

BYTHOM ZCONNECT MANUAL

VERSION 1.0 (15)

THOM HOGAN



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CHAPTER 1

WHY YOU NEED BYTHOM ZCONNECT

THE NUMBER one complaint from digital camera owners is that you need an often-flakey or unreliable app to get images from the camera to your mobile device. This makes these cameras less useful than just taking photos using the smartphone or tablet itself, as no one wants to fuss with all the messy Bluetooth and Wi-Fi connectivity only to find that they can't directly do what they really wanted to do, or that it takes them too long to do it.

If you have a Z System camera, a recent iOS or iPadOS device, and a USB-C 3.1 or later data cable, and byThom ZConnect, the mess will be gone, and you can now do what you've always wanted to do: get that great image you took off the camera and into social media with just a few taps.

Why this app got developed is basically the same story. As a sports photographer, I often have to get images I've taken very rapidly up to my photo agency or the University sports director I'm working with. In some stadiums and arenas, even the very best Wi-Fi connection can be unreliable due to the amount of other people trying to use the transmission bands. Cellular

works more reliably, but our cameras don't have cellular connections, they have to rely on a mobile device for that.

Thus I built a simple app that used USB-C to transfer images to my iPhone, and then once they were there, I moved them into some other app that would allow me to push them to my clients via the cellular connection on the phone.

The more I used my original simple app, the more I became aware that, with just a few additions and changes, it could be even more generally useful, and even bypass having to use another app to send the images. From that thought came the current byThom ZConnect.

CHAPTER 2

WHAT YOU NEED TO USE BYTHOM ZCONNECT

RATHER THAN TRY to support every possibility in the world poorly, I chose to create an app that does everything excellently with a subset of devices.

You need:

- *Any Nikon Z System camera:* Z5, Z5II, Z6, Z6II, Z6III, Z7, Z7II, Z8, Z9, Zf, ZR, Z30, Z50, Z50II, or Zfc.
- *A USB-C equipped iPhone or iPad:*
 - iPad Pro 11" 1st generation or later (2018+)
 - iPad Pro 12.9" 3rd generation or later (2018+)
 - iPad Air 4th generation or later (2020+)
 - iPad mini (6th generation or later (2021+)
 - iPad (10th generation or later (2022+)
 - iPhone 15, 15 Plus, 15 Pro, 15 Pro Max
 - iPhone 16, 16 Plus, 16 Pro, 16 Pro Max, 16e
 - iPhone 17, 17 Plus, 17 Air, 17 Air, 17 Pro Max, 17e
 - iPhone 18 Pro, iPhone 18 Pro Max
 - iPhone Duo
- *A recent version of the operating system for your device:*
iOS 26.x or later, iPadOS 26.x or later.

- ***A USB-C 3.1 or faster data cable.*** This one is important, as you want the fastest possible data transfer speed from camera to mobile device, and only USB-C 3.1 or later cables will support that. Watch out for those ubiquitous USB-C cables you get with inexpensive devices: many of them don't even support data transfer, only charging.
- ***The byThom ZConnect app.*** The app is only available from the official Apple App Stores. This is good news, as updates will be automatically taken care of and pushed to your device, you can use the app on multiple devices on your account, and even share the app with your family without having to anything extra.

Some of you might ask about these specific requirements. When I decided to make a commercial app, I wanted to make sure that it was well tested and meaningfully supported current (and hopefully future) cameras and devices. By avoiding older OS versions, older mobile devices, and even pre-Z Nikon or non-Nikon cameras, I could use the most modern frameworks that Apple provides developers as well as have a manageable testing cycle. byThom ZConnect is written fully in Swift 6, Apple's current language of choice, using only OS 26 (and later) functions.

15 possible cameras on 23 possible devices is already a serious testing load to manage. Fortunately, these all share the same communication abilities, meaning that there is almost no "if X device then do Y" code in the app. This makes code verification, code testing, and code maintenance much easier.

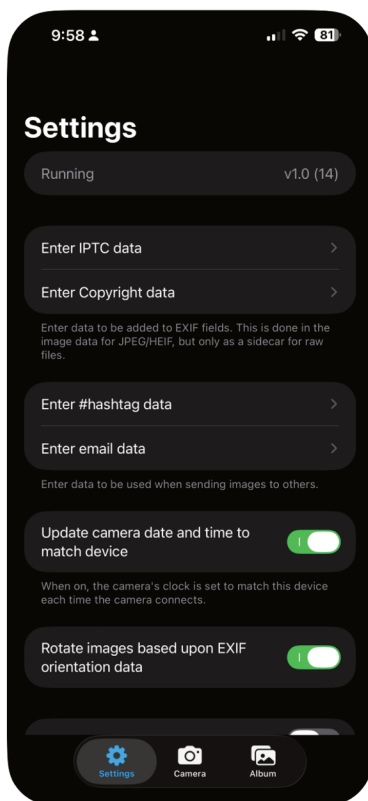
For you, it either gives you bragging rights (because you already made it to the 2020's with your cameras and mobile devices), or gives you a reason to buy something new (wink, wink).

