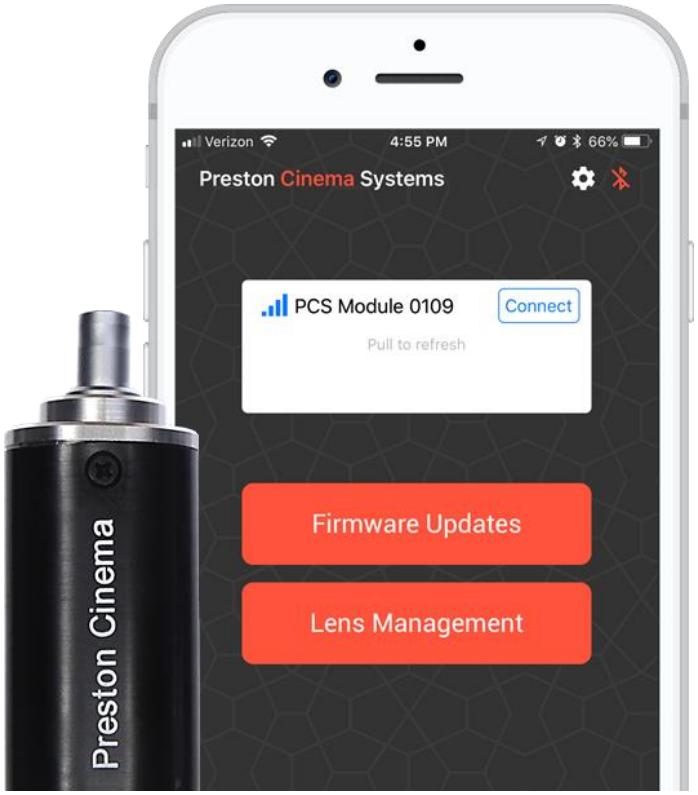
Preston Connect

Mobile App and Bluetooth Module

User Manual



V1.0 – September 2018

System Overview

The Preston Connect system simplifies and improves many processes for both camera assistants and rental house staff. It enables painless firmware updates for most Preston products and quick and easy lens transfer and editing for Preston Hand Units. By utilizing the built-in Bluetooth and Wi-Fi/4G radios of your smartphone, Preston Connect gives you immediate access to new firmware features as soon as they are released, without the need for USB-serial adapters and complicated driver installs. Preston Connect does the heavy lifting so you can focus on what you do best.

Supported Products

Preston Connect supports firmware updates for the following products:

HU3 | MDR-4 | MDR-3 | MDR-2 | LR2 Video Interface | Panavision DXL Module

Note that the LR2 Sensor is not supported. This is due to the fact that its Serial port is set up to receive power from the MDR, while the supported units provide power to the Module through their Serial ports.

System Components

The Preston Connect system consists of two components that complement a FIZ system: a mobile app, available for iOS and Android, and Bluetooth Module (the "dongle") that plugs into the FIZ unit's Serial port.

Mobile App

The app uses your phone's data connection to automatically download the latest firmware versions from our website, and acts as a central database for storing all your calibrated lens files. You will also receive push notifications on your phone the moment we release a new firmware version, which can then be downloaded and flashed on the spot, allowing for immediate adoption of new features and bug fixes.

System requirements for the mobile app are as follows:
Hardware: Bluetooth, mobile data connection (required to download latest firmware versions)
iOS: iOS 11+; both iPhone and iPad are supported.
Android: Android V4.4+; both phones and tablets are supported.
To receive firmware update notifications, the app must be granted push notifications access.

Bluetooth Module

The Bluetooth Module, or "dongle", as it's affectionately known, is the wireless link between your FIZ system and mobile app. It replaces the Serial-LEMO cable and USB-Serial adapter required for firmware updates with a computer. Note that no data is stored on the Module itself – it's simply a wireless connection to the app. All relevant data is stored within the mobile app, specific to your individual phone.

The Bluetooth Module has one indicator LED on the back side of the chassis. This LED illuminates bright blue when the Module establishes a Bluetooth connection to the mobile app. This is not a power LED; it will only light up when connected to the app. The Module plugs into and is powered by the Serial port of supported Preston products.

App Download Links

Search "Preston Cinema" or "Preston Connect" in the App Store or Google Play Store, or download directly here: iOS | Android

Connecting to a Bluetooth Module

All connections between the app and Bluetooth Module are done from inside the app itself, not the phone's Bluetooth devices menu. If you're looking to perform a firmware update, the Preston unit needs to be booted into a special programming mode before plugging in the Bluetooth Module to the unit's Serial port.

Firmware Updates

Each supported Preston product has a special power-up sequence to boot up in programming mode, which enables access to the device firmware to update it. Follow the procedure below before plugging in the Bluetooth Module or attempting to connect through the app.

HU3

1) Power down unit.
2) Hold Iris Set button (button marked "s" inside the "I" cutout on the front of the unit).
3) Power on unit.
4) Release Iris Set button
5) If done correctly, the display will show "Ready to load"

MDR-4, MDR-3, MDR-2

1) Unplug power cable.
2) Hold Reset button (the white or red lens calibration button).
3) Plug in power cable.
4) Release Reset button after power LED illuminates.
5) If done correctly, you will not have any motor control from the Hand Unit.

LR2 Video Interface

1) Unplug power cable.
2) Hold Menu button.
3) Plug in power cable.
4) Release Menu button after radio channel LEDs illuminate.
5) If done correctly, no graphics will appear on your monitor.

Panavision DXL Module

1) Power down camera.
2) Hold Reset button (the white lens calibration button).
3) Power on camera.
4) Once radio channel LEDs illuminate (approx. 20-30 seconds), release Reset button.
5) If done correctly, you will not have any motor control from the Hand Unit.

