

# Cambrionix Intents

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User Manual

# Cambrionix Intents

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## 2. Introduction

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This manual provides detailed information on Cambrionix Intents, a set of predefined actions designed to control Cambrionix products through the Apple Shortcuts application. Apple Shortcuts is a powerful automation app available for macOS that enables users to create custom workflows, known as "shortcuts." These workflows can automate a variety of tasks, ranging from simple operations to complex sequences of actions.

### What are Cambrionix Intents?

Cambrionix Intents are specialised actions that allow users to interact with Cambrionix devices through the Cambrionix API. These intents are built to integrate seamlessly with the Shortcuts app, making it easy to add and control features of your Cambrionix products within custom workflows.

### Features and Capabilities

By using Cambrionix Intents in the Shortcuts app, users can automate and control various functions of their Cambrionix hubs, such as:

- **Port Control:**  
Manage individual USB ports, including turning them on or off, resetting them, or configuring power levels.
- **LED Control:**  
Adjust or change the status and colour of LED lights on supported hubs, providing visual feedback or notifications within your workflows.
- **Hub Status Monitoring:**  
Gather real-time information about the hub, such as connected devices, power usage, and port activity.

### How Cambrionix Intents Work

Cambrionix Intents act as a bridge between your Cambrionix devices and the Shortcuts app. Each intent corresponds to a specific function available in the Cambrionix API. For example, you can drag and drop an intent into a shortcut workflow to trigger actions like controlling USB ports or changing LED lights, making your automation smarter and more responsive.

### Integration with Apple Shortcuts

The Shortcuts app allows users to combine multiple actions and commands, creating powerful automations across apps and devices. With Cambrionix Intents, users can now incorporate control over their USB hubs into these workflows. Whether you're setting up a workflow for charging management, data synchronisation, or visual indicators, Cambrionix Intents offer full control over your hub's functionality.

Specific features and functions of the app may vary depending on the version of macOS you are using. For the best experience, ensure that your operating system and the Shortcuts app are up-to-

date. For the latest information, it is recommended to check the official Apple website or refer to the macOS user guide.

## Benefits of Using Cambrionix Intents

- Streamlined Automation:  
Easily integrate control over your Cambrionix devices within broader workflows.
- Customisation:  
Create workflows that combine Cambrionix actions with other apps, tasks, or system commands for a fully customised automation experience.
- Increased Efficiency:  
Automate repetitive tasks like turning USB ports on/off, managing power distribution, or monitoring hub status, saving time and improving productivity.

By using Cambrionix Intents, users can unlock the full potential of their hubs, incorporating advanced functionality into their daily workflows while enjoying the convenience and power of Apple's automation ecosystem.

## Prerequisites

In order to use Cambrionix Intents with the Apple Shortcuts application you will require the following:

- macOS Monterey (version 12) or later versions
- Shortcuts App (this is pre installed on macOS Monterey and later versions)

Optionally if you wish to synchronise shortcuts across devices using iCloud an Apple ID is required. You will also require the Cambrionix software relevant to the actions 'Intents' you wish to use.

[Cambrionix Hub API](#)

Use these API Intents to control the Cambrionix Hub and view information

### 3. Cambrionix Hub API

In order to control the Cambrionix Hubs you will require the Cambrionix Hub API downloaded and installed on your Mac. The minimum version is 3.22.0. During the Hub API installation, a checkbox for Cambrionix Hub Intents is pre-selected. Ensure this option remains selected, as these intents are required to use the features outlined in this manual.

To download and install the Cambrionix Hub API please use the following link . You will also find a link to the user manual which has lots of information on the different functions of the API along with detailed installation information. <https://www.cambrionix.com/products/api>.

To access the available intents, open the "Cambrionix Hub Intents" app in your Applications folder. Alternatively, you can search directly for the specific intents listed below within the app. This will allow you to quickly locate and utilise the desired functionality.