CHAPTER 3

SETTING UP

WHILE THE BYTHOM ZConnect app has a simple and direct design, we don't leave off some customization bits, and that's probably where you want to start with the app.

Tap the **Settings** tab (at the bottom on the iPhone, top on the iPad).



This page gives you the ability to set up a number of things that the app will remember:

- IPTC data
- hashtags or keywords
- Email recipients
- Whether the mobile device updates the camera's date and time when connected
- Whether images should follow the camera's rotation instructions

There's even a **Show camera diagnostics** toggle at the very bottom (scroll down), just in case you have issues connecting and we ask you to send a log of what the two devices are saying to each other.

Let's step through those settings options so you understand what they're there for and how they'll be used.

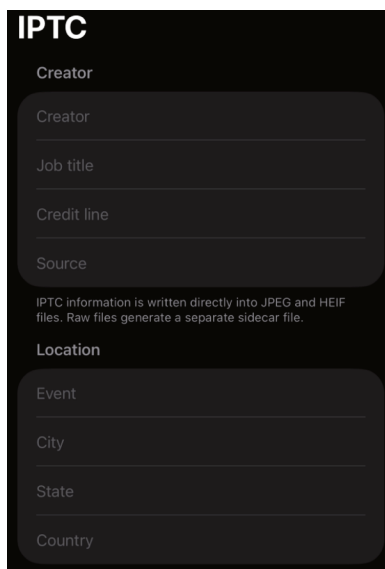
IPTC DATA

IPTC (International Press Telecommunications Council) is the International standard for adding metadata to an image so that those publishing an image know who created it, where it comes from, and who owns the Copyright, among other things.

That's exactly the three subsets of IPTC data that byThom ZConnect can associate with your images. We let you prefill the Creator, Location, and Copyright sections of IPTC data so that they're added to images you bring over to the mobile device.

Note: Many, but not all, Nikon Z cameras have the ability to write IPTC data *in the camera*. If you have done so, entering IPTC data with byThom ZConnect will override that.

To enter IPTC data, tap **Enter IPTC data** (again, on the **Settings** tab) and enter it. It's that simple. You're definitely going to want to enter your name (**Creator**) and the photo credit you prefer (**Credit line**).



The screenshot shows a dark-themed mobile app interface for entering IPTC metadata. At the top, the title "IPTC" is displayed in white. Below it, the section "Creator" is highlighted. Under this section, there are four input fields: "Creator", "Job title", "Credit line", and "Source". A small note below these fields states: "IPTC information is written directly into JPEG and HEIF files. Raw files generate a separate sidecar file." Below this, the "Location" section is highlighted, followed by four input fields: "Event", "City", "State", and "Country".

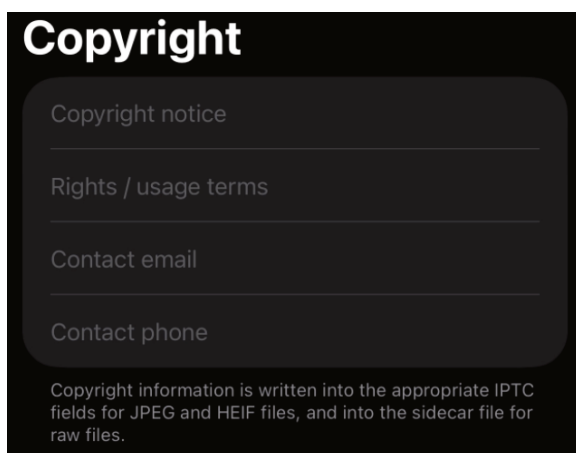
These entry fields—indeed all byThom ZConnect entry fields—will pull up the usual on-screen keyboard when you tap on them. Note that you can use voice dictation to fill in fields; just tap the microphone icon in the lower right and speak into your device.

Here's a quick overview of what you should enter into these fields:

- **Creator** — that would be your name
- **Job title** — that's usually irrelevant for most users, but if I'm working under contract, I'll enter **Photographer**
- **Credit line** — this should be the way the credit should appear if the photo is used somewhere, as in **Photo by Thom Hogan/bythom.com**.
- **Source** — if you're working for someone else, you'd tend to fill this field in with that organization's name; this is particularly true for work for hire situations.

- **Event** — a title for event you're photographing; for most people, I'd enter something like **Summer vacation 2025** or **JoeBob's wedding**. This would give you the ability to search for all such photos in a different way, using IPTC data.
- **City** — obviously the city where the image was taken
- **State** — ditto for the state
- **Country** — and finally the country

You don't always use all of these options. But do fill in ones that you find relevant. In particular, I think everyone should fill in **Creator**, **Credit line**, and then just before each download, use **Event** to add another way to find those images.

A screenshot of a mobile application interface for entering copyright information. The title 'Copyright' is at the top in white. Below it are four input fields: 'Copyright notice', 'Rights / usage terms', 'Contact email', and 'Contact phone'. At the bottom, a paragraph explains that this information is written into IPTC fields for JPEG and HEIF files, and into the sidecar file for raw files.

