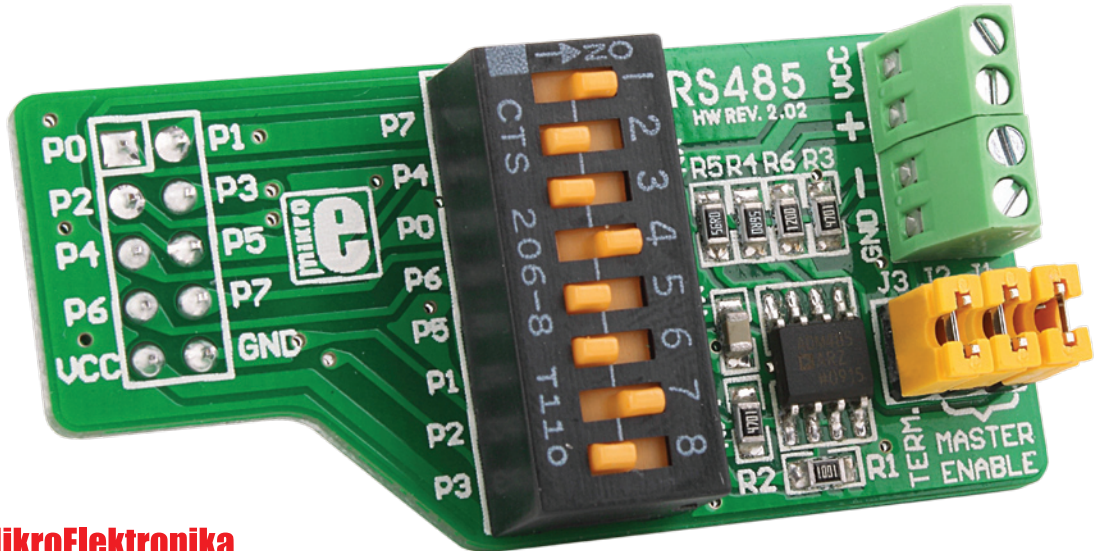
user's guide to

RS485

Expand development system capabilities by adding RS485 communication accessory board



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Nebojsa Matic
General Manager

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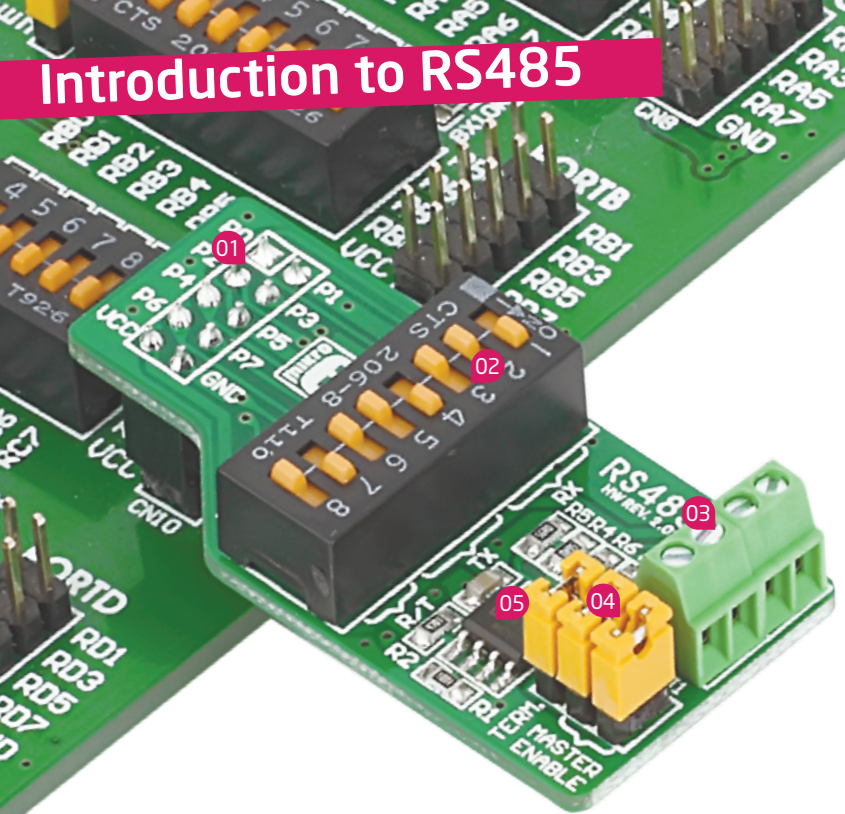
Introduction to RS485



Accessory board is designed for usage with various development systems and other MCU device with 2x5 header. RS485 additional board is designed for RS485 communication which is suitable for usage in electrically noisy environment on long distances (up to 1200m (4000ft)).

