Power Management Tips

Follow these simple rules to ensure that the Scepter performs at maximum efficiency for the longest possible duration.

(1) Know the difference between "sleep mode" and "power off". When the power button is pressed and released, the display will dim and the Scepter will go into low-power mode or "sleep". During this period the device will continue to consume battery power, albeit at a drastically reduced rate. But if left overnight for example, the user will notice they have less battery capacity when they wake the device than it did when they shut it down. If the Scepter is going to be left idle for any significant period of time, completely power down the device by holding the power button down for a few seconds. A prompt will appear on the display that says "Power Off". Confirm a true power-down by tapping this prompt and the Scepter will power off, conserving both the main battery and the backup battery.

(2) When "hot-swapping" the main battery, ensure that a new battery is installed within 10 minutes. If it will sit idle for a while before a new battery is installed, ensure the device is properly TURNED OFF. When the main battery is removed, the display will immediately go dark which might lead the user to believe the device has turned off. In fact, it has just gone into "low-power" mode and is now running off of the internal backup battery. The longer the device remains in this state, the more the backup battery is depleted. Once the backup battery is completely depleted, the Scepter powers down completely. When a main battery is inserted into a Scepter with a depleted back-up battery, it will of course power the device so the user can return to work, but some of its power is used to re-charge the backup battery. For the first several minutes it will re-charge the back-up battery at an accelerated rate to get it quickly charged in case it is needed again soon. The backup battery will typically be fully recharged within the first one to two hours. During this period when the backup battery is recharging, users may notice the main battery depleting more rapidly than normal, resulting in overall reduced battery life for that charge session. To avoid this, minimize the time the device is in low power mode without a main battery. Install a fresh main battery quickly when hot-swapping batteries. If a device has been in low-power mode, without a main battery for 10 minutes or more, install a fresh battery then set the Scepter in a cradle for a half-hour or longer so that the backup battery can re-charge without taxing the main battery.

Battery Care

Adequate battery life is crucial to the performance of mobile computing devices. Here are some tips for prolonging the life of your Scepter batteries:

- Charging your batteries at room temperature is recommended. Charging at lower temperatures will require a longer charge time and charging below freezing can permanently damage battery cells, making them more sensitive to failure when exposed to vibration and other stresses. Charging at elevated temperatures (above 40°C / 104°F) is also not recommended as it can create a possible thermal runaway condition that can also permanently damage a battery cell.

- Avoid discharging the batteries completely. The shorter the discharge, the longer the battery lasts. There is no issue with "memory" and the battery does not need periodic full discharge cycles to prolong life. A partial discharge with a Li-ion is perfectly fine.

- Avoid storing batteries with a full charge. If you purchase batteries to be used as replacements in the future, avoid the urge to fully charge them and then set them on the shelf. Instead, place them in a cool, dry place and then wait to charge them fully when you're ready to use them. Ideally, Li-ion batteries should be charged at 40 percent for long-term storage. The worst possible scenario is a fully-charged battery stored at an elevated temperature.

- Date-stamp your batteries when you receive them. If you use the "500-cycle rule" – meaning that your battery should last about 500 charges – you can calculate about how long your batteries are expected to work at 80 to 100% of full capacity. It's important to note that Lithium Ion batteries do just simply age, regardless of charge cycles. If a battery is five years old, even if it's only used once a month, it will still not perform at full capacity.

How long should the battery last?

AML periodically tests the battery life of our products using real-life scenarios to produce empirical data. The information below was gathered from tests performed on our Scepter Mobile Computer in various configurations. Note that this information is in no way a warranty or guarantee of performance for all applications. It is simply to provide a point of reference for battery performance under a known set of criteria.

Test Criteria:

- Each Scepter was loaded with an application that simulated a "trigger pull" or "scan press" every ten (10) seconds.
- On each "trigger event", the scan engine was activated to scan a barcode and the radio was activated to ping a server.
- The LCD remained on at all times.

Model No.	Scan Engine	Battery Life	Trigger Events
M7800-1100	Standard Laser	8 hours, 19 minutes	2,994
M7800-1500	Near/Far Laser	8 hours, 14 minutes	2,964
M7800-1600	Standard Imager	7 hours, 36 minutes	2,736
M7800-1700	Near/Far Imager	8 hours, 17 minutes	2,982