



accupre

custom power solutions

THE COMPLETE DESIGN, DEVELOPMENT & MANUFACTURING SERVICE
FROM ACCUTRONICS LTD



MEDICAL & HEALTHCARE



INDUSTRIAL



DEFENCE & SECURITY

DRIVEN BY RESEARCH & DEVELOPMENT

Accutronics is a leading independent design, development and manufacturing company for high-performance smart batteries and chargers with experience spanning over 40 years'.

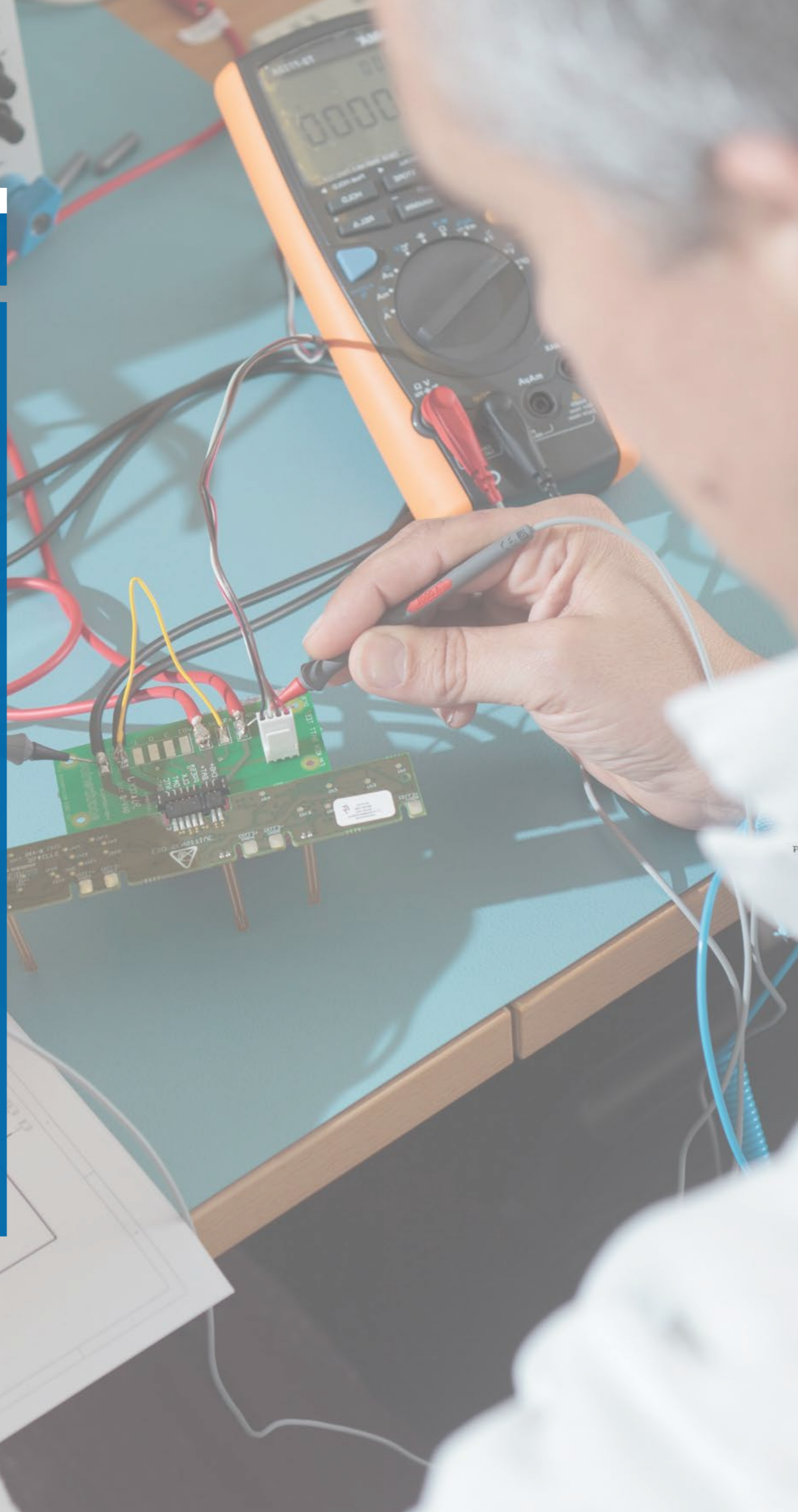
Our substantial Research & Development programme addresses future requirements of customers, creating robust, future-proofed power solutions suited to our clients' long product life cycles.