Lens Transfer

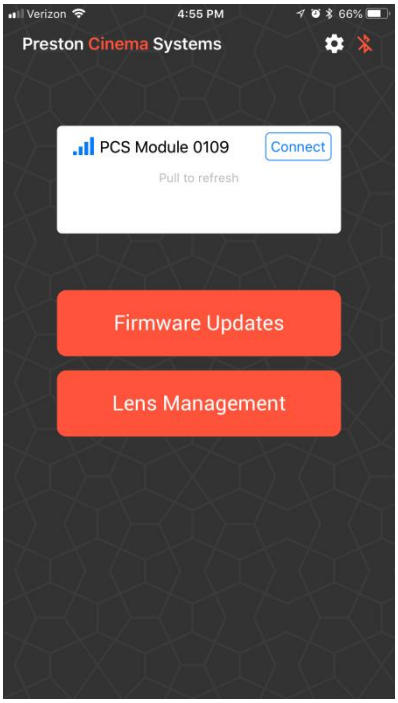
Lens transfer functions do not require the HU3 to be powered in any special mode. Simply power the Hand Unit on normally. You do not need to navigate anywhere within the HU3's menu system either.

Connecting to the Module

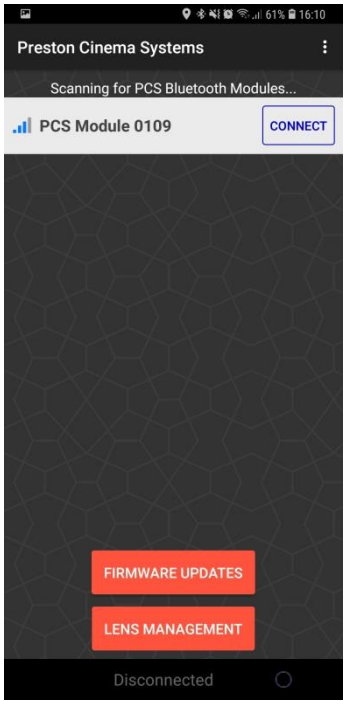
Once you've booted the unit up into the appropriate mode, plug in the Bluetooth Module to an available serial port. As mentioned before, the LED on the back will not light up at this time. This LED is a connection status LED, only illuminating in blue once the module is connected to the app.

Open the app. It will begin searching for nearby Bluetooth Modules:

iOS



Android



Make sure the device shown matches the serial number engraved on your Bluetooth Module. Click the Connect button to connect to the module. If you don't see your Bluetooth Module in the list of available devices, swipe down on the list to refresh and scan again. If you still don't see your Module, proceed to the troubleshooting section on page 20.

By default, the app remembers devices it's connected to in the past and will auto-connect to those devices the next time they're detected. This makes the connection process much simpler and faster, but if you'd like to disable this feature you can do so in the app's Settings.

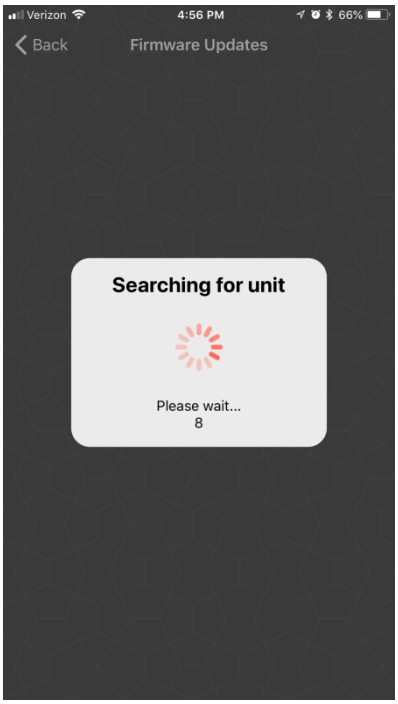
Performing Firmware Updates

Standard Procedure

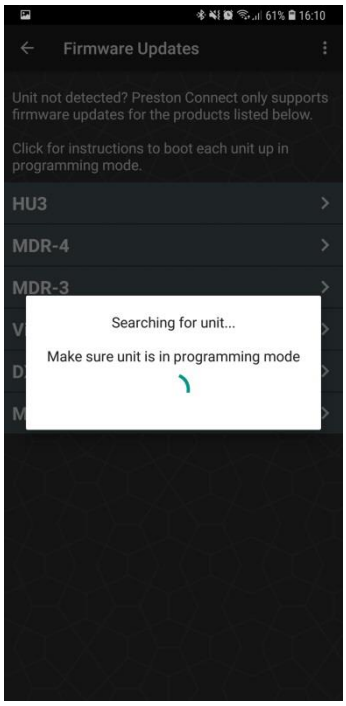
With your Preston unit booted into programming mode, and a successful connection established between the app and Bluetooth Module, click the Firmware Updates button. The app moves to the Firmware Updates screen and immediately downloads the latest firmware files from our website. *Note: if your phone is in airplane mode or you don't have a mobile data/Wi-Fi connection for some other reason, the app will not be able to retrieve the latest firmware files.*

At the same time, the app begins the process of detecting and verifying which unit the Module is connected to.

