PAGE 2

AX11001 & AX11005 Chip
H/W Configuration Pins
25MHz Crystal
RJ-45 Connector
DoCD HAD Debugger Connector
I2C Configuration EEPROM (AT24C02A)
Power and By-pass Capacitors

PAGE 3

BUS DIP Switches:
Multi-function Pins DIP Switches
GPIO/Timer/INT1/PCA Interfaces
Connectors

PAGE 4

UART0/1/2 Schematic:
UART 0&1: RS-232/9 pin/M
UART 2 : RS-232/9 pin/M
UART 2 : RS-485 FULL/Half
RS232 Transceiver : ZT3243F
RS485 Transceiver : ZT491E

PAGE 5

Serial Bus Schematic:
I2C : I2C EEPROM
SPI : AT25128 EEPROM (optional)
1-wire : DS18B20 Temperature Sensor

PAGE 6

Power and Reset Schematic:
Reset Circuit
Input Power : 5V / 1A
Regulator 5V to 3.3 V / 1A

Note: Please refer to AX110xx Network SoC Application Design Note for more detailed information.

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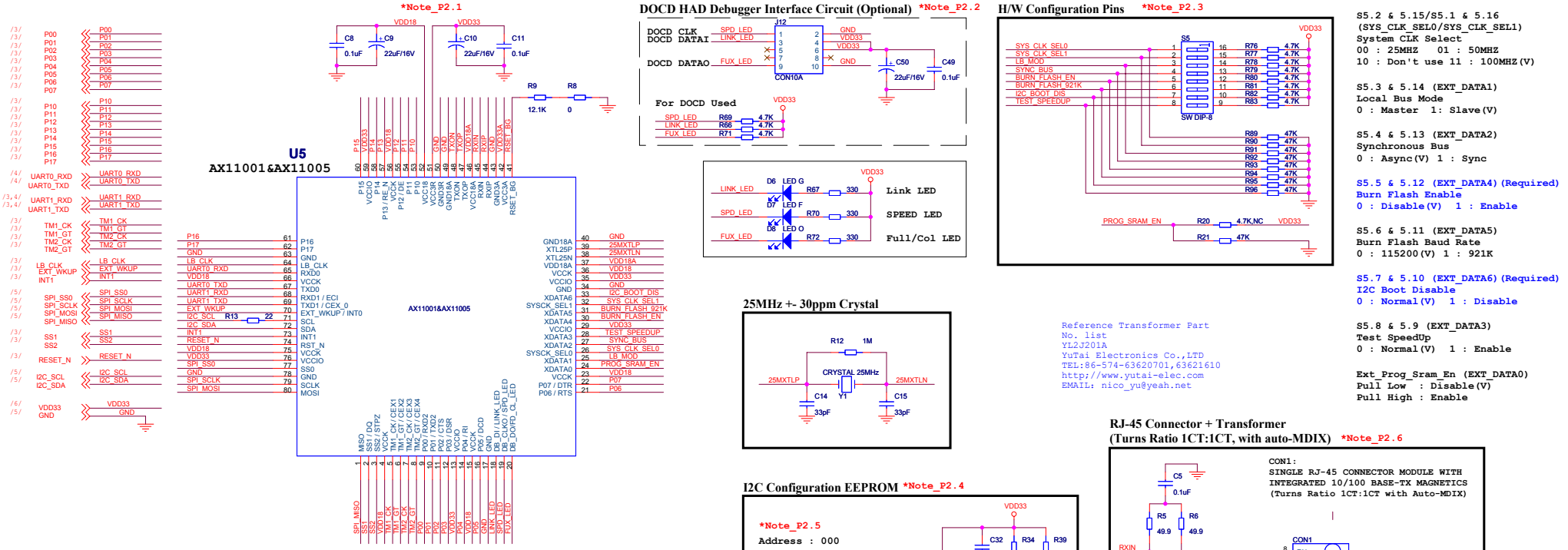

*Note_P2.1:
AX1100x on-chip 3.3V to 1.8V regulator is a low dropout regulator (LDO), which requires some large external compensating capacitors on its input (pin #51) and output (pin #52) pins. The C8, C9, C10, and C11 capacitors are the compensating capacitors for the on-chip regulator.

*Note_P2.2:
The DoCD HAD Debugger circuit is optional if you don't need to use the DoCD HAD debugger. The DoCD interface pins are shared with the Ethernet LED pins.

