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## Who is Austin's most innovative tech company?

Austin Business Journal - September 14, 2007

### STORY IMAGES



We need your help in choosing the most innovative technology ideas in Central Texas. Our judges have narrowed the field to 32 finalists and now -- for the first time -- the power is in your hands. We will feature a different group of four finalists each week, and you can vote for your favorite in that group each week. You can vote for one of the finalists or all four -- the choice is yours. The winners will be announced November 29 at an awards breakfast and in our Nov. 30 issue.

The first group of finalists are featured below:

#### Jon Mayes

Applied Physical Electronics LC

**WEB:** [www.apelc.com](http://www.apelc.com)

**INNOVATION:** Anti-IED technology

#### Dale Mischynski

Monebo Technologies

**WEB:** [www.monebo.com](http://www.monebo.com)

**INNOVATION:** CardioBelt Electrode System

#### Mitch Medford

RF Code

**WEB:** [www.rfcode.com](http://www.rfcode.com)

**INNOVATION:** M220 Mobile RFID Reader

#### Jim Pladmondon

Thumtronic

**WEB:** [www.thummer.com](http://www.thummer.com)

**INNOVATION:** Thummer

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#### What is it?

**Applied Physical:** APELC is developing technology for addressing terrorist activities, such as attacks using Improvised Explosive Devices (IEDs), with a compact, high-powered radio-frequency source that disrupts electronic systems without damage to humans or infrastructure.

**Monebo:** This system allows patients to easily run electrocardiograms and wirelessly transmit them to a health care provider.

**RF Code:** This device will allow RF Code's award-winning active RFID technology to be used to monitor and inventory critical enterprise assets that are valuable, loss-prone or that contain sensitive information (such as computers).

**Thumtronic:** Thumtronic has developed a new system for the display and control of musical information, which makes music easier to teach, learn and play. In addition, the Thummer is a new electronic musical instrument that is easier to learn and more emotionally expressive than many others.

#### Why is it necessary?

**Applied Physical:** APELC's device could suppress IED use in Iraq, be used to stop high-speed car chases, and have a significant impact on drug trafficking by stopping cargo vehicles.

**Monebo:** The CardioBelt is designed for ease of use and to allow health care professionals to quickly obtain accurate information on their patients' ECGs. It is worn across the chest with no patient preparation, sticky electrodes or cables, eliminating the need for a trained health professional to be physically present. The patient simply puts the belt on and pushes one button, and the CardioBelt connects wirelessly to a communication device, leaving the patient with total mobility.

**RF Code:** RF Code produces active Radio Frequency Identification systems using beacon tags that periodically broadcast their status using encoded radio transmissions. Fixed (non-mobile) readers, such as our M200 model, are commonly used to monitor tag activity in predefined zonal coverage areas. By introducing a mobile reader, we will enable many new asset-tracking solutions to be deployed without the need for cost-prohibitive wireless infrastructure.

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**Thumtronics:** Nearly everyone would like to be able to play a musical instrument, understand music and be able to write an occasional song. Traditional musical instruments, notation and music theory make music so hard to understand that 80 percent of music students fail -- yet this 20 percent success rate yields a \$30 billion music-making industry. Thumtronics' innovations could deliver an 80 percent success rate, growing the industry by \$90 billion and capturing most of that growth.

#### How does this idea differ from the competition?

**Applied Physical:** Other companies have developed systems that can affect nearby electronics but often wind up damaging the user's own electronic systems. Furthermore, the host vehicle has to be customized to carry these other systems, and in military applications they are so large that they are targets themselves.

**Monebo:** The system provides easy-to-use yet powerful ECG monitoring tools, and improves efficiency in handling multiple patients. The system provides a cost-effective and patient-liberating solution to cardiac electrical monitoring, making it an excellent alternative for patients in a home-care or distance-care setting.

**RF Code:** Previous mobile readers in the active RFID industry have only worked in expensive industrial handheld devices that feature a PC card slot. The M220 is designed to work with almost any computer, handheld or smartphone.