Key features

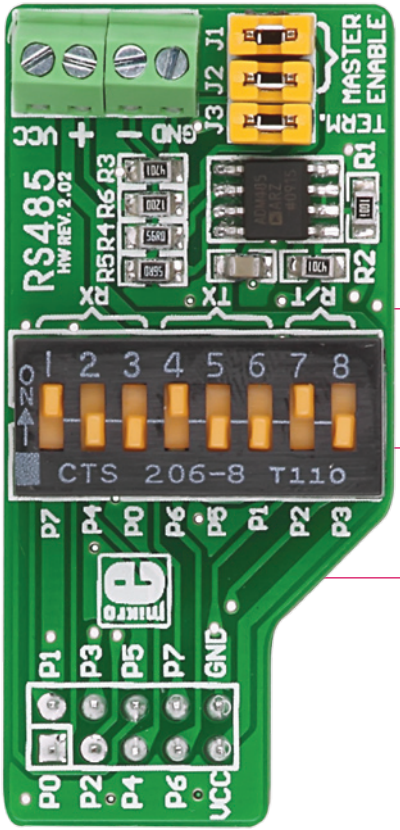
01 Pads with female 2x5 header on back side of the board.

02 DIP switch for pin selection.

03 Two pole screw terminals CN2 and CN3.

04 Jumpers for selecting slave/master mode.

05 ADM485 chip



System Specification

power supply

5V DC

power consumption

~2mA outputs enabled

board dimensions

50.42 x 23.88mm (1.99 x 0.94")

weight

~9g (0.02 lbs)

1. Connecting with development system

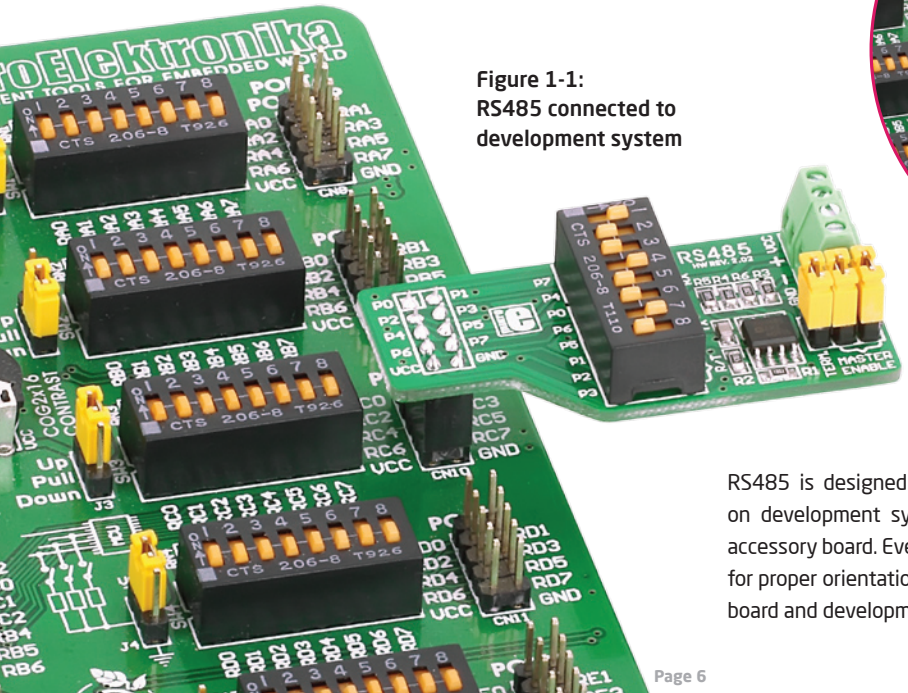


Figure 1-1:
RS485 connected to development system

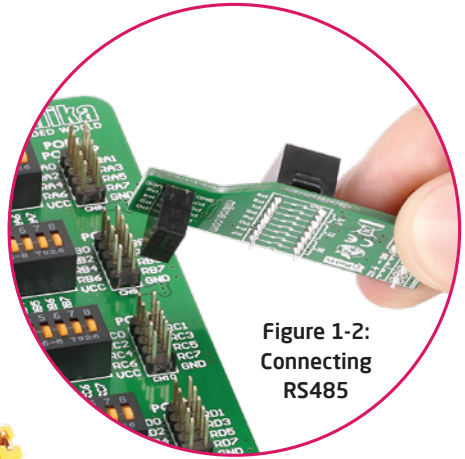


Figure 1-2:
Connecting RS485

RS485 is designed for connection with 2x5 male headers on development system port's via 2x5 female header on accessory board. Every pin on 2x5 female header is marked so for proper orientation just compare marks between accessory board and development system.