*Note_P2.3:
The BURN_FLASH_EN (pin #30) and I2C_Boot_DIS (pin #33) configuration pins should be connected to a DIP switch for AX1100x mass production purpose. The other configuration pins can be configured to a default setting based on your requirements. These configuration pins should be pulled high/low through a respective 4.7K/47K resistor but couldn't be connected to VDD33/GND directly or shared the same resistor each other.

*Note_P2.4:
The I2C Configuration EEPROM is used to configure some important AX110xx hardware initialization data and is required for most of AX1100x applications. The AX1100x supports the 24C02~24C16 I2C EEPROM.

*Note_P2.5:
The 7-bit device address of the I2C Configuration EEPROM should be 1010000b for AX1100x. That is the A0, A1, A2 signals of the 24C02~24C16 I2C Configuration EEPROM should be pulled down.

*Note_P2.6:
The TXCT and RXCT pins of magnetic were connected together inside in order to support the Auto-MDIX function. You can select the magnetic without Auto-MDIX function (i.e. the TXCT and RXCT pins are separate) but need to short the TXCT and RXCT pins on your schematic.

*Note_P2.7:
All power pins should be implemented with a by-pass capacitor, and the by-pass capacitor should be as close as the power pin.
The analog powers and digital powers should be isolated with a Ferrite Bead.

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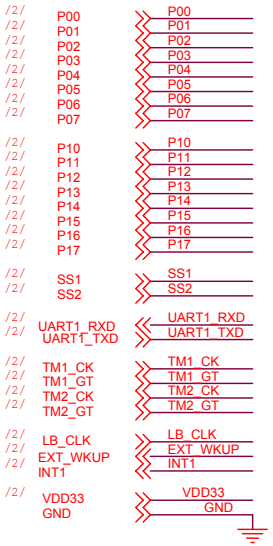
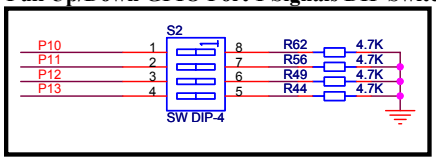
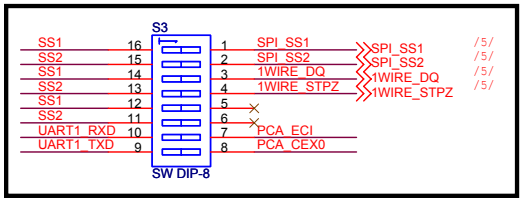


