SBC8600B 120900

Design	MITCH	Embest Tech Co. LTD		
Review	<review>	Title00 INDEX PAGE		
Authorize	<authorize>	Size	Doc Name	Ver.
Standardize	<standardize>	A3	SBC8600B 120900	V1.0
		Date Friday, September 28, 2012		Sheet 1 of 16

Design	MITCH	**Embest Tech Co. LTD**	
Review	<review>	Title 02 BLOCK	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900 Ver. V1.0
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 2 of 16

Design	MITCH	**Embest Tech Co. LTD**	
Review	<review>	Title 03 INSTRUCTION	
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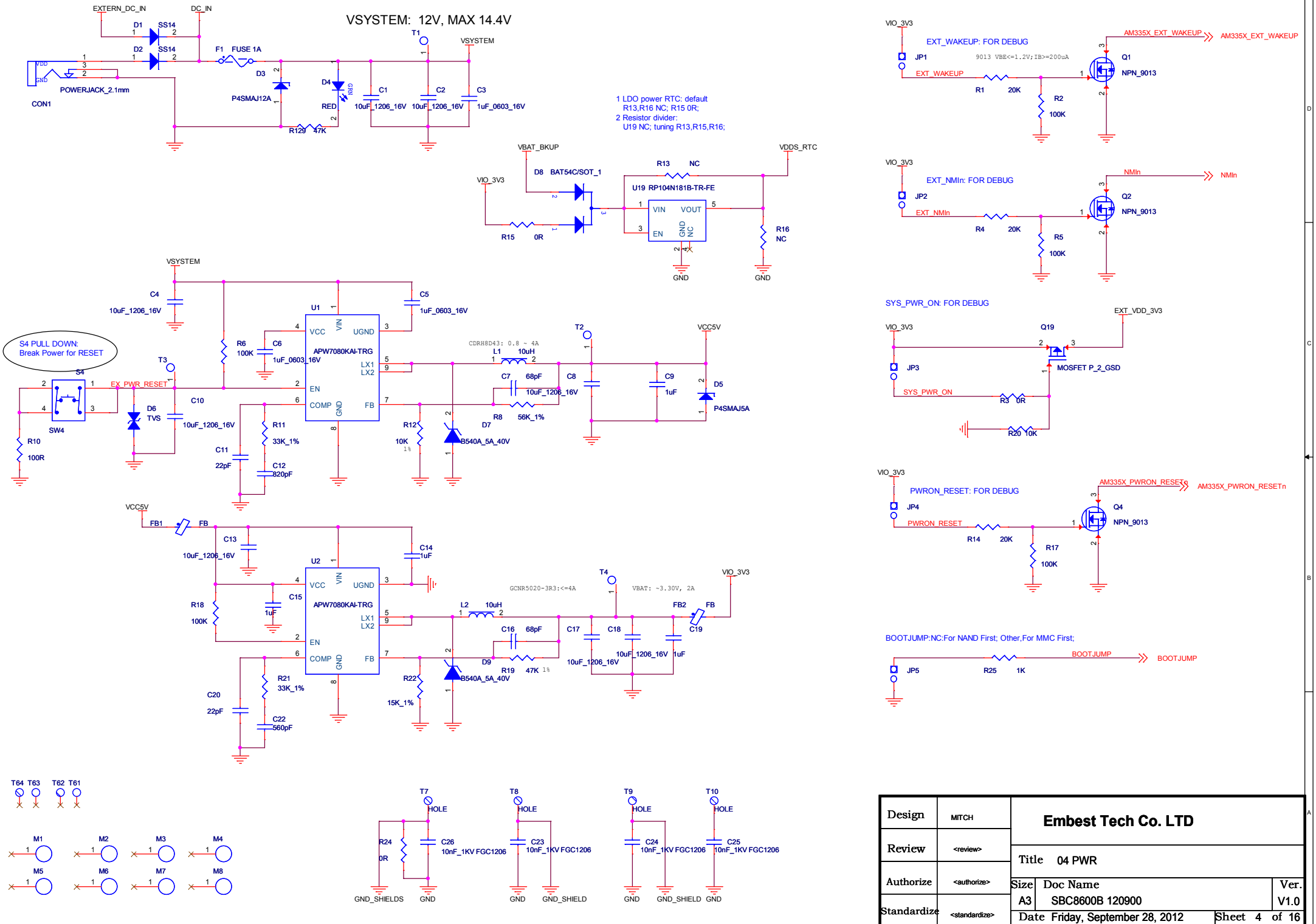
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 3 of 16



