



**Power Management Module for Mobile Applications**

**Features:**

- 240 Watt max. output power to application
- 82 Watt max. output power to battery
- Automatic power source selection
- Wide DC input voltage range
- 3D data available of power management module and batteries for easy integration into user application
- Fits to standard smart batteries from RRC (e.g. RRC2020, RRC2024, RRC2040, RRC2040-2, RRC2054, RRC2054-2, RRC2057, ...)

**Applications:**

Power management and smart battery charging capability for medical and industrial applications

**Specification**

<b>Power supply Input</b>		<b>Application Output</b>	
Input voltage range	Min. Battery charge voltage+1V Max. 24VDC	Output voltage range	Equal to DC input voltage if ext. DC power supply is present. Equal to battery voltage if no ext. DC power supply is present.
Total input power	192W max.	Total output power	240W max.
Input current	8A max.	Output current	10A max.
Input fuse	12A	Output fuse	12A
Protection	Reverse polarity, short current		
<b>Power Management</b>		<b>Battery Input / Output</b>	
Automatic power source selection with seamless transition between ext. DC power supply and battery		Battery charge voltage	Up to 19.2V (± 0.5%)
		Battery charge current	Up to 6.2A (± 3%)
		Battery charge power	Up to 82W
		Battery discharge current	10A max.
		Protection	Battery short circuit, over temperature, over voltage, over current & reverse polarity
		Standby current	Typical 1mA
<b>Environmental Condition</b>		<b>User Interface</b>	
Operating Temperature	-20° to +60°C	UI via GPIO / available info	Charging: yes/no Ext. DC power supply: yes/no Battery/hardware error
Transport & Storage Temperature	-20° to +60°C	SMBus commands to set	Charge current limit, input current limit
Relative Humidity	5% - 95% non-condensing	Battery information available	via standard SMBus
Ambient pressure	500-1070hPa		
<b>Recommended Voltage for External AC/DC Power Supplies</b>			
Battery architecture	DC input voltage	Power supply wattage @ 4A max input current	Power supply wattage @ 8A max input current
1SxP	6VDC	≥30W	≥60W
2SxP	12VDC	≥48W	≥96W
3SxP	15VDC	≥64W	≥128W
4SxP	19VDC	≥80W	≥160W
<b>Regulatory Approvals</b>			
International: IEC 60601-1(ed.3), IEC 60601-1(ed.3);am1		USA: ANSI/AAMI ES60601-1:2005/(R)2012 Canada: CAN/CSA-C22.2 NO. 60601-1:14	
<b>Mechanical Details</b>			
Board dimensions (LxWxH)		60mm x 50mm x 11mm, without cables and connectors	
Weight		Typical 22g	
Connectors:		DC input & DC output (2 pin) / User interface (6 pin) / Battery connector (5 pin smart battery connector)	

To facilitate a fast design-in process for developers, RRC is providing 3D data of the power management module RRC-PMM240 and the battery housings of RRC smart battery. For an application note related to the power management module with additional details contact your RRC representative. For further information on the RRC smart batteries please refer to the RRC website ([www.rrc-ps.com](http://www.rrc-ps.com)).

**Germany/Headquarters**

RRC power solutions GmbH  
Technologiepark 1  
D-66424 Homburg / Saar

Tel.: +49 6841 98090  
Fax: +49 6841 9809280  
Email: [sales@rrc-ps.de](mailto:sales@rrc-ps.de)  
Web: [www.rrc-ps.de](http://www.rrc-ps.de)

**USA**

RRC power solutions Inc.  
18340 Yorba Linda Blvd.,  
Suite 107-437  
Yorba Linda, CA 92886-4104

Tel.: +1 714 777 3604  
Fax: +1 714 777 3658  
Email: [usa@rrc-ps.com](mailto:usa@rrc-ps.com)  
Web: [www.rrc-ps.com](http://www.rrc-ps.com)

**Hong Kong**

RRC power solutions Ltd.  
S-V,6/F, Valiant Industrial Centre  
2-12 Au Pui Wan Street  
Fo Tan, N.T., Hong Kong  
Tel.: +852 2376 0106  
Fax: +852 2375 0107  
Email: [hkrcc@rrc-ps.cn](mailto:hkrcc@rrc-ps.cn)  
Web: [www.rrc-ps.com](http://www.rrc-ps.com)

**China**

RRC power solutions Ltd.  
Room 520, Yuanlin Building,  
Aiguo Road No. 3066,  
Luohu District, Shenzhen 518021  
Tel.: +86 755 8374 1908  
Fax: +86 755 8374 1861  
Email: [hkrcc@rrc-ps.cn](mailto:hkrcc@rrc-ps.cn)  
Web: [www.rrc-ps.com](http://www.rrc-ps.com)