We harness the latest battery innovations for the benefit of OEMs with next-generation devices and maintain a dialogue with the device OEM R&D community – our R&D is focussed around your future requirements and challenges.

Accutronics won the prestigious Lombard Award for Innovation in Products & Processes.



Collecting the heavily contested Lombard Award for Innovation in Products and Process at the Manufacturing Excellence Awards



PROVIDING CHOICE

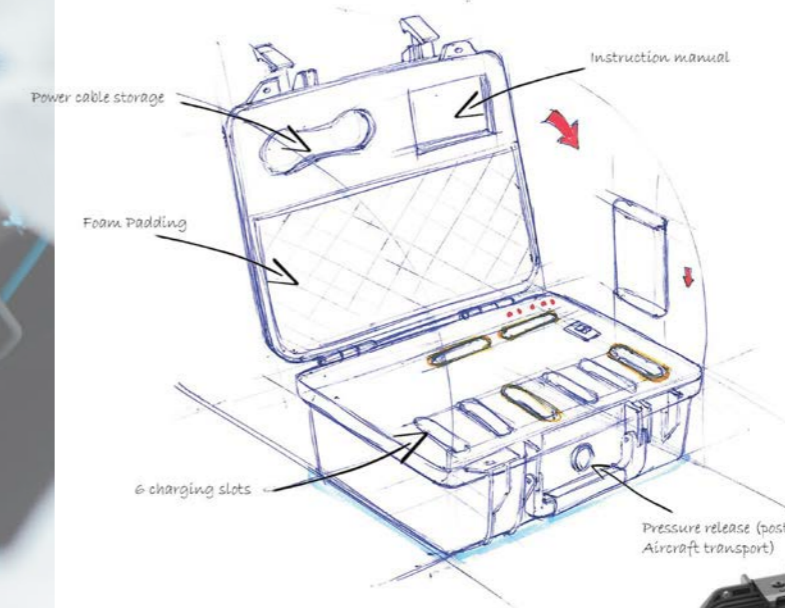
Original equipment manufacturers have differing power sourcing strategies and approach battery and charger procurement in different ways. This is why we strive to make the integration of a battery or charger as simple as possible by offering multiple development routes coupled with flexible commercial agreements.

For customers who want an off the shelf solution or who require minor customisation of an existing design our **entellion** range of batteries and chargers could be the solution. When complete freedom in design is required our **accupro** custom battery and charger design and manufacturing service integrates seamlessly into OEM device development programmes. Our well-proven project management processes ensure that custom solutions are delivered on time and on budget.

With **accupro** there's no need to compromise on product design, the battery and charger are designed in tandem with your device; weight, volume, functionality, materials and regulatory compliance are all optimised.

