

# Trickle Charge at Target Rate with ThunderSync5-C16 PD

*Anastasiia Liedovska and Alan Lowne*

Managing battery health and complying with international charging and shipping requirements is especially critical when it comes to device refurbishment, recycling, or deployment. When repairing, cleaning, and testing used devices, maintaining consistent charge levels without unnecessary wear might be challenging, but it helps extend the battery life of used or shared devices and improve operational efficiency.



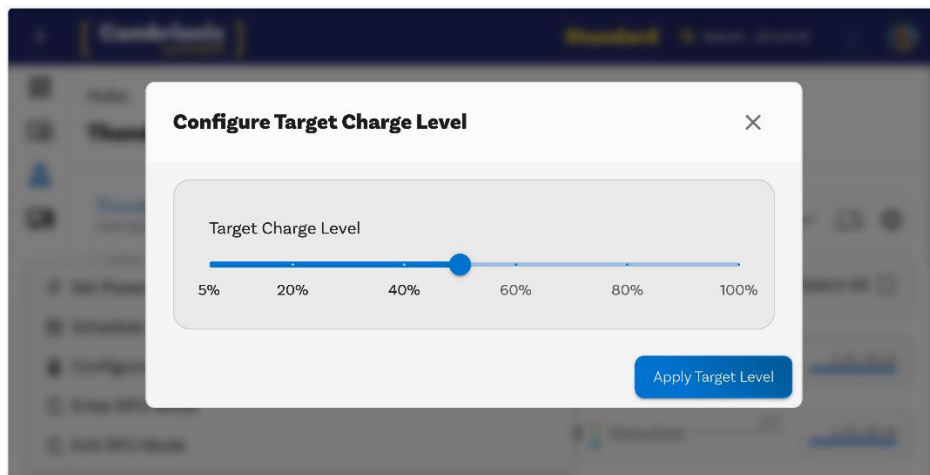
With Cambrionix PD hubs and Target Charge Mode, you can set a target charge level, and then Connect Premium software maintains devices at that percentage. Instead of powering off the port, the hub switches to the lowest PD profile (4.5 W) to keep the port active at the target charge level. Once devices reach the selected level, power automatically switches off. This approach is ideal for reducing battery wear during long-running workflows. However, when a port powers down, data transfer stops too, interrupting syncing, testing, or re-imaging workflows. Cambrionix calls **this 4.5 W Trickle Charge at Target**, available exclusively on ThunderSync5-C16 PD with Connect Premium. Data flow remains consistent, devices stay at the desired charge level, and workflows continue uninterrupted. **Target Charge Mode** was developed as a part of the Connect Premium software to keep devices powered safely and efficiently. Target Charge Mode is valuable for organizations in Circular Tech, Reverse Logistics, IT Asset Disposition (ITAD), Software Quality Assurance (SQA), and Education.

## Why Charge Control Matters in Circular Tech, ITAD, and SQA

Organizations operating in device recycling, refurbishment, and redeployment manage large volumes of devices across multiple life cycles. In these environments, battery health and safety are just as important as regulatory compliance. Additionally, from 1 January 1 2026, the [International Air Transport Association \(IATA\)](#) has extended the **≤30% state-of-charge requirement for lithium-ion batteries shipped by air to include batteries packed with equipment**. This applies to smartphones, tablets, and laptops. While ocean and road transport regulations may allow higher levels, many refurbishers maintain the 30% level to comply with international regulations and ensure battery safety. But keeping devices fully charged or frequently pushed to 100% can accelerate battery degradation and ultimately reduce resale value and profitability. This creates a clear operational need: **precise control over charging behavior**, allowing devices to be held at defined charge levels without unnecessary wear or excess power use. Target Charge Mode was designed to address this exact challenge.

## Target Charge Mode

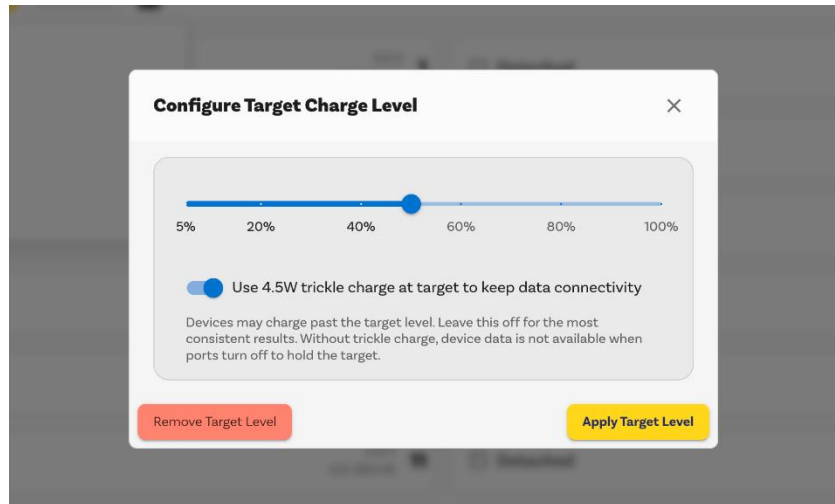
Target Charge Mode allows Cambrionix hub users to set a target charge level for connected devices and maintain them at that percentage. This approach is particularly useful for: reducing battery wear during long-running workflows, avoiding prolonged 100% charge states, and limiting unnecessary power consumption 24/7.