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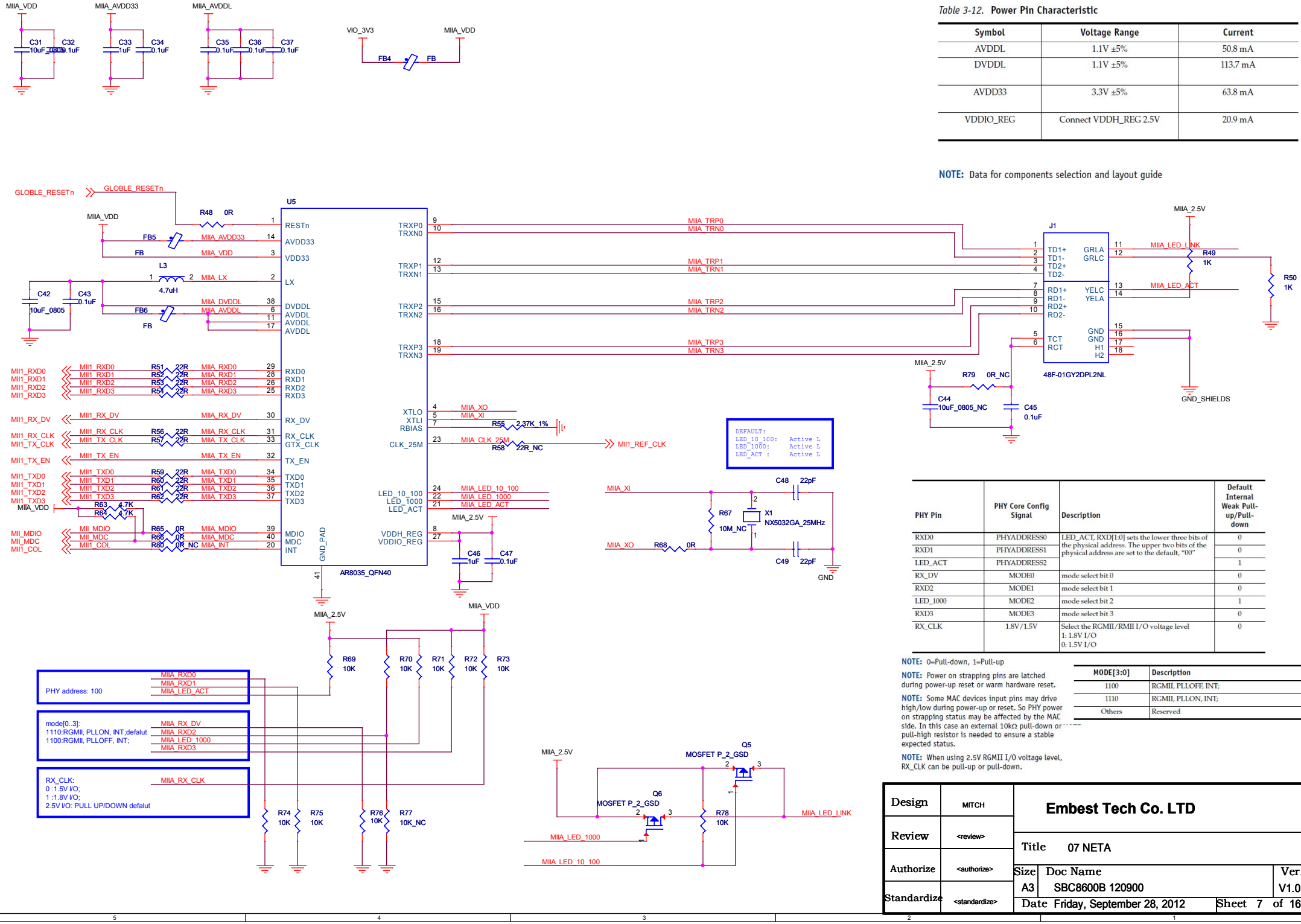
Review	<review>	Title 04 PWR	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900 Ver. V1.0
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 4 of 16

Design	MITCH	**Embest Tech Co. LTD**	
Review	<review>	Title 06 NAND	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900	Ver. V1.0
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 6 of 16



3.6 Power Pin Consumption

Table 3-12. **Power Pin Characteristic**

Symbol	Voltage Range	Current
AVDDL	1.1V ±5%	50.8 mA
DVDDL	1.1V ±5%	113.7 mA
AVDD33	3.3V ±5%	63.8 mA
VDDIO_REG	Connect VDDH_REG 2.5V	20.9 mA

NOTE: Data for components selection and layout guide

PHY Pin	PHY Core Config Signal	Description	Default Internal Weak Pull-up/Pull-down
RXD0	PHYADDRESS0	LED_ACT, RXD[1:0] sets the lower three bits of the physical address. The upper two bits of the physical address are set to the default, "00"	0
RXD1	PHYADDRESS1		0
LED_ACT	PHYADDRESS2		1
RX_DV	MODE0	mode select bit 0	0
RXD2	MODE1	mode select bit 1	0
LED_1000	MODE2	mode select bit 2	1
RXD3	MODE3	mode select bit 3	0
RX_CLK	1.8V/1.5V	Select the RGMII/RMII I/O voltage level 1: 1.8V I/O 0: 1.5V I/O	0

NOTE: 0=Pull-down, 1=Pull-up

NOTE: Power on strapping pins are latched during power-up reset or warm hardware reset.

NOTE: Some MAC devices input pins may drive high/low during power-up or reset. So PHY power on strapping status may be affected by the MAC side. In this case an external 10kΩ pull-down or pull-high resistor is needed to ensure a stable expected status.

NOTE: When using 2.5V RGMII I/O voltage level, RX_CLK can be pull-up or pull-down.

MODE[3:0]	Description
1100	RGMII, PLLOFF, INT;
1110	RGMII, PLLON, INT;
Others	Reserved