entellion
pre engineered power solutions

accupro
custom power solutions



FROM CONCEPT
TO COMPLETION



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ACCUPRO BATTERIES

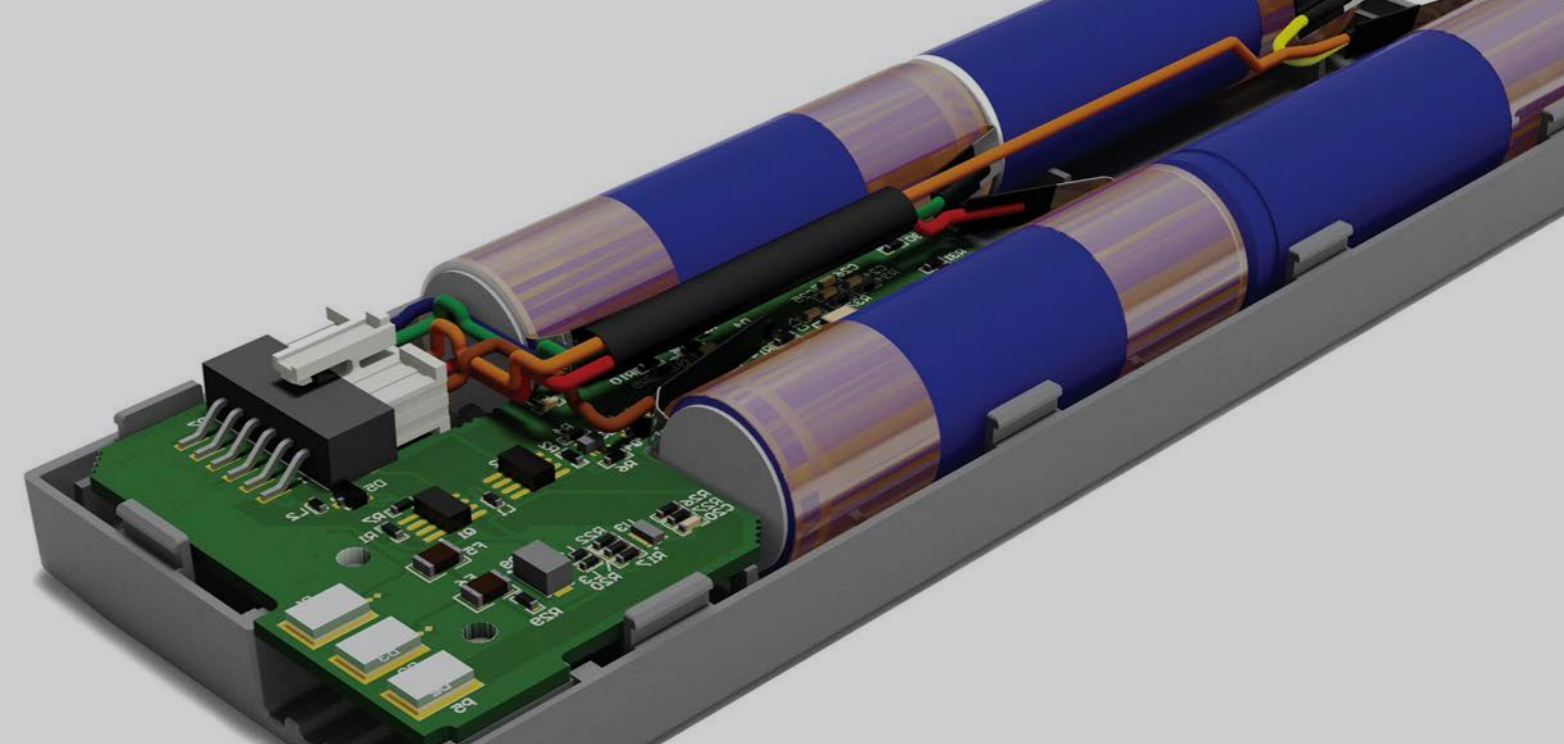
With a proven track record, Accutronics develops products that are both functional and stylish.

We work closely with you to understand how the battery will function in your device as well as in the workplace and, through creative and innovative design, create a solution that complements the workflow.

Batteries are developed, tested and produced 'under one roof', ensuring total consistency & single-point accountability.

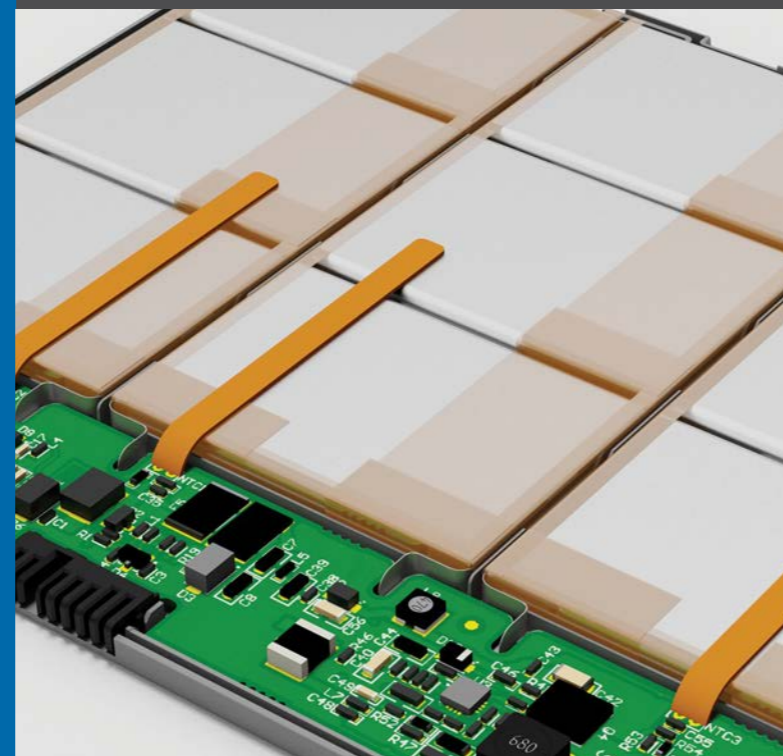
Highly trained and motivated assembly operators, dedicated assembly fixtures and our own purpose built test equipment ensures every single battery tested provides you with quality and peace of mind.

“
Simple operation, stylish design and outstanding reliability and safety are hallmarks of our products.”



For an initial consultation about our accupro battery design service please contact our sales team.

