

CASE STUDY

Rechargeable Power System For Portable Breathing Device



A single power solution designed for portable breathing devices, optimized for home, car and airplane



CUSTOMER CHALLENGE

An industry leading medical OEM develops and markets a portable breathing device with several accessories to power the device. The customer was sourcing an AC/DC power supply from one vendor, two DC/DC power supplies from another vendor and a battery pack from a third vendor. The accessories added weight and complexity to the breathing device, making it difficult for patients to carry. The customer contacted Inventus Power to improve the rechargeable power system and improve the product experience of the end user.

Specific Requirements:

- 120-240VAC to 15VDC power supply for home
- 11-16VDC to 15VDC power supply for car
- 11-16VDC to 15VDC power supply for airplane
- Charger for battery
- 14.4V battery pack with 180 minutes of run time at full load

INVENTUS POWER SOLUTION

Inventus Power developed a single power supply with integrated charging capabilities and a light weight lithium-ion battery pack. Our universal input (home, car, airplane) power supply design eliminated three power supplies and replaced it with one. The dual output on the power supply simultaneously charges the battery pack while powering the device. The simplified rechargeable power system resulted in fewer hardware components and increased portability for end users. Patients now power and charge their breathing device at home, in a car or on an airplane with one power supply.

RESULTS

Customer Benefit:

- Replaced three power supplies with one triple input (home, car, airplane) power supply
- Simplified rechargeable power procurement (one partner, one solution)
- Integrated the power supply and charger into a single unit with dual output (DC power & charger)
- Compact, high efficiency power supply design
- A lightweight 12.0 – 16.8V Lithium-ion battery pack with 200 minutes of run time
- Medical (60601-3) grade and DO-160F emissions compliant (approval for aircraft use)
- Ease the approval process with fewer components



End User Benefit:

- Reduced total system weight by 30%
- Reduced rechargeable power size by 35%
- Fewer accessories for patient to carry
- Inline switch to cut off output power without the need for user to bend over and unplug

Market success for medical OEM device makers is dependent on many factors relating to the rechargeable system that is powering the device. Improving efficiency, reliability and user experience ensures a competitive advantage for medical devices.

By partnering with Inventus Power, you gain access to an experienced team of power system experts including top battery chemists/technologists and a global engineering staff who are dedicated to designing and engineering the best fit, form and function for your device's power system.

Learn more at inventuspower.com or contact info@inventuspower.com to learn more about how our power systems expertise sets medical device innovation into motion.