Design	MITCH	**Embest Tech Co. LTD**	
Review	<review>	Title 07 NETA	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900 Ver. V1.0
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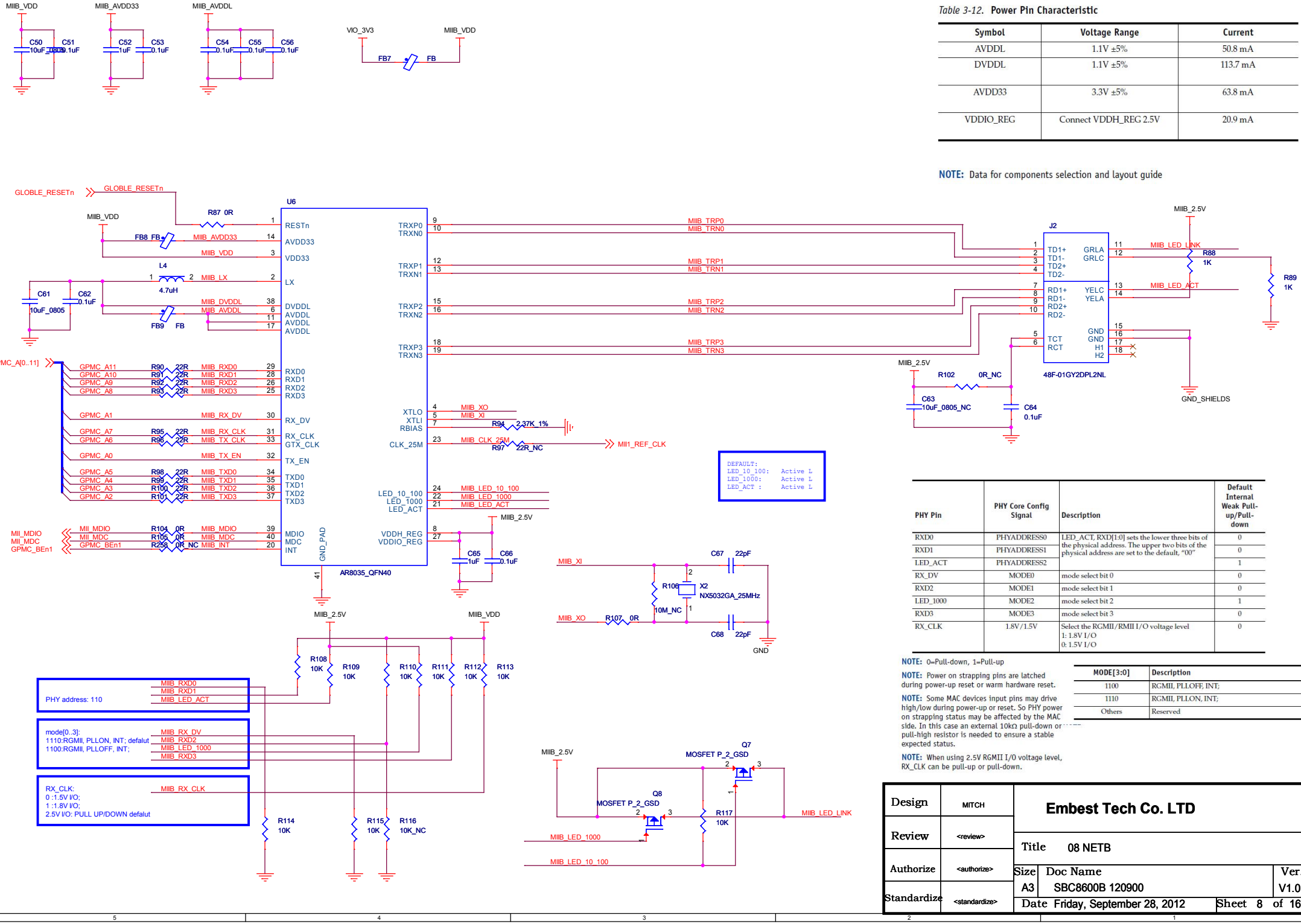

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VDDIO_REG	Connect VDDH_REG 2.5V	20.9 mA

NOTE: Data for components selection and layout guide

PHY Pin	PHY Core Config Signal	Description	Default Internal Weak Pull-up/Pull-down
RXD0	PHYADDRESS0	LED_ACT, RXD[1:0] sets the lower three bits of the physical address. The upper two bits of the physical address are set to the default, "00"	0
RXD1	PHYADDRESS1		0
LED_ACT	PHYADDRESS2		1
RX_DV	MODE0	mode select bit 0	0
RXD2	MODE1	mode select bit 1	0
LED_1000	MODE2	mode select bit 2	1
RXD3	MODE3	mode select bit 3	0
RX_CLK	1.8V/1.5V	Select the RGMII/RMII I/O voltage level 1: 1.8V I/O 0: 1.5V I/O	0

NOTE: 0=Pull-down, 1=Pull-up

NOTE: Power on strapping pins are latched during power-up reset or warm hardware reset.

NOTE: Some MAC devices input pins may drive high/low during power-up or reset. So PHY power on strapping status may be affected by the MAC side. In this case an external 10kΩ pull-down or pull-high resistor is needed to ensure a stable expected status.

NOTE: When using 2.5V RGMII I/O voltage level, RX_CLK can be pull-up or pull-down.

MODE[3:0]	Description
1100	RGMII, PLLOFF, INT;
1110	RGMII, PLLON, INT;
Others	Reserved

