

Re: RS485 is bidirectional does it mean it is full duplex?

Re: RS485 is bidirectional does it mean it is full duplex?

Source: <http://coding.derkeiler.com/Archive/General/comp.arch.embedded/2005-06/msg00709.html>

- *From:* Grant Edwards <grante@xxxxxxxx>
 - *Date:* Thu, 16 Jun 2005 16:54:53 -0000
-

On 2005-06-16, kunil <kunilkuda@xxxxxxxx> wrote:

- > May I summary this ?
- >
- > I think RS485 problem is 2 :
- > *) Noise over long distance cable and
- > *) Faulty data because of different node voltage reference
- >
- > To prevent noise over long distance cable, we can earth one side of the
- > cable shield (refer to Ott, Henry, Noise Reduction Techniques in
- > Electronic Systems).
- >
- > To prevent faulty data because of different node voltage, we can use
- > common line.

Yes.

- > But since RS485 is a differential mode protocol, we can use
- > either A or B line as our common line.

I don't see how you can use A or B as a "common" line.

- > However, if we connect using this fashion, when the master is
- > in the idle mode, there will be floating voltage between A or
- > B line (since nobody is driving the bus). Therefore, we
- > connect pull-up/pull-down resistors in the A and B line (to
- > give at least definite voltage level when nobody's driving the
- > bus).

What happens when nobody is driving the bus is a (mostly) different issue. Usually solved by pulling one line to the reference/common node and the other to 5V (with respect to the reference node).

The reference node connection between the two ends is required to keep the A/B signal values being output by the transmitter within the common-mode voltage range spec for the receiver.

- > To make this "definite voltage level" same at the receiver /

Re: RS485 is bidirectional does it mean it is full duplex?

Re: RS485 is bidirectional does it mean it is full duplex?

- > transceiver point, we need to earth their voltage reference
- > node at the both side.

You don't need to earth either one, as long as the transmitter/receiver reference nodes at the two ends are tied together.

—

Grant Edwards grante Yow! Bo Derek ruined at my life!
visi.com

• **References:**

- ◆ **RS485 is bidirectional does it mean it is full duplex?**
◇ From: Swizi
 - ◆ **Re: RS485 is bidirectional does it mean it is full duplex?**
◇ From: Tim Mitchell
 - ◆ **Re: RS485 is bidirectional does it mean it is full duplex?**
◇ From: Steve at fivetrees
 - ◆ **Re: RS485 is bidirectional does it mean it is full duplex?**
◇ From: Floyd L. Davidson
 - ◆ **Re: RS485 is bidirectional does it mean it is full duplex?**
◇ From: Grant Edwards
 - ◆ **Re: RS485 is bidirectional does it mean it is full duplex?**
◇ From: Floyd L. Davidson
 - ◆ **Re: RS485 is bidirectional does it mean it is full duplex?**
◇ From: Grant Edwards
 - ◆ **Re: RS485 is bidirectional does it mean it is full duplex?**
◇ From: Floyd L. Davidson
 - ◆ **Re: RS485 is bidirectional does it mean it is full duplex?**
◇ From: Grant Edwards
 - ◆ **Re: RS485 is bidirectional does it mean it is full duplex?**
◇ From: kunil
- Prev by Date: **BGA Rework/Prototype Placement Anyone?**
 - Next by Date: **Re: Idea exploration – Image stabilization by means of software.**
 - Previous by thread: **Re: RS485 is bidirectional does it mean it is full duplex?**
 - Next by thread: **Re: RS485 is bidirectional does it mean it is full duplex?**
 - Index(es):
 - ◆ **Date**
 - ◆ **Thread**