

# CREDIT CARD BATTERIES

COMPACT LITHIUM ION BATTERIES & CHARGERS  
FROM ACCUTRONICS

The logo for entellion features the word "entellion" in a bold, sans-serif font. The letters "entellion" are purple, while the final "n" is black and contains a white battery symbol. Below the main text, the tagline "pre engineered power solutions" is written in a smaller, grey, lowercase sans-serif font. The background of the logo area consists of several overlapping, wavy lines in shades of purple and blue, creating a sense of motion and energy.

**entellion**  
pre engineered power solutions

Entellion products are smart, innovative portable power products, designed to meet the emerging needs of feature-laden devices in professional markets. Created and manufactured by Accutronics, Entellion combines our expertise in custom OEM battery products with our understanding of professional OEM requirements and market trends. Entellion products are available off the shelf and can also be customised for your application, getting you to market quickly and confidently.

**entellion**  
pre engineered power solutions



# CREDIT CARD BATTERIES COMPACT LITHIUM ION BATTERIES

## THE POCKET-SIZED BATTERY SOLUTION FOR PROFESSIONAL PORTABLE ELECTRONIC DEVICES

Entellion credit card batteries have been developed by Accutronics in response to OEM (Original Equipment Manufacturer) demand for an off-the-shelf, compact, rechargeable Lithium Ion battery solution for professional portable and wearable electronic devices.

The CC1150, CC2300 and CC3800 credit card batteries allow device designers to integrate a Lithium Ion battery into the next generation of devices with minimal effort and cost. Each battery has been designed to provide a high level of functionality and safety, reducing time to market, while eliminating tooling and qualification costs.

Complete with the CX3050 and CX6100 desktop chargers, the credit card battery family is the ideal power source for your next portable device.

“  
High functionality & safety  
whilst reducing time to  
market & eliminating tooling  
& qualification costs ”



# CREDIT CARD BATTERY: CC1150, CC2300 & CC3800



## MECHANICS

Measuring just 54.0mm square and 9.1mm high, the CC1150 'mini' credit card battery allows device designers to integrate a Lithium ion battery into new handheld portable devices with minimal effort and cost. The slim plastic casing of the CC1150 is coloured black and has a UL94V-0 rating.

At 86.4mm x 54.0mm, the CC2300 and CC3800 have exactly the same footprint as a regular credit card. This familiar, compact format allows device designers to easily integrate credit card batteries into handheld and wearable electronic devices with minimal effort. The CC2300 is just 9.1mm high and the CC3800 measures only 14.7mm. Each battery casing is manufactured from UL94V-0 rated plastic and is coloured in modern 'cool grey'.

## FUEL GAUGE

It is important that users know how long their electronic devices will run before they require charging. The CC1150, CC2300 and CC3800 contain embedded fuel gauge circuitry, which constantly tracks battery capacity and communicates this to the device upon request via an I<sup>2</sup>C interface (*HDQ available as an option*). The fuel gauge is also capable of providing other pertinent data such as battery voltage, temperature and serial number, making credit card batteries a valuable part of device power management.

## CONNECTOR INTERFACE

A reliable system of electrical connection is provided through the use of a 7-way Tyco connector which allows connection to positive, negative, clock, data and thermistor.

## ACTIVE PROTECTION

To ensure the CC1150, CC2300 and CC3800 remain safe under all operating conditions they contain active electronic circuitry which protects against over-charge, over-discharge, over-current and short-circuit.

## LITHIUM ION TECHNOLOGY

The CC1150, CC2300 and CC3800 credit card batteries contain the latest 3.7V Lithium Ion cells with a Lithium Cobalt Oxide (LiCo<sub>2</sub>) cathode - this technology offers outstanding volumetric and gravimetric energy density, allowing portable devices to be smaller, lighter and longer running whilst remaining safe and providing excellent cycle life.

The CC1150 has a typical capacity of 1150mAh (4.2Wh) whilst the CC2300 has a typical capacity of 2300mAh (8.5Wh) and the CC3800 is rated at 3800mAh (14.1Wh).

CC1150, CC2300 and CC3800 are ideally suited to the environments affecting modern handheld and wearable electronic devices – they can be charged between 0°C and +45°C, discharged between -10°C and +50°C and stored between -20°C and +60°C.

