

Technical Bulletin CS-20-16

Versity Series Battery Best Practices

This technical bulletin explains battery best practices for the Spectralink Versity Series handsets.

System Affected

Spectralink Versity Series Handsets

Description

Battery Pack Technical Specifications

Each Spectralink Versity Series battery pack utilizes advanced Lithium-ion (Li-ion) cell chemistry with the following performance specifications:

- Talk time - up to 12 hours
- Standby time - up to 80 hours
- Call server protocol, WLAN infrastructure; and Push-to-Talk may reduce actual performance
- Some conditions which negatively affect performance: Talk time is known to be reduced in a network environment with excessive jitter. Standby time is known to be reduced if handsets experience frequent reboots or frequent disconnections and reconnections to the wireless network. If handsets are frequently rebooting for no apparent cause contact the designated service organization to identify the specific issue.
- Full charge time – <3.5 hours
- When proper storage and charging practices are followed; the battery pack is expected to have a service life of approximately 500 charge/discharge cycles. Based on typical use behavior, Spectralink suggests planning to replace battery packs every fifteen to eighteen months.
- Battery packs can be charged either in Spectralink Versity Series handsets; or in the rear slot of a dual slot charger or docking station; or in a multi-charger slot; or using the provided USB wall charger while inserted into a Spectralink Versity Series handset
- Charging the battery pack in the handset is possible powered off or powered on in the “Standby” state. If the handset is powered off when inserted in the charger it will power on automatically to begin charging. When charging, the handset will vibrate to indicate charging has started
- Ensure that you fully charge the battery pack before its first use
- If multiple battery packs are supplied with your handset, Spectralink recommends that each be fully charged upon receipt to prolong battery life. Battery packs will slowly lose charge if unused. To maintain battery potential, charge unused battery packs occasionally or alternate battery pack use. If batteries are to be stored for an extended period, it is recommended that they be kept at approximately 50% charge and 25C

Battery Pack Storage & Inventory Recommendations

Spectralink's Versity Series battery packs are designed to be resistant to high temperatures, safely used in harsh work environments, and deliver a long service life provided optimal storage and charging practices are followed. As with other rechargeable Li-Ion based products, Spectralink Versity series battery packs should not be stored or kept idle for an extended period of time, rather they should be cycled at regular intervals to ensure they maintain the expected lifetime.

During sales channel distribution and prior to deployment at a customer site, battery stock should be managed by shipping or using older batteries first, i.e. typically those received first, using a FIFO (First In, First Out) process. This will help ensure, on average, batteries do not sit on-the-shelf longer than necessary.

It is recommended to maintain lean inventory levels to avoid holding batteries for extended duration. If batteries are stored for an extended period of time, periodic maintenance charges may be necessary.

Battery pack storage recommendations are as follows:

- Battery packs must be fully charged using the appropriate Spectralink battery charger before first use. Full charge time is dependent on battery model
- Battery packs should not be stored more than 12 months at room temperature prior to use/sale
- If for some reason a battery pack is stored more than 12 months it must have a periodic maintenance charge to maintain the battery's useful lifetime. The maintenance charge should bring the battery up to its full capacity.
- In cases where battery packs are stored for an extended time (greater than 12 months) the battery should return to almost complete capacity after two to three charge/discharge cycles. The first battery pack charge after prolonged storage usually yields a lower capacity than normal.

Battery Charge Cycles & Life Expectancy

If handsets no longer deliver talk or standby time that they used to, typically, batteries are past their useful life, and usually because customers don't recall how long the batteries have been in service. To help prevent this type of dissatisfaction, customers can use a battery replacement or battery management strategy. Spectralink offers the AMiE¹ (Advanced Mobile Intelligence for Enterprise) solution to help manage your Spectralink fleet of devices.

When batteries approach their end of life. Li-Ion battery performance degrades consistently until near end of life when performance degrades sharply until battery will no longer accept a charge.

Spectralink Versity Series Lithium-Ion (Li-Ion) batteries will deliver approximately 500 charge cycles before performance starts to degrade. For this battery technology a single charge cycle is defined as each time a battery is drained to less than 20% of full charge capacity. The 80% or greater discharge could occur in a single use or in multiple uses followed by a full charge. Example: Battery is drained of 20% of capacity then charged, repeat four times; the total of the four 20% discharges equals an 80% discharge – one charge cycle.

To obtain the maximum service life from the Li-Ion batteries:

- Continuously charging the phone for periods of more than 48 hours can negatively affect the battery life and lead to battery degradation.
- Ensure device has downloaded the most recent software revision to ensure it is utilizing the latest features to maximize performance, battery life, and monitoring.
- Charge batteries after each use without regard to "Low Battery" warning (Note: discharges to handset "low battery" message or full discharges (to handset power off) does not adversely impact battery cycle life
- Handsets should be powered off when not in use
- Powered on handsets should stay within the facility wireless coverage area, handsets discharge batteries more quickly when the wireless network is extremely weak; not stable; or is unavailable
- Extreme environments negatively affects battery life, specifically extreme cold (below -5°F or - 20°C) and in extreme heat (greater than 158°F or 70°C); it is important to never heat battery packs above 45°C, 113°F, as this

¹ <https://www.spectralink.com/products/mobile-device-management-intelligence/amie/>

can result in serious damage to battery packs and may result in a risk of fire or chemical burn. Spectralink products contain mechanisms that prevent charging at extreme temperatures

- Batteries do not suffer from the “memory effect”

Battery Management & Replacement Recommendations

With a large number of handsets, tracking each battery’s actual performance can be tedious for an administrator and battery management becomes a reactive process, making it harder to budget and manage replacement inventory. A better methodology is to plan periodic replacements (based on usage and charge patterns, e.g. lifespan of 12-18 months) from when batteries entered service. The easiest approach is to replace all the batteries periodically. But if system expansion has occurred and/or batteries are not all of the same age, another option is to write the date each battery first enters service on the battery label, and then periodically review the batteries, replacing those batteries approaching end of the expected life based on the planned lifespan.

Each battery has unique serial number that is used to log when it was shipped from Spectralink. A customer can use the battery serial number with the Spectralink support web portal to approximate date of service for the battery. Typically a battery will have experienced some delay through sales distribution before getting to the customer however.

Locating the Battery Serial Number for Warranty Replacements

Each battery has unique serial number on the battery label used to log when it was shipped from Spectralink. If a battery’s performance is degraded within the battery warranty period, but does not exceed the battery’s expected performance lifespan of 500 charge cycles or 15 months (12 + 3 transit), a customer can request a replacement using the support web portal using the battery serial number.



Other Useful Battery Information

You can locate additional information about Versity Series batteries in other Spectralink Tech Bulletins located on the Spectralink Support Site.

CS-19-10 Versity Battery Contacts - https://support.spectralink.com/sites/default/files/resource_files/CS-19-10%20Versity%20Battery%20Contacts.v4.pdf

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Warranty

The *Product Warranty and Software License and Warranty* and other support documents are available at <http://support.spectralink.com>.

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