SALES & CUSTOMER SERVICES
Tel: +44 (0) 1782 566622
Email: sales@accutronics.co.uk
www.accutronics.com



STATE OF THE ART

CELL TECHNOLOGY

Accutronics work with the world's leading cell manufacturers to bring the latest rechargeable Lithium ion technologies to our OEM customers. We specialise in the design and manufacture of batteries utilising cylindrical, prismatic and pouch cell types across all of the major chemistries, including Lithium Ion Cobalt (LiCoO₂), Lithium Ion Nickel Manganese Cobalt (Li(NiMnCo)O₂), Lithium Iron Phosphate (LiFePO₄) and Nickel Metal Hydride (NiMH). Each cell type has its own performance attributes which we match against the required performance of the battery.

ROADMAPS

We work closely with the major cell manufacturers to understand their future technology and development plans. We ensure our customers benefit from the latest performance upgrades as they become available, as part of an ongoing process that we manage professionally and seamlessly.

FUEL GAUGING

A user must be able to rely on the runtime prediction made by their battery powered device - otherwise they will suffer from runtime anxiety - the worry that the battery energy may be exhausted before their work is completed. We use the very latest impedance tracking fuel gauges to provide highly accurate energy predictions, allowing users to fully realise the runtime capabilities of their battery powered device.

VISUAL STATE OF CHARGE INDICATION

Accutronics can equip batteries with LCD or LED displays that allow users to quickly identify how much charge remains in their battery - ideal for quickly differentiating state of charge when a user may have multiple batteries for their device.

ACTIVE PROTECTION

The safety of any battery system is paramount. Accutronics ensure safe operation by building layers of active electronic protection around the battery cells, ensuring they cannot be over charged, over discharged or overloaded. The cells are also protected against over temperature conditions. We follow industry best practise by incorporating secondary over-charge protection circuitry into our designs which allows the battery to permanently disable its operation if a potentially unsafe condition exists.

COMMUNICATION

Robust communications between battery, host device and charger are vital for reliable operation of any battery powered system. Accutronics specialise in the implementation of batteries that are fully compliant with the Smart Battery Specification (SBS), utilising System Management Bus (SMBs) communication. We also provide solutions based on I2C, HDQ and RS232 protocols.

CONNECTION

A robust electrical interface between battery, device and charger is critical if the system is to function correctly. Accutronics utilise either standard or custom connector solutions to ensure the battery meets specification and is convenient to use.

VALIDATION & CERTIFICATION

The performance of each battery design is fully validated as part of the development process. Fuel gauge accuracy, capacity, runtime, cycle life, environmental performance, ingress protection and mechanical integrity are all verified alongside mandatory testing for electromagnetic compatibility and transportation. We also certify batteries to international standards for performance and safety, including IEC62133 and UL2054.



ACCUPRO CHARGERS

We specialise in the development and manufacture of desktop, portable and embeddable battery chargers for medical, security and industrial applications. Our proven smart charging technologies allow batteries to be charged faster and more safely than conventional charger designs.

DESKTOP OR EMBEDDABLE

Desktop chargers are selected when batteries are removed from equipment for charging – usually in an office, hospital or industrial environment.

Embeddable chargers are PCB level solutions that customers can embed directly into the devices during manufacture.