iOS



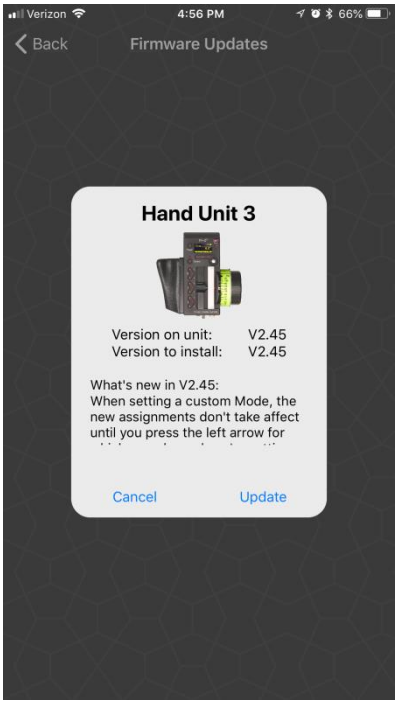
Android



Once the unit is detected, the app shows relevant info for the update process:

- The firmware version currently installed on the unit
- The new version ready to be installed
- Changes in the latest version, including new features, bug fixes, stability improvements

iOS



Android

Review the changes, and click Update to begin the update process. If you don't want to update, click cancel and there will be no changes to your unit (you will need to cycle power to get it back into normal operation mode though). Depending on the product, the update process can take several minutes (potentially longer if your phone is also connected to other Bluetooth devices).

While the update is in progress, don't turn off your phone or Preston unit. If the update is interrupted, you will need to restart the process to ensure the entire file gets loaded properly. It is OK to use a different app or receive a call during the update, as it will continue in the background. Make sure you remain close to the Module, though, because Bluetooth has a range of about 30 feet (significantly less in a noisy wireless environment).

Once complete, click Done. Unplug the Bluetooth Module from the Serial and cycle power on your unit. This completes the firmware update process. If you experience issues at any step of the process, refer to the troubleshooting section on page 20.

Special Cases

In some instances, it is necessary to load firmware files through a different process, such as with limited or no mobile data on set, or custom firmware for testing purposes. Typically, you would receive the firmware file from us via email, which you can save somewhere on your phone's file system. This procedure is slightly different on iOS and Android.

iOS

While we always recommend saving the file you receive to your phone's file system, on iOS is it not necessary – you can load it into the app directly from the email attachment:

1) Power Preston unit up in programming mode.
2) Plug Bluetooth Module into unit's Serial port.
3) Open the iOS app and connect to the Module, but remain on the main screen (don't click Firmware Updates). *Note: you must connect to the Module before proceeding.*
4) Return to email application (or wherever you originally received/saved the firmware file).
5) Tap the firmware file. A pop-up menu appears with a number of available options.
6) Select "Copy to Preston".
7) Preston app launches and goes directly to Firmware Updates screen.
8) The update process continues as normal from here on.

Android

Upon receiving the firmware file from us, save it somewhere you can access later, such as your phone's file system, Dropbox, Google Drive, etc. The firmware update process is almost the same as the standard procedure, with the exception of steps 5-8 below:

1) Power Preston unit up in programming mode.
2) Plug Bluetooth Module into unit's Serial port.
3) Open the Android app and connect to the Module.
4) Click the Firmware Updates button and allow the app to search for the unit.
5) When the unit is detected, click Import… on the left side of the pop-up.
6) The standard Android file chooser is shown.
7) Navigate to wherever you stored the firmware file and tap it.
8) The pop-up will change to indicate the name of the selected file. Make sure it matches the product type you're updating.
9) Click Update to begin flashing the firmware.
10) The update process continues as normal from here on.

Lens Management

Preston Connect also gives you the ability to wirelessly transfer lens calibrations. The mobile app contains an internal database for storing lenses imported from a Hand Unit, a backed-up list of lenses, or another assistant's app. Gone are the days of deleting lenses from your Hand Unit due to the memory limit of 255 lenses – store an unlimited number of lenses in the Lens Database within the app and then flash only the ones you need to the Hand Unit. This reduces your prep time since you only need to map each lens once. Once mapped, import the file to the app so you can share it later with the other Hand Units on the job.

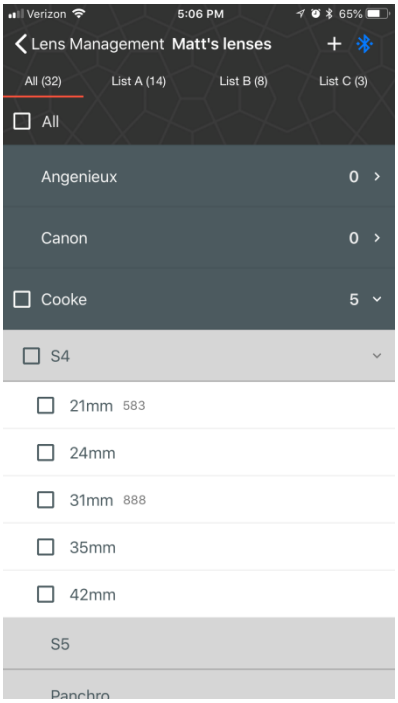
Lenses, Lens Database, and Lens Lists

Preston Connect's Lens Management system is broken into three main components for organization and ease of use. The basic module is a Lens, which is just a collection of the information used for focus mapping in the Hand Unit. Lenses are stored in the Lens Database, which acts as a library for all your lenses and resides on your phone. Finally, lenses can be organized into Lens Lists, allowing grouping of lenses for a specific job, lens series, etc.
A simple analogy for making sense of the components of the Lens Management system is to consider similar terms for music: Song, Library, and Playlists. A lens is like a song, which is contained in a Library (Database) and can be grouped together into Playlists (Lens Lists).