Design	MITCH	**Embest Tech Co. LTD**	
Review	<review>	Title 08 NETB	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900 Ver. V1.0
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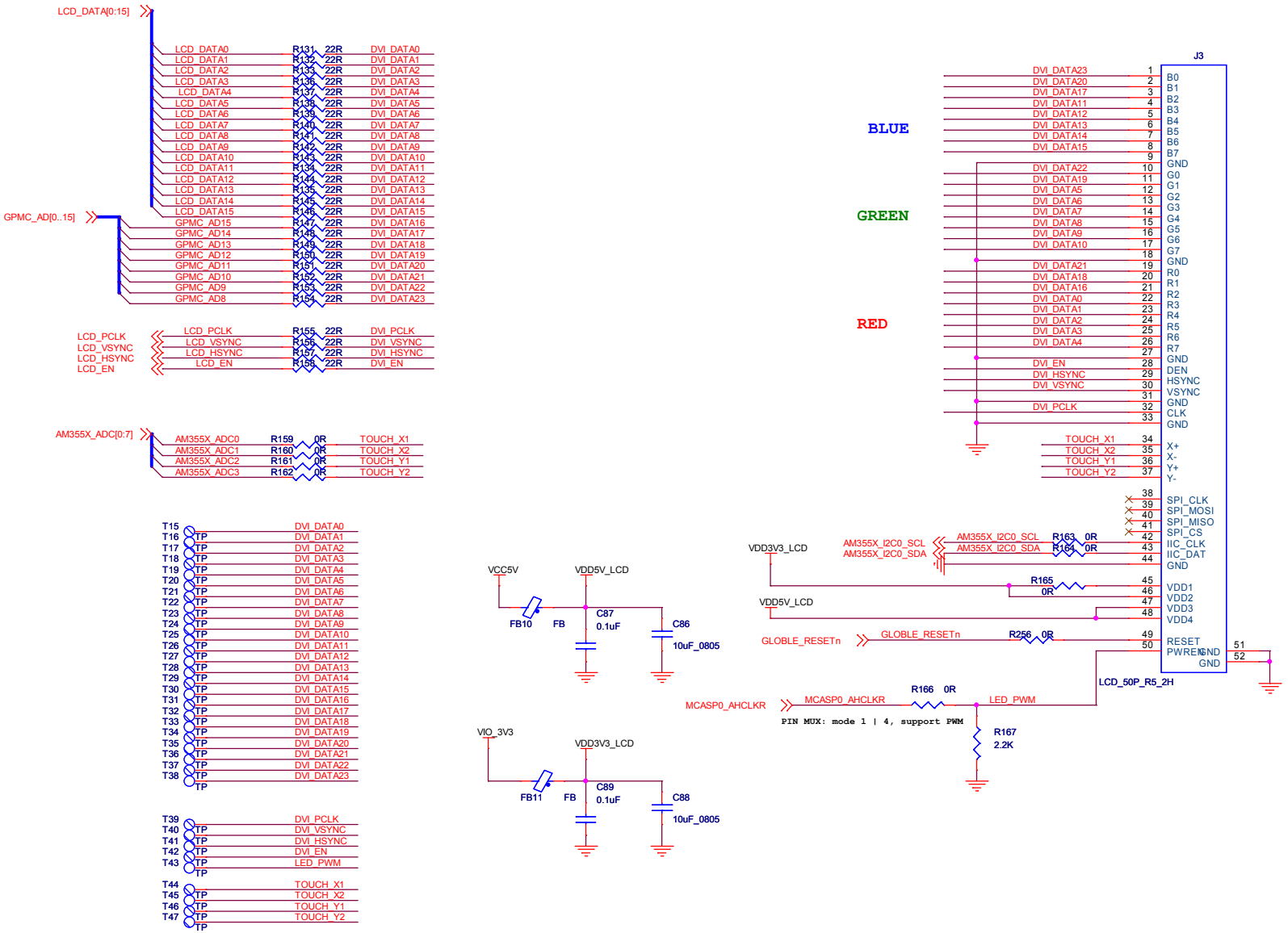

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Review	<review>	Title 10 LCD	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900 / Ver. V1.0
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 10 of 16

Attack (0.8dB/s to ~3200dB/s)
DAP_AVC_ATTACK

ure 16. DAP AVC Block Diagram

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The
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a limiter. In
signal level

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is distorted.
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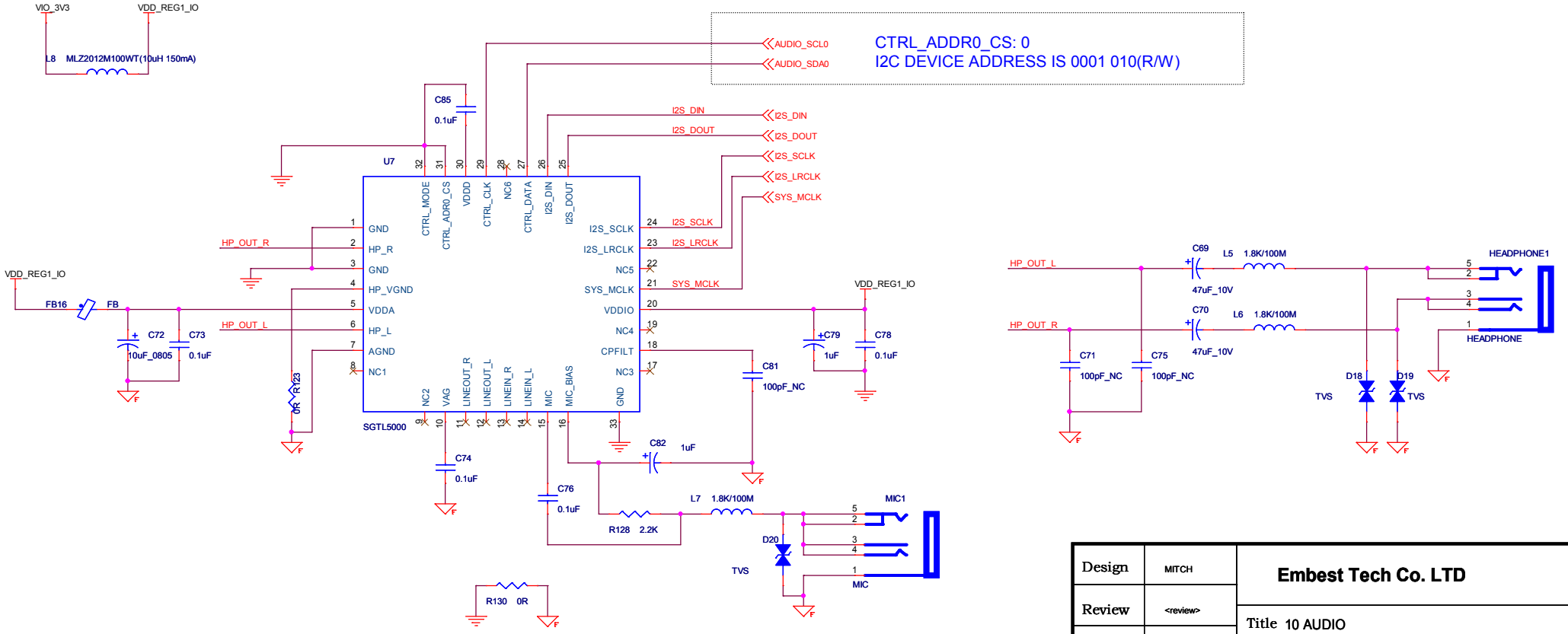
I²C

The I²C port is implemented according to the I²C specification v2.0. The I²C interface is used to read and write all registers.

