AN INTRODUCTION TO THE BENEFITS OF IMPRES™ ENERGY SOLUTIONS

INTRODUCTION

Professional two-way radio provides instantaneous communications, enhancing personnel safety and operational efficiency. But the radio relies on the battery that powers it. Choosing the right battery system will positively impact on the performance of the radio, and also helps reduce the total cost of ownership over the life of the radio.

Selecting the battery on purchase price alone can be a false economy. Purchasing non-genuine batteries can have a detrimental effect as they may not meet stringent safety standards intended to safeguard users and ensure compliance to applicable laws governing their use. In extreme cases, non-genuine batteries have even caused damage to the radio. Motorola Original™ batteries are designed and tested to the same stringent standard as the radios to meet relevant safety and performance regulations and the unique IMPRES™ technology takes performance to the next level.

IMPRES ENERGY EXPLAINED

IMPRES (Intelligent Motorola Portable Radio Energy System) is a proprietary system unique to Motorola and includes IMPRES batteries, IMPRES chargers and compatible portable radios.

Once connected, the IMPRES radio, battery and charger communicate with each other to optimize performance. The radio detects the IMPRES circuitry embedded in the battery, identifying the battery type and automatically adjusting the radio's transmitter and receiver audio circuits and battery gauge. The IMPRES circuitry also stores key data to allow analysis and management of the battery when inserted in an IMPRES charger.
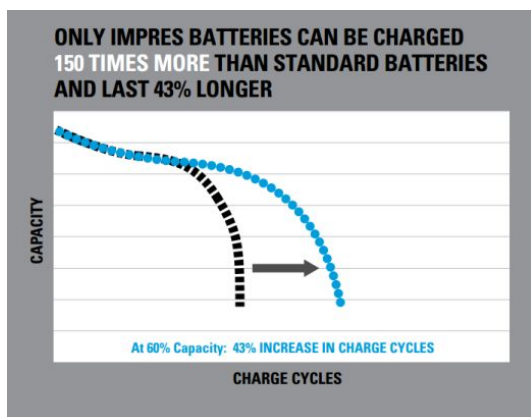
BENEFITS OF IMPRES ENERGY

Managing radio batteries is an essential part of maintaining a radio fleet, but it can require significant resources to monitor and check the batteries to ensure they are always charged and conditioned ready for a shift - vital for safety and operational efficiency. Often, the charge capacity of a battery and its potential remaining lifetime have to be estimated, resulting in poor performance, or batteries being replaced before necessary as administrators replace at fixed intervals or give workers spare batteries just in case. These factors all add up to increased costs in excess battery purchases, reduced performance, impact on the environment or recycling waste battery materials.

The IMPRES energy solution takes away this guesswork as it automatically recalibrates and reconditions the battery exactly when required. This can increase the life of an IMPRES battery by up to 43% - typically 150 charge cycles. If the battery is recharged three times a week, IMPRES could extend the battery life by a year when compared to non-IMPRES batteries.

The result is fewer batteries over the life of the radio, reducing total lifetime cost and enhancing reliability, performance and safety.

ONLY IMPRES BATTERIES CAN BE CHARGED 150 TIMES MORE THAN STANDARD BATTERIES AND LAST 43% LONGER

CAPACITY

At 60% Capacity: 43% INCREASE IN CHARGE CYCLES

CHARGE CYCLES

HOW IMPRES ENERGY WORKS

Every IMPRES battery contains an embedded microcontroller that monitors and stores the individual details of the battery, including its serial number, part number, age and usage profile. When connected to a compatible radio, the battery communicates accurate energy information to be shown on the display so the user knows how much charge is left in the battery.

Using an IMPRES charger adds even more to the system. IMPRES chargers will monitor temperature, voltage and current into and out of the battery to prevent overheating which can permanently damage and prematurely reduce the life of the battery pack. Overheating is also a sign of inefficient use of valuable electrical energy and IMPRES chargers eradicate this inefficiency. Unlike conventional chargers, IMPRES prevents incorrect charging and the charger combines four functions in one device:
- Initial calibration
- Rapid, trickle and maintenance top up charges
- Reconditioning/recalibration of the batteries
- Analysis of the batteries

The result is a solution designed for crisis management because radios with IMPRES batteries can be left in their IMPRES chargers indefinitely, ready for any critical incident.