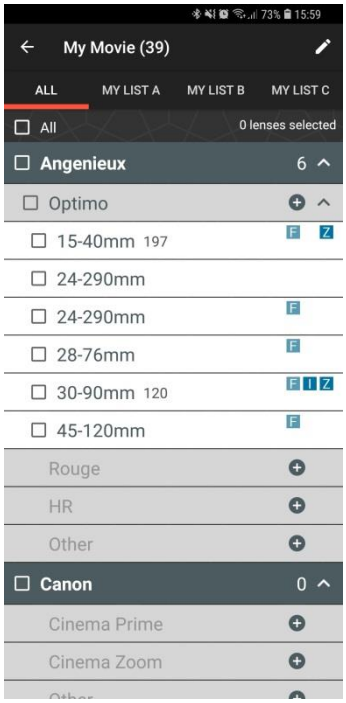
Lenses

The main advantage of lens mapping with the Hand Unit is the ability to translate the throw of any lens to one of five pre-printed focus rings. This is achieved through some advanced mathematical modeling of the lens based on the 10 points (plus infinity) that you enter during prep. Preston Connect enables persistent storage of those parameters, along with easy editing, creation, and manipulation of lenses from within the app. All lenses are stored on the phone inside the Lens Database.

iOS



Android



Lens Database

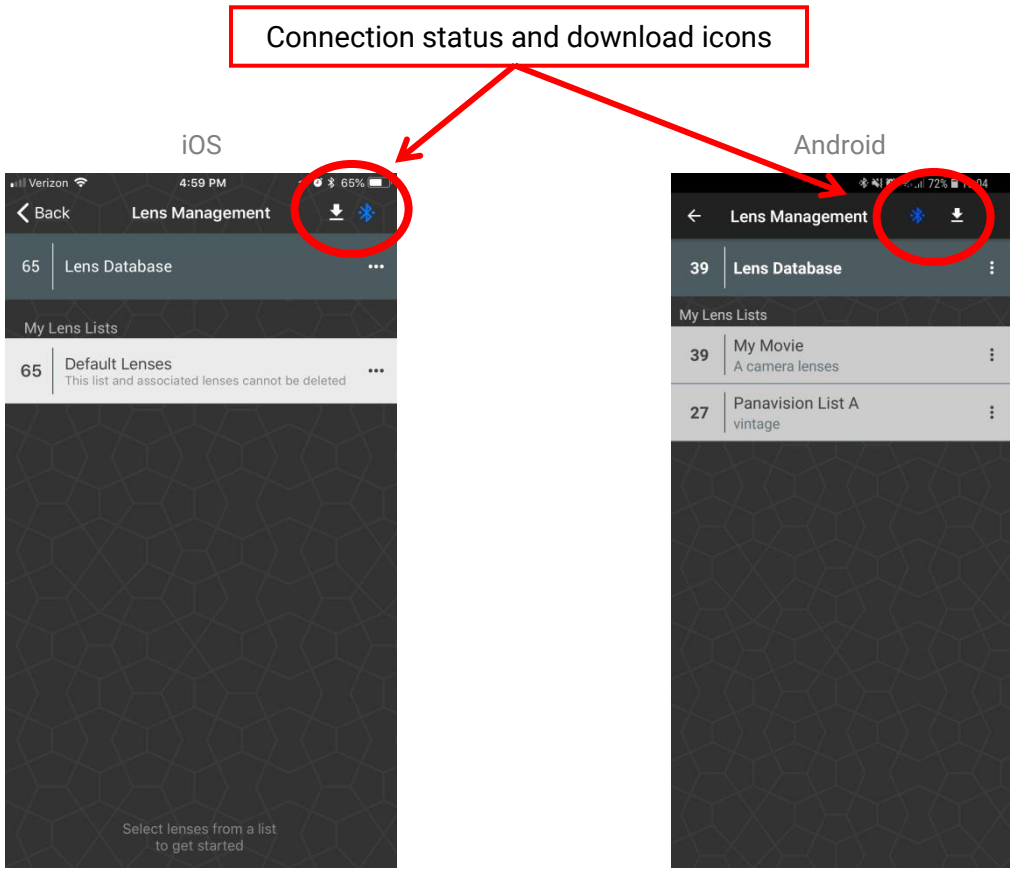
The Lens Database is a central repository for all your imported or created lenses. Think of it as a master list of any lens you've saved with the app that you can pick and choose from depending on which lenses you're using for a job. *Note: The database is stored within the app itself, so if you delete the app you'll lose your lenses! See the "Backing up Lenses" section below.*

Lens Lists

Lens Lists are just a collection of lenses grouped together, typically for a specific job or set of lenses. Lenses are pulled from the master Lens Database and associated with as many lists as you like – a lens can be a member of any number of lens lists, or no lists at all!

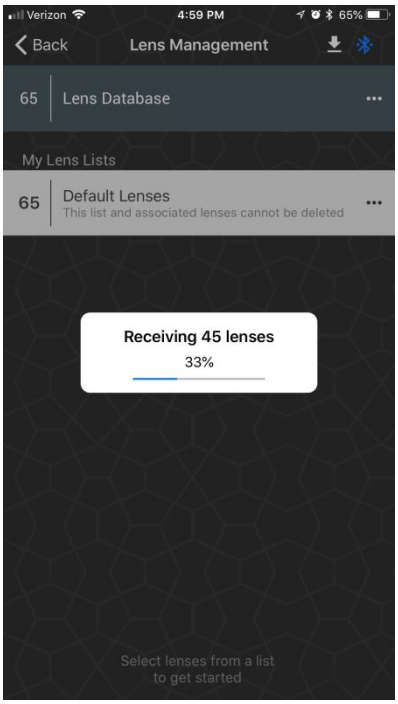
Importing Lenses from a Hand Unit

Before you begin, make sure you've powered up the Hand Unit and connected to the Module properly, as described above in the **Connecting to a Bluetooth Module** section. Once connected, click the Lens Management button in the app to see the following:

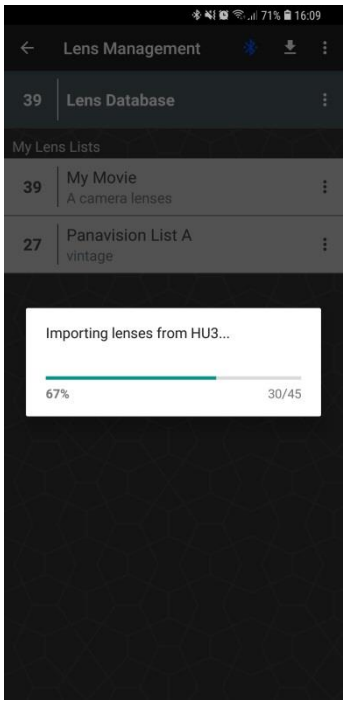


Verify the connection status with the Bluetooth Module by checking the icon in the upper right corner of the app. The Bluetooth logo should be blue if currently connected to a Module. If so, click the download arrow icon to initiate the import from the Hand Unit.

iOS



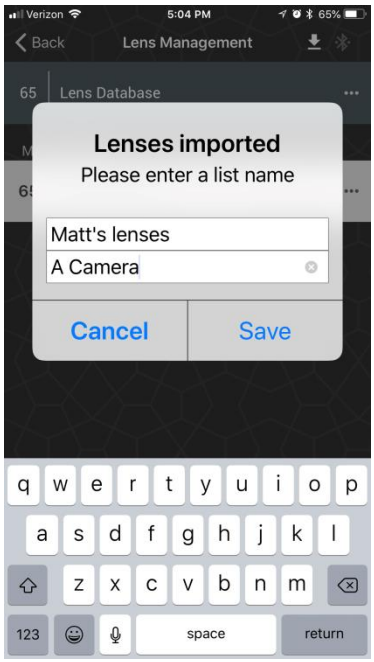
Android



During import, the app checks the received lenses for corruption, and these lenses are discarded as their data isn't valid and would cause undesirable behavior if used. As a result, the number of lenses received in the app might not match the number of lenses in the HU3.

iOS

Once the app has received the lenses, provide a name and comment (optional) for the Lens List to create with those lenses. Lens List names must be unique, so if you enter something already present in the app it will append "_copy" to the name.

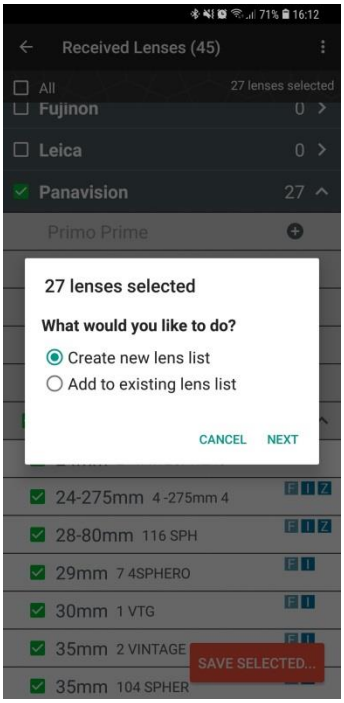


Coming soon: ability to select specific lenses to save to the database (currently Android only).

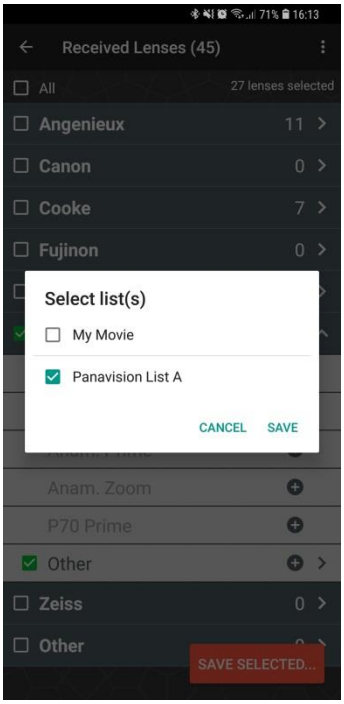
Android

Once the app has received the lenses, you're prompted to select which ones you actually want to save to your internal Lens Database. Use the checkboxes on the left to select lenses individually, by series, or by manufacturer. *Note: only lenses that are selected will be saved to the database. Others will be discarded upon leaving this screen!*

Click Save Selected once you've chosen all the lenses you wish to save, and then choose whether to create a new Lens List with the selected lenses, or add them to an existing Lens List.



If you're creating a new Lens List, input a name and comment (optional) and click Save. Otherwise, select an existing Lens List and click Save.



Click Back to return to the Lens Management screen. Any new Lens Lists will show up below the Lens Database. The counts next to the Lens Database and each Lens List might seem off,

because the system checks the existing lenses before saving new ones to the database. If the same lens already exists, it's associated with the new Lens List to avoid duplicates. A lens is considered a duplicate if the following conditions are met:

- Same Manufacturer, Series, and Focal Length(s)
- Same Serial and Note
- Same calibration coefficients

Importing Lenses from a File

In addition to importing lenses directly from a Hand Unit, Preston Connect also supports importing lenses from a Lens List file. This file can be created by another instance of the app (i.e. on another assistant's phone) or a backup of your existing lenses. You do not need to be connected to a Bluetooth Module to import lenses from a file, but you do need access to the file itself. You will typically receive the file via email, text, Dropbox, etc.

iOS

The process for importing lenses from a file is similar to importing a custom firmware file, but you do not need to connect to a Module beforehand. Locate the file, tap it, and select "Copy to Preston". The app will launch and prompt you to enter a name and comment (optional), just like importing lenses from a Hand Unit.

