

MUSIC VISION CORRECTIONS

An error appeared in the parts placement diagram (Fig. 10) of the article, "Music Vision" (Electronics Now, November 1995). The label for resistor R59 was incorrectly placed; It appeared as an unlabeled jumper located below R60. In addition, the solder-side of the PC board was reversed in the X-ray view, Fig. 10. The corrected version is shown below.—Editor

TELCO IN A BOX CORRECTIONS

I spotted an error in the article, "Telco in a Box" (Electronics Now, September 1995), and a corrected schematic was published. Since then, I have found two other errors. First, resistors R1 and R2 should be at least one-watt resistors but two watts would be better if you want to make allowance for a telephone with an internal short circuit.

Second, the author stated that the telephone company's ring signal pulses "the 50-volt DC line voltage on and off at about 20 Hz." I have found that the ring voltage is much higher than that, and available ring generators provide a much higher voltage. For example, the JEC TECH RG-1 ("Phone Line Simulator," Electronics Now, August 1993) has an output of about 85 volts at 20 Hz. The output of the telephone ringing generator module, No. 56-374, from Hosfelt Electronics is 180 volts peak-to-peak at 20 Hz.

Most telephone equipment will respond to a 60-Hz ring signal. I plan to use a second power transformer, rated for either 24 or 36 volts, with the secondary turns in

series with T1, to give a ring voltage of 50 or 60 volts. I still like the "Telco in a Box" because it is a simple, useful circuit. I have already located defects in several telephones with the breadboarded test circuits I have built.

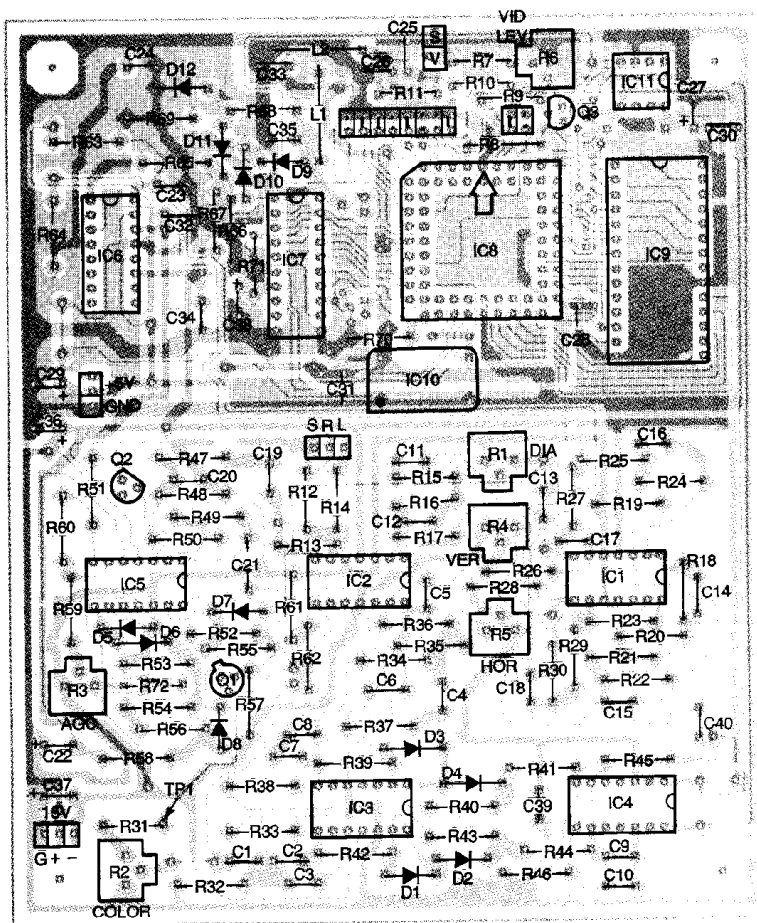
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When the November "Letters" column mentioned that several eagle-eyed readers had found an error in the "Telco in a Box" schematic, I assumed someone else would have caught another error in

the circuit.

The standard for telephone connections states that the red ("ring") lead is to have negative polarity with respect to the green ("tip") lead. The design shown does not follow this standard. Most recent RJ-11-based devices are designed so they are polarity insensitive. I assume that was done because, as simple as it might be, keeping the polarity correct is not always done. The article clearly illustrates that specific point.

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CORRECTED DIAGRAM for Music Vision article.

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However, there is still a lot of older serviceable telephone equipment around that can be tested with the "Telco in a Box." As shown, the circuit will indicate polarity sensitivity (primarily DTMF, or AT&T's Touch Tone) to be defective; they will work but will not produce any DTMF. There are DC-operated circuits that depend on the loop current for power. Thus, reversing the polarity is like putting batteries in a radio with their positive and negative terminals reversed.

All that is required to make a telephone polarity insensitive is to design a diode-bridge circuit within the telephone in the tip and ring so that the positive and negative polarities will be correctly delivered to the circuitry, regardless of what the loop polarity is.

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