As a battery ages the unique IMPRES circuitry will adapt the charging profile to optimize the usable life and maximize return on investment. When a battery has aged so it has fallen below 60% of rated capacity, the charger will provide an indication to warn the administrator that battery performance is failing. All of this adds up to batteries that are maintained in optimal condition to maximize run time and extend life.

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IMPRES ENERGY FLEET MANAGEMENT

For even greater control of radio battery fleets, Motorola created the IMPRES Energy Fleet Management solution. This consists of data readers, charger interface units and a software application that allows administrators to record and analyze battery and charger usage and performance to ensure they get the best from their radio system.
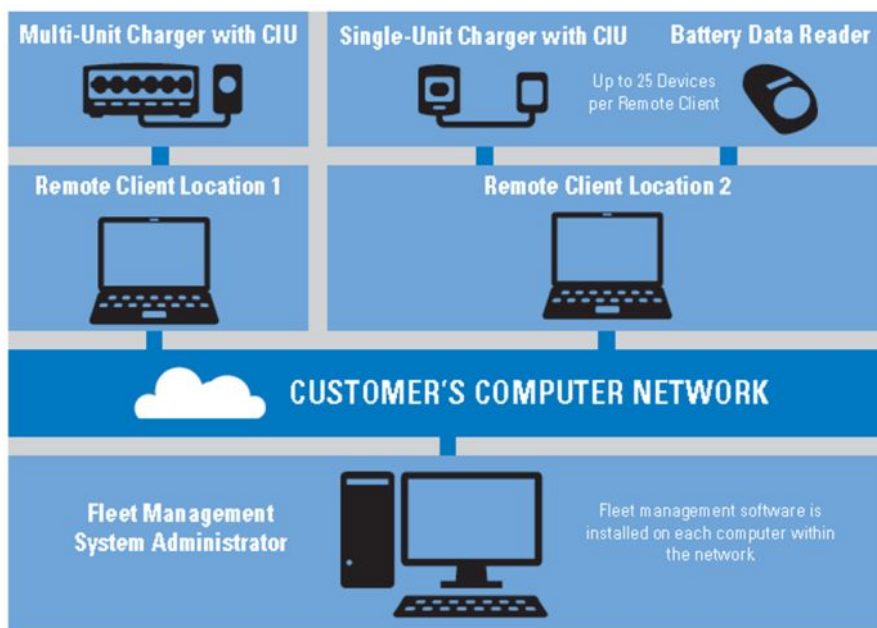
IMPRES ENERGY FLEET MANAGEMENT EXPLAINED

The IMPRES Energy Fleet Management System allows managers or administrators to monitor and analyze their radio batteries and chargers. It is scalable from a single-site to a multi-site system and can be networked to support up to 25,000 batteries in the same location or over geographically dispersed areas. It can even collect the battery data remotely over-the-air using the radio network. The system consists of three key components:
- Fleet Management application software
- Software license activation key
- Charger Interface Units (CIUs) and Battery Data Readers

The software application is installed on the system administrator's PC and also on any remote client PCs if required. Each software license supports 1 system administrator and up to 19 clients (each of which can support up to 25 IMPRES chargers or data readers). If more client PCs are required then additional licences can be used to increase the system capacity. Fleet Management uses normal IMPRES Single-Unit and Multi-Unit Chargers, but a Charger Interface Unit (CIU) is required to connect the chargers to the PC. The battery data reader is an optional component in the system – it does not charge the battery, but enables the IMPRES data to be read by the system. Fleet Management can be used across a LAN or as a standalone computer (client PC) installation. The administrator is able to monitor all chargers and data readers, and the batteries placed in them, across the system.

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IMPRES ENERGY FLEET MANAGEMENT EXPLAINED

TRACKING

IMPRES technology is unique to Motorola and allows the battery, charger and radio to communicate with each other, retaining key performance-related information including:
- Serial number
- Part number
- Rated capacity
- Potential capacity
- Date manufactured
- Date first used
- Number of charge cycles

All this data is stored in the battery and is read and saved automatically into the Fleet Management database. System administrators can then run reports and create charts to help manage their battery and charger fleets. Predefined or customizable reports (like batteries sorted by capacity, chargers by amount of use, and many others) allow the administrator to see a status snapshot of their entire battery fleet in seconds, evaluate whether batteries are meeting performance criteria and determine when batteries are nearing end of life.

This allows forward planning, removes guesswork and enables administrators to decide exactly when and how many new batteries to buy, helping budget for replacements in advance.