Android

From the Lens Management screen, tap the 3 dots in the upper right corner and select "Import Lens List". The Android file chooser opens. Locate the file and tap it. The app will open and prompt you to select which lenses to save to the database. Follow the same procedure detailed above to save them to the database, either as a new Lens List or within an existing one.

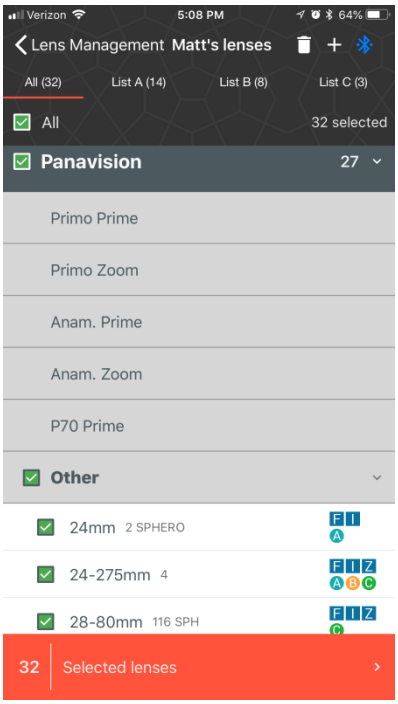
Exporting Lenses

Lens Selection

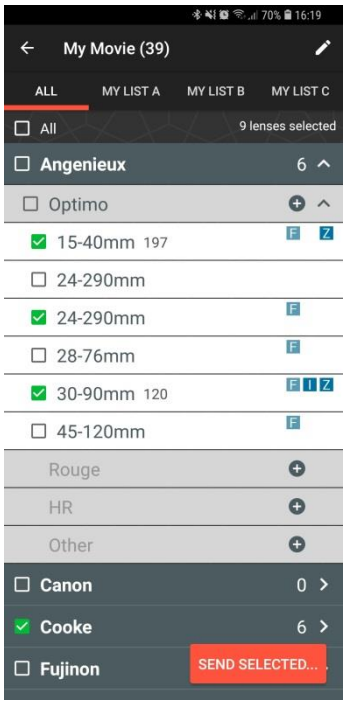
Preston Connect allows you to select lenses from the Lens Database as well as multiple Lens Lists in order to build a collection of lenses to export to a Hand Unit or share via email, text, Dropbox, etc. It's important to understand that the app will only export *selected* lenses.

Selecting lenses is a simple as tapping the checkbox next to a lens, series, or manufacturer from the Lens Database or inside any Lens List. A lens remains selected until you explicitly deselect it, which makes it easy to send the same grouping of lenses to multiple Hand Units, or come back to the app at a later time and send the same selected lenses somewhere else. This allows you to build a temporary Lens List comprised of lenses from several Lens Lists, which can then be exported or saved as a new Lens List itself.

iOS



Android



Once you've populated the temporary list of lenses to export, you're ready to send them to a Hand Unit or file for backup or sharing.

Exporting

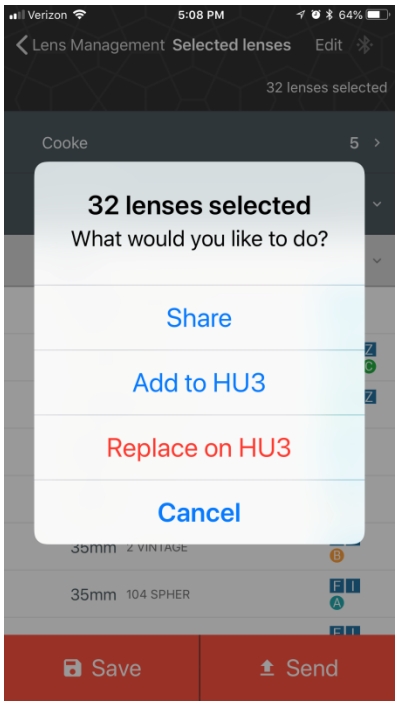
If you plan to export to a Hand Unit, make sure you've powered up the Hand Unit and connected to the Module properly, as described above in the **Connecting to a Bluetooth Module** section. Once connected, click the Lens Management button in the app.

Verify the current connection status with the Bluetooth Module by checking the icon in the upper right corner of the app. The Bluetooth logo should be blue if currently connected to a Module. As discussed in the Lens Selection section above, only *selected* lenses will be transmitted.

<u>iOS</u>

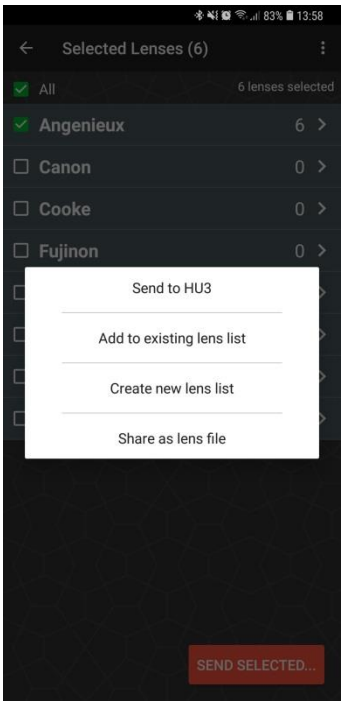
Click the orange "Selected Lenses" banner on the bottom of the Lens Management screen to view all the lenses you've prepared for export. If you need to make changes to this collection before export, click "Edit" in the upper right corner and remove any lenses, series, or manufacturers.

