 5%
R528
0R 5%
R529
0R 5%
R530
0R 5%
R531
0R 5%
SATA_REFCLKP
R532
0R 5%
SATA_REFCLKN
SATA_REFCLKP
SATA_REFCLKN
R533
0R 5%
PCIE0_CLKP
R534
0R 5%
PCIE0_CLKN
PCIE0_CLKP
PCIE0_CLKN
R536
0R 5%
PCIE1_CLKP
R537
0R 5%
PCIE1_CLKN
PCIE1_CLKP
PCIE1_CLKN
R539
0R 5%
PCIE_SLOT0_CLKP
R540
0R 5%
PCIE_SLOT0_CLKN
PCIE_SLOT0_CLKP
PCIE_SLOT0_CLKN
R542
0R 5%
PCIE_SLOT1_CLKP
R544
0R 5%
PCIE_SLOT1_CLKN
PCIE_SLOT1_CLKP
PCIE_SLOT1_CLKN
R545
0R 5%
PCIE_SLOT2_CLKP
R546
0R 5%
PCIE_SLOT2_CLKN
PCIE_SLOT2_CLKP
PCIE_SLOT2_CLKN
R550
0R 5%
PCIE_SLOT3_CLKP
R551
0R 5%
PCIE_SLOT3_CLKN
PCIE_SLOT3_CLKP
PCIE_SLOT3_CLKN
R552
0R 5%
PCIE_SLOT4_CLKP
R553
0R 5%
PCIE_SLOT4_CLKN
PCIE_SLOT4_CLKP
PCIE_SLOT4_CLKN
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北京市海淀区稻香湖路中关村环保科技示范园龙芯产业园
板卡名称 LS2K1000_PC_EVB
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Checked By Fuxingjian

2017.3.9 V1.1

1. Add NAND RDY# pull up
2. I2C0_SDA and I2C1_SCL exchange
3. Change JTAG_sel pull down
4. Delet I2C pull up for clock generator
5. Change R781 to 150R
6. Change HDA to I2S
7. Add RTC chip
8. Change Dotest pull up to RTC-3V3
9. Change GMAC1 PHY layout
10. USE CAN_RX for PHY1 RSTn, NC watchdog disable
11. Put PCIE1 signals upside down
12. Change PCIE RSTn, Use GPIO(HDA_SDI2)
13. Invert ACPI_SYSRSTn
14. Change SiI164 to TFP410
15. Delet DIMM slot1

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北京市海淀区祾香湖路中关村环保科技示范园龙芯产业园

板卡名称	LS2K1000_PC_EVB		
Size C	部门 芯片研发部		Rev V1.2
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Drawn By Fuxingjian		Checked By <OrgAddr2>	