Copyright

Copyright notice

Rights / usage terms

Contact email

Contact phone

Copyright information is written into the appropriate IPTC fields for JPEG and HEIF files, and into the sidecar file for raw files.

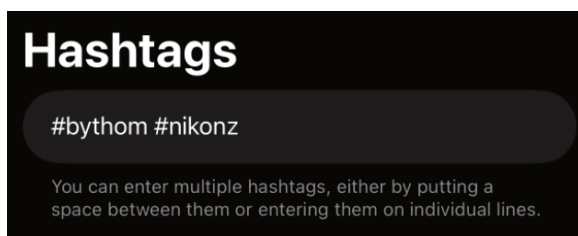
Next, tap **Enter Copyright data** and you'll see the above window. Enter your Copyright information. Technically, your photos are automatically considered copyrighted when you take them, however filling out these fields tells any organization that comes across your images on the Internet who owns them. Reliable companies and publications will always ask for permission to use your image when they see this metadata filled in, while it's your first legal step against the unreliable ones that ignored it.

IPTC data (including the next bit) all gets saved in the EXIF data of your image. There is an exception: byThom ZConnect does not write *anything* into a raw file, because we want to preserve the “rawness” of the file. Instead, we write an .XMP sidecar file that products like those made by Adobe will understand.

That sidecar file is only going to show up in one circumstance in this version of byThom ZConnect: when you select to move files from the Album to Folders in the selecting and sending process.

HASHTAGS AND KEYWORDS

Technically, keywords also get stored in the IPTC metadata of a photo. But we’ve separated them out here and joined them with hashtags, because often you want to have those things pulled out and displayed when you send an image. byThom ZConnect will do that for you automatically when you email images, for instance (more on that later in the manual).



Hashtags are those #something strings you often see after an image in social media. In the above screen I’ve added two I use regularly. They help searches find specific things, and it helps social media sites understand what the images you post relate to.

byThom ZConnect stores hashtags in the keywords field for IPTC data, so if you leave off the # you can simply type keywords to use instead.

One reason why hashtags don't appear grouped with the IPTC data on the **Settings** page is that you may make a slightly different decision about them than you do for the IPTC data. If you always use the same hashtags or keywords on all of your images—we use #bythom, for example—then yes, you want to enter them here.

But if you have lots of images that should have different hashtags or keywords, you should *not* enter them here, but enter them later, when you send the image(s) off to social media or your image cataloging program.

ENTERING EMAIL ADDRESSES

When you're ready to send an image and want to do so via email, you can, of course, enter the email address at that time. What the **Enter email data** field was designed for is for people such as sports photographers, who may be emailing many or all the photos from one session to the same editor or editors.

Email

Default To address

Attached image from byThom

You can enter multiple email addresses separated by commas. If no default subject is entered, byThom ZConnect uses the image's filename as the subject.

Numbering

Next email number #4

Reset numbering to #1

You can enter one email address, or a string of them separated by commas into the field. You can also enter a common field to use for the Subject field in emails (here **Attached image from byThom**).

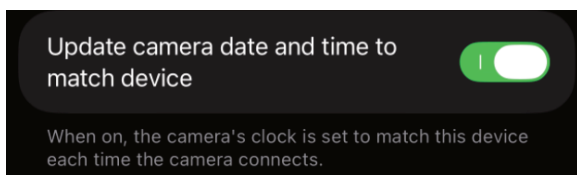
You're probably thinking you don't need that, but consider this: let's say you're going on vacation and you want to send your favorite images you take to a group of friends back home. Yep, you could have pre-entered all their email addresses, a subject line, and saved yourself a lot of time when you get around to sending your images.

byThom ZConnect has a lot of these small, thoughtful time savers. If you need them, they'll save you lots of last minute typing. If you don't, you can just live these fields blank until the time comes when they will help you.

Finally, one last thing with emails: because most people send more than one email at a time (one image per email), we number the emails as they're sent, and you can reset that number here.

GETTING TIME AND DATE FROM THE MOBILE DEVICE

This one is simple: if the toggle is on (green), then each time you connect the USB-C cable between your mobile device and your camera, the mobile device will update the cameras date and time to match.



This may be more important than you think. This was originally put into the program because we were trying to synchronize a

bunch of cameras date and time fields for a sporting event. If we plugged each camera into the mobile device, they all got updated to the same synchronized date and time.

Mobile devices use cellular and GPS signals to keep their date and time quite accurate, typically down to the second.

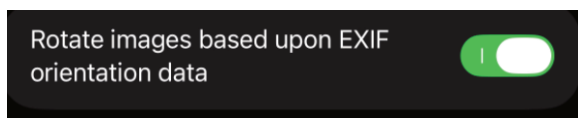
Cameras, on the other hand, don't tend to do that (a few can; the Z9 has a built-in GPS that can be used to synchronize its date and time). Instead, cameras typically use a circuit inside them that just ticks at some constant speed and the camera just counts ticks. The problem with that is the ticking isn't as accurate as getting a known date/time signal, so camera time (and sometimes date) tends to drift. The longer between the camera talking to something that actually knows the real time, the further off the camera's clock will be.

