

# Big sound from tiny circuits

# Pro audio giant Mackie relies on small test probes and connectors to ensure quality

Whether it's live music in a club or a huge stadium concert, there's a good chance you'll find Mackie products there.

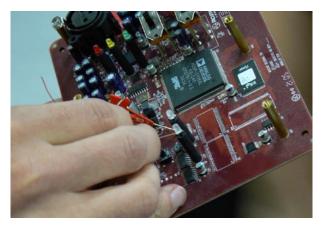
Mackie is a worldwide leader in professional audio products-from loudspeakers and mixing consoles to studio and recording equipment. Based in Woodinville, Wash., Mackie is part of LOUD Technologies, one of the world's largest pro audio and music products companies. Its world-recognized brands include Alvarez, Ampeg, Crate, EAW, Knilling, Mackie, SIA and TAPCO. These companies produce a wide range of digital recording products, loudspeakers, commercial audio systems, audio and music software, guitars, guitar and bass amplifiers, and orchestral string instruments.

Professional musicians buy Mackie products for the exceptional sound quality and reliability that come from the company's commitment to superior engineering and quality control. In the course of testing products, Mackie engineers rely on a variety of leads, probes and connectors.

### A bit of a pain

When testing or troubleshooting sound systems from a user's perspective, Mackie engineers use XLR and 1/4" phone plug connectors to simulate the conditions a musician would face. If there's a problem that lies deeper within the system, it generally leads to the tiny surface mount devices (SMD) and the circuit boards that run the system.

"In the electronics, getting probes on things is a bit of a pain," said Mackie EMC Engineer Glen Tennison. "When you get near a converter to test the audio, trying to get two probes on two adjacent pins can be tricky. Sometimes I have to attach leads on them, but I don't want to have to solder a lead for what I'm doing. When you have to solder a test lead, it takes a significant amount of time."



## **Micro SMD Grabbers**

In response to electronic designs getting smaller and smaller, Pomona developed Micro SMD Grabber test clips. Designed for easy, secure attachment to SMD chips with pitches down to 0.008 inches (0.20mm), these small clips allow attachment in tight spaces. The clip's insulated tips minimize shorting on adjacent pins and the gold plating is ideal for low resistance connections. Paired with a holding rod, these clips can be lined up for reliable side-by-side measurements.

"The great thing about the Micro SMD Grabbers is I can get them on and they stay on," Tennison said.

## The big thing is reliability

Mackie engineers rely on Pomona products because the company offers a wide range of reliable, high-quality leads, probes and connectors that give them easy access to even the smallest wires.

"With any adapter or connector the big thing is reliability because the last thing you want to do is switch gears, go to something else, hook something up and then spend a good portion of your time troubleshooting what could be a bad connector," Tennison said. "You want to rely on the connectors when you hook them up. You want them to last and you want them to work making connections."

Mackie is able to create the big sound it's famous for because of its passion for excellence—a passion that Pomona products help them achieve.



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