Pull Up/Down GPIO Port 1 Signals DIP Switch



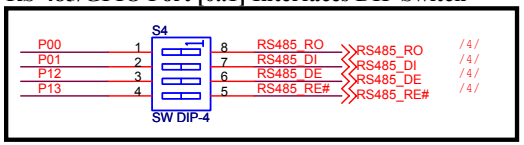
*Note_P3.1

SPI/1-Wire/PCA/UART1 Interfaces DIP Switch



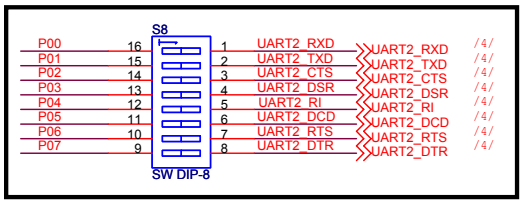
*Note_P3.2

RS-485/GPIO Port [0..1] Interfaces DIP Switch

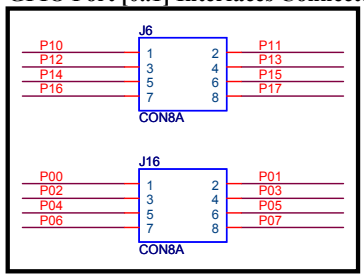


*Note_P3.2

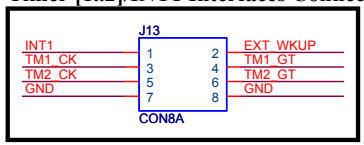
UART2/GPIO Port 0 Interfaces DIP Switch



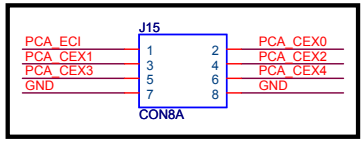
GPIO Port [0..1] Interfaces Connectors

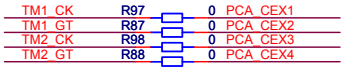


Timer [1..2]/INT1 Interfaces Connector



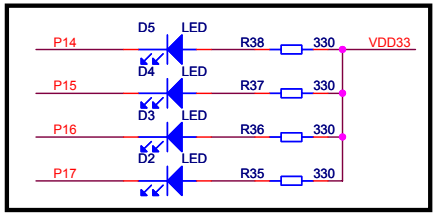
PCA Interface Connector

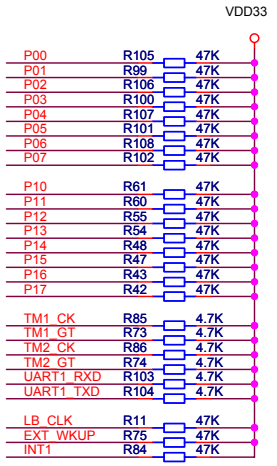




*Note_P3.3

GPIO Port 1 LED Control Circuit





*Note_P3.1:
The (SPI_SS1, SPI_SS2) and (1WIRE_DQ, 1WIRE_STPZ) poles can not be set to ON at the same time because these pins are connected to the SS1 and SS2 pins respectively.

*Note_P3.2:
The UART2 and RS-485 interfaces can not be enabled at the same time since the (UART2_RXD, UART2_TXD) and (RS485_RO, RS485_DI) pins are connected to the same pins (i.e. P00 and P01).

*Note_P3.3:
The GPIO Port 1 LEDs can be controlled by the web server of AX1100x demo firmware.

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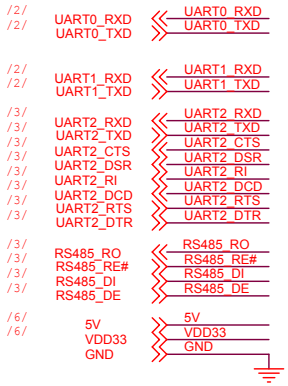
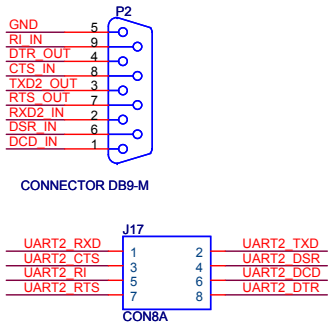
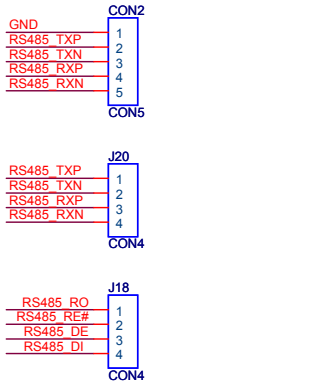