Worse still, it's possible to run down the camera's internal clock battery, particularly if you don't use your camera often. Thus, you may find that when you finally do charge the camera battery and start using the camera again, the date and time have been reset to something years off from what you want them to record.

We strongly suggest you leave this toggle on. It's a little convenience that will make your life simpler some day.

ROTATING IMAGES

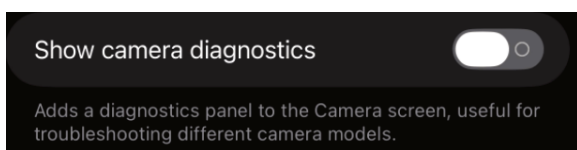
Assuming that you've set the camera to record its orientation when it takes photos, a flag will be set in the image's metadata that shows the camera's orientation when the image was recorded.



Normally, you always want your software to honor that rotation flag, but sometimes you might not want to, and we allow you to turn rotation off within byThom ZConnect.

DEBUGGING

We left one of our testing abilities in the **Settings** page: **Show camera diagnostics**. By default this is turned off, as there really is no reason why you need to see this information.



However, in the rare instance where you have trouble with your connection between mobile device and camera—we’re betting it will turn out to be a cable problem—you can turn this function on, and then when you plug your camera into your device, a log of what the connection is doing will appear at the very bottom of the **Camera** tab (and probably scroll off it). To help us troubleshoot, we’d ask you take a screenshot of that information and send it to us.

You take screenshots by pressing the on/off and volume up buttons simultaneously. This puts it on the Camera Roll, and if you tap on it, you can directly share that image.

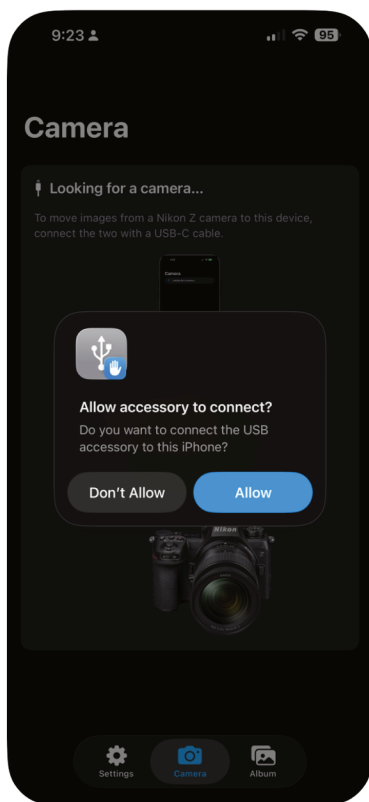
CHAPTER 4

CONNECTING AND TRANSFERRING

WHEN YOU FIRST START THE byThom ZConnect app, you get a simple screen that has selected the **Camera** tab and shows a mild animation of what it wants you to do: connect your mobile device and camera via a USB-C cable. Until you do that, you obviously can't transfer images.

One setting you may need to set (most Nikon's are shipped with this as the default): **NETWORK > USB data connection > MTP/PTP** (on some cameras just **NETWORK > USB > MTP/PTP**).

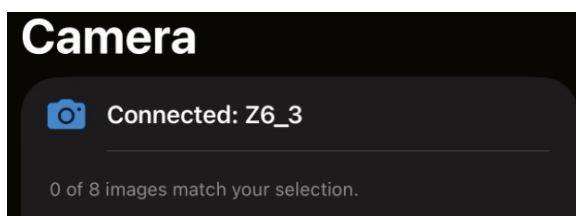
The very first time you run byThom ZConnect, you'll get a prompt from the device whether or not to allow the app to connect to files and services. You have to tap **Allow** for the program to continue. Now connect your USB-C cable between camera and mobile device.



The first time you do actually connect the camera to the mobile device, you'll get another prompt, asking whether you want to allow the accessory (camera) to connect. Again, tap **Allow**.

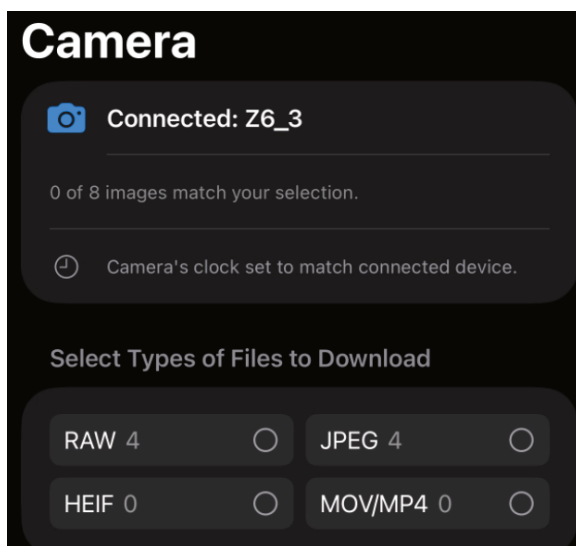
These access prompts are part of Apple's method of letting a user protect their device from potential malicious intent. We follow Apple's app guidelines exactly, so we're required to show these dialogs and have you approve.