Intent	Description
<a href="#">Get API Version</a>	Get the Cambrionix Hub API Version
<a href="#">Find Cambrionix Hubs</a>	Find and List all Connected Cambrionix hubs
<a href="#">Find USB Devices</a>	Find and List all Connected USB Devices
<a href="#">Set LED (Legacy)</a>	Control the LEDs for "Legacy" products
<a href="#">Set LED</a>	Control the LEDs for products using RGB LEDs
<a href="#">Set LED Control Mode</a>	Toggle the ability to change a products LEDs
<a href="#">Set Port Mode</a>	Change port mode for a specific port on a specific hub
<a href="#">Set Port Mode (All Ports)</a>	Change port mode for all ports on a specific hub

Table 3-1

## 3.1. Get API Version

This intent is designed to retrieve and display the version number of the Cambrionix Hub API currently running on your Mac. To use it, simply drag the intent into the shortcut you are creating or modifying within the Apple Shortcuts app. Once the shortcut is executed, the version number of the API will be shown, allowing you to verify that the correct version is installed and running. This can be particularly useful for troubleshooting or ensuring compatibility with other software components. The example below illustrates how the version number will be presented after running the shortcut.

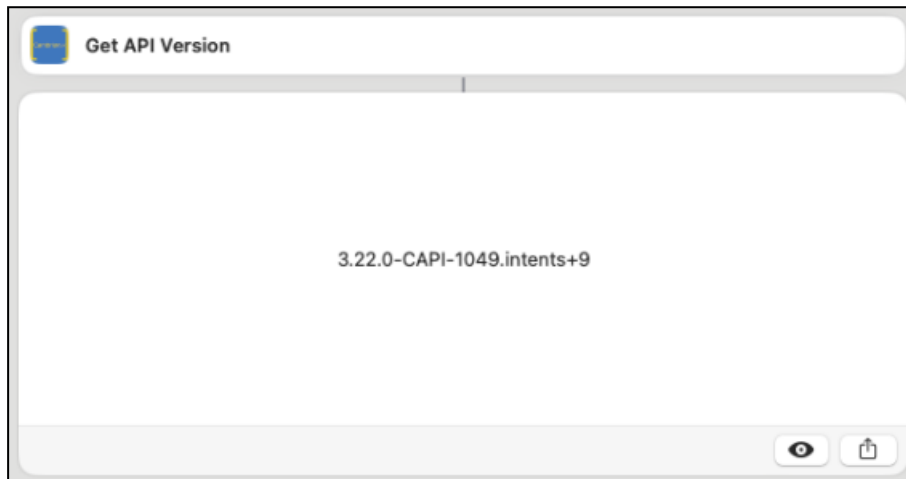


Figure 3.1

## 3.2. Find Cambrionix Hubs

This intent is designed to locate and display all Cambrionix USB hubs connected to your Mac. Once the Cambrionix hubs are successfully identified, the following key details will be provided for each hub:

Detail	Description
Hub Model Number	The specific model number of the detected Cambrionix hub, allowing for easy identification and reference.
Serial Number	The unique serial number of each hub, which helps to distinguish between multiple hubs and track individual devices.
Hub Location	The physical or system-assigned location of the USB hub on your Mac. This may include details such as the port it is connected to, making it easier to locate the device if needed.
Number of Ports	The total number of USB ports available on the hub, offering insight into the hub's capacity and the number of devices it can support.

Table 3-2

This intent streamlines the management of your Cambrionix hubs by giving you an organized view of each hub's specifications and current configuration. It's particularly useful for optimizing USB hub usage, troubleshooting connection issues, or verifying hardware details.

