Revision history

Version	Date	Updated by	Modifications
1.0.0	10/31/2010		First draft
1.8.1	01/05/2011	Lee Song	Update
1.8.2	01/06/2011	Lee Song	Check Out
1.8.3	01/07/2011	Lee Song	Update
1.8.4	01/08/2011	Lee Song	Update
1.8.5	01/11/2011	Lee Song	Update
1.8.6	01/12/2011	Lee Song	Debug
1.8.7	01/13/2011	Lee Song	Debug (V485,TRANS,DECAL)
			Update (PLC)
1.8.8	01/15/2011	Lee Song	Modify (LED,IR)
2.0.0	01/21/2011	Lee Song	Modify (PLC,LED,POWER,RTC)

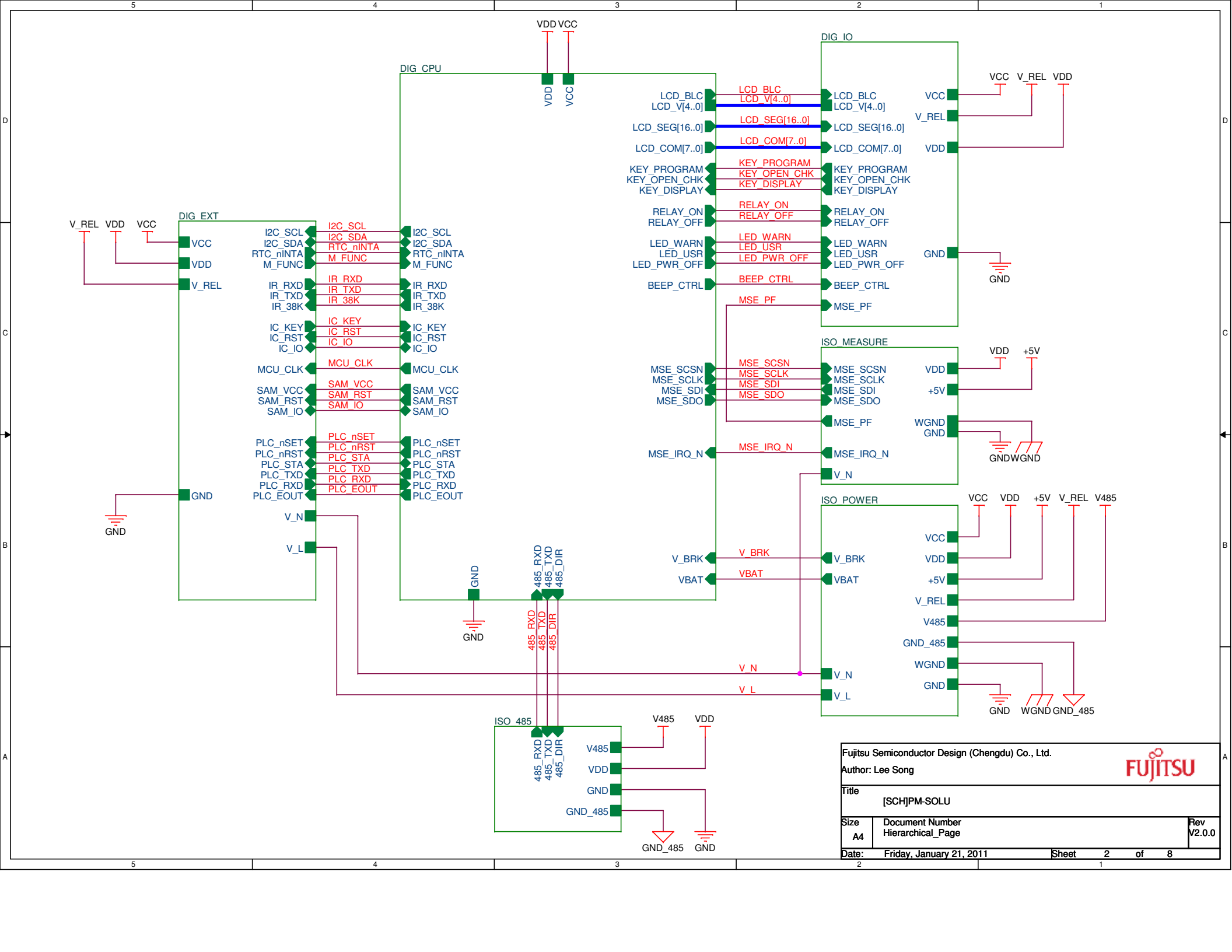
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Author: Lee.Song