For the 32 QFN version of the SGTL5000, the I²C device address is 0n01010(R/W) where n is determined by I2C_ADR0_CS and R/W is the read/write bit from the I²C protocol.

For the 20 QFN version of the SGTL5000 the I²C address is always 0001010(R/W).

The SGTL5000 is always the slave on all transactions which means that an external master will always drive CTRL_CLK.



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Review	<review>	Title 10 AUDIO	
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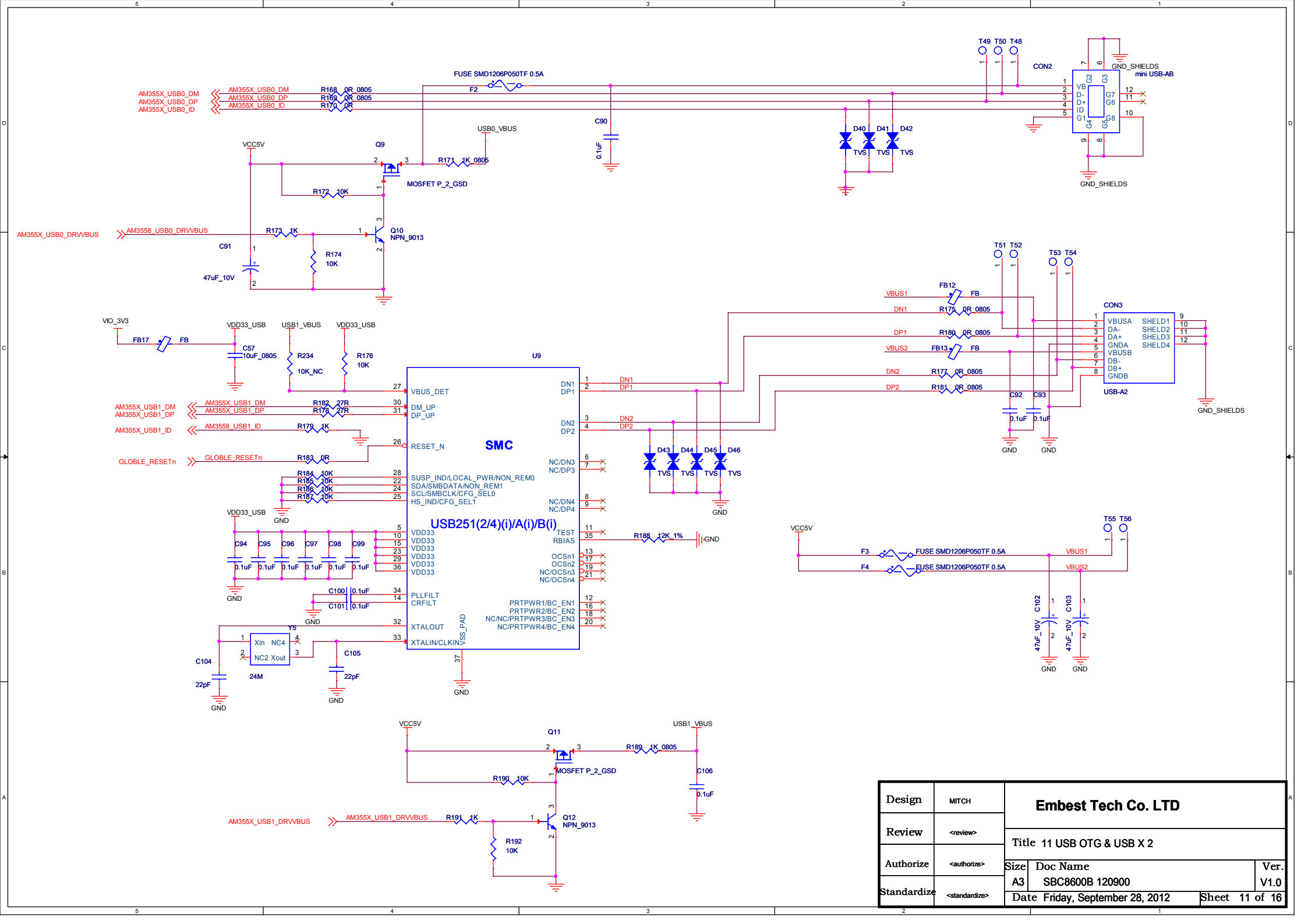
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 10 of 18

Design	MITCH	**Embest Tech Co. LTD**	
Review	<review>	Title 10 AM335XZCZ-CON	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 10 of 11