SINGLE OR MULTI-BAY

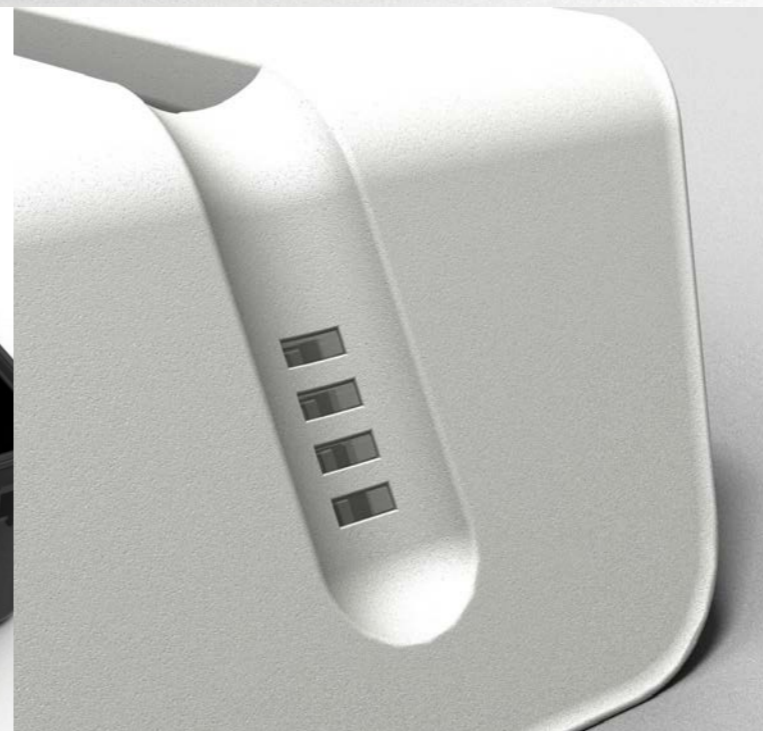
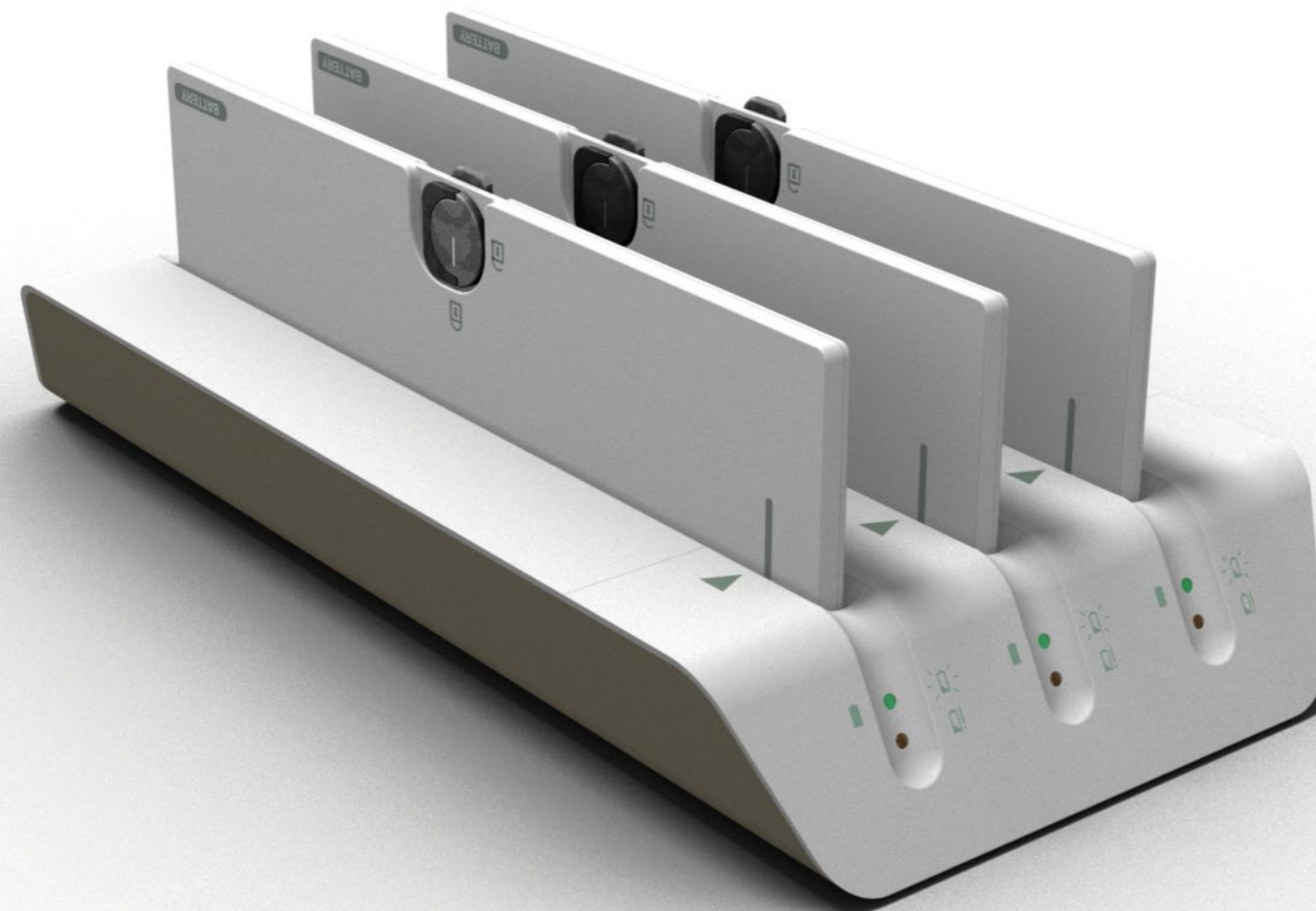
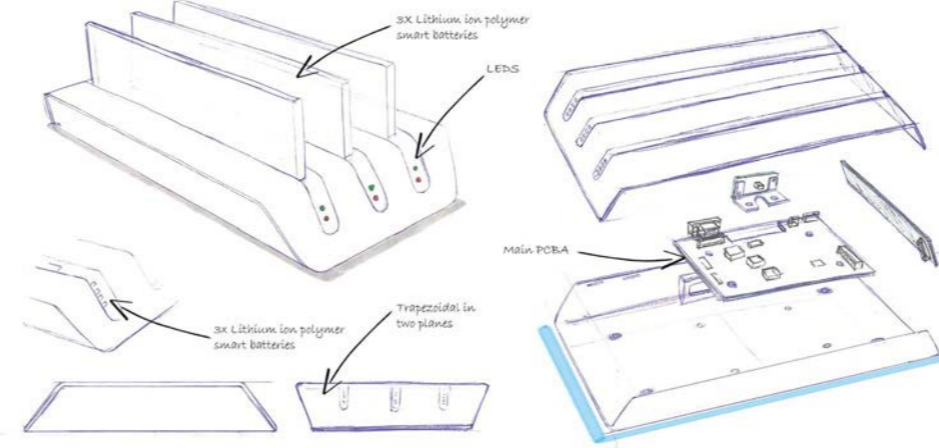
Single bay chargers offer a convenient method for charging individual batteries, whilst multi-bay allow for the rapid charging of many batteries in busy work environments. Our multi-bay chargers can include intelligent power distribution algorithms to minimise charging times, reducing device down time.