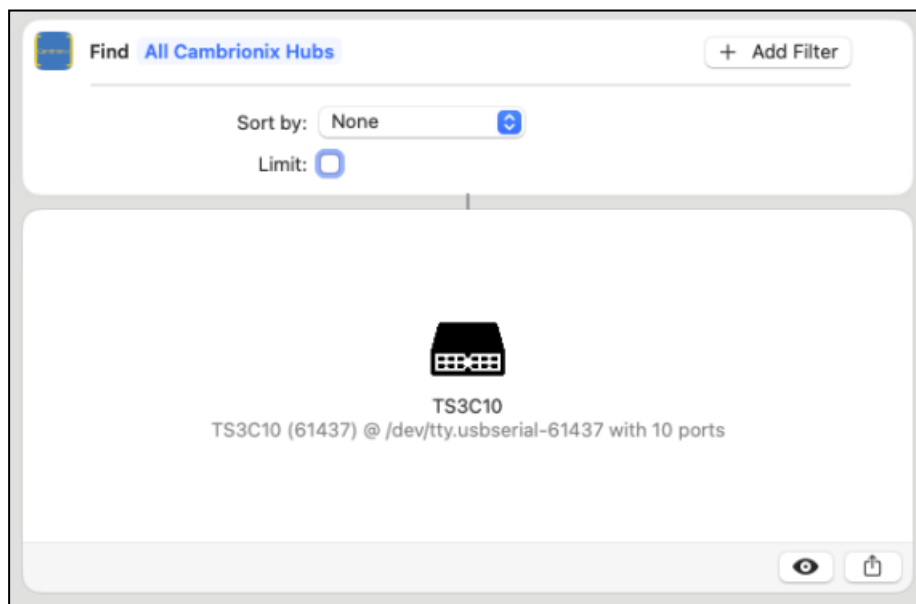


Figure 3.2

## Filters

This intent allows you to apply filters to narrow down the list of Cambrionix hubs shown. You can filter hubs using the following options:

- **Hub Serial Number:**  
Find a specific hub by entering its serial number or searching for hubs that contain certain characters in their serial numbers. This is helpful when managing multiple hubs.
- **Hub Type:**  
Filter hubs by their model or type

These filters give you more control over which hubs are displayed, making it easier to manage and work with your devices. Whether you need to find one hub or group them by type, these options make the process smoother and more efficient.

## Sorting

The results can be sorted in several ways, allowing for a customised view of the connected Cambrionix hubs based on your preferences or requirements. You can organise the results using the following criteria:

- **Hub Serial Number:**  
Sort the hubs by their unique serial numbers
- **Hub Type:**  
Group the hubs by their model or type
- **Number of Ports:**  
Sort hubs by the total number of available USB ports
- **Virtual Serial Port:**  
Sort by the virtual serial port number
- **Firmware Version:**  
Arrange the hubs based on their firmware version
- **Board Type:**  
Sort hubs according to their internal board type
- **USB Version:**  
Group hubs by the supported USB version (e.g., USB 2.0, USB 3.0),

In addition to these sorting options, you can also limit the number of hubs displayed in the results. This feature is helpful when working with a large number of hubs, as it allows you to focus only on a subset of devices for more streamlined management. Whether you need to isolate a few hubs or review all connected devices, this flexibility ensures you have full control over how the data is presented.



### 3.3. Find USB Devices

This intent is designed to detect and list all USB devices connected through Cambrionix Hubs on your Mac. It provides a comprehensive overview of every device plugged into the hubs. Whether you're managing a complex setup with multiple devices or just need to quickly identify what's connected, this intent streamlines the process by automatically discovering and displaying all USB devices linked through your Cambrionix Hubs..

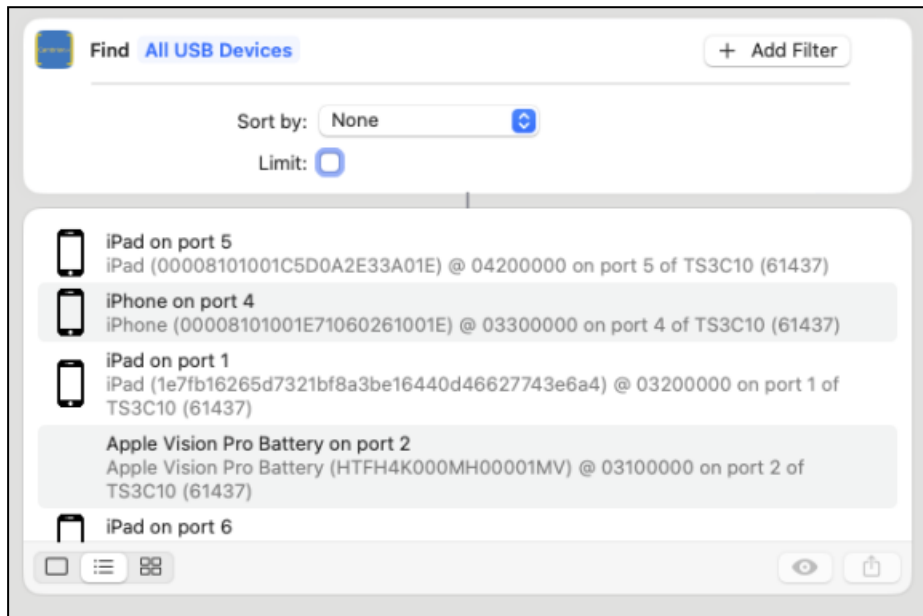


Figure 3.3

When using this intent, the following information about each connected USB device is shown:

- **Device Type:**  
Identifies what type of device is connected, such as an iPad, iPhone, or other USB peripherals.
- **USB serial number:**  
Displays the unique serial number of each device
- **USB Location:**  
Shows where the device is connected within the USB network
- **Port Number:**  
Indicates which port on the hub the device is connected to
- **Connected Hub:**  
Identifies the Cambrionix Hub the device is connected to
- **Hub Serial Number:**  
Displays the serial number of the hub hosting the device

This output makes it easy to monitor and manage all USB devices connected through your Cambrionix Hubs.

#### Filters

This intent allows you to refine the results by applying filters based on the following parameters:

Filter	Description
USB Serial Number	Filter devices by their unique USB serial number
Hub Port Number	Narrow down the results by the specific port number on the hub
Location ID	Filter devices by their Location ID to pinpoint where each device is connected within your setup.
Type of Device	Specify the type of device, such as Apple products or flash drives, to focus on a particular category of connected devices.
Exclusive Chip ID	Use this filter to target devices with a Exclusive chip ID (ECID)
USB Description	Filter results based on the USB device description
USB Manufacturer	Narrow down the list by the manufacturer of the USB device
USB VID	Filter devices by their Vendor ID (VID), which is useful for identifying devices from specific manufacturers.
USB PID	Use the Product ID (PID) filter to find devices with specific product identifiers, often used in conjunction with VID for detailed searches.

Table 3-3

When applying filters, you can choose to match the criteria exactly or filter results that contain certain information. Additionally, you can combine multiple filter criteria, allowing for highly specific searches. For example, you could filter for an iPad with a serial number containing 'e6a4' to find a particular device among many. This flexibility makes it easy to locate the exact devices you need to manage.

## Sorting

This intent provides flexible sorting options, enabling you to organise the results using the same parameters as the previously mentioned filters. You can sort by:

- USB Serial Number
- Hub Port Number
- Location ID
- Type of Device (Apple, Flashdrive...)
- Exclusive Chip ID
- USB Description
- USB Manufacturer
- USB VID
- USB PID

You can determine how you wish to sort these parameters, such as alphabetically (A-Z) or numerically (smallest to largest). Additionally, you can limit the number of devices listed in the intent's output, helping you focus only on the most relevant results. This customisable sorting feature ensures that you can view and manage your connected devices in the most efficient way possible.

### 3.4. Set LED (Legacy)

This LED control feature allows you to change the LED colours on legacy Cambrionix products. Before using it, you must first activate LED Control Mode by using the [Set LED Control Mode](#) intent, which prepares the hub for LED adjustments.

'Legacy products' refer to hubs equipped with individual Green, Yellow, and Red LEDs for each port. The following legacy products are supported:

- ThunderSync3-16
- PDSync-C4

Once the hub is in Control Mode, you can select the specific hub and port you wish to update. For each port, there are three checkboxes for the available LED colours—Green, Yellow, and Red. You can select one or more colours to light up the LED on the chosen port. This gives you a flexible way to visually monitor and manage the status of each port on your legacy hubs.

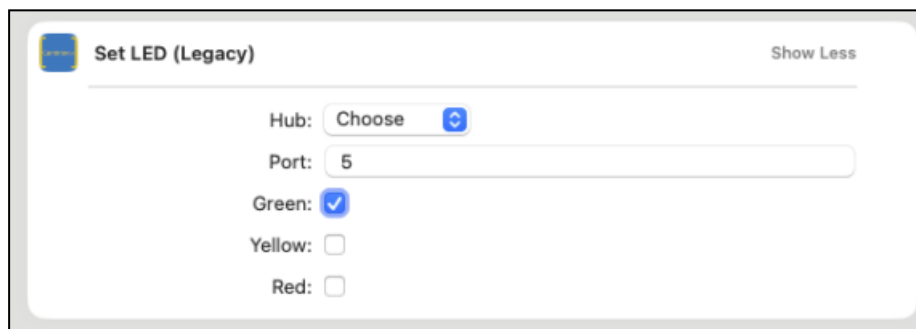


Figure 3.4

## 3.5. Set LED

This LED control feature allows you to change the LED colour on Cambrionix products equipped with RGB LEDs. Before using this control, you must first activate the [Set LED Control Mode](#) by using the corresponding LED control intent, which enables the hub to accept LED commands.

