

Sipex Part: SP3070

Date: June 2, 2006

Question:

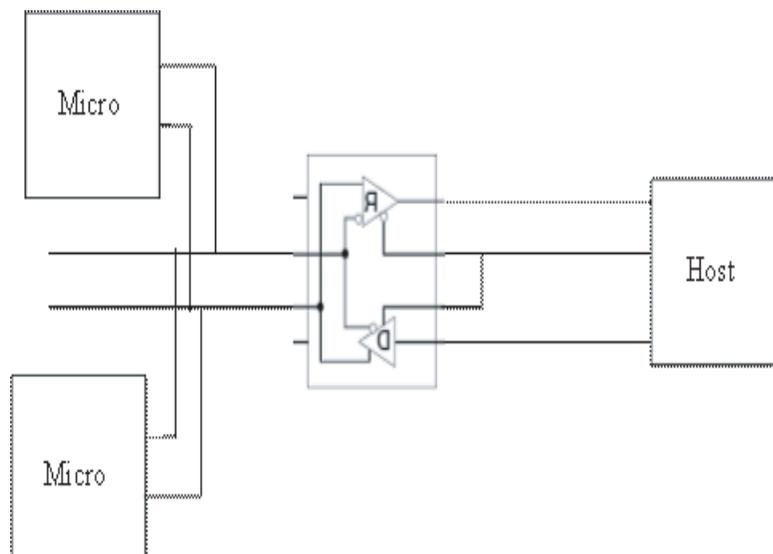
In a PCB design with several local microcontrollers on it, the customer wants them all to communicate with a host PC via RS-485. Can just one driver/receiver pair be used for several controllers? We know they will each need their own address and only one can transmit at a time. The preference is that since several of these PCBs will be in an enclosure, the customer would like each PCB to be a node instead of each microcontroller.

Answer:

Yes, this is possible using one 485 transceiver. The microcontrollers will have to be addressable and have tri-state outputs. The 485 device can be controlled by the host via the DE/RE pin. The micros will have to be in either receiving mode or tri-state mode when the 485 transceiver is transmitting data. When the host transmits it will have to send an address to the specific micro. If any micro transmits the transceiver will have to be in receiving mode and all other micros will have to be in receive or tri-state. So the host would have to initiate this sequence by addressing the micro first then switch the transceiver to receive.

The half duplex system would have a bus with one transceiver and multiple microcontrollers all tied to the bus. For 5V systems the SP485 family can be used. For 3V systems the SP3070 family can be used. The require speed will determine the part number. The 3078 part runs up to speeds of 16Mbps.

Care must be taken to assure the transceiver can drive the multiple micros in RX mode.



Question:

Do the SP3486 and SP3488 RS-485 Line Driver/Receivers meet or exceed the requirements of ANSI TIA/EIA-485-A TYPE HVD10 operating at 3.3V VCC?

Answer:

The SP3486 and SP3488 meet or exceed all of the ANSI TIA/EIA-485-A. The signal rate is guaranteed minimum 10Mbps so not HVD10 speed. With the SP3486/87 family going obsolete, we recommend the SP3070 family operating at a minimum 16Mbps but only 1 RX and 1 TX per device.