Click the Send button. You should see a pop-up with different actions.



Share: Export the selected lenses to a file, for backup or sharing via email, text, Dropbox, etc.
Add to HU3: Export the selected lenses to a Hand Unit, **adding them to any existing lenses** already present on the Hand Unit.
Replace on HU3: Export the selected lenses to a Hand Unit, **erasing any existing lenses** present on the Hand Unit and replacing them with the selected lenses from the app.

Android
Click the orange “Selected Lenses” banner on the bottom of the Lens Management screen to view all the lenses you’ve prepared for export. If you need to make changes to this collection before export, simply deselect any lenses, series, or manufacturers you don’t want to export. Click Send Selected to show a pop-up to select how to export your selection.



If you're sending to a Hand Unit, select Send to HU3 and then review the options:
Add lenses to HU3: Export the selected lenses to a Hand Unit, **adding them to any existing lenses** already present on the Hand Unit.
Replace all lenses in HU3: Export the selected lenses to a Hand Unit, **erasing any existing lenses** present and replacing them with the selected lenses from the app. Click Send to confirm your selection and begin the export process.

If you don't want to send to a Hand Unit, choose the appropriate action from the pop-up to either 1) Add the selected lenses to an existing list; 2) Create a new lens list from the selection; or 3) Export the selection to a file for backup or sharing via email, text, Dropbox, etc.

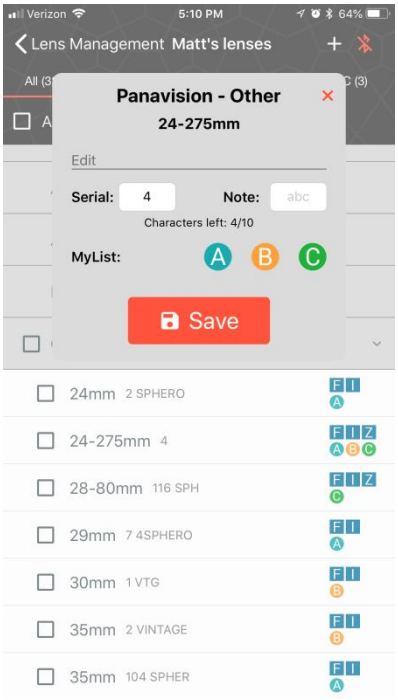
Lens Editing and Creation

Lenses can be created and altered from the Lens Management section of the app. Created lenses will have empty calibration parameters until they're mapped with a Hand Unit and re-imported to the app. Any changes to lens attributes, such as Serial number or Note, will be reflected in any Lens List that lens is a member of.

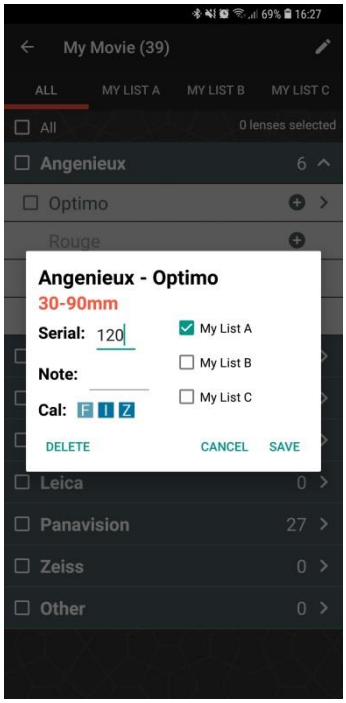
Editing Existing Lenses

In the Lens Database or within a Lens List, simply tap on a lens to bring up a pop-up window to edit its attributes. Lens names are limited to 14 characters, which includes the focal length(s), "mm", the Serial, and the Note. This means that a 21mm lens could have a longer note than a 24-290mm. The app won't let you save changes to a lens if the lens name is too long.

iOS

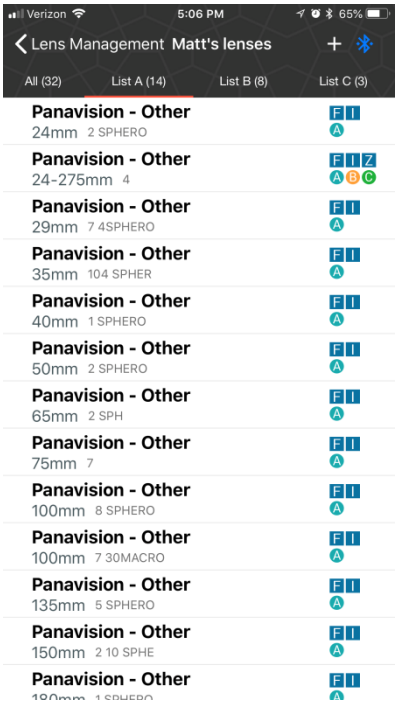


Android

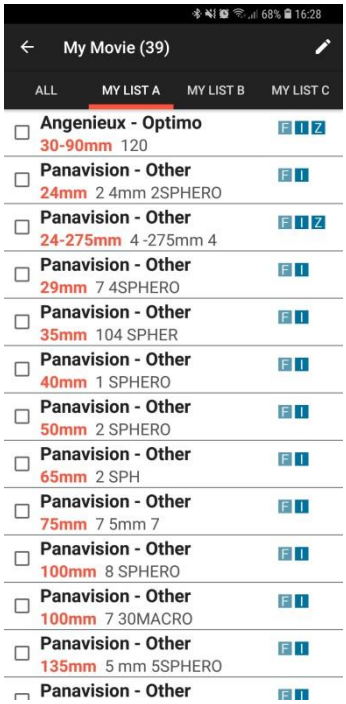


If at least the Focus of the lens is mapped, you can add it to My List A/B/C inside a Lens List. Check the box next to the list(s) you want to add it to, and then it will appear in the corresponding My List tabs. Click the tabs or swipe (Android only) to view each My List.