Products with RGB LEDs supported by this feature include:

- ThunderSync3-C10

Once the hub is in Control Mode, you can select the specific hub and the port you wish to update. For each port, a drop-down list will allow you to choose the desired LED colour. The available colours you can select from include:

- Off
- Red
- Green
- Blue
- Yellow
- Magenta
- Cyan
- White

This feature provides a versatile way to customise the LED colours on your RGB-enabled hubs, helping you to visually manage and identify ports with ease.



Figure 3.5

### 3.6. Set LED Control Mode

To control the LEDs on Cambrionix Hubs, you must first enable LED Control Mode. This step only needs to be performed once, and the hub will stay in this mode until either a different intent is used to exit the mode or the hub is power cycled.

After enabling LED Control Mode, the hub will be ready for LED customisation, whether you're changing colours on legacy products or RGB-enabled hubs. This mode remains active until explicitly changed or the hub is restarted.

Mode	Description
Off	Turn off LED control
On	Turn on LED control
Auto	Turn on LED control with the added functionality that the LEDs will reset if a device is removed

Table 3-4

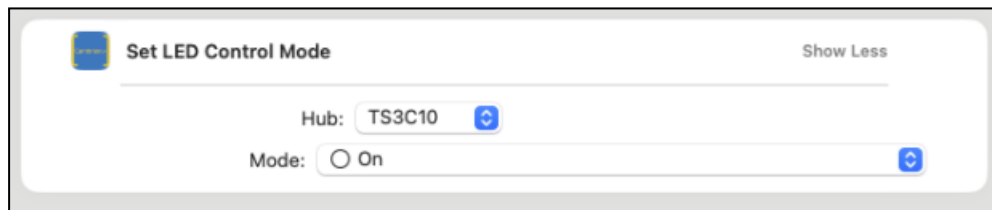


Figure 3.6

### 3.7. Set Port Mode

This intent allows you to change the port mode on a specific hub and port. To understand the different port modes and the options available for your particular hub, please consult the hub's individual user manual. This intent provides flexibility in configuring the behaviour of each port, ensuring that your hub operates according to your specific requirements.

Once you have selected the hub you wish to control, and defined the port number there is a drop-down of the available port modes:

On	Turn specific ports on
Off	Turn specific ports off
Charge	Turn specific ports to charge only mode (no data connection, hub emulates an OEM charger) (Legacy hubs only)
Biased	Detect the presence of a device but it will not sync or charge it (Legacy hubs only)

Table 3-5

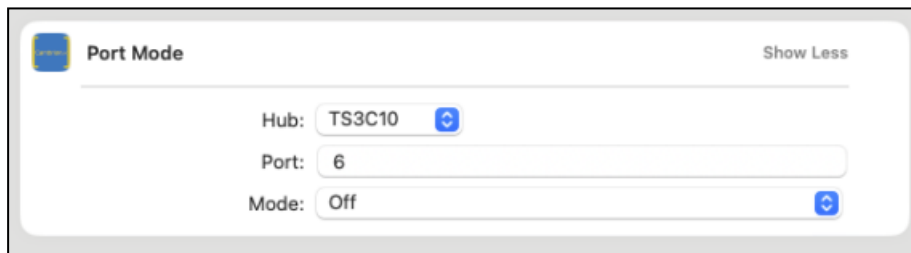


Figure 3.7

### 3.8. Set Port Mode (All Ports)

This intent allows you to change the port mode for all ports on a specific hub simultaneously. To understand the different port modes and their availability on your hub, please consult the hub's individual user manual.

This intent streamlines the process of managing the port modes across an entire hub, ensuring consistent operation according to your specific needs.