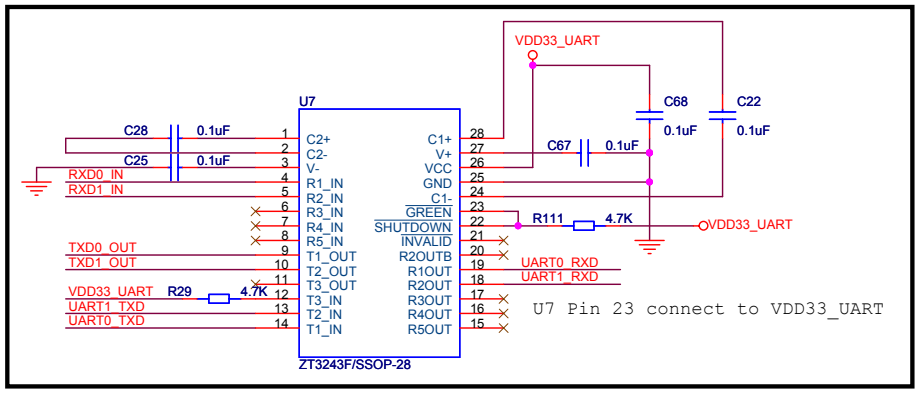
UART2 RS-232 Connector



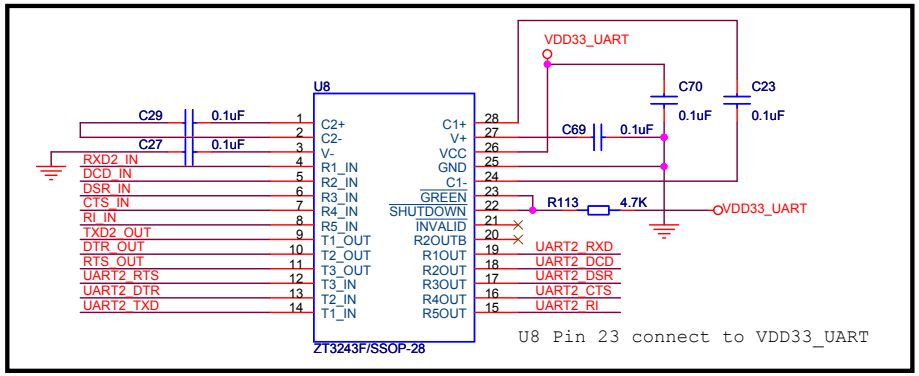
RS-485 Connector



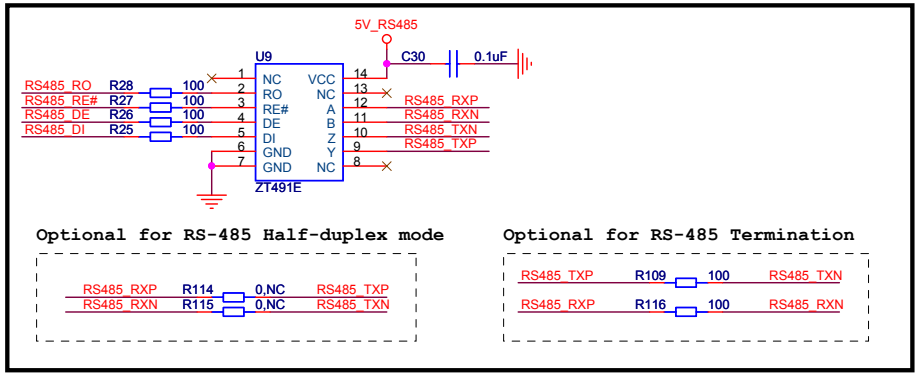
UART0/UART1 RS-232 Transceiver *Note_P4.1



UART2 RS-232 Transceiver *Note_P4.2

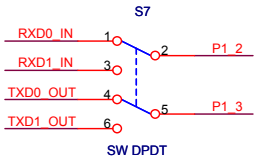


RS-485 Transceiver *Note_P4.2

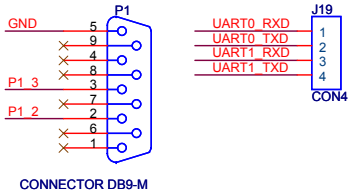


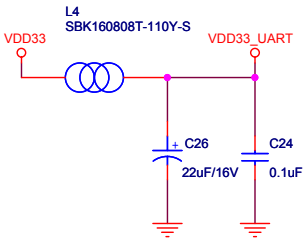
*Note_P4.1

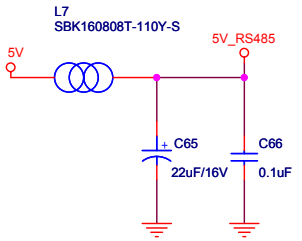
UART0/UART1 Interface Switch



UART0/UART1 RS-232 Connector







***Note_P4.1:**
The UART0 and UART1 interfaces share the same RS-232 port on the AX1100x 80-pin development board. You can select the UART0 or UART1 interface by switching the UART0/UART1 interface switch.

***Note_P4.2:**
The UART2 and RS-485 interfaces can not be enabled at the same time since the (UART2_RXD, UART2_TXD) and (RS485_RO, RS485_DI) pins are connected to the same pins (i.e. P00 and P01). Please refer to page #3 for more details.