AESTHETIC DESIGN

Our in-house design team have a proven track record in designing chargers that are both functional and stylish to ensure the charger complements your battery and host device.



Our proven smart charging technologies allow batteries to be charged faster and more safely than conventional charger designs.



CUTTING EDGE

HOW SMART CHARGERS WORK

In conjunction with smart batteries they work to maximise safety, reduce charge time and extend product life. When a compatible smart battery is inserted into a smart charger the battery communicates its charging requirements, the charger responds by providing the voltage and current until the battery is fully charged. The battery may amend its charging criteria during charging if environmental conditions (e.g. temperature) change. A smart charger can choose to modify the charge regime but is never allowed to exceed the voltage or current requested by the battery.

CHEMISTRY INDEPENDENCE & FUTURE PROOFING

One of the main advantages of a smart charger is its ability to adapt to an unknown future. We design smart chargers to respond to the charge requests made by the battery, which means they can be used with batteries of different voltages, capacities, chemistry or manufacturer. Accutronics customers have peace of mind that their smart charger will be compatible with existing and future ranges of batteries – meaning fewer chargers are required and last longer in the field.

COMMUNICATION & AUTHENTICATION

Smart chargers can communicate with smart batteries operating either SMBus, I²C or HDQ interfaces. We can also deploy SHA-1 digital encryption and authentication between the battery and charger to ensure only approved batteries are used – batteries which fail the authentication test are rejected by the charger and will not be charged.

CALIBRATION

Smart chargers can include calibration functionality which ensures the battery fuel gauge is correctly aligned with the capability of the battery cells. Routine calibration of smart batteries ensures that host devices report runtime information correctly.

STATE OF HEALTH MONITORING

Accutronics smart chargers can perform diagnostic checks on batteries during the fuel gauge recalibration process. The charger can communicate the state of health to the user by means of an LED or LCD display so that the user can make an informed decision to use or replace their battery.

POWER SUPPLY

A choice of either internal or external power supplies is available. Internal supplies allow the charger to be connected to an AC supply via a standard IEC connection. External supplies allow the charger size and weight to be minimised as the power supply is either a desktop or wall mount unit.

REGULATORY CERTIFICATION

Accutronics chargers meet all regulatory requirements and may be qualified to IEC/UL60950-1 (Information Technology Equipment – Safety – Part 1: General Requirements) or IEC/UL60601-1 (Medical Electrical Equipment – Part 1: General requirements for basic safety and essential performance).

PROFESSIONAL DEVICE MARKETS

Accutronics serve OEMs worldwide in medical, industrial and defence markets creating high quality, high performance battery and charger solutions, custom designed to satisfy the most demanding application requirements.

For an initial consultation about our accupro battery design service please contact our sales team.

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MEDICAL & HEALTHCARE



WHEN POWER FAILURE IS NOT AN OPTION

When powering medical devices, performance, reliability and safety are the most critical aspects of any specification. This is why healthcare OEMs worldwide look to Accutronics when designing new battery powered medical equipment. Accutronics has a proven track record, delivering rechargeable batteries and chargers for applications as diverse as digital imaging, ventilators, anaesthesia, endoscopy, patient monitoring, cardio pulmonary care, oxygen concentration and aspiration.