2. DIP switch settings

In order to connect RS485 to different development system it is necessary to make settings on DIP switch SW1. Every pin on DIP switch SW1 is connected to different pin of 2x5 female header. In table 1 is given list which switch on DIP switch SW1 should be turned ON for different development system.

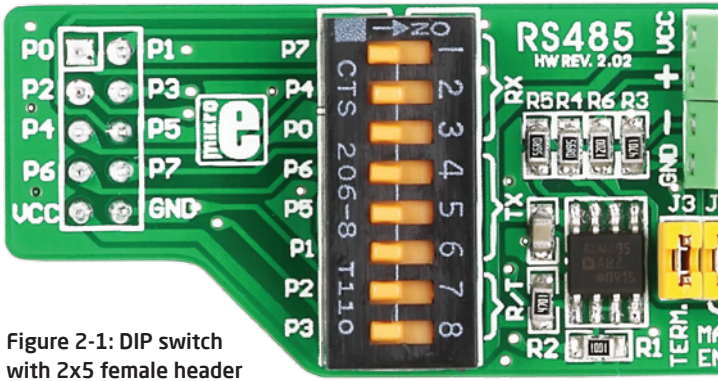


Figure 2-1: DIP switch with 2x5 female header

Table 1

Development system:	Turn ON switch number:	Pin on female 2x5 header:	Pin function:
EasyAVR, BIGAVR, Easy8051, BIG 8051	3	P0	RX
EasyAVR, BIGAVR, Easy8051, BIG 8051	6	P1	TX
BIGdsPIC, dsPIC PRO, EasydsPIC	2	P4	RX
BIGdsPIC, dsPIC PRO, EasydsPIC	5	P5	TX
EasyPIC, BIGPIC	4	P6	TX
EasyPIC, BIGPIC	1	P7	RX
R/T lines are defined in user program.	7	P2	R/T
	8	P3	R/T

3. Connecting RS485 with other RS485 devices

Figure 3-1: RS485 connected with other device via wire

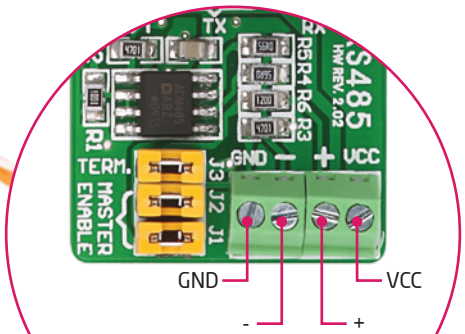
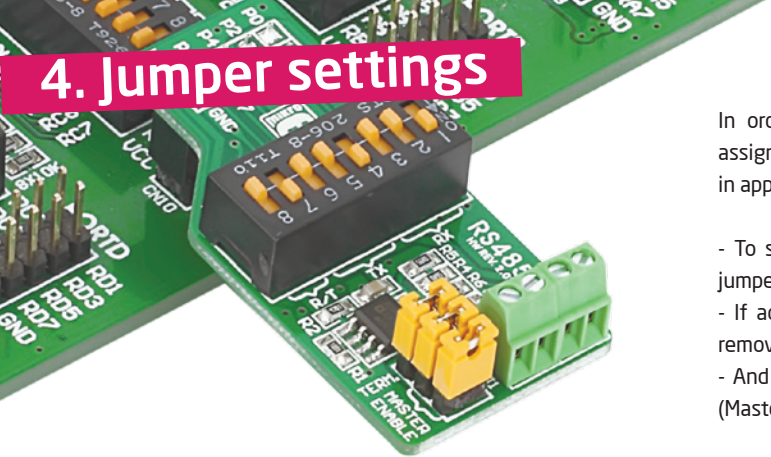


Figure 3-2: RS485 screw terminal pinout

In order to connect RS485 accessory board with other RS485 devices on a network it is necessary to provide twisted wires or shielded cable which is good choice if cable goes thru electrically noisy environment.

4. Jumper settings



In order to determine which node in RS485 network will be assigned to RS485 accessory board it is necessary to set jumpers in appropriate position.

- To set accessory board to first node in RS485 network place jumpers J1, J2 and J3 (Master and Term. jumpers are placed);
- If accessory board is somewhere between first and last node remove all jumpers (Master and Term. are off); and
- And to place accessory board to last node just place jumper J1 (Master off and Term. is placed).