Ver. V1.0


FUSE SMD1206P050TF 0.5A
F2
CON2
mini USB-AB
GND_SHIELDS
USB0_VBUS
C90
0.1uF
D40 D41 D42
TVS
Q9
MOSFET P_2_GSD
R171 1K 0805
R172 10K
Q10
NPN_9013
R173 1K
R174 10K
C91
47uF_10V
AM355X_USB0_DRVVBUS
AM3558_USB0_DRVVBUS
AM355X_USB0_DM
AM355X_USB0_DP
AM355X_USB0_ID
R168 0R 0805
R169 0R 0805
R170 0R
T49 T50 T48
T51 T52
T53 T54
CON3
USB-A2
FB12
FB13
R175 0R 0805
R180 0R 0805
R177 0R 0805
R181 0R 0805
C92 C93
0.1uF
GND
VIO_3V3
FB17
C57
10uF_0805
R234
10K_NC
R176
10K
VDD33_USB
USB1_VBUS
U9
SMC
USB251(2/4)(i)/A(i)/B(i)
VBUS_DET
DM_UP
DP_UP
RESET_N
SUSP_IND/LOCAL_PWR/NON_REM0
SDA/SMBDATA/NON_REM1
SCL/SMBCLK/CFG_SEL0
HS_IND/CFG_SEL1
DN1
DP1
DN2
DP2
NC/DN3
NC/DP3
NC/DN4
NC/DP4
TEST
RBIAS
R188 12K_1%
OCSn1
OCSn2
NC/OCSn3
NC/OCSn4
PRTPWR1/BC_EN1
PRTPWR2/BC_EN2
NC/NC/PRTPWR3/BC_EN3
NC/PRTPWR4/BC_EN4
PLLFILT
CRFILT
XTALOUT
XTALIN/CLKIN
VSS_PAD
D43 D44 D45 D46
AM355X_USB1_DM
AM355X_USB1_DP
AM355X_USB1_ID
GLOBLE_RESETn
R182 27R
R178 27R
R179 1K
R183 0R
R184 10K
R185 10K
R186 10K
R187 10K
C94 C95 C96 C97 C98 C99
C100 C101
Y5
24M
C104 C105
22pF
T55 T56
F3
F4
FUSE SMD1206P050TF 0.5A
VBUS1
VBUS2
C102 C103
47uF_10V
Q11
Q12
R189 1K 0805
R190 10K
R191 1K
R192 10K
C106
AM355X_USB1_DRVVBUS
Design MITCH
Review <review>
Authorize <authorize>
Standardize <standardize>
Embest Tech Co. LTD
Title 11 USB OTG & USB X 2
Size A3
Doc Name SBC8600B 120900
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Date Friday, September 28, 2012
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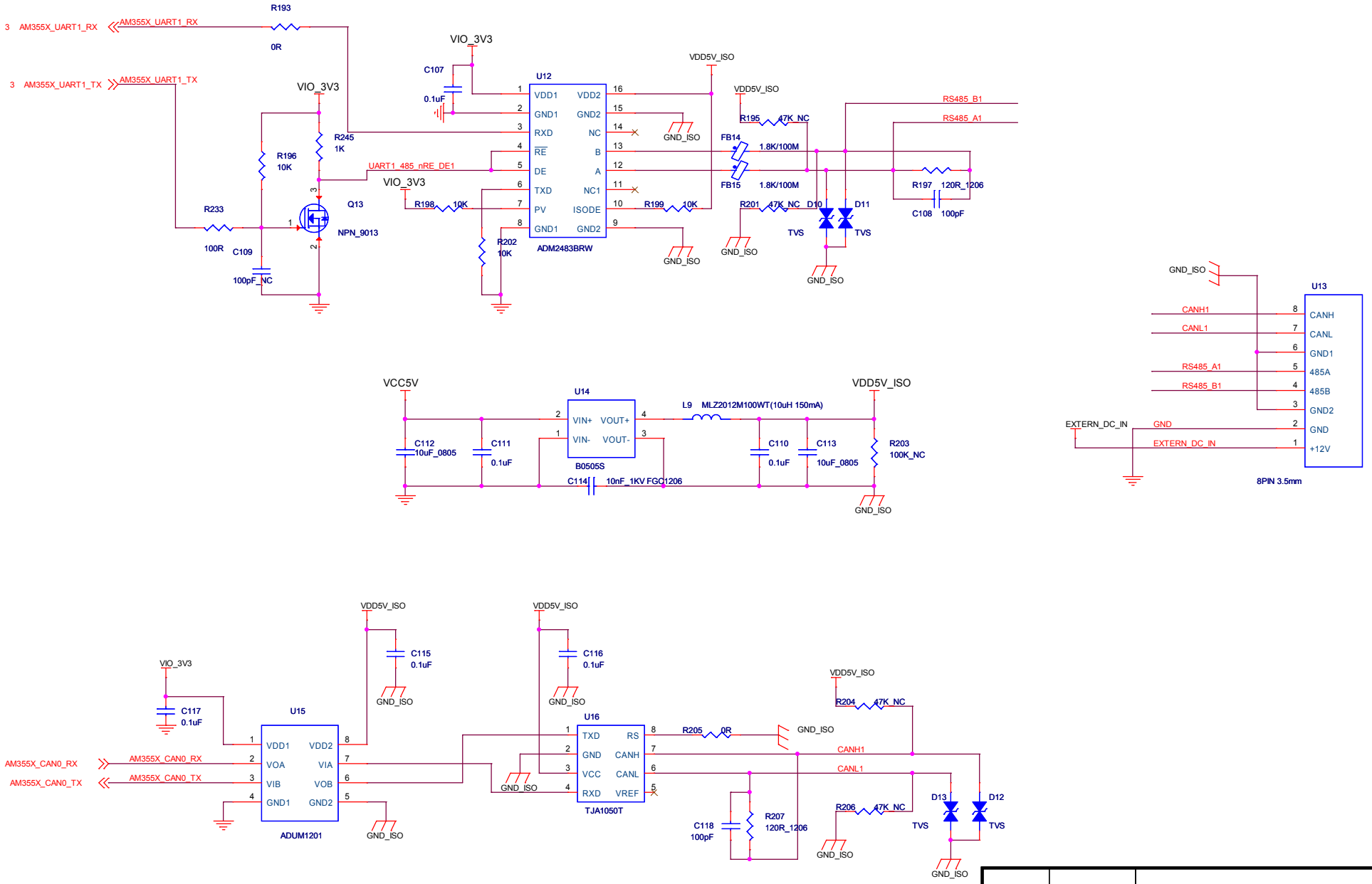
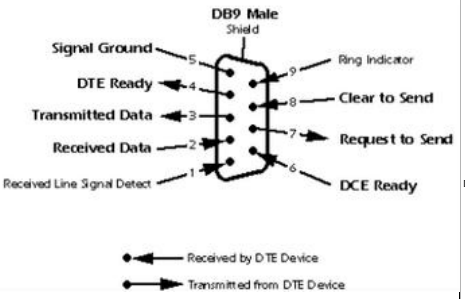
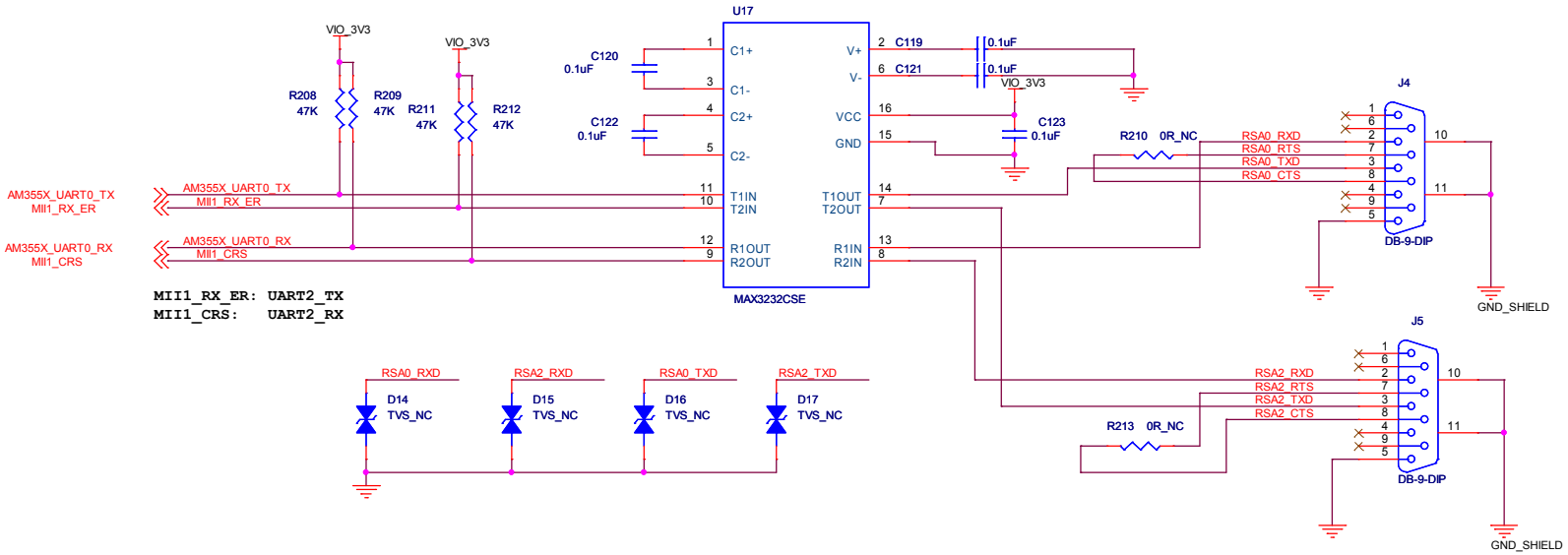