Whether the battery is required to be the main power source, or a back-up supply, our experienced engineers work with your design team to ensure the complete power solution is brought in on time and within budget.

Our batteries and chargers undergo rigorous testing and evaluation and meet all current performance, safety and transportation standards, including the latest IEC standards which are mandatory requirements for medical devices.

As experts in the field of medical batteries, Accutronics offers our customers the latest Lithium-ion technology, integrated smart battery electronics and intelligent charging techniques which maximise runtime while reducing end customer intervention, allowing healthcare professionals to spend more time caring for their patients.



TEST & INSTRUMENTATION



RELIABILITY & ENDURANCE

When portable devices are required to operate without AC power, OEMs turn to Accutronics to provide battery and charger solutions that give equipment a real benefit over the competition. Our team of dedicated technical and commercial staff work diligently to understand challenges related to portable power and then create innovative battery and charger solutions to make the product function effortlessly.

Accutronics are experts in developing and manufacturing the rechargeable batteries that allow professional people to measure, calculate, interrogate, sample, monitor or communicate.

We have provided solutions for thousands of diverse industrial and portable applications, from oceanographic monitoring to ultrasonic flaw detectors, earthquake monitoring to test & instrumentation, industrial tables & computers to transmission and calibration instruments. All of which are custom designed and manufactured by Accutronics to meet our customers demanding needs.

Attention to detail is what sets us apart from our competitors.

Whatever your development budget and timescales, Accutronics provides a service to suit and delivers the solution.



Our in house team of electronic and mechanical specialists utilise the latest design techniques to ensure customers receive the most appropriate, cost effective and timely power solution for their demanding needs.



DEFENCE & SECURITY



POWERING THE MISSION

Accutronics excels in the defence and security arena, delivering safe, lightweight, ruggedised, high energy power solutions for a wide range of systems such as man-portable communications, covert airfield-landing lights, night vision goggles, rugged portable computers and critical server back-up; providing high performance and reliable power for the harshest of environments.

Defence contractors, OEMs and leading design houses trust Accutronics to think beyond conventional wisdom and produce a solution that will increase end-user benefit, with features such as lightweight Lithium-ion technology, smart battery functionality, ruggedised environmental proof design, integrated charge control and power harvesting capabilities.

We know that the qualification of military products is of paramount importance and manage this process in a methodical, timely manner to ensure the battery meets all specifications. Our in house team of electronic and mechanical specialists utilise the latest design techniques to ensure customers receive the most appropriate, cost effective and timely power solution for their demanding needs.



BETTER THAN EXPECTED RESULTS

The design experts at Accutronics strive to deliver better than expected results to maximise commercial value and optimise product performance.

Your customers demand reliable devices which is why we are totally committed to quality. The excellent field reliability of our products gives you guaranteed quality and peace of mind.

Our business is organised to fit our customers' expectations, providing a cradle-to-grave service from initial design concepts to aftermarket support.

OUR PHILOSOPHY

We seek to develop strategic long-term customer partnerships based on service excellence.

We strive to develop superior battery and charger solutions that deliver reliability, functionality, safety, performance and commercial value for our customers.

We are always open to customer needs, always willing to change, always determined to deliver.



Our multi-disciplined team work with you to ensure a smooth transition from initial concept to series production enabling you to get to market faster, within budget and with confidence. ”

⚙️ **CELL TECHNOLOGY**
THE HEART OF YOUR BATTERY SOLUTION

⚙️ **ELECTRICAL & ELECTRONIC DESIGN**
SAFETY AND PERFORMANCE

⚙️ **MECHANICAL DESIGN**
STRENGTH AND DURABILITY

⚙️ **REGULATORY & QUALIFICATION TESTING**
COMPLIANT & CORRECT

⚙️ **MANUFACTURING, QUALITY & TESTING**
RELIABILITY & PEACE OF MIND



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CUSTOMER VALUE

CUSTOMER SERVICE

What sets us apart is a culture that engages its people in delivering outstanding levels of customer service from initial concept through to series production.

We pride ourselves on delivering real commercial value by enhancing your product competitiveness, delivering aftermarket revenue for you and driving down your total acquisition costs.