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Title: [SCH]PM-SOLU

Size	Document Number	Rev
A4	Cover	V2.0.0

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DIG_CPU
DIG_IO
DIG_EXT
ISO_MEASURE
ISO_POWER
ISO_485
VDD VCC
V_REL VDD VCC
VCC V_REL VDD
VDD +5V
VCC VDD +5V V_REL V485
V485 VDD
GND
GND_485
WGND
LCD_BLC
LCD_V[4..0]
LCD_SEG[16..0]
LCD_COM[7..0]
KEY_PROGRAM
KEY_OPEN_CHK
KEY_DISPLAY
RELAY_ON
RELAY_OFF
LED_WARN
LED_USR
LED_PWR_OFF
BEEP_CTRL
MSE_PF
MSE_SCSN
MSE_SCLK
MSE_SDI
MSE_SDO
MSE_IRQ_N
V_N
V_L
V_BRK
VBAT
I2C_SCL
I2C_SDA
RTC_nINTA
M_FUNC
IR_RXD
IR_TXD
IR_38K
IC_KEY
IC_RST
IC_IO
MCU_CLK
SAM_VCC
SAM_RST
SAM_IO
PLC_nSET
PLC_nRST
PLC_STA
PLC_TXD
PLC_RXD
PLC_EOUT
485_RXD
485_TXD
485_DIR
Fujitsu Semiconductor Design (Chengdu) Co., Ltd.
Author: Lee Song
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Title
[SCH]PM-SOLU
Size
A4
Document Number
Hierarchical_Page
Rev
V2.0.0
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VCC
VDD
GND

I2C_SCL
I2C_SDA
RTC_nINTA

M_FUNC

LED_USR
LED_WARN
LED_PWR_OFF

IR_38K
IR_TXD
IR_RXD

SAM_VCC
SAM_RST
SAM_IO
MCU_CLK
IC_KEY
IC_RST
IC_IO

LCD_BLC

LCD_V[4..0]

LCD_COM[7..0]

LCD_SEG[16..0]