“ Their size allows easy design into handheld & wearable devices ”



# CHARGER OPTIONS

Accutronics has two off-the-shelf options for charging Credit Card Batteries.

## EXTERNAL SINGLE DESKTOP CHARGER

Two desktop chargers are available for charging credit card batteries. CX3050 is compatible with the CC1150 mini credit card battery while the CX6100 is compatible with the CC2300 and CC3800 regular credit card batteries.

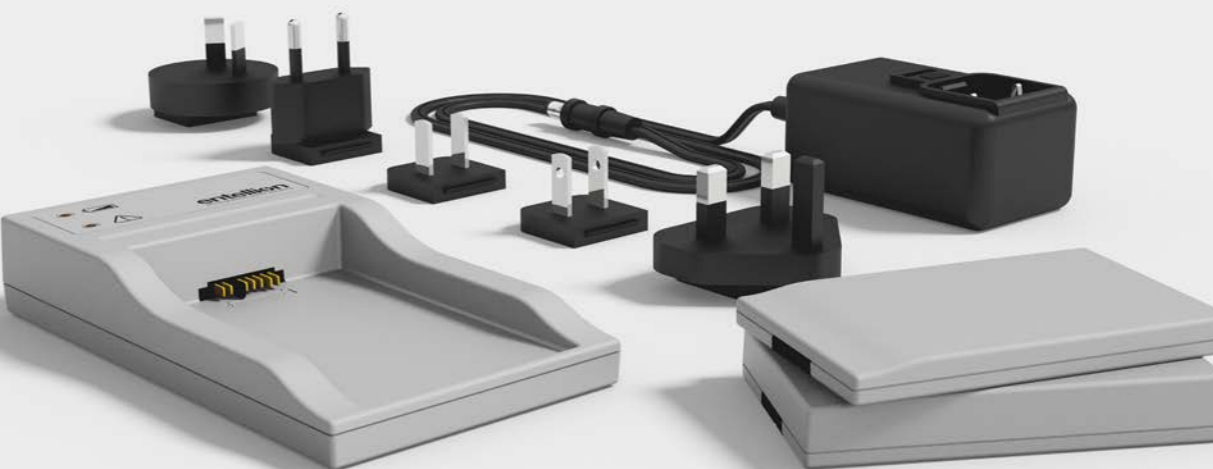
Both CX3050 and CX6100 are desktop charging units which allow users to charge their batteries separate from their portable devices. Chargers are supplied with a 100-240VAC wall mount power supply which provide a regulated 6V to the desktop charger unit. LEDs provide indication for 'power', 'charging', 'fully charged' and 'fault' conditions.

Interchangeable AC blades allow use in the UK, Europe, North America, Australia and China. The units are certified to UL 60950-1 / IEC 60950-1 and are CE marked.

CX3050



CX6100



“ Chargers can be modified to meet OEM Requirements ”



# ITS ALL IN THE DETAIL



Credit Card Batteries and Accessories offer Portable Electronic Device OEMs a high performance, timely solution that gets you to market sooner

## DEVELOPING A NEW ELECTRONIC DEVICE?

Why specify an Entellion credit card battery in your next electronic device?

- Designed specifically for professional OEMs by a company who provide rechargeable batteries to many of the world's leading portable electronic device OEMs
- Available off-the-shelf in quantities from one to tens of thousands, either as a standard product or customised to meet your needs
- High tech solution utilising the latest Lithium Ion and fuel gauging technology
- Backed up with unrivalled technical & commercial support

## TYPICAL APPLICATIONS

- Wearable medical devices
- Test & measurement equipment
- Portable communications
- Industrial handheld computers
- Tracking devices

## CUSTOMISATION

Credit card batteries and chargers are available off-the-shelf or can be customised:

**CASE COLOUR:** The plastic case of any credit card battery or charger can be manufactured in a custom colour to better match the colour of your device.

**SOFTWARE:** The programming of any credit card battery can be modified. SHA-1 authentication can be deployed in any customised battery which provides a unique digital key that can be verified by your device, ensuring that only your customised credit card battery can be used in your device.

**LABELLING:** The standard battery or charger labelling can be modified to include your company name, logo and part number, along with your website, telephone number and repurchase information.

