I2C/UART Demo Board
Quickstart Guide

1.0   Introduction

This guide is designed to get you started with the Scenix I2C/UART Demo kit.

The following items are included with the I2C/UART demo kit:

- 9V or greater power supply with a current capacity of 300mA or greater.
- 9-pin to 9-pin serial cable.
- I2C/UART demo board
- I2C/UART demo board users manual
- Floppy disk containing demo source code, EEPROM datasheet, I2C specification, MAX232 datasheet and the demo board circuit diagram
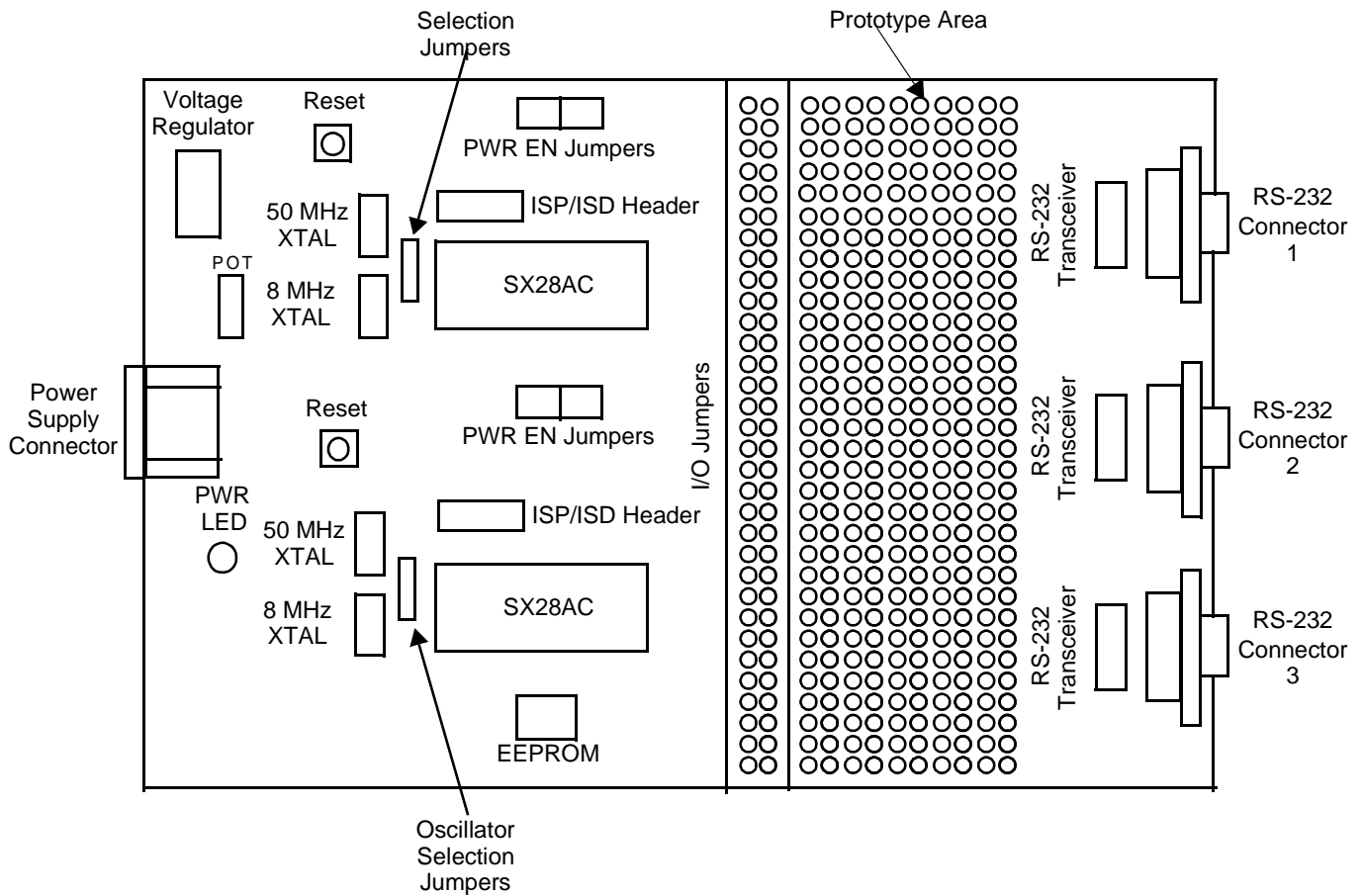- Quickstart guide

Figure 1-1. I^{2}C/UART Demo Board Layout

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2.0   How to Run the I2C/UART Demo

The I2C/UART demo software utilizes a PC serial connection to give the user access to SX implemented I2C masters, allowing the user to read and write to an on-board I2C EEPROM device.

2.1   Steps

1. Ensure jumpers JP1 through JP4 are all present as these jumpers give power to the SX devices.
2. Ensure the following jumper settings are selected:
   - 8/50:Run SX 1 in 50Mhz mode
   - MM: Multi-Master mode selected for SX 2. (Arbitration active)
   - MSTR: Run I2C master on SX 2
   - SL: Run slave on SX 2
   - 8/50: Run SX 2 in 50Mhz mode
3. Check the four jumpers JP13 through P16 are installed for 50MHz operation. (All across pins 1-2).
4. Connect a serial cable between UART 3 and your PC. Load Hyper Terminal or any such terminal program and set the terminal options as follows:
   - 19200 Baud rate.
   - 8 Data bits
   - No parity checking
   - 1 Stop bit
   - No flow control
5. Connect power to the AC adapter connector and check the power LED is "on" indicating the board is powered.
6. Press the reset buttons associated with both SX devices.Your terminal screen should now display the following:

   SX I2C/UART Demo2

   Multi-Master Mode

   Devices Found at: 40 50 A0 A2 A4 A6 A8 AA AC AE

   R - Read Saved Sentence

   S - Save a Sentence

   >

   If this is not the case, check steps 1 to 7 again. Check the voltage level of VCC for 5V and adjust potentiometer R15 if needed.
7. The addresses of slave devices found between A0h to AEh correspond to one of the 8 banks of the EEPROM. Each bank can store up to 256 characters. Once you see these addresses on your terminal, you can follow the instructions and read/write strings to the on board EEPROM. You should also notice the addresses 40h and 50h, as these corre-spond to the SX slave devices. Address 40h corresponds to the SX-2 slave device and 50h corresponds to SX-1. The two SX slave devices will simulate a read only EEPROM which contains an identification string only. More complexity can easily be added to the SX slaves.
8. Once you have tested SX-2 is running correctly and you can read your saved messages from the EEPROM, you can connect the serial cable to UART 1 and do the same but this time from one of the SX-1 masters. Once you have plugged in the serial cable to UART 1, press reset for SX-1 to display the prompts again. You will now be able to read the same messages out of the same EEPROM but from the SX running dual masters. You can do the same from UART 2 to activate the second master running on SX-1 however this second I2C master is not connected to the same I2C bus and therefore cannot access the EEPROM or SX-2. Testing this master will require to add an EEPROM device to the prototype area and be connect it to I2C-1 bus.

   Note:For SX-1, it is not possible to access its own slave (50h) reliably as this puts too much strain on the ISR, by executing dual UARTs, dual I2C masters, and an I2C slave.

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