A couple of meters can find shorts in pc gate inputs

Why remove integrated circuits or, worse, cut etched connections from a printed-circuit card when trying to determine which of a number of paralleled gate inputs has a short to ground? **It's faster and nondestructive if you use a volt-ohmmeter and digital voltmeter to measure the small voltage drop associated with the short,** says Martin Ewing of the California Institute of Technology in Pasadena, Calif. (An ohmmeter alone won't do, of course, because of the low impedances involved.)

Set a volt-ohmmeter, such as the Simpson 260, to its R × 1 scale, and connect it between the node in question and ground, providing a constant current of about 100 milliamperes. Then use the DVM (say, an HP3476) in its millivolt range to probe the etched wiring and pinpoint the defective gate input. **You simply note the location of increased voltage drop brought about by high current through the portion of the etched wiring adjacent to the shorted gate.** Typical etched connections produce a voltage drop of about 1 mv per inch with these currents, so useful results can also be obtained with partial shorts up to nearly 100 ohms.