



MOTOTRBO™ SL SERIES

BATTERY LIFE CONSIDERATIONS

TABLE OF CONTENTS

INTRODUCTION 3

THE RIGHT RADIO FOR THE RIGHT USER 3

PARAMETERS IMPACTING BATTERY LIFE..... 4

TYPICAL IMPACT ON BATTERY LIFE..... 5

MOTOTRBO SL SERIES PORTABLE BATTERY LIFE IMPROVEMENT TIPS 5

SUMMARY 7

INTRODUCTION

A few years ago, portable radio battery life was primarily based upon how much the user transmitted by pressing the Push-To-Talk (PTT) button, as radios were mainly used for voice communications. Today, two-way radios have been enhanced with features to meet the growing needs of users. With an expanding portfolio of applications and accessories available, there is more hardware and software that needs to be powered in portable radios which has an impact on the battery that must keep everything running.

Rechargeable batteries are key to the proper functioning of two-way portable radios. Choosing the right battery, following programming guidelines and adhering to proper maintenance will ensure the MOTOTRBO SL Series portable radio performs well during the working shift and the battery is maximized during its useful life.

THE RIGHT RADIO FOR THE RIGHT USER

When selecting a two-way radio, it is important to properly understand the user's requirements and the environment in which the radio will be used. Think of it like shopping for a car- the sports convertible is fast and looks sleek, but it may not be the right choice for a family of five.

During the development of a digital radio specifically for the hospitality industry, we turned to the experts – our customers. We allowed professionals and customer facing radio users to guide the decision-making process that resulted in the most optimal solution for their use case and environment. We learned that hospitality professionals value size and weight more than oversized knobs and rugged capabilities. This customer centric approach led to the innovation of the unique portable radio known as the SL 7550.

PARAMETERS IMPACTING BATTERY LIFE

There are several parameters to consider when estimating battery life for two way portable radios, including the MOTOTRBO SL Series. How and where the radio is used, attached accessories and radio settings will impact the battery life.

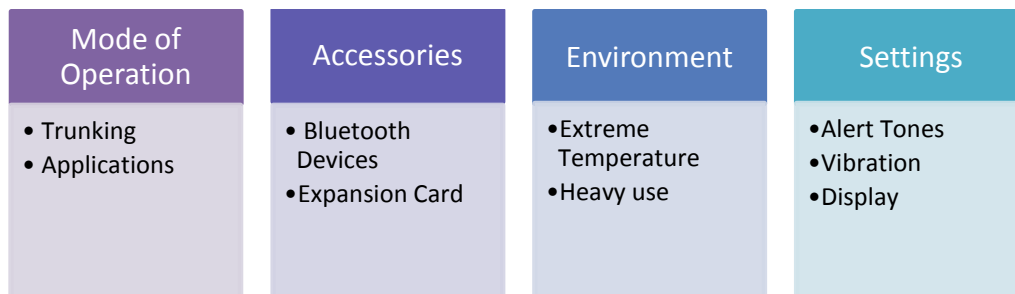


Figure 1 - Parameters impacting MOTOTRBO SL Series portable battery life

Mode of Operation

One of the main considerations for selecting a portable battery is the number of hours of operation required between charges. This will depend on how much the user is expected to use the PTT button, which features are turned on, and what software applications are running on the radio.

In trunking modes of operation, the radio is typically scanning for activity and has to move to another channel that may be available (Capacity Plus), or is listening to a control channel for instructions on which channel to go to for voice calls (Connect Plus). This additional activity has an impact on the battery life of the radio. Applications running on the Expansion Card (a.k.a option board) will have an impact on the battery life as well.

Accessories

Another important parameter when considering battery life is the audio accessories that may be attached to the portable radio, as some of these devices will draw additional current from the energy source. Bluetooth wireless operation will have an impact on battery life.

Environment

Extreme temperatures can affect both the charging and useful life of portable batteries. Talk time can be reduced by 10% when operated in extreme heat (+50C / +120 F) and by more than 30% when operated in extreme cold (-20C / -4F or more) environments. The MOTOTRBO SL Series portable batteries are rated to provide best performance when operating in the -20 C to +60 C (-4 F to +140 F) temperature range.

How much the radio is used during the work day obviously will impact the battery life. Typically published battery life specifications are for 5/5/90 (Transmit/Receive/Stand-by) duty cycles and users exceeding this duty cycle will experience reduced battery life. Using a desktop charger to keep a spare battery at hand may be an option to keep the MOTOTRBO SL series radio going during those long busy days.

Settings

Tones and vibrate alerts used to notify the user of messages or alert calls can have an impact on battery life when set to infinite or long durations. Please refer to the next section for some battery life improvement tips when programming MOTOTRBO SL Series radios.

TYPICAL IMPACT ON BATTERY LIFE

Figure 2 shows the typical impact for a MOTOTRBO SL Series portable battery life under specific modes of operation. It is assumed that the battery is new and fully charged.