TOTAL COST OF OWNERSHIP

Our customers include leading global OEMs, many of whom have single-sourced their custom batteries from us for many years – they understand the value we deliver:

- ⚙️ High product performance
- ⚙️ Delivering outstanding levels of customer service from initial concept through to series production
- ⚙️ In-house multi disciplined teams offer total end to end project management – improve quality, efficiency
- ⚙️ High product performance
- ⚙️ Quality products - low return rate
- ⚙️ Product safety
- ⚙️ Agency testing and approvals
- ⚙️ Customised pre production and post production testing
- ⚙️ UK based manufacturing process – low cost. ISO9001, ISO13485
- ⚙️ World class manufacturing processes
- ⚙️ Design and manufacturing under one roof - seamless teams – improved quality and efficiency
- ⚙️ Project delivery reliability, on time within budget
- ⚙️ Just in time product supply
- ⚙️ Long term commercial agreements
- ⚙️ Continuous improvement and lean manufacturing

DEDICATED & EXPERIENCED TEAMS

'WHOLE LIFE' SERVICE

Technical assistance is provided long after the product has been shipped as we understand that customers in professional markets have product life cycles measured in years or even decades.

We advise you about possible upgrades to your battery or charger in order to improve performance or reduce cost whilst minimising risk.



We design specifically for you and sell only to you – no unapproved specification changes; no aftermarket issues. ”

CUSTOMER RELATIONSHIPS

We are committed to developing strategic long term customer partnerships based on service excellence.

We aim to drive continuous improvement in overall service and keep customers up to date with new technologies through regular development meetings and technical reviews.

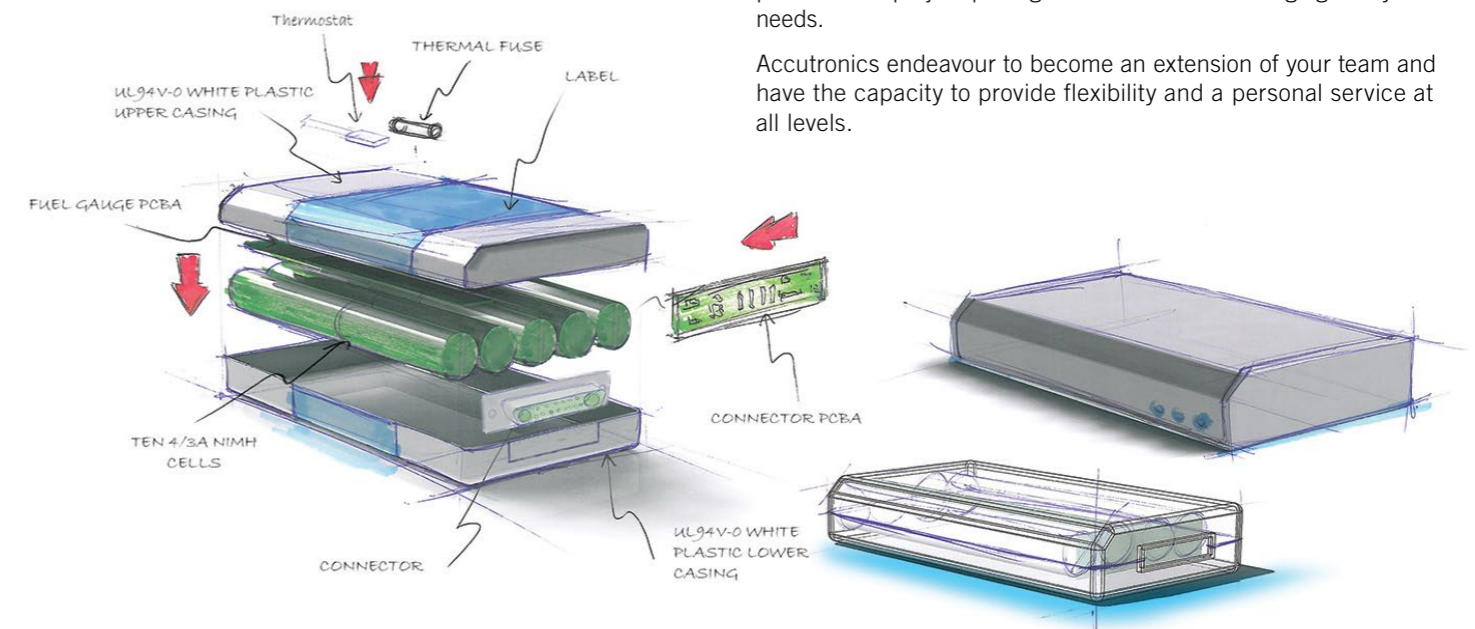
Working closely with our customers we have developed customer specific services that include:

- ⚙️ Vendor Managed Inventory
- ⚙️ Supplier Management
- ⚙️ Flexible shipping and ordering options

PERSONAL SERVICE

Experienced account managers, project managers, technical and customer service staff work closely with you throughout each phase of the project priding themselves on delivering against your needs.

Accutronics endeavour to become an extension of your team and have the capacity to provide flexibility and a personal service at all levels.





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