485_DIR
485_TXD
485_RXD

KEY_OPEN_CHK
KEY_DISPLAY
KEY_PROGRAM
BEEP_CTRL

PLC_EOUT
PLC_STA
PLC_nRST
PLC_TXD
PLC_RXD
PLC_nSET

RELAY_ON
RELAY_OFF

MSE_SCSN
MSE_SCLK
MSE_SDO
MSE_SDI
MSE_IRQ_N

VBAT
V_BRK

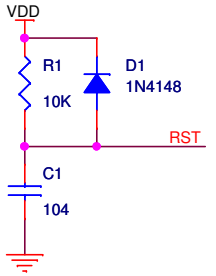
U1

MB95F418

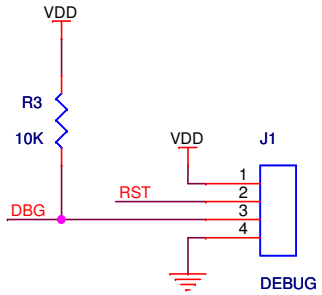
1	VCC	AVCC	
2	V_BRK	P07/INT07/AN07/SEG30	
3	VBAT	P06/INT06/AN06/SEG31	
4	MSE_IRQ_N	P05/INT05/AN05/SEG32/UCK1	
5	IC_IO	P04/INT04/AN04/SEG33/UI1	
6	SAM_IO	P03/INT03/AN03/SEG34/UOI	
7	RTC_nINTA	P02/INT02/AN02/SEG35/UCK2	
8	IR_RXD	P01/INT01/AN01/SEG36/UI2	
9	IR_TXD	P00/INT00/AN00/UO2	
10	IR_38K	P16/PPG10	
11	MCU_CLK	P15/PPG11	
12		P14/UCK0	
13	485_DIR	P13/ADTG	
14	DBG	P12/DBG	
15	485_TXD	P11/UO0	
16	485_RXD	P10/UI0	
17	KEY_OPEN_CHK	P53/TO0	
18	KEY_DISPLAY	P52/TI0/TO00	
19	KEY_PROGRAM	P51/EC0	
20	BEEP_CTRL	P50/TO01	
21	I2C_SDA	P23/SDA0	
22	I2C_SCL	P22/SCL0	
23	M_FUNC	P21/PPG01/CMPP	
24	LCD_BLC	P20/PPG00/CMPN	
25	LCD_V4	P90/V4	
26	LCD_V3	P91/V3	
27	LCD_V2	P92/V2	
28	LCD_V1	P93/V1	
29	LCD_V0	P94/V0	
30	LED_PWR_OFF	PB2/SEG37	
31	LED_WARN	PB3/SEG38	
32	LED_USR	PB4/SEG39	
33	LCD_COM0	PA0/COM0	
34	LCD_COM1	PA1/COM1	
35	LCD_COM2	PA2/COM2	
36	LCD_COM3	PA3/COM3	
37	LCD_COM4	PA4/COM4	
38	LCD_COM5	PA5/COM5	
39	LCD_COM6	PA6/COM6	
40	LCD_COM7	PA7/COM7	
41	GND	VSS	
42	X1	PF1/X1	
43	X0	PF0/X0	
44	C	C	
45	RELAY_OFF	PG2/X1A	
46	RELAY_ON	PG1/X0A	
47	VCC	VCC	
48	RST	PF2/RSTX	
49	PLC_nSET	P17/CMPO	
50	LCD_SEG0	PB0/SEG00	
51	LCD_SEG1	PB1/SEG01	
52	LCD_SEG2	PC0/SEG02	
53	LCD_SEG3	PC1/SEG03	
54	LCD_SEG4	PC2/SEG04	
55	LCD_SEG5	PC3/SEG05	
56	LCD_SEG6	PC4/SEG06	
57	LCD_SEG7	PC5/SEG07	
58	LCD_SEG8	PC6/SEG08	
59	LCD_SEG9	PC7/SEG09	
60	LCD_SEG10	P60/SEG10	
61	LCD_SEG11	P61/SEG11	
62	LCD_SEG12	P62/SEG12	
63	LCD_SEG13	P63/SEG13	
64	LCD_SEG14	P64/SEG14	
65	LCD_SEG15	P65/SEG15	
66	LCD_SEG16	P66/SEG16	
67	PLC_STA	P67/SEG17	
68	PLC_RXD	P43/SEG18	
69	PLC_TXD	P42/SEG19	
70	PLC_nRST	P41/SEG20	
71	PLC_EOUT	P40/SEG21	
72	MSE_SDI	PE0/SEG22	
73	MSE_SDO	PE1/SEG23	
74	MSE_SCLK	PE2/SEG24	
75	MSE_SCSN	PE3/SEG25	
76	SAM_RST	PE4/SEG26	
77	SAM_VCC	PE5/SEG27/TO11	
78	IC_KEY	PE6/SEG28/TO10	
79	IC_RST	PE7/SEG29/EC1	
80	GND	AVSS	