Once you've managed to get through these prompts, the app will connect, look at the card (or cards) in the camera, and provide you with a connection notice and summary:

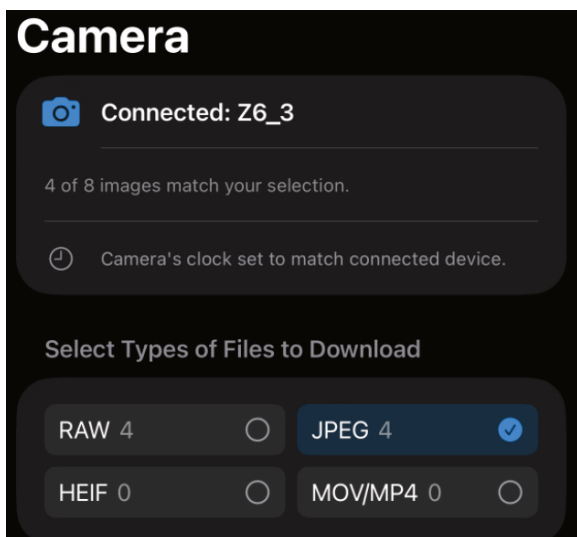


Note the **0 of 8 images...** information below the connection notice. This tells you how many images (and videos) the app found on the camera.

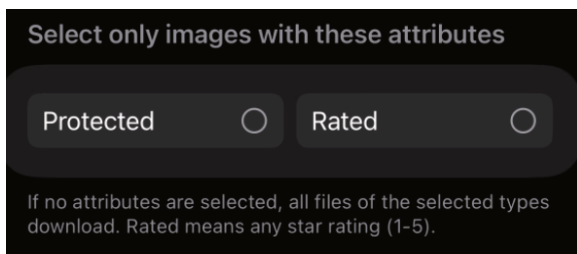
Immediately below that is an additional area where you can select what you're going to want to transfer. Each type of file will have a number next to it indicating how many of that type were found on the camera:



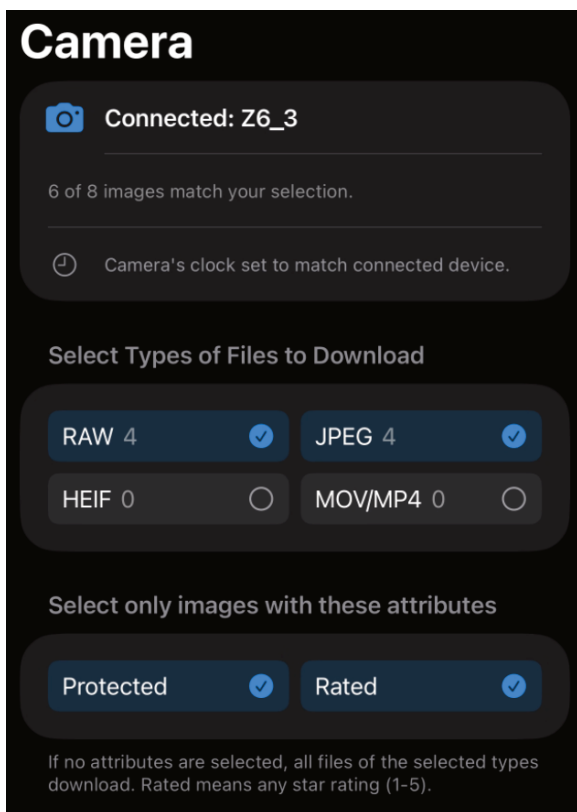
As you select **RAW**, **JPEG**, **HEIF**, and **MOV/MP4**, you'll see that the **0 of 8 images...** information updates. Here's I've selected just **JPEG** and now see **4 of 8 images...**



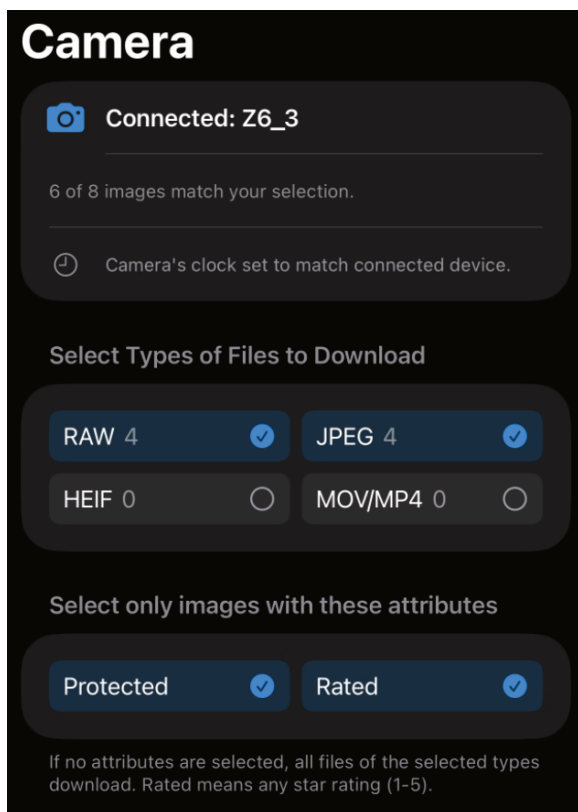
Below the file type selection area, you'll find another way of selecting files:



This is the way that we've been using this app photographing sports: between plays we'll look at the images we just took, and mark any that we want to transfer onward by (usually) protecting them. I use protect because it's a simple customizable button press on the camera. But you could use ratings, instead (that usually requires a button press plus dial rotation, which is slower).



You'll notice that when I select both **RAW** and **JPEG** and both **Protected** and **Rated**, I end up specifying 6 of the 8 files on this camera.



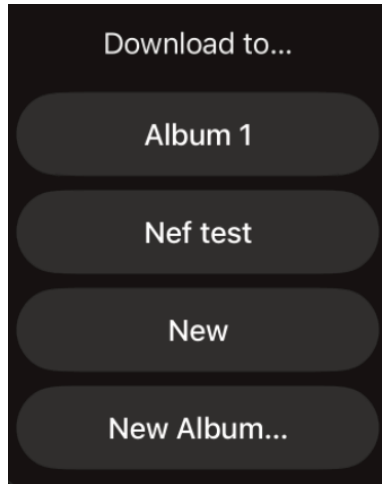
Obviously, the numbers you'll see will be different. But this is how you, from the camera, determine which images to download: just protect them or rate them.

Finally, we have the Download button at the bottom.

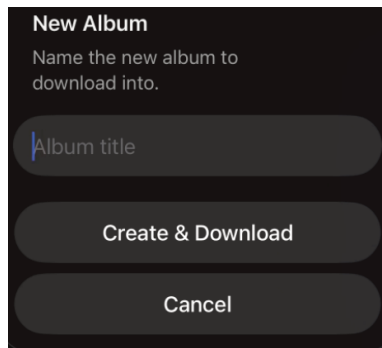


This button is not active (blue) until you've selected at least one file via the file type and file attribute selections previously described.

If the button is blue and you tap it, you'll get a small pop-up dialog that asks you to pick which Album (on the mobile device) to download to:



Any previously created Albums (**Album 1** and **Nef test** in the above example) will show up, as well as the opportunity to create a new one. If you pick **New Album** you'll be prompted for a name:



If you don't provide a name, the name will be Untitled, and if you already have an Album with that name, then Untitled-1, -2, etc.

Tap **Create & Download** once you've entered a name.

Congratulations, you've now mastered the connect and transfer portion of the app. After you've downloaded to an Album, everything else will be done on the Album tab.

CHAPTER 5

SELECTING AND SENDING

YOUR IMAGES HAVE MOVED from your camera to your mobile device. Now what?

Well, you select some or all of them and send them onward to whatever you determine should be their final destination. Just to be clear, that can be:

- **Photos** — Apple's app for browsing, cataloging, and editing images. Apple's support page for Photos: <https://www.apple.com/my/ios/photos/>.
- **Files** — Apple's app for storing the data in a form similar to what Macs do in the Finder. Files can be on an external drive to the mobile device. Apple's support page for Files: <https://support.apple.com/guide/iphone/files-basics-iphe9d46e90f/ios>.
- **Share** — The way Apple let's you share files with something else (typically an app, but also services). Apple's support page for Share: <https://support.apple.com/guide/iphone/customize-sharing-options-iphc572ca489/ios>. One thing to note is that what is available in the Share menu is customizable to each app, including

byThom ZConnect. Thus, the first few times you're using our app you'll probably want to consider what options you have available. That said, the "big ones" to consider are Messages, Instagram, TikTok, and Facebook.

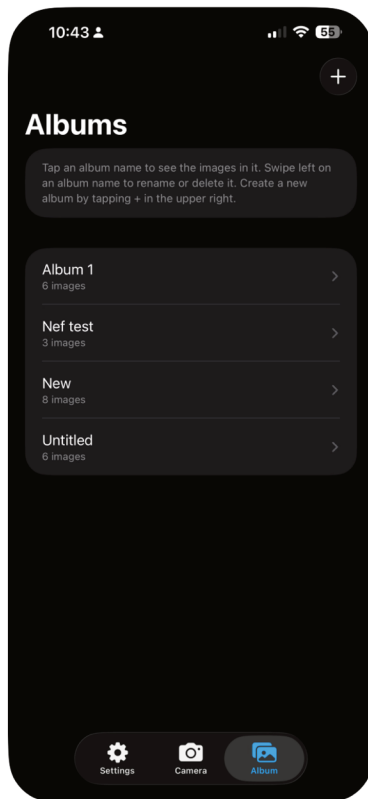
Messages is automatically added in byThom ZConnect, but you'll have to add the others manually, as we don't know what you have installed or what you want to use most.