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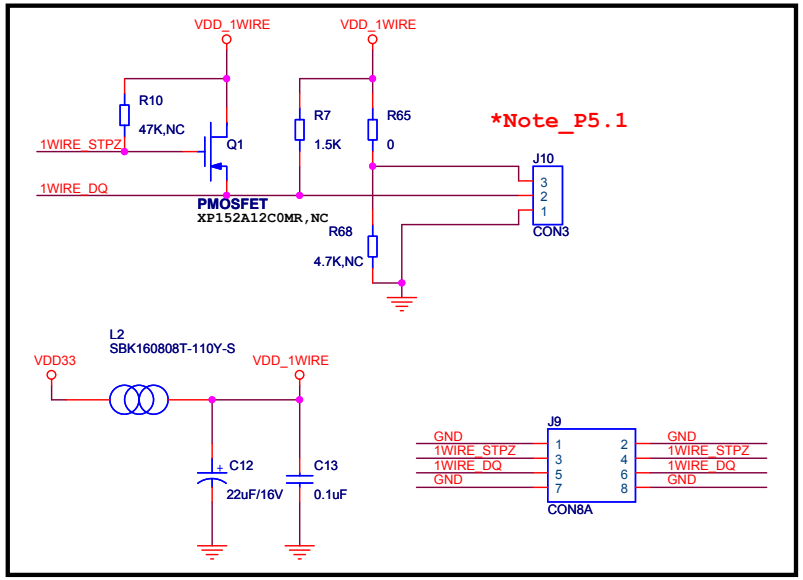
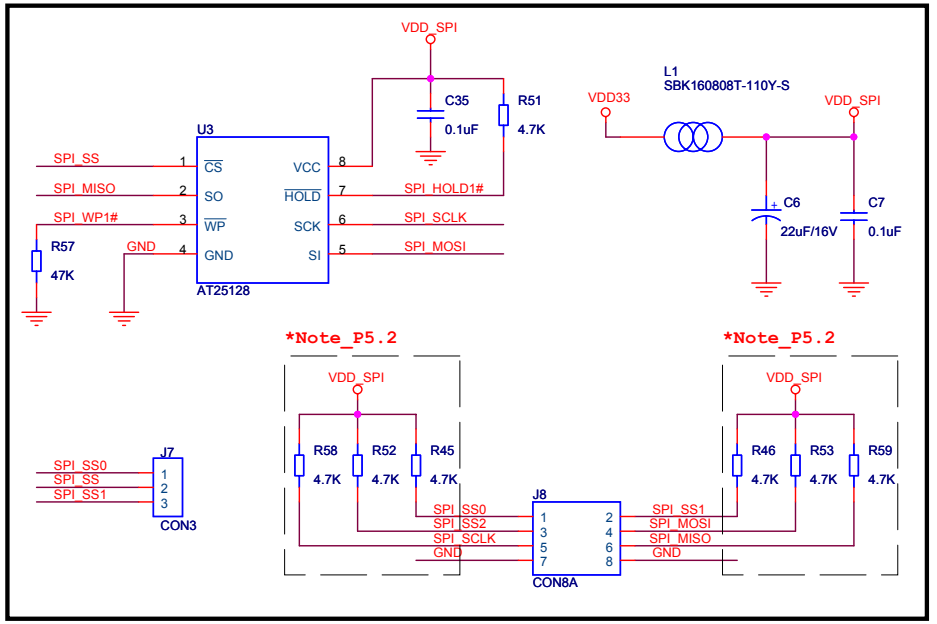
/3/ 1WIRE_DQ → 1WIRE_DQ
/3/ 1WIRE_STPZ → 1WIRE_STPZ
/3/ SPI_SS1 → SPI_SS1
/3/ SPI_SS2 → SPI_SS2
/2/ SPI_SS0 → SPI_SS0
/2/ SPI_SCLK → SPI_SCLK
/2/ SPI_MOSI → SPI_MOSI
/2/ SPI_MISO → SPI_MISO
/2/ I2C_SCL → I2C_SCL
/2/ I2C_SDA → I2C_SDA
/6/ 5V → 5V
/6/ VDD33 → VDD33
GND → GND

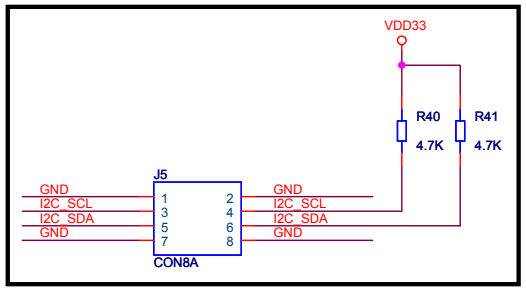
1-Wire Interface Circuit/Connector



SPI Interface Circuit/Connector



I2C EEPROM Circuit/Connector



***Note_P5.1:**
There is a 1-Wire temperature sensor connected to the J10 1-Wire connector on the AX1100x 80-pin development board to demonstarte an example of the 1-Wire applications.