C2
104

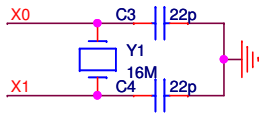
RESET



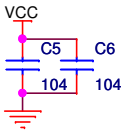
DEBUG



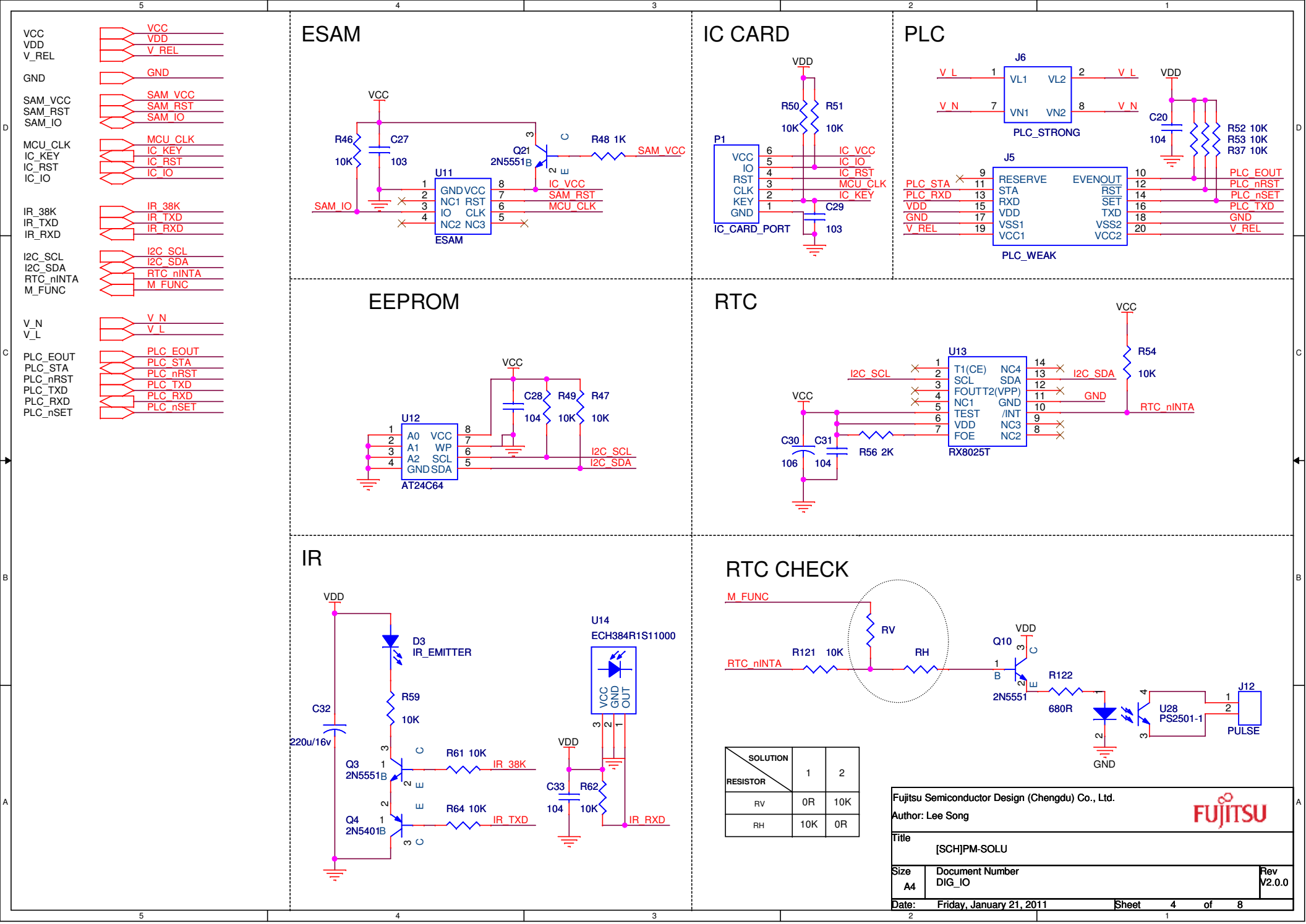
CLOCK CIRCUIT



DECOUPLE CAPACITOR

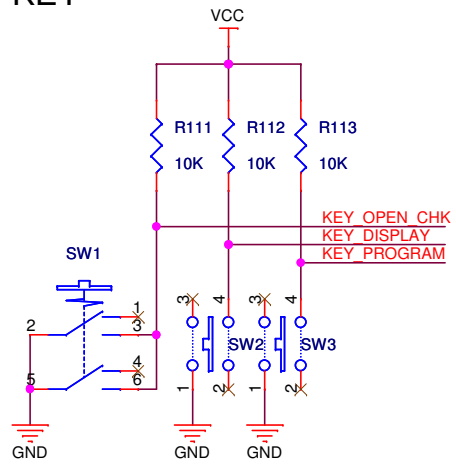


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Author: Lee Song		
Title: [SCH]PM-SOLU		
Size: A4	Document Number: DIG_CPU	Rev: V2.0.0
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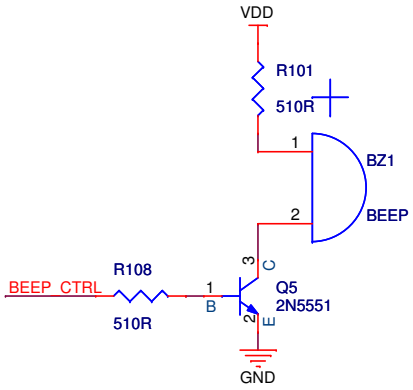

VCC
VDD
V_REL
GND
SAM_VCC
SAM_RST
SAM_IO
MCU_CLK
IC_KEY
IC_RST
IC_IO
IR_38K
IR_TXD
IR_RXD
I2C_SCL
I2C_SDA
RTC_nINTA
M_FUNC
V_N
V_L
PLC_EOUT
PLC_STA
PLC_nRST
PLC_TXD
PLC_RXD
PLC_nSET
ESAM
R46 10K
C27 103
U11
GND VCC
NC1 RST
IO CLK
NC2 NC3
ESAM
Q21 2N5551B
R48 1K
IC CARD
P1
IC_CARD_PORT
R50 10K
R51 10K
C29 103
PLC
J6
VL1 VL2
VN1 VN2
PLC_STRONG
J5
RESERVE
STA
RXD
VDD
VSS1
VCC1
EVENOUT
RST
SET
TXD
VSS2
VCC2
PLC_WEAK
C20 104
R52 10K
R53 10K
R37 10K
EEPROM
U12
A0 A1 A2 GND
VCC WP SCL SDA
AT24C64
C28 104
R49 10K
R47 10K
RTC
U13
T1(CE) SCL FOUT NC1 TEST VDD FOE
NC4 SDA T2(VPP) GND /INT NC3 NC2
RX8025T
R54 10K
R56 2K
C30 106
C31 104
IR
D3
IR_EMITTER
R59 10K
C32 220u/16v
Q3 2N5551B
Q4 2N5401B
R61 10K
R64 10K
U14
ECH384R1S11000
VCC GND OUT
C33 104
R62 10K
RTC CHECK
RV
RH
R121 10K
Q10 2N5551
R122 680R
U28 PS2501-1
J12
PULSE
SOLUTION / RESISTOR
1
2
RV 0R 10K
RH 10K 0R
Fujitsu Semiconductor Design (Chengdu) Co., Ltd.
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[SCH]PM-SOLU
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Document Number DIG_IO
Rev V2.0.0
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VCC
VDD
V_REL
GND
LED_USR
LED_WARN
LED_PWR_OFF
MSE_PF
BEEP_CTRL
KEY_OPEN_CHK
KEY_DISPLAY
KEY_PROGRAM
RELAY_ON
RELAY_OFF
LCD_BLC
LCD_V[4..0]
LCD_COM[7..0]
LCD_SEG[16..0]