- ***Email*** — This was the primary function of the original app I developed. It does just as you'd expect and bring up the Mail app with the image (or images) you've selected. One thing to note, though: byThom ZConnect will also add a caption and hashtags/keywords in your mail's body text!

We have a lot to cover. Let's dive in:

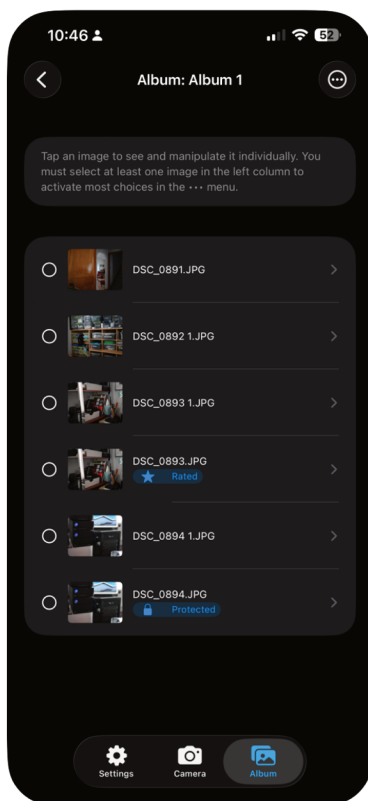
ALBUMS

When you tap the **Album** tab you'll see your choices; you can have one or more choices to select from, depending upon how you've been using the app.



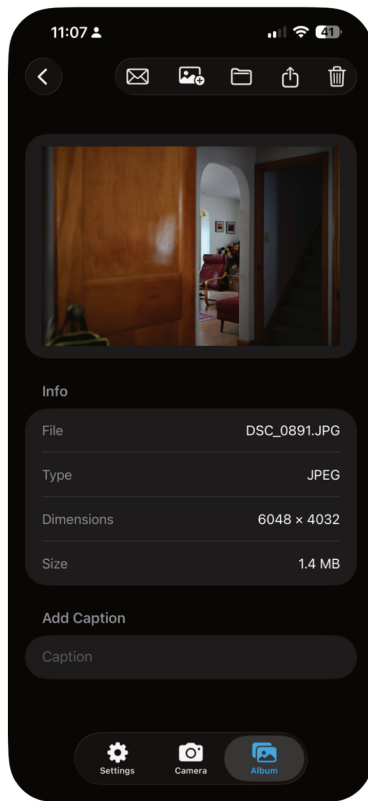
The Album list uses standard Apple UI. You can tap on the name (or the ➤) to drop into the Album, or you can swipe left on an Album name to reveal the ability to delete it or rename it directly. Yeah, we don't like the undiscoverable swipe mechanisms that Apple likes to scatter around. That's one reason why we put useful support text throughout the app: if you can read, you'll discover.

Once you've entered an Album, you'll see a scrolling list of images that are in it.



This presents additional information about each image, along with a thumbnail and a selection button (○). While the page seems simplistic at first, there's a lot you can do from here:

- Select an image or images with the ○ buttons, then tap the ... menu in the upper right to tell byThom ZConnect what to do with the selected images (**Select All, Deselect All, Add to Photos, Save to Folder, Share, Email, Delete**).
- Tap on an image name (or the >) to be taken to a detail page for the image:



Note the **Add Caption** field at the bottom. If you're going to email an image, this is a good place to tell people more about it (remember, you can use voice dictation instead of the keyboard). Don't worry about that file size if you're going to email the image, we'll get to that in a bit.

Let's step through some of the options.

SELECT ALL / DESELECT ALL

These options live in the ... menu in the upper right of an Album page. They do exactly what they say, no matter what the current

status of selections is: select all or deselect all. Nothing else to see here.

You'll note that all the following options will have an appended number in parentheses, which indicates how many images you have currently selected.

ADD TO PHOTOS

The **Add to Photos** option sends selected images right to Apple's Photo app on your mobile device, where you can browse them, catalog (group) them, edit them, or share them.

If you're using Apple's iCloud Photos options (**Settings** > [your account] > **iCloud** > **Saved to iCloud**), your images will also migrate right up to the cloud after you've used this option. (Make sure you have plenty of iCloud storage, as images from Nikon cameras can be a lot larger than those that came from your mobile device).

SAVE TO FOLDER...

The **Save to Folder...** option is going to push your camera images into Files on your mobile device. Files is an Apple provided app that acts a bit like Finder on the macOS, but is a little more limiting on the mobile devices.