**Thumtronics:** Traditional musical instruments, notation and theory are based on the notion of pitch, in which a given note corresponds to a specific frequency of vibration. But music theory is not based on pitch; it is based on the relationships between pitches, known as intervals. Thumtronics' innovations shift the emphasis to intervals, where it belongs, thereby exposing music's underlying structure, making music simpler to teach, learn and play.

#### Who is the target customer or client?

**Applied Physical:** The Department of Defense covets this technology to defeat IEDs in Iraq. The Department of Homeland Security will use this technology to defend our borders and mitigate terrorist activities on our soil, with such threats as suicide car bombers and the communication systems used in carrying out terrorist activities. Law enforcement officers can use this technology to safely end high-speed car chases.

**Monebo:** It will be integrated into the platform technologies of home health care and telemedicine equipment providers, in devices ranging from computers to cell phones, and will work in concert with other devices that monitor blood pressure, weight, glucose levels and oxygen saturation to provide physicians a more complete assessment of their patients' health.

**RF Code:** The most appropriate applications for our new M220 mobile reader involve tracking computers, medical equipment and other valuable mobile assets in sectors including health care, defense, manufacturing, information technology and homeland security.

**Thumtronics:** Initially, serious musical hobbyists. Later, nonmusical consumers -- either musical novices or people who have previously tried and failed to learn music using traditional means.

#### What are the barriers to success?

**Applied Physical:** APELC faces a very conservative market, and introducing a disruptive technology, while gaining acceptance for use, is a very ambitious goal.

**Monebo:** The key barrier is the slowness of adoption of new technologies within the health care space.

**RF Code:** Our challenge will be to prove that our dedicated closed-loop approach to tracking assets does not burden the corporate network with data from thousands of tagged assets, as Wi-Fi solutions tend to do.

**Thumtronics:** Thumtronics needs capital to bring the Thummer to market.

#### What are the chances for commercial success?

**Applied Physical:** APELC has obtained several Small Business Innovative Research contracts from the Department of Defense to develop key components for this technology. APELC is pursuing an exclusive teaming agreement with a prime defense contractor to help this technology enter the market.

**Monebo:** The company has received FDA clearance to market the CardioBelt Wireless ECG System. In July the company secured Series B financing. The undisclosed sum will be used to accelerate the product's commercialization. This round follows a \$500,000 grant from the Texas Emerging Technology Fund in October 2006.

**RF Code:** RF Code has won numerous awards for its 433-MHz active RFID platform, and we have now leveraged our best-of-breed 433-MHz technology and put it into a battery-powered, mobile form.

**Thumtronics:** Thumtronics' business model can be profitable at low sales volumes, scaling up to higher volumes without the need for high fixed overheads at any stage. Customers can be acquired

inexpensively, with a high lifetime value.

**Why is this idea the best?**

**Applied Physical:** Very simply, this innovation is the best for all the right reasons: this technology will save many lives threatened by IEDs and terrorism; it will enhance our abilities to protect our borders by helping mitigate the drug trafficking that threatens the lives of our children and our economy; and it will help end the dangerous high-speed car chases that so often end with disastrous results, effecting the lives of innocent bystanders.

**Monebo:** This system opens up the opportunity for the monitoring of heart patients using a widely understood test, the ECG. It yields improved health care, convenience for the patient and more efficient health care delivery.

**RF Code:** Since our active RFID tag transmissions are processed in realtime, the new reader will enable asset managers to quickly locate, monitor and manage shared assets. With market-specific software applications, almost any Bluetooth-enabled wireless device can be put into service as an asset-tracking terminal when paired with the M220 Mobile Reader.

**Thumtronics:** It combines Austin's local expertise in music and electronics to build a clean, green music-technology industry. Its success can benefit the Central Texas region by making Austin the world center for music-technology innovation, music education and new musical styles, with increased economic and cultural benefits for all.

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