KEY

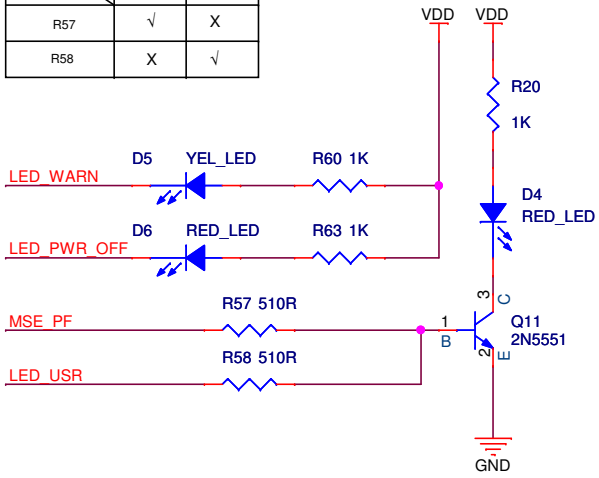


BEEP

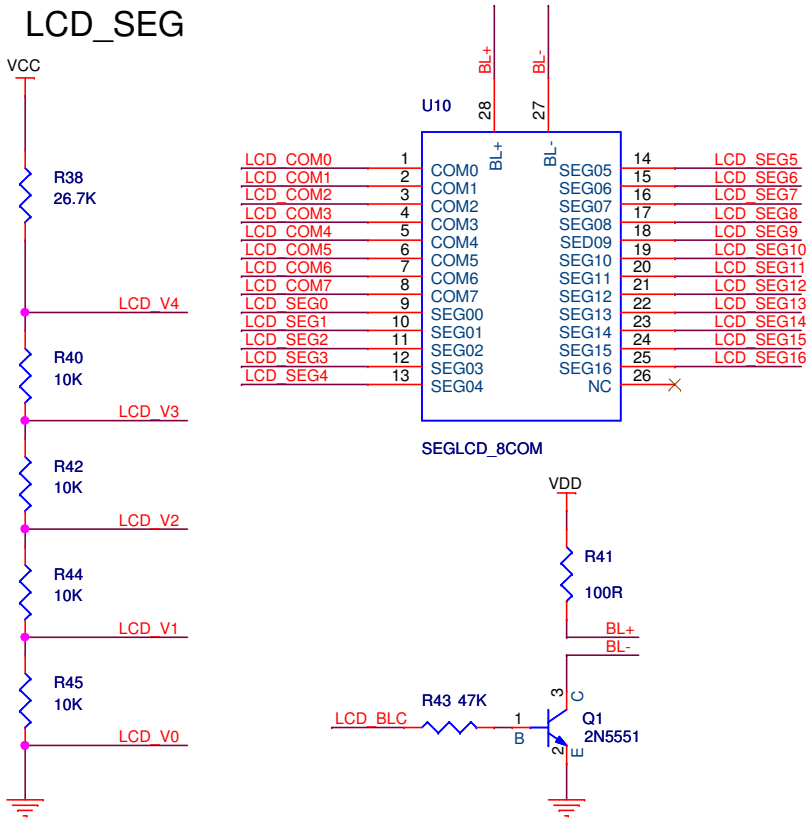


LED

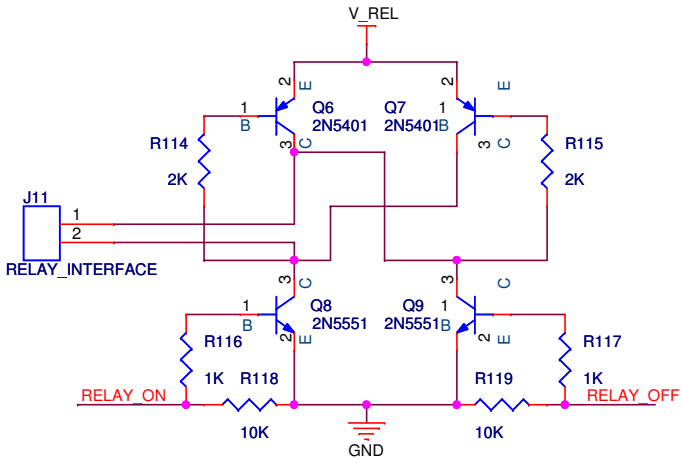
RESISTOR \ CONNECT	PULSE	MCU
R57	√	X
R58	X	√