**PACKAGING:** All credit card battery products ship in standard OEM packaging. Custom packaging solutions are available upon request.

## NO CHANGE AGREEMENT

When we produce a customised battery or charger for any of our customers we also provide a written 'no-change' agreement. This simply means that we will not modify the fit, form or function of the product without your prior knowledge and express permission. This gives you the confidence that the product will always remain compliant with your device and prevents any regulatory compliance or quality issues.

## REGULATORY COMPLIANCE

The CC1150, CC2300 and CC3800 can be easily designed into handheld and wearable electronic devices due to the level of regulatory certification that comes as standard:

**TRANSPORTATION:** All models have been tested to, and meet the requirements of the UN Model Regulations and the Manual of Tests and Criteria (ST/SG/AC.10.11 Rev5 §38.3), meaning they are ready to be offered for transportation without any additional testing or expense.

**SAFETY:** CC1150, CC2300 and CC3800 meet the requirements of IEC 62133 and a CB test certificate is available upon request. Compliance to this standard is becoming a requirement of many device standards. This includes medical devices certified to IEC 60601-1 and test equipment certified to IEC 61010-1.

**CE COMPLIANCE:** All models meet the requirements of the EMC directive 2004/108/EC and are CE marked.

DESIGNED FOR OEMS

AVAILABLE OFF THE SHELF

CUSTOMISABLE FOR OEMS

# TECHNICAL SPECIFICATIONS



## MADE IN THE UK

The family of Credit Card Batteries and Chargers are designed and assembled in the United Kingdom by Accutronics Ltd.

CREDIT CARD BATTERIES		CC1150	CC2300	CC3800
Capacity	0.2C (Typical)	1150mAh	2300mAh	3800mAh
	0.2C (Minimum)	1093mAh	2185mAh	3610mAh
Charging	Voltage	4.20V		
	Current (Typical)	550mA	1150mA (0.5C)	1900mA (0.5C)
	Current (Maximum)	1093mA	2000mA	
	Temperature	0°C to +45°C		
Discharging	Voltage (Average)	3.7V		
	Cut-off Voltage)	3.0V		
	Current (Maximum)	2000mA		
	Temperature	-10°C to +50°C		
Storage Temperature		-20°C to +60°C		
Cycle Life		>300		
Mechanical	Length	54.0mm	85.6mm	
	Width	54.0mm		
	Thickness	9.1mm		14.7mm
	Weight	<37g	<65g	<105g
Fuel Gauge		Texas Instruments BQ27541-G1 impedance tracking fuel gauge with I <sup>2</sup> C Communication		
Termination		7 way Tyco connector 1827684-1 (mates with Tyco 1827654-1 or 18276540-2)		
Certification	Transportation	ST/SG/AC.10.11 Rev5 §38.3		
	Safety	IEC 62133		
	CE	Applicable directives		
Packaging		OEM Bulk packaging		

DESKTOP CHARGERS		CX3050	CX6100	
Battery Compatibility		CC1150	CC2300	CC3800
Charge Time	Charge	~2.5 hours	~3.5 hours	~5.5 hours
Mechanical	Length	102.4mm	134.0mm	
	Width	74.0mm		
	Height	25.0mm		
	Weight	<100g (excluding power supply)		
Power Supply		6V, 18W wall mount power supply with interchangeable AC blades for use in the for UK, North America, Europe, Australia and China		
Certification	Safety	UL 60950-1 / IEC 60950-1		
	CE	EN61204-3:2000, EN61000-3-2:2006+A1&A2:2009 and EN61000-3-3:2008		
Power Supply		Applicable directives		
Packaging		OEM Bulk packaging. White carton containing charger, power supply and instruction manual		

- Specification details are correct at the time of printing
- For the latest data please refer to published specifications which are available on our website at [www.accutronics.com](http://www.accutronics.com)
- ACCUTRONICS, ENTELLION and ACCUPRO are European Community registered trade marks of Accutronics Ltd
- The CC2300 credit card battery is a UK registered design (No. 4021272)
- The CC3800 credit card battery is a UK registered design (No. 4021273)
- Operator & regional variations may apply to the transport of Lithium Ion batteries - check with your operator

**ULTRALIFE®**

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