



**MODTRONIX**  
ENGINEERING

*Modular Electronic Solutions*



# *Daisy Chaining MicroX Boards*

MicroX Application Note

## **Table of Contents**

Introduction.....	3
RS485 Data and Power Bus.....	4
Supplying power to multiple boards .....	5

## 1 Introduction

Many of the MicroX Main Boards (Single Board Computers) have 2 RJ45 connectors. If they are assembled with the RS485 interface option, multiple boards can be daisy chained together as shown in Figure 1, using standard RJ45 network cables.

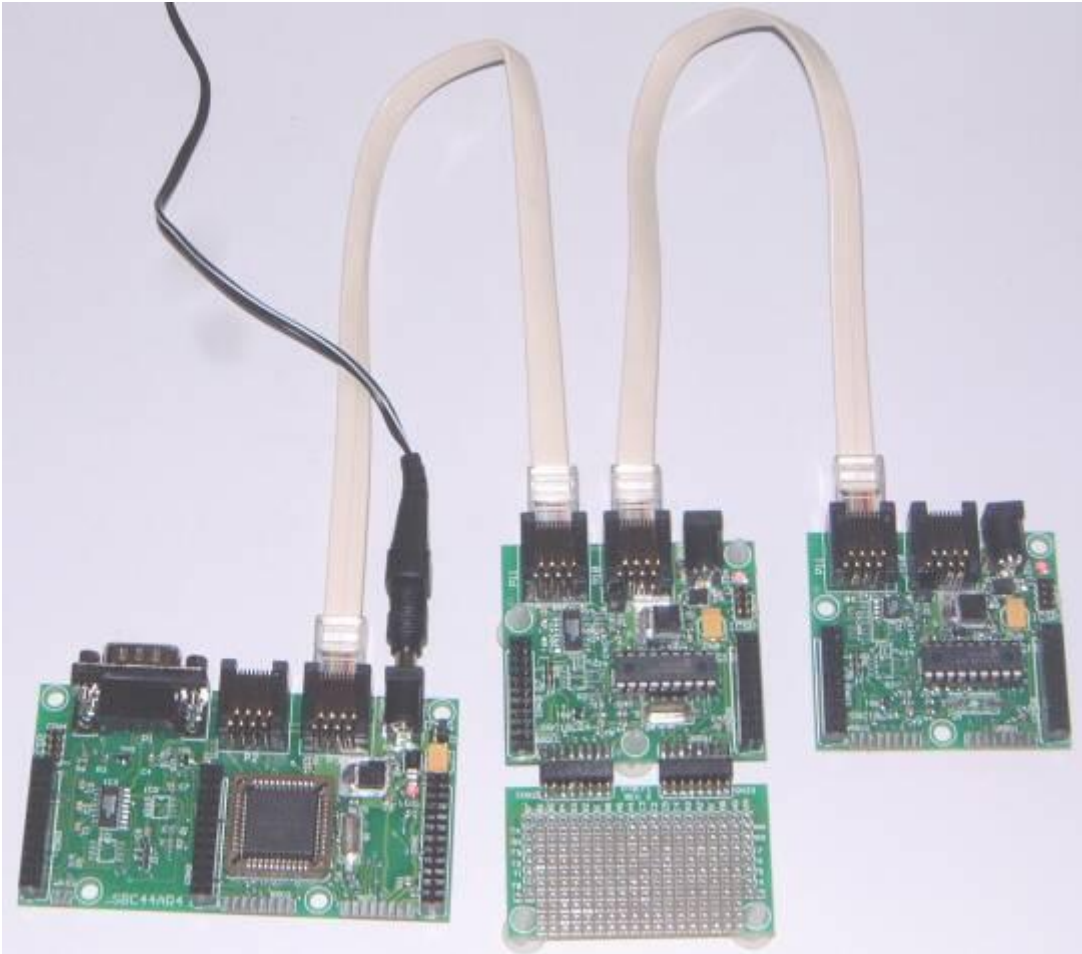


Figure 1

All boards shown in Figure 1 are connected to the same **RS485 Data and Power Bus**, and can communicate with each other. In addition, most of the MicroX boards have jumpers to connect pins 1 and 2 of the RJ45 connectors with the unregulated power on the board (Input of the 2.1mm power jack). This means that only one boards needs to be supplied with power (via it's 2.1mm power jack), and all other boards can obtain their power from the **RS485 Data and Power Bus**.

## 2 RS485 Data and Power Bus

The RS485 line driver chip used on most of the MicroX Boards is the MAX485 or equivalent chip. This chip is capable of data rates up to 2.5Mbps, and can support up to 32 transmitters on a single bus. The RS485 positive bus line is connected to pin 5 of the RJ45 connector, and the negative bus line is connected to pin 4.

