

Expansive Acoustic Engineering Expertise

Mobile Speaker Design Capability

Our **Mobile Speakers** cutting edge voice-coil & diaphragm design result in:

- Minimal Total Harmonic Distortion (THD)
- Flat Frequency Response
- Custom Chambering and Porting
- Chamber Free Options



Diligent Diaphragm Design

Our **Round and Square Speakers** are designed with a variety of cutting-edge diaphragm materials, providing:

- Flat Frequency Response
- Lush stereo-sounding output
- Energy efficient decibel-to-wattage ratio
- Easy mounting onto PCBAs & pre-fabricated frames



CHALLENGE ELECTRONICS

We provide innovative audio, battery and wire assemblies to integrate either an **off-the-shelf or custom designed** part. Let us help determine what's perfect through **Free-of-Cost Design Consultations**.

Quality is Key

Our **Quality Control and Product Assurance** procedures ensure our components are designed in accordance with **globally compliant** operational guidelines and all relevant environmental standards.

Breakthrough Business

Our Sales Team is equipped with our interactive **Demo Sample Kit**, providing an **immersive, real-time audio** experience of over 60 of our most popular products.



CHALLENGE ELECTRONICS
INDICATORS • SOUND TRANSDUCERS • MICROPHONES • SPEAKERS • ASSEMBLIES



PRODUCT OVERVIEW

ENGINEERED
FOR EVERYONE

Tried-and-True Piezoelectric and Electromagnetic Components



Patented Product

Our Indicators are optimized to use our **Patented PinPoint Technology**, incorporating Sound Localization, the ability to locate a sound only through acoustics.



Indicators



Piezoelectric, Mechanical & Electromagnetic DC powered sounders with **well controlled, defined outputs** and options for Multi-Alarm Interfaces (MAI).



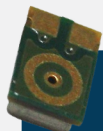
Sound Transducers

Piezoelectric & Electromagnetic **low cost and high performance** units with no internal circuitry to play any AC-powered tone.

Piezo-Elements



Ultra low cost & minimal footprint units which allow you to control all aspects of the design.



ECM & MEMS Microphones

Omnidirectional, Unidirectional & Noise Cancelling **precision-made** microphones innovated for new design applications.



CHAMBER ASSEMBLIES

Utilizing **innovative materials and speaker layouts** in all designs, providing:

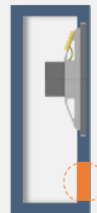
- ◆ Unique Acoustic Propagation Methods
- ◆ Maximum Desired Audio Output
- ◆ Minimal Chamber & Speaker Footprint



— Sealed —
Flattest Response &
Small Dimensional
Footprint



— Ported —
Low-Frequency
Boosting



— Passive
Radiator —
Low-Frequency Boosting
& Improved Dimensional
Footprint



— Aperiodic —
Smallest Dimensional
Footprint

Fully Customized Battery and Wire Assembly Solutions

Wire Assemblies

We provide premium RF and standard wire assemblies **tailored to your specifications**, combining **dedicated quality control** with the flexibility to meet diverse applications.



Battery Assemblies

We provide innovative materials & custom designs resulting in a **Rugged, Durable, and Lightweight** solution for all battery configurations, even reaching IP ratings.

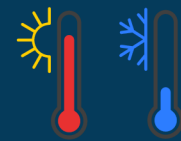


Built to Outlast

We provide **rugged and long-lasting products** many of which are rated up to Ingress Protection (IP) 68 ensuring our products function in:



Severe Weather
Conditions



Extreme
Temperatures



Waterproof
Applications