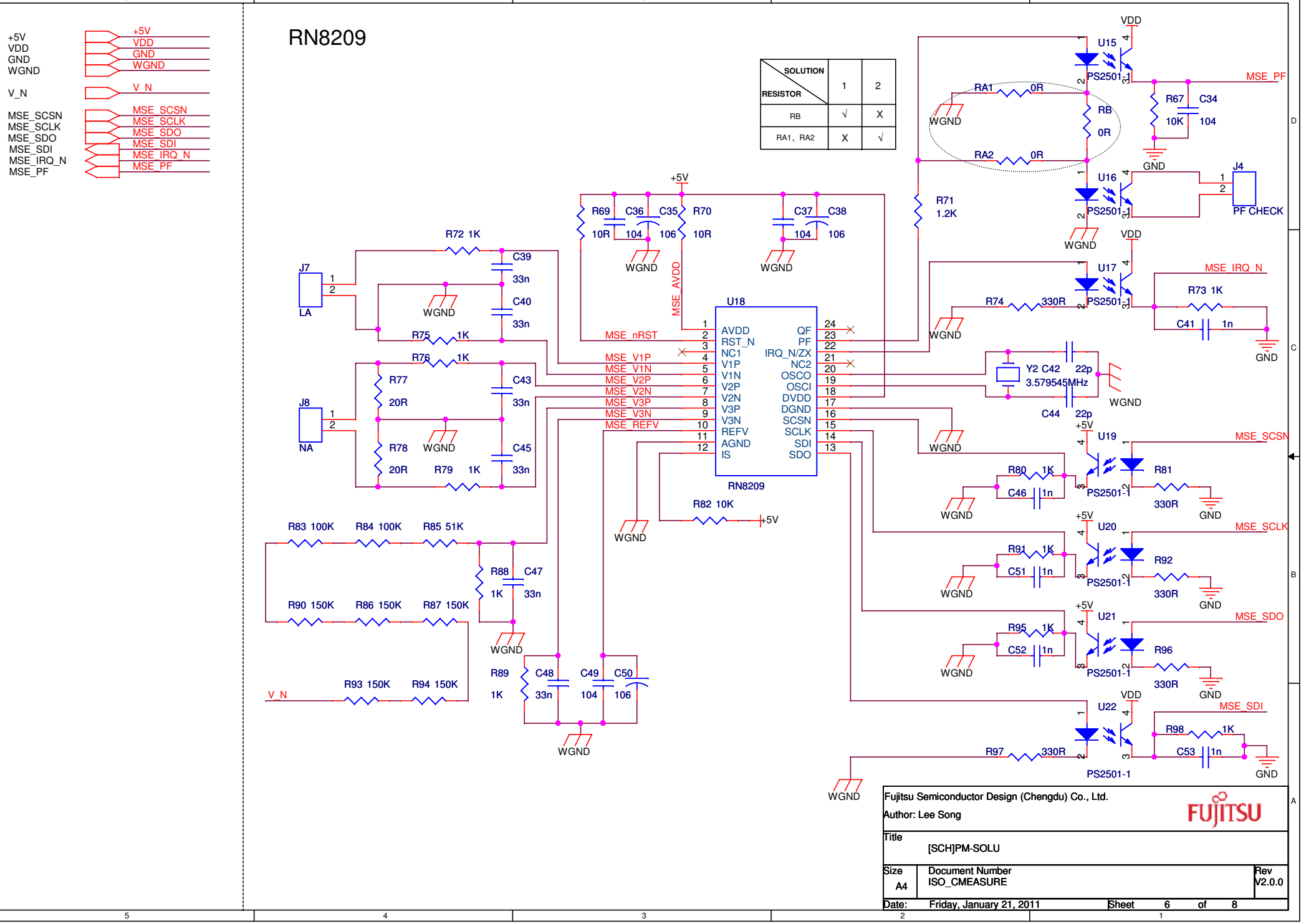
LCD_SEG



RELAY



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Size: A4	Document Number: ISO_485_KEY_BEEP	Rev: V2.0.0
Date: Friday, January 21, 2011	Sheet 5 of 8	