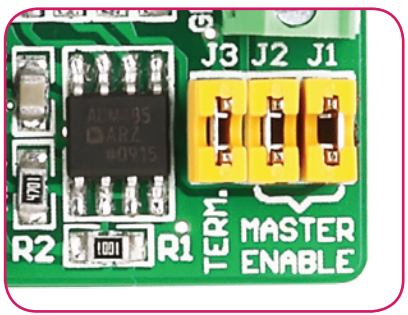


Figure 4-1: First node

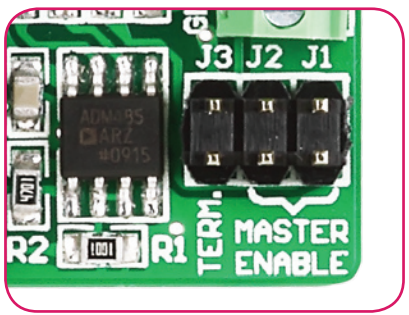


Figure 4-2: Node between first and last

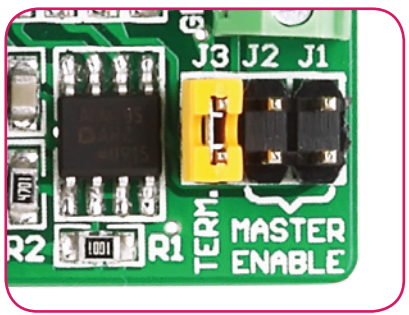


Figure 4-3: Last node

5. Schematic

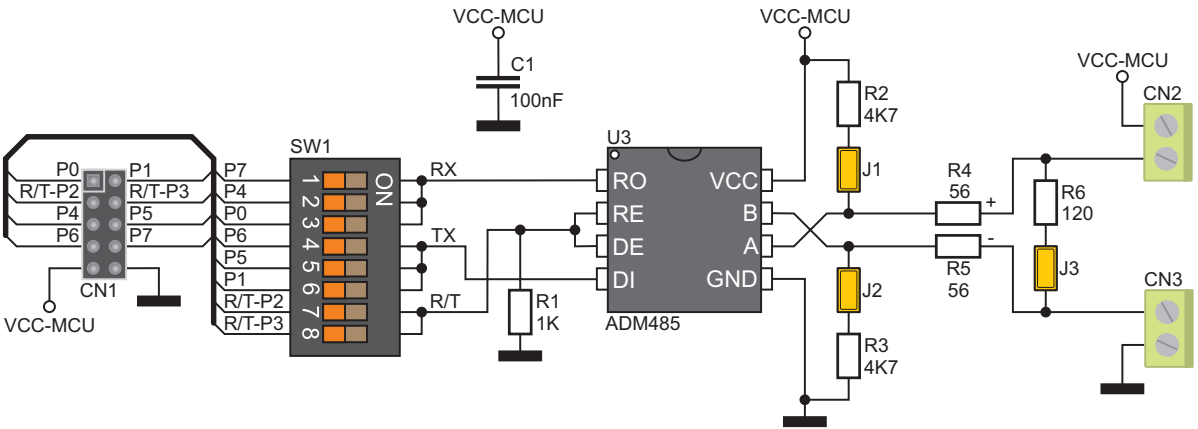


Figure 5-1: Connection schematic

6. Dimensions

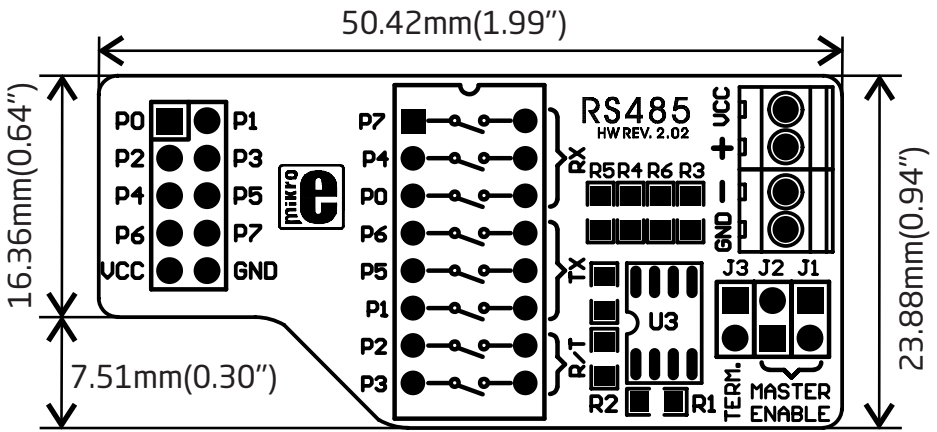


Figure 6-1: Dimensions

Notes:

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