On Cambrionix hubs without USB Power Delivery (PD) technology and user-configurable PD profiles, this behavior is achieved by **turning the port off once the target charge level is reached**, then periodically polling the device to determine whether charging should resume. While effective for protecting battery health, this approach has one limitation: when a port powers down, data connections also stop. For workflows that rely on persistent data transfer, such as syncing, testing, or re-imaging, this interruption can be disruptive.

### NEW Trickle Charge at Target with ThunderSync5-C16 PD

With ThunderSync5-C16 PD, CAMbrionix introduced an enhanced version of Target Charge Mode that **maintains data connectivity** while holding devices at a defined charge level. Instead of turning the port off completely, ThunderSync5-C16 PD uses its advanced Power Delivery capabilities to **switch the port to the lowest available PD profile (4.5 W)** once the target charge level is reached. Called **Trickle Charge at Target**, it allows devices to stay connected while tests, updates, and monitoring continue uninterrupted.



### How Trickle Charge at Target Works:

- Devices charge normally until they reach the configured target level,
- At the target, the port transitions to a 4.5 W “trickle” PD profile,
- The operating system may report “Not Charging”, but the device still **accepts a small amount of charge**,
- The port stays live, and data connections remain active,
- Devices are maintained at the target charge level without unnecessary charging\*.

*\*Trickle Charge is designed to minimize charging beyond the target while keeping data active. If devices are idle or under very light load, they may continue to charge slowly above the target level.*

Watch [the demo video](#), where Anthony Partou, our Head of Product, walks through how Target Charge Mode works in Cambrionix Connect Premium, **demonstrates the feature with a connected iPad**, and explains how power draw changes in real time. The result is stable data transfer, controlled charging, and uninterrupted workflows.

### User-configurable Power Delivery profiles

Currently, Trickle Charge at Target is only available on ThunderSync5-C16 PD because the hub features advanced **USB Power Delivery technology with user-configurable PD objects**.

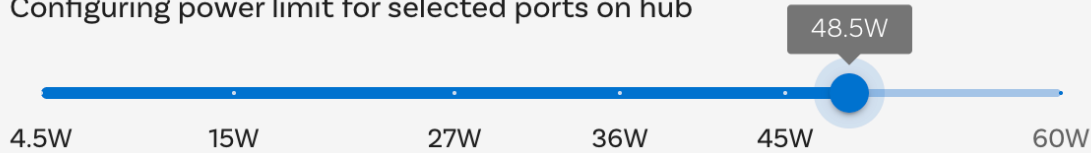
USB-PD is a smarter charging standard than legacy USB charging protocols such as USB Battery Charging (USB-BC), allowing the device and hub to negotiate the right power level instead of relying on a fixed, one-size-fits-all profile.

### On ThunderSync5-C16 PD:

- A shared **300W power budget** is available across all 16 ports,
- Each USB-C port supports PD profiles from **4.5 W to 60 W**, in 0.5W increments,
- PD profiles can be configured on a per-port basis using Connect Premium software.

## Set The Port Power Limit

Configuring power limit for selected ports on hub



Cancel

Confirm

This fine-grained Power Delivery control allows the hub to maintain data connectivity while delivering just enough power to hold a device at a target charge level.

In order to use the updated Target Charge Mode feature, you need to **update both the Hub API and ThunderSync5-C16 PD firmware** to the latest version.

### Firmware and Software Requirements

We regularly release new firmware to ensure our hubs benefit from the latest features, performance improvements, and bug fixes, and maintain compatibility with the latest Connect software.

**To use Trickle Charge at Target on ThunderSync5-C16 PD, the following versions are required:**

- Hub API v3.28.1 (released January 29, 2026) or later,
- ThunderSync5-C16 PD firmware v2.3.6 (released January 29, 2026) or later.

Firmware updates can be managed through Cambrionix Connect or the Command Line Updater (CLU), depending on your deployment needs and preferred workflow. Learn more about firmware updates and available update methods in this guide: [Firmware Updates For Cambrionix Hubs](#).

### Connect Premium License

Target Charge Mode is a part of [Cambrionix Connect](#) Premium software.

**A Connect Premium license is required to use the following features:**

- Target Charge Mode, including the **Trickle Charge at Target** enhancement
- Power Delivery Profile Selection
- Instant DFU mode for Apple devices

- Port Mode Scheduling

Since October 1, 2025, all Cambrionix hubs have been available as comprehensive solutions, including:

- A hub (with a host cable, power supply, and region-specific power adaptor),
- Lifetime access to Connect Standard software,
- A **Connect Premium Hub licence**, included for an initial term (varies by hub model),
- Dedicated global support with 24-hour SLA,
- Warranty coverage.

A Connect Premium license is included with every Cambrionix solution on a **per-hub basis**. To learn more about solutions, pricing, and license and support duration, [view this document](#).

In addition, existing Cambrionix customers who purchased a supported hub before October 1, 2025, receive **FREE access to Connect Premium until March 31, 2026**, allowing teams to explore advanced functionality at no cost. Get started with [Cambrionix Connect](#).

### Additional reasons to choose Cambrionix hubs

- ✓ Thunderbolt technology helps eliminate endpoint limitations and process 10 to 16 devices per hub in less than 11 minutes.
- ✓ Intelligent device management via the Connect software allows one-click DFU mode, target charge mode, and port mode scheduling to keep workflows fully automated.
- ✓ Thunderbolt expansion ports support daisy-chaining up to 6 hubs, enabling up to 96 devices to run in parallel without sacrificing performance.

Cambrionix hubs are stocked by Saelig Co. Inc. in NY USA at best prices and no shipping cost!

<https://www.saelig.com/category/cambrionix.htm>