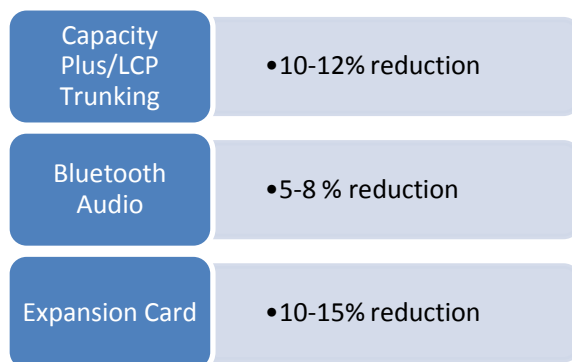


Figure 2 – Typical battery life impact for MOTOTRBO SL Series Portable

MOTOTRBO SL SERIES PORTABLE BATTERY LIFE IMPROVEMENT TIPS

When programming the MOTOTRBO SL series portables it is important to consider certain settings that will help obtain a balance between functionality and battery life. Using a desktop charger can also provide some added flexibility.

Backlight Timer

This parameter keeps the SL series portable display on after user operation has ended. It is recommended to set it to the lowest possible setting of 10 seconds.
(*Radio Menu: Utilities/Radio Settings/Display/Backlight Timer*).

Backlight Battery Saver

When using Bluetooth or wired audio accessories the portable screen will not be displayed in any receive operation except for Emergency Call/Alarm which will take the radio out of this saver mode. Default is enabled.

(CPS Menu: General Settings- make sure it is set to Enabled).

Call Alert Tone Duration

This parameter configures the call alert tone duration for the radio decoding the digital selective call alert. When this parameter is set to a large value (>1 min.) it will impact battery life, especially when the vibrate function is on. If the infinity duration is selected, the call alert tone will sound continuously until the user cancels the call alert indication.

(CPS Menu: General Settings - set to a small finite value. Minimum setting is 5 seconds).

Text Message Alert Tone Duration

This parameter sets the duration of the alert tone that is played when the Text Message Alert Tone is set to repetitive. If the infinity duration is selected, the text message alert tone will sound continuously until the user cancels the alert indication. This will impact battery life, especially when the vibrate function is on.

(CPS Menu: General Settings - set to a small finite value. Minimum setting is 1 minute).

Ring Alert Type

This parameter sets the type of ring used by the radio when a text or Call Alert message is received. Available options are silent, ring, vibrate, and ring & vibrate. Vibrate mode should be used only when needed as this ring mode has the most impact on battery life.

(Radio Menu: Utilities/Radio Settings/Tones/Alerts/Ring Alert Type

Desktop Charger

A recently introduced tri-unit desktop charger (Part Number: PMLN6358_) for the MOTOTRBO SL Series radios provides an easy way to charge multiple devices simultaneously. It has a convenient, small profile that can be easily placed on a desk for quick access, similar to a Smartphone desktop charger.

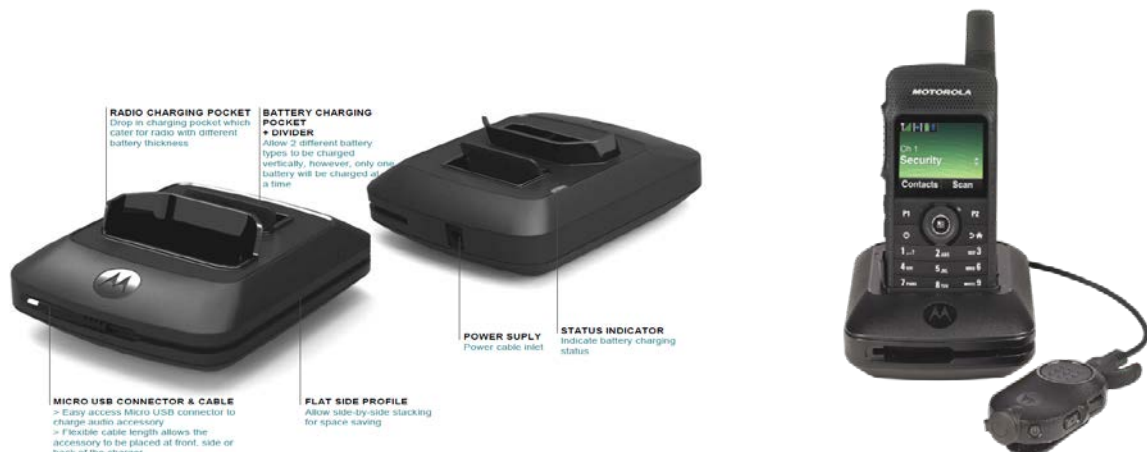


Figure 3 – Desktop Tri-Unit Charger for SL Series portables

The MOTOTRBO SL series desktop charger (shown in Figure 3) provides several services: a front radio charging pocket where the radio can be quickly dropped to recharge, a back pocket where a second SL series battery can be inserted, and a micro USB connector for charging accessories such as the Bluetooth audio device.

The MOTOTRBO SL series desktop charger can be used to help extend the battery life of an SL Series portable in situations where above average voice and data use present some challenges to the radio user. The portable radio can be dropped to charge in between day activities, or a spare battery can be ready and accessible when needed.

SUMMARY

- Today, two-way radios go beyond voice and new applications such as work order ticket management and wireless audio devices place additional demands on portable radio batteries.
- There are several programming settings, that when properly used, can provide a balance between radio features and battery life duration. An SL series desktop charger provides flexibility allowing radio users to have additional batteries and wireless devices charged as needed.
- Understanding user needs and the work environment is critical when selecting the right radio. The MOTOTRBO SL series portable was designed with size and weight in mind and some tradeoffs may be required when comparing it with other types of portables.



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