***Note_P5.2:**
The AX1100x SPI interface supports 4 types of interface timing mode, namely, Mode 0 ~ Mode 3 by configuring the SPI_SCLK and SPI_SSx signals. Please refer to Section 4.20 of AX1100x datasheet for details.

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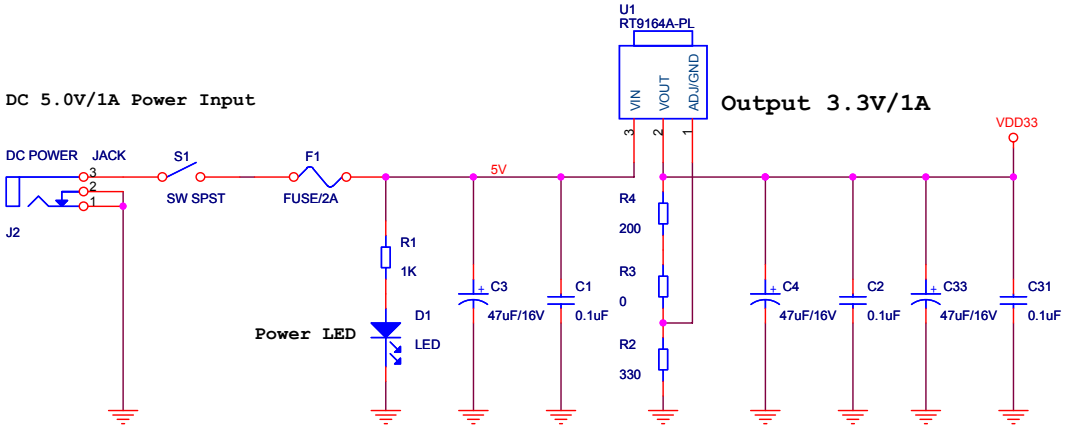
/2/ RESET_N

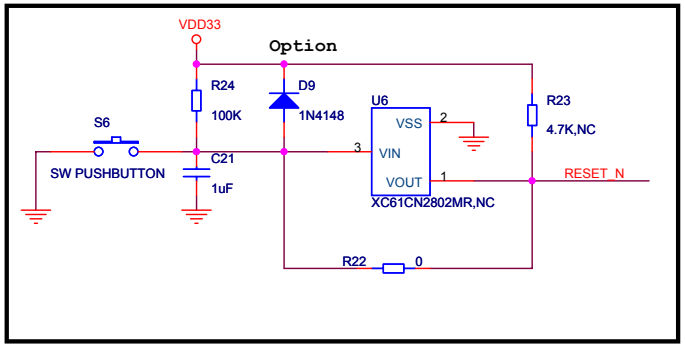
/4,5/ /2,3,4,5/ 5V VDD33

GND

DC 5.0V/1A Power Input

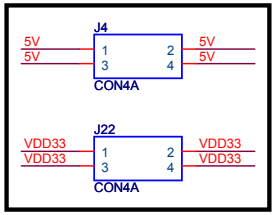


Reset Circuit *Note_P6.1

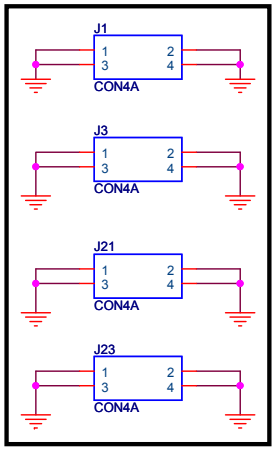


*Note_P6.1:
You can consider using a RC reset circuit on your AX1100x applications if you don't have special requirement.

5V/3.3V Power Connectors



GND Connectors



ASIX ELECTRONICS CORPORATION		
Title: AX11001&AX11005 EV Board - Power-Reset		
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V1.00 Init

V1.01
R7 is changed from 4.7K to 1.5K
R110 and R112 are changed from 0 to 4.7K,NC
U7 and U8 Pin 23 connect to VDD33_UART

V1.02
The circuit is supported both AX11001 and AX11005

V1.10 2008/8/12
1. Add some notes to indicate the important information of this schematic.
2. Add the page number information for all off-page symbols.

V1.11 2009/10/28
1. Added more information of the configuration pins circuit in Note_P2.3.

V1.12 2009/12/1
1. Changed default setting to high for Local Bus Mode of H/W Configuration Pins.

ASIX ELECTRONICS CORPORATION		
Title: AX11001&AX11005 EV Board - History		
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