Design	MITCH	**Embest Tech Co. LTD**	
Review	<review>	Title 12 RS485 X 1 & CAN X 1	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900 / Ver. V1.0
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 12 of 16





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Review	<review>	Title 13 RS232 X 2	
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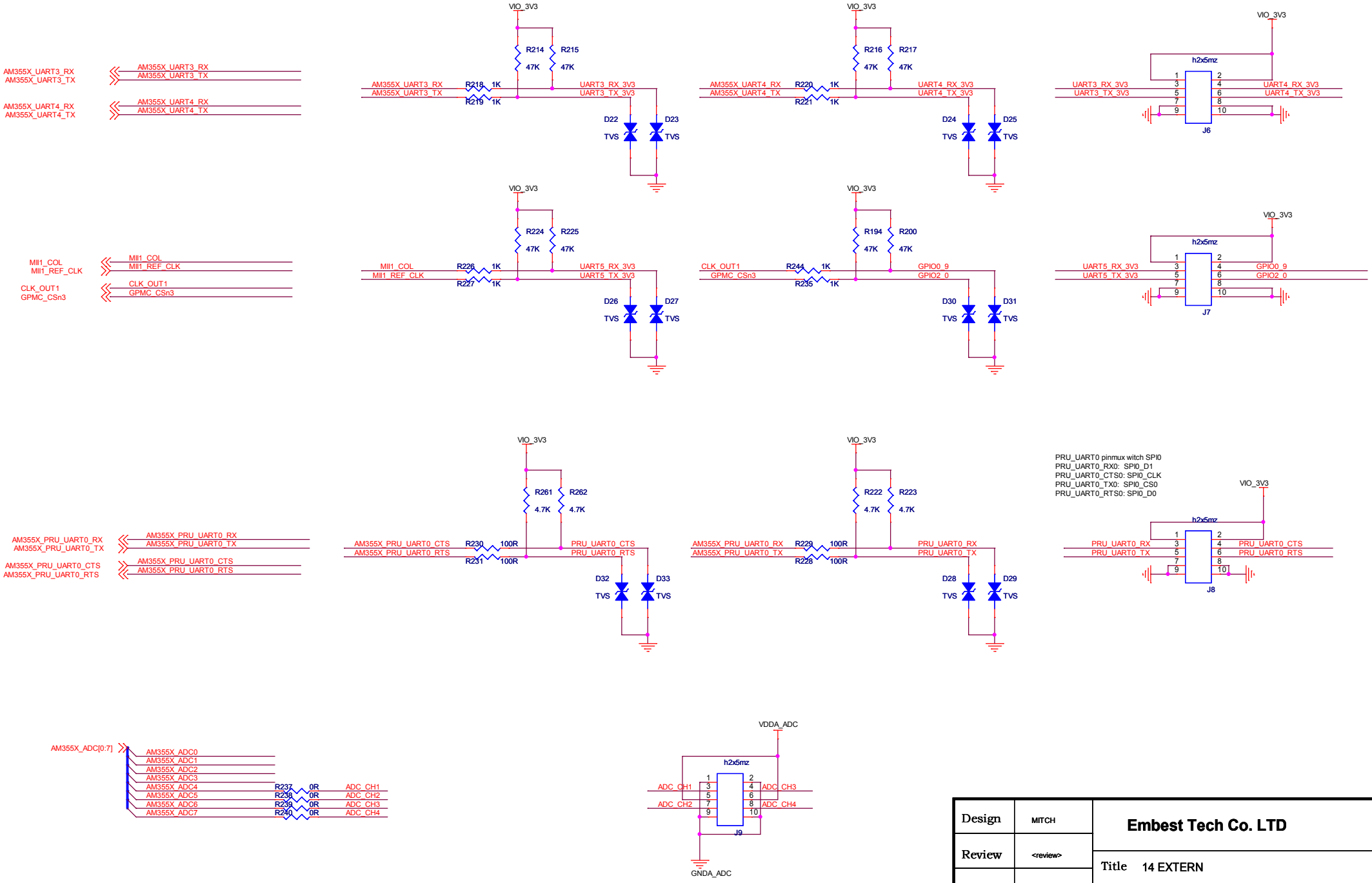