As mentioned previously, most of the MicroX boards have jumpers to connect pins 1 and 2 of the RJ45 connectors with the unregulated power on the board (Input of the 2.1mm power jack). Pins 3 and 6 are connected to ground. Figure 2 shows the typical configuration.

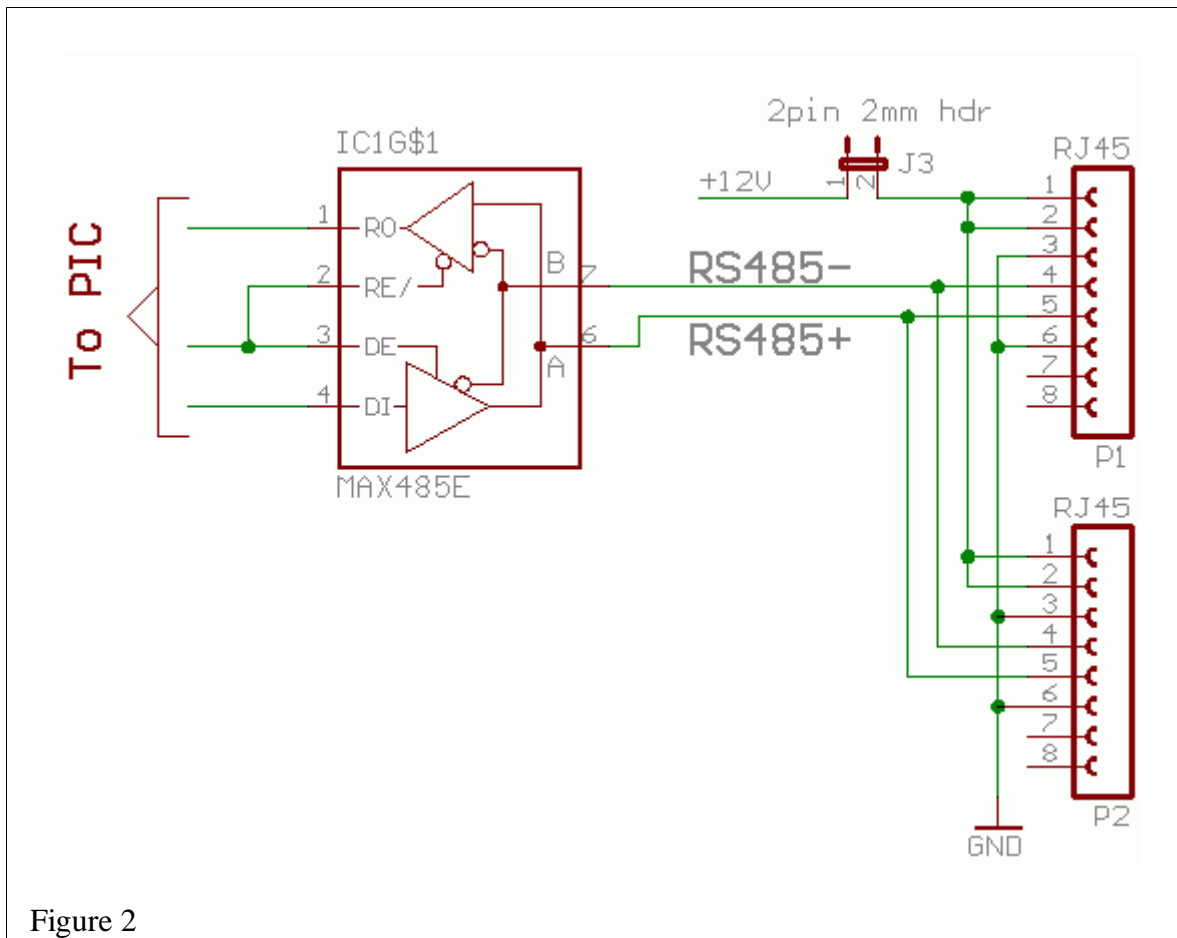


Figure 2

Standard RJ45 network cables (Not crossover cables) are used to connect multiple boards together.

### 3 Supplying power to multiple boards

When using the power feature of the *RS485 Data and Power Bus*, it is **VERY** important that only one board supplies the power (Has a DC transformer connected to it's 2.1mm power jack), and all the rest source power from the bus. All boards must have the jumper mounted that connects it's unregulated power to the RJ45 connector. The board with the DC transformer will supply the power for all the other boards. See Figure 1 for an example of multiple boards being supplied with power from the *RS485 Data and Power Bus* – note that only one board has a power cable connected to it's 2.1mm power jack!