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In this next video we test the solution using a logic analyzer.

Students in the edX class may purchase their own Analog Discovery logic analyzer/scope at <http://www.digilentinc.com> (<http://www.digilentinc.com/Products/Detail.cfm?Prod=ANALOG-DISCOVERY>) for \$99 plus shipping. This hardware debugging tool is not required for this class, but we love ours a lot. When purchasing the Analog Discovery identify your school as edX and your class as UT.6.01x. If you have any questions about the Analog Discovery logic analyzer/scope please contact Digilent at awong@digilentinc.com.

VIDEO 11.5BLA. LOGIC ANALYZER USED AS A NETWORK SNIFFER

Help

C11 5b Logic Analyzer

YouTube



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DR JONATHAN VALVANO: So as we saw from last chapter, the Logic Analyzer is a non-intrusive hardware debugging instrument. And I've connected the Logic Analyzer to the UART system, connecting one wire, channel zero, from the signal from A to B, and channel one from the transmit line from B to A. And we're going to see, that if I select a pattern-- like if I want to send the color Red-- I will then push the send button. And over here on the Logic Analyzer, we see that this is the UART pattern which was sent from B to A. Let's send a different color. Let's send Green.

And there is the Green pattern.

The signal is transmitted in serial.

And we have the start bit, bit zero, bit one, bit two, bit three, bit four,

five, six, and seven.

And right here is the stop bit.

So we can see voltage versus time as our signal is transmitted.

And I have it triggered on the falling edge, which

is the idle to start the transition.

So if I send a Blue, we can see that the pattern changes.

Now if I switch the Logic Analyzer to trigger on the falling

edge of the other one, so now we have the falling edge of the A to B.

And over here, if I send a Red, we see that the A to B signal has the pattern.

Help

We put all the pieces together and demonstate the **Chat Tool**.

VIDEO 11.5C. DEMONSTRATION OF THE CHAT TOOL



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DR JONATHAN VALVANO: So as we saw from last chapter,

the Logic Analyzer is a non-intrusive hardware debugging instrument.

And I've connected the Logic Analyzer to the UART system,

connecting one wire, channel zero, from the signal from A to B,

and channel one from the transmit line from B to A. And we're going to see,

that if I select a pattern-- like if I want to send the color Red--

I will then push the send button.

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And over here on the Logic Analyzer, we see

that this is the UART pattern which was sent

from B to A. Let's send a different color.

Let's send Green.

And there is the Green pattern.

The signal is transmitted in serial.

And we have the start bit, bit zero, bit one, bit two, bit three, bit four,

five, six, and seven.

And right here is the stop bit.

So we can see voltage versus time as our signal is transmitted.

And I have it triggered on the falling edge, which

is the idle to start the transition.

So if I send a Blue, we can see that the pattern changes

Help

Full disclosure: a serial port without hardware drivers will operate over a distance of only a few meters. In actuality, the professors were in the same room while this video was taped.



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