iOS



Android

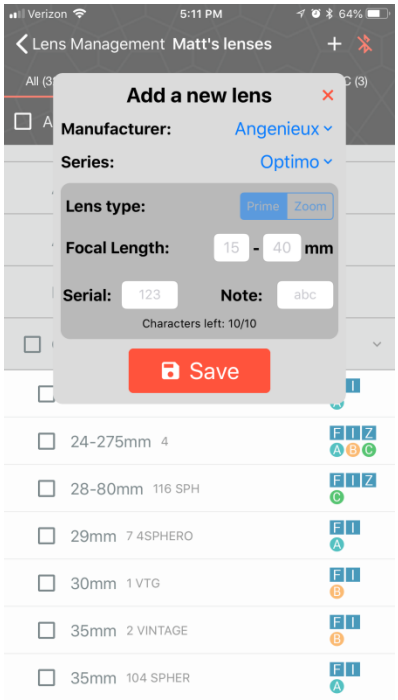


Creating New Lenses

New lenses can be created within a specific Lens List, or from the Lens Database. If created from the Lens Database, they won't be associated with any Lens List until you select them and add them to an existing list. Lenses added in either location are always saved to the Lens Database, as that's the master list of all lenses on the phone.

iOS

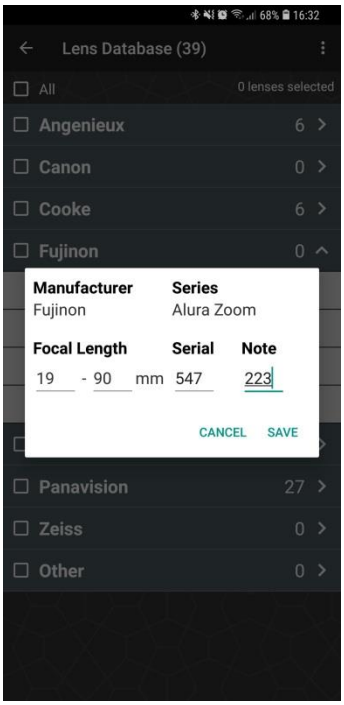
From a Lens List or the Lens Database, click the + icon in the upper right corner.



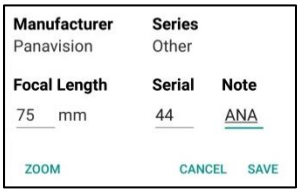
From the pop-up window, select the Manufacturer and Series. The prime/zoom indicator will change automatically based on those selections, unless you select "Other". If that's the case, make sure you toggle the prime/zoom indicator to the correct position for the lens you're adding. Enter the focal length(s), Serial, and Note and click Save.

Android

From a Lens List or the Lens Database, expand the appropriate Manufacturer section and select the + icon for the Series that the lens belongs to.



If you selected “Other”, use the Zoom button in the lower left corner of the pop-up to toggle between prime or zoom. Enter the focal length(s), Serial, and Note and click Save.



Backing up Lenses

As mentioned earlier, all the lenses reside in the Lens Database, contained within the app itself. This means that if you delete the app, your lenses will be deleted with it! It’s a good idea to back up your Lens Database periodically so you can easily restore it if needed. You can also back up specific Lens Lists using the same procedure.

From the Lens Management screen, tap the 3 dots icon on the Lens Database or a specific Lens List. Select Share, which will bring up the appropriate file chooser for your operating system. Save the file to a place you will remember and have access to later, such as Dropbox, email it to yourself, etc. Later, when you want to restore these lenses to the app, follow the instructions above in the **Importing Lenses from a File** section.

Troubleshooting

App does not find my Bluetooth Module

1) Make sure your Bluetooth is turned on in your phone's settings.
2) Make sure you're searching for the Bluetooth Module from within the Preston Cinema app, not your phone's Bluetooth devices.
3) Make sure the Preston unit you plugged the Bluetooth Module into is powered.
4) Make sure you're less than 20 feet from the Bluetooth Module.
5) Make sure your Bluetooth Module is plugged in to a supported product (page 4).

If you've followed the above steps and the Bluetooth Module still doesn't show up in the app, please contact support as you may have a defective Bluetooth Module.

I'm connected to my Bluetooth Module but my Preston unit is not detected

1) Make sure the Preston unit is powered in programming mode (see page 5 for procedure).
2) Make sure you're less than 20 feet from the Bluetooth Module.
3) Try closing the app, cycling power on the Preston unit (again, in programming mode), and restarting the app.
4) Try updating firmware on another Preston unit.

If you've followed the above steps and your Preston unit still isn't detected, please contact support as you may have a defective Bluetooth Module.

I can transfer lenses but can't update firmware

Please contact support as there's likely an issue with your Bluetooth Module or a bug in the app.

The firmware update didn't reach 100%

1) This can happen if the connection between the app and Bluetooth Module is interrupted. Make sure you remain close to the Bluetooth Module until the completion of the firmware update.
2) Repeat the standard update steps. The version displayed may show "?.??".
3) A Preston unit will not function at all with only partial firmware loaded.

If a specific Preston unit is consistently failing to complete its firmware update, please contact support as there is likely an issue with the unit's memory.

Contact Us

For support or feature requests, please contact techsupport@prestoncinema.com. Be sure to mention which OS you're using along with the app version number, the make and model of your phone, and any troubleshooting steps you've tried.