IMPRES Fleet Management also identifies batteries and chargers that are deemed lost or under-utilized because they have not been used for months – they can be reassigned to other users. Batteries that are several years old may be deemed no good because of the date code printed on the battery, but Fleet Management can show whether they are still usable.

MONITORING

As well as analysis of historical performance, IMPRES Fleet Management also allows real-time monitoring of batteries and chargers. The fleet administrator can view IMPRES data and compare it against predefined preferences to ascertain the health of the battery.

If the battery fails to meet the preference settings, it will be identified on-screen with an orange warning triangle. This automated but simple check is easy for nontechnical personnel to identify potentially under-performing batteries and take them out of service. So if you set preferences to identify a battery that will not last the shift – Fleet Management will tell you.

ASSET MANAGEMENT

IMPRES Fleet Management System is ideal for administrators who need to manage energy assets across a wide geographical area and also for workshop technicians, service managers and rental business aiming to get the best performance and return on investment from their radio batteries.

Preempting failures and providing high quality customer service helps improve user satisfaction. Keeping tight control of expenditure at the same time is sound business practice. Fleet Management allows managers a competitive advantage by enabling them to identify potentially problematic batteries and to order replacements before they cause issues for users.
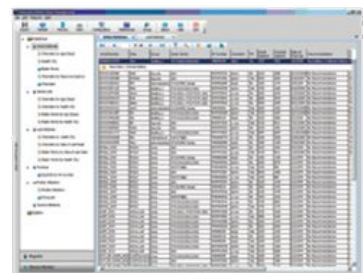
Also being able to easily identify under-utilized assets and usable capacity maximizes efficiency and provides greater return on investment on batteries that may have been disposed of prematurely.
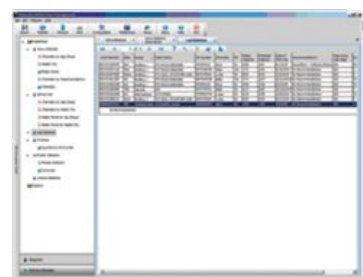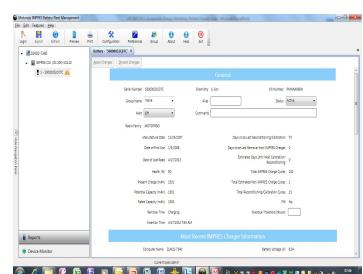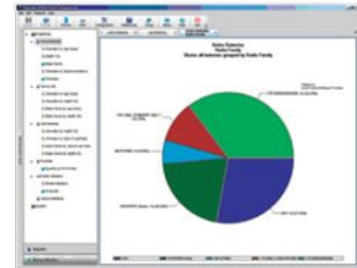

Batteries in use by radio family
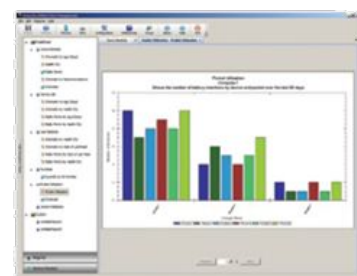
Charger pocket utilization

Active battery report

Lost battery by location

Individual battery data

MOTOROLA SOLUTIONS

IMPRES BATTERIES LAST LONGER, AND SAVE MORE

A radio is only as good as the battery that powers it. So when a battery fails and communication is lost, it impacts every aspect of the organization from serving customers to saving lives. To avoid this, some organizations are buying too many batteries because they're uncertain if their batteries will work when needed, or are unsure when they should be replaced. Using IMPRES batteries and chargers removes the guesswork. They last up to 150 additional charge cycles compared to a standard battery and tell you when their performance is reducing.

Monitoring and maintaining the status of a large fleet of batteries can be time-consuming, inefficient and potentially overwhelming: that's why we created our proprietary IMPRES Battery Fleet Management technology. It saves the guesswork, complexity and cost of managing hundreds or even thousands of radio batteries and chargers wherever they're located, and makes it easier for radio users to do their work safely and successfully.

If you're not using IMPRES, your batteries may stop working when your people need them most or even damage your radio. And that's a high price to pay on your investment in your valuable two-way radio system.

IMPRES™ ENERGY	YOUR BATTERY, SAFER, SMARTER, POWERED FOR LONGER	Ensure your battery lasts the shift and beyond

For more information on Motorola Solutions' accessories, visit http://www.motorolasolutions.com/en_us/products/two-way-radio-accessories.html
or find your closest Motorola authorized reseller at http://www.motorolasolutions.com/en_us/partners/search.html.