

## Re: Telephone : Checking for "RTS"

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- *From:* John Fields <jfields@xxxxxxxxxxxxxxxxxxxxxx>
  - *Date:* Fri, 14 Apr 2006 15:54:03 -0500
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On Fri, 14 Apr 2006 14:25:53 +0200, "R.Wieser"  
<address@xxxxxxxxxxxx> wrote:

Hello All,

I'm currently trying to build a Caller-ID (in the Netherlands, meaning the phone-company uses DTMF to send the CLID). Currently the detecting of the DTMF is reliable.

What I'm looking for is a method to check for the polarity-swap between the A and B lines, which precedes the CLID-sequence (and closes a(n attempted) connection).

I can just link an opamp to the A-B lines, but that would cause a direct connection between my experiment (and the computer that is linked to it) and the phone-line. Next to that not being allowed by our national phone-company (no possible path to ground should exist), it also endangers my electronics, as they are connected to ground (and phone-lines could be floating at several tens-of-volts above it).

Another problem is that the resistance of the whole voltage-measuring circuit should be over a Meg, preferably even larger (again, mandated by the phone-companies specs).

As I see it I have little choice : It looks like I have to create a separate power-supply, not connected to anything, but for the opamp monitoring the phone-lines. The result should then be transferred to the rest of the circuit by an opto-coupler.

In short, what I need :

A method to detect a polarity-change between the A and B lines, with no electrical connection to the main-circuit. The time between the change of polarity and the actual signalling of it should be no more than about 200 mSec (leaves me 50 mSec to respond to it :-). An added plus would be if I could ask for the current polarity of the line.

Any hints, tips, tricks or other suggestions are appreciated. An URL to some already existing schematics that solve the problem would be great.

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I don't know what you mean by the "A and B" lines, but if it's like tip and ring is over here, why not connect the IRLEDs from two optocouplers in anti-parallel and connect that set in series with either A or B?

That way, one or the other of transistors associated with the IRLEDs will be turned on and will give you polarity information while being completely electrically isolated from the phone line.

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John Fields  
Professional Circuit Designer  
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