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Review	<review>	Title 14 EXTERN	
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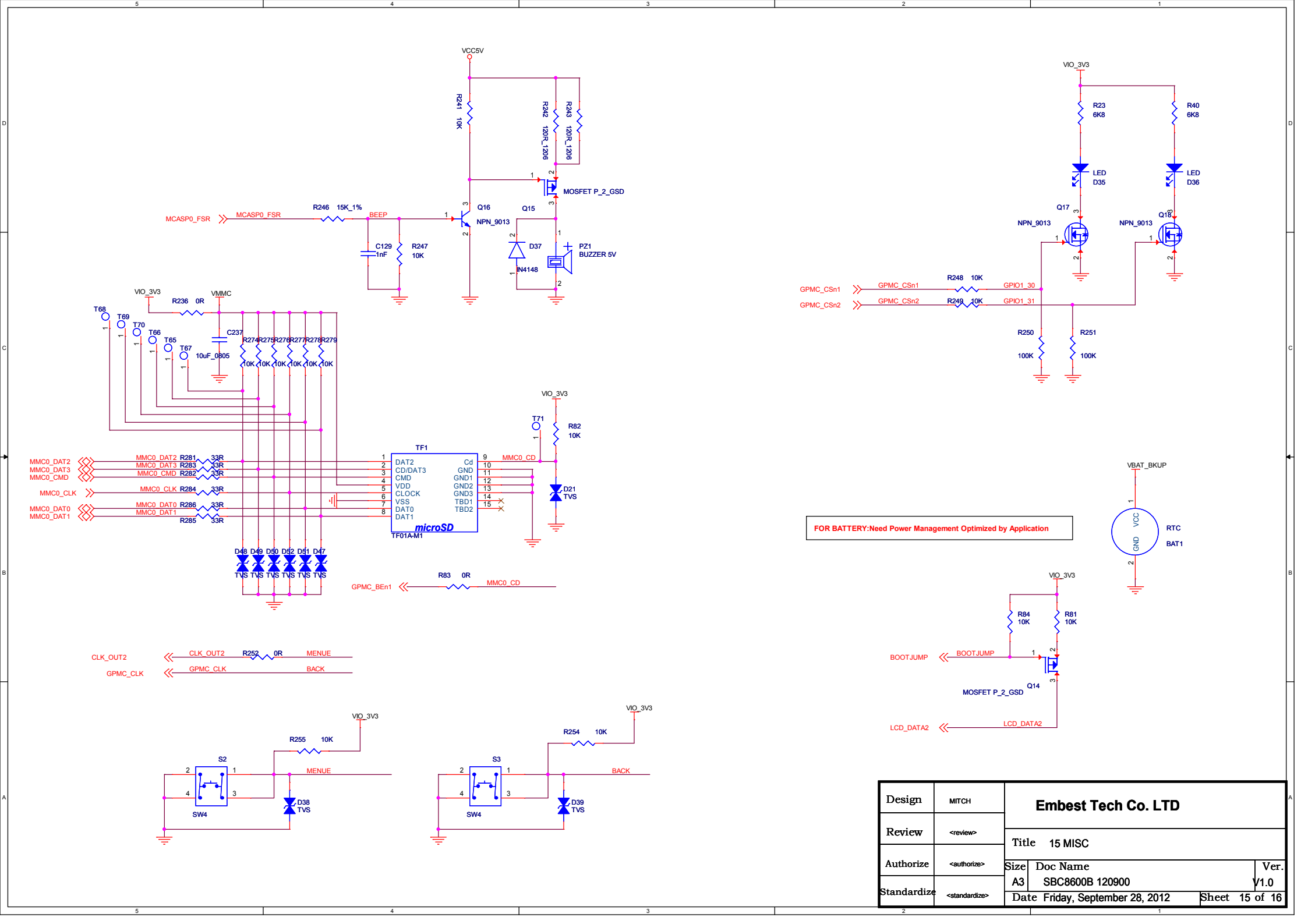

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Review	<review>	Title 15 MISC	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900 Ver. V1.0
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 15 of 16

SBC8600B Revision History

SBC8600B 110900

1 Modify From SBC8600 120601: RM Nand; Add TF;

Design	MITCH	**Embest Tech Co. LTD**	
Review	<review>	Title 16 REVISION HISTORY	
Authorize	<authorize>	Size A3	Doc Name SBC8600B 120900 Ver. V1.0
Standardize	<standardize>	Date Friday, September 28, 2012	Sheet 16 of 16