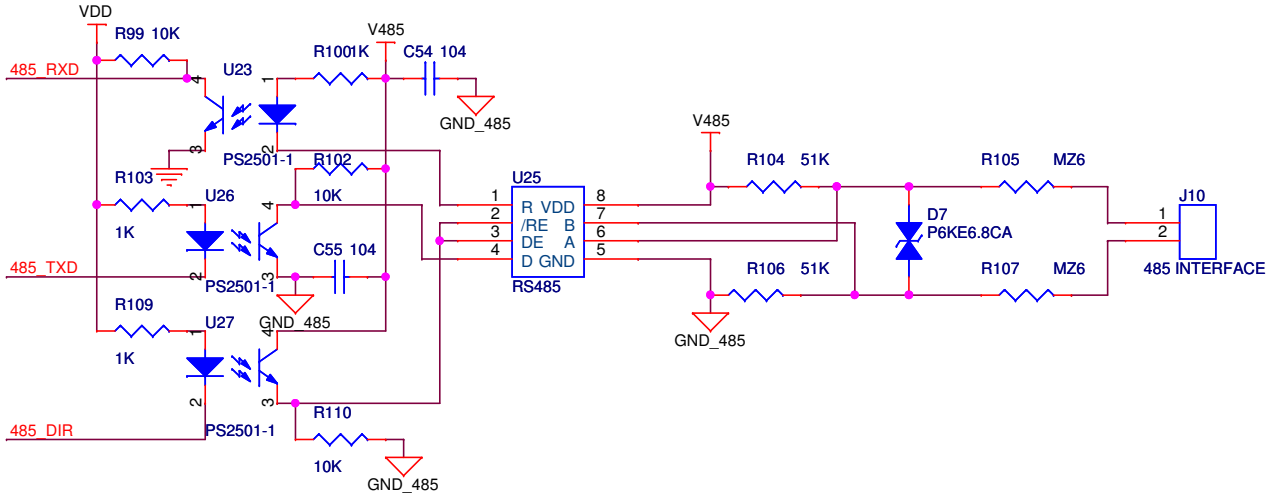

RN8209
+5V
VDD
GND
WGND
V_N
MSE_SCSN
MSE_SCLK
MSE_SDO
MSE_SDI
MSE_IRQ_N
MSE_PF
SOLUTION / RESISTOR
1
2
RB
√
X
RA1、RA2
X
√
U15
PS2501-1
RA1 0R
RB 0R
RA2 0R
R67 10K
C34 104
MSE_PF
J4
PF CHECK
R71 1.2K
U16
U17
U19
U20
U21
U22
MSE_IRQ_N
R73 1K
C41 1n
R74 330R
Y2 C42 22p
3.579545MHz
C44 22p
MSE_SCSN
MSE_SCLK
MSE_SDO
MSE_SDI
R80 1K
C46 1n
R81 330R
R91 1K
C51 1n
R92 330R
R95 1K
C52 1n
R96 330R
R98 1K
C53 1n
R97 330R
R69 10R
C36 104
C35 106
R70 10R
C37 104
C38 106
MSE_AVDD
U18
AVDD
RST_N
NC1
V1P
V1N
V2P
V2N
V3P
V3N
REFV
AGND
IS
QF
PF
IRQ_N/ZX
NC2
OSCO
OSCI
DVDD
DGND
SCSN
SCLK
SDI
SDO
MSE_nRST
MSE_V1P
MSE_V1N
MSE_V2P
MSE_V2N
MSE_V3P
MSE_V3N
MSE_REFV
R82 10K
J7
LA
J8
NA
R72 1K
C39 33n
C40 33n
R75 1K
R76 1K
R77 20R
C43 33n
R78 20R
R79 1K
C45 33n
R83 100K
R84 100K
R85 51K
R88 1K
C47 33n
R90 150K
R86 150K
R87 150K
R89 1K
C48 33n
C49 104
C50 106
R93 150K
R94 150K
Fujitsu Semiconductor Design (Chengdu) Co., Ltd.
Author: Lee Song
FUJITSU
Title
[SCH]PM-SOLU
Size
A4
Document Number
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VDD
V485