On	Turn specific ports on
Off	Turn specific ports off
Charge	Turn specific ports to charge only mode (no data connection, hub emulates an OEM charger) (Legacy hubs only)
Biased	Detect the presence of a device but it will not sync or charge it (Legacy hubs only)

Table 3-6

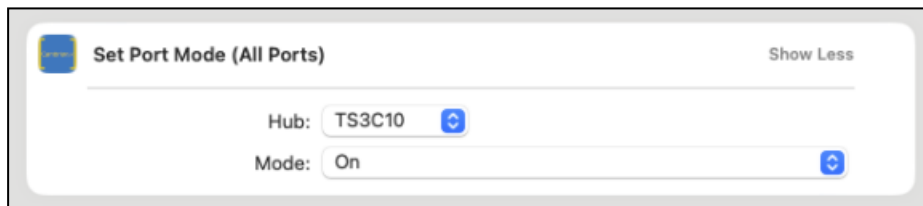


Figure 3.8



## 4. Creating Shortcuts

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To create a shortcut, you'll need to combine multiple intents (actions) to build a complete workflow. Intents are the predefined tasks that you can drag into your shortcut to form various actions. For detailed instructions on how to create and manage shortcuts, please refer to Apple's official [guide](#).

### Example Shortcut: Managing Device Updates with Cambrionix and Apple Configurator

In this example, we've built a shortcut designed to run through Apple Configurator. The shortcut is triggered automatically when a device is connected to a Cambrionix hub. It utilises intents from both the 'Cambrionix Hub Intents' and 'Apple Configurator Intents', along with a few additional tools to handle data efficiently. This shortcut performs the following series of actions:

#### Steps in the Workflow:

1. Find Devices Attached to the Hub  
The shortcut identifies all devices currently connected to the Cambrionix hub.
2. Set Up a Repeat Loop for Each Device  
A loop is initiated to ensure that the following actions are applied to each connected device one by one.
3. Obtain the USB Serial Number  
For each device, the USB serial number is retrieved. This unique identifier helps track and manage the device throughout the workflow.
4. Obtain the Port Number  
The port number where the device is connected is identified, allowing the workflow to control specific port-related actions.
5. Set the Port LED to Yellow  
The LED on the corresponding port is set to yellow, indicating that the device is currently undergoing an update or a task is in progress.
6. Update the Device to the Latest iOS Version  
Using Apple Configurator intents, the shortcut updates the device to the latest version of iOS, ensuring it is up to date with the latest software.
7. Turn the Port LED to Green  
Once the iOS update is complete, the port's LED is changed to green to signify that the update has successfully taken place.

#### Notes:

This shortcut assumes that the Cambrionix hub is already in [Set LED Control Mode](#). If the hub is not in this mode, the LED control steps will not work as expected.

By combining different intents, you can create powerful, automated workflows that streamline device management, software updates, and other tasks, all controlled through the Cambrionix Hub and Apple Configurator.

The screenshot displays a vertical sequence of workflow steps in a light gray container. Each step is represented by a rounded rectangle with a distinct icon on the left and text describing the action. The steps are as follows:

- Receive Text input from Nowhere:** Includes a download icon, the text "Receive Text input from Nowhere", and a conditional path "If there's no input: Stop and Respond Must be run via Configurator".
- Find connected devices from Shortcut Input:** Includes a laptop icon and the text "Find connected devices from Shortcut Input".
- Repeat with each item in Connected Devices:** Includes a refresh icon and the text "Repeat with each item in Connected Devices".
- Find All USB Devices where USB Serial Number is Unique Device Identifier (UDID):** Includes a magnifying glass icon, a search bar with "All USB Devices" and "where" text, a filter "USB Serial Number is Unique Device Identifier (UDID)", a "Sort by: None" dropdown, and a "Limit:" input field.
- Get First Item from USB Devices:** Includes a list icon and the text "Get First Item from USB Devices".
- Set variable port to Hub Port Number:** Includes a variable icon and the text "Set variable port to Hub Port Number".
- Set LED:** Includes a lightbulb icon, the text "Set LED", and a "Show More" link.
- Update Connected device to the latest release of System if needed:** Includes a laptop icon, the text "Update Connected device to the latest release of System if needed", and a "Show More" link.
- Set LED:** Includes a lightbulb icon, the text "Set LED", and a "Show More" link.
- End Repeat:** Includes a refresh icon and the text "End Repeat".

Figure 4.9

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