

movies and camcorder use. The cable networks can ignore the FCC. I'll be an early buyer, because I have no need for network-broadcast garbage anyway. I rent video movies.

NORMAN M. HILL
Bellevue, WA

AMPLIFIED SPEAKER MODIFICATIONS

I enjoyed Gary McClellan's "Amplified Speaker" article, which ap-

peared in the September 1988 issue of **Radio-Electronics**. I built two of the speakers, using the exact parts that were specified in the Parts List. Both units performed as suggested in the check-out remarks at the end of the article. However, there's a problem present in both units that I'm hoping you can help me out with.

After turning the power switch on, it is necessary to turn the loudness potentiometer (R2) one-third

to one-half a rotation before getting any volume. When the volume control is turned fully up, I get a moderate amount of sound—approximately half the audio that I get from a 5-watt amplifier that I've had for some time. Is there some slight change I can make that would put more audio into the circuit that would influence the volume potentiometer during the first one-third rotation? Could R1, or R12, or even R10 be reduced for more input to Pin 2 of IC1? Or, perhaps the one-third turn is normal? Not having experience with IC amps, I hesitate to make changes on my own.

T.E. DEWEY
Caney, KS



Shown here:
Model SP100
Switchable 1X-10X **\$43.**

TPI Probes Last Longer, Cost Less

Unique flexible cable and superior strain relief give longer life and easier, more comfortable handling

Order from these distributors:

- | | |
|-------------------------|----------------------------|
| • ACTIVE | • JENSEN TOOLS |
| • ALLAN CRAWFORD ASSOC. | • JOSEPH ELECTRONICS |
| • ALLIED ELECTRONICS | • MARSHALL |
| • BCS ELECTRONICS | • MC MASTER-CARR |
| • CALCOTRON | • OLIVE ELECTRONICS |
| • CHELSEA ELECTRONICS | • RADAR ELECTRIC CO. |
| • CMI METERMASTER | • RS ELECTRONICS |
| • CONTACT EAST | • SOUTHEASTERN ELECTRONICS |
| • EIL INSTRUMENTS | • SPECIALIZED PRODUCTS CO. |
| • ELECTRA TEST | • TECHNI-TOOL |
| • ELECTRONIC PARTS CO. | • WESTCON INC. |
| • ELECTROTEX | • WM. B. ALLEN |
| • FAIRMONT | |

**TEST
PROBES, INC.**



9178 Brown Deer Road, San Diego, CA 92121
Call Toll Free for information and free catalog:
1-800-368-5719
1-800-643-0382 in CA

CIRCLE NO. 123 ON INQUIRY CARD

There are a few things that you can do to improve the sound level. If you think there is a low-volume problem, check the audio-input level, speaker system, and amplifier circuitry.

This unit is intended for input levels above 150 mV, as provided by tuners, tape decks, etc. If your level is less, there are two things you can do. First, connect a 22-µF electrolytic capacitor across R5. That boosts preamp gain a bit. For more gain, build an amplifier and connect it between the line and the amplifier's volume control. Duplicate the Q1 circuitry from C3 through R4, as shown on the schematic drawing, and power it from D1. With that setup, a dynamic microphone should drive the amplifier to full volume.

The speaker system itself is as important as the amplifier. If you use a low-efficiency unit, the volume will be low. I use a KLH model 23 (8-inch woofer, 2½-inch tweeter), and the volume is enough to drive most reasonable-minded people from my workshop. The sound quality is also quite excellent.

As for the amplifier, your volume-control action is characteristic for the modified log-taper potentiometer specified. If you don't like it, substitute a 100K linear-taper pot, leaving out C2-R1. I guarantee you will be startled by the difference!

Before modifying the circuitry, make sure that all voltages are present and that there is about 5

volts on the collector of Q1. Also, turn up the volume and measure the voltage across C23. If it sags below 11 volts on the audio peaks, get a transformer with more current capacity. Understand that a small transformer cuts power output drastically!

And, finally, to answer your questions on the power-amp IC, gain is set internally and can't be changed by varying parts values.—
GARY McCLELLAN