GND_485
GND

485_DIR
485_TXD
485_RXD

485



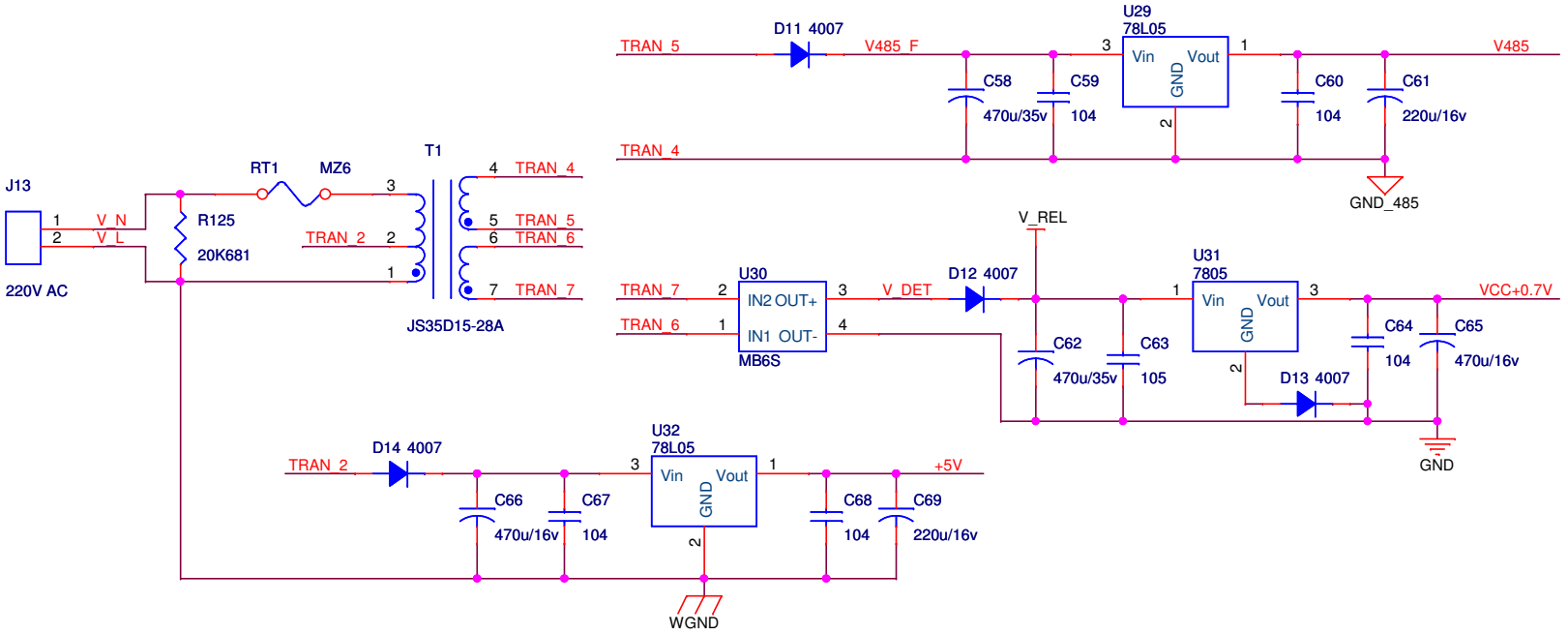
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Title: [SCH]PM-SOLU		
Size: A4	Document Number: ISO_485	Rev: V2.0.0
Date: Friday, January 21, 2011	Sheet 7 of 8	

VCC
VDD
+5V
V_REL
V485
V_N
V_L

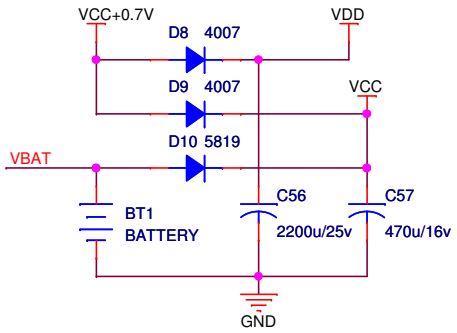
GND
WGND
GND_485

VBAT
V_BRK

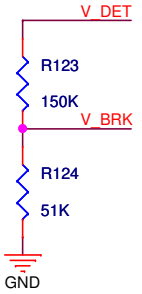
POWER MODULE



BATTERY SUPPLY



AC CHECK



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Author: Lee Song		
Title: [SCH]PM-SOLU		
Size: A4	Document Number: ISO_POWER	Rev: V2.0.0
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