SHARE

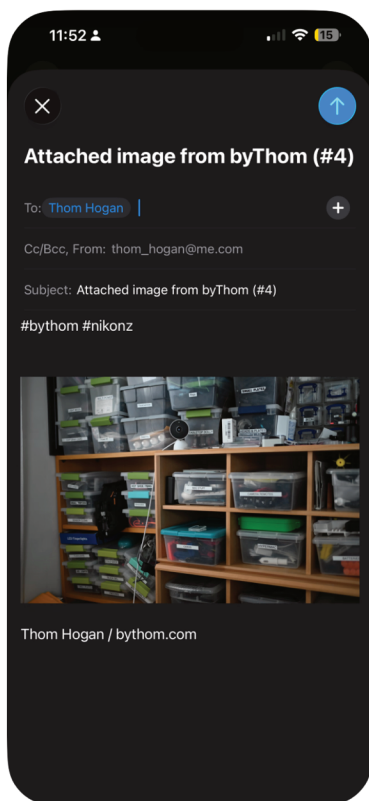
Tapping **Share** takes you to sharing dialog for byThom ZConnect. Remember, every app on your mobile device can have a different Share dialog, so early on you'll want to configure what appears on this screen (instructions for that were given earlier in this chapter).

Typically this is the place you go if you want to share an image with someone via Messages, Instagram, TikTok, etc. Because of the way iOS restricts passthroughs, byThom ZConnect can't populate the actual message accompanying the image, we only pass the image through to the other app, where you'll have to add your captions, comments, destination, etc.

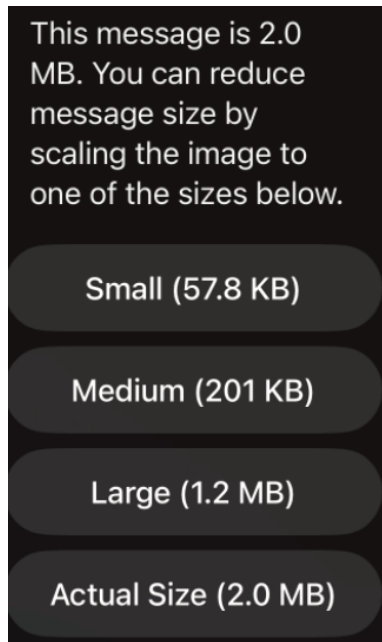
EMAIL

Don't discount this option, as we've added some helpful features to it (unlike the other apps, iOS allows us to pass more information than just the image file).

byThom ZConnect will populate the email with information from **Settings** (email address(es), subject), hashtags/keywords) as well as from any caption you added when you viewed the image individually on the app.



But wait, I said I'd tell you how to change image size at some point. Well, when you go to send this email (via the blue up arrow button) you'll see this pop up.



byThom ZConnect takes advantage of Apple's excellent scaling options to allow you to send more email-friendly sizes.

One thing to be aware of is that byThom ZConnect does one email at a time. If you've selected multiple images, it will send an email for each image to the addresses, and you'll see the appended email count go up after each email is sent. For that reason Email isn't a great way to send dozens of images at once (use Messages instead), but it is a good way to send one image to many people at once.

byThom ZConnect uses Apple's Mail app (or whichever mail app you've made your default) to do all the work. All you'll see in byThom ZConnect is confirmation that an email has been passed off for sending by Mail. Thus, if you're having issues with the email, check Mail to see if perhaps you've misentered an email address or you don't have a current connection and the email hasn't actually been sent yet.

CHAPTER 6

FINAL THOUGHTS AND TIPS

WE'RE TRYING to be thorough, so there's a few loose ends we need to wrap up with.

STORAGE

Images from the Nikon cameras, particularly the 45mp bodies, can be quite large. It's entirely possible that you run out of storage on your mobile device if you get too aggressive about moving lots of apps to it:

- You probably want to periodically check how much actual storage space you have left on your device (**Settings** > **About** will show you a simple version of that under **Capacity** and **Available**). If you want a more specific listing, use **Settings** > **iPhone Storage** instead (byThom ZConnect will show up in the apps section and tell you how much memory it's using).
- It's possible that you end up with images in multiple places. Obviously, byThom ZConnect retains the images in its Albums until you delete them, but you might have also passed those images on to Photos or Files (or both),

in which case you've got image duplication going on that you probably want to do something about (e.g. once you've verified the images are in Photos, delete them in byThom ZConnect).

WORKFLOW

Each time I pull out my camera for a photography session these days, I do the following:

1. Pull up byThom ZConnect and make sure the **Settings** options are set correctly for the session. Sometimes I use IPTC location data, sometimes I don't, for instance. I also might change hashtags or keywords.
2. Go about my general image taking. As I do, I'll periodically review my images on camera and mark ones I want to transfer to the mobile device by protecting them (you can also assign a rating of 1 to 5 to do the same thing).
3. Once I'm finished with the photography session (or when I have a break), I'll connect my camera to my mobile device and run byThom ZConnect. I'll select just the JPEG files that are protected, because that's all I really need to get to the phone and be forwarded onward; that night I'll download all the files on the camera to my computer.
4. I'll send the downloaded files onward, typically either via email or Messages. Because I had already done my selection in the camera, I usually don't have many I need to send onward.
5. At this point, I'll also move some of the images from byThom ZConnect to Photos for later use, and then delete the files in byThom ZConnect so that I'm not continuing to consume extra storage.

Simple, fast, direct. That's what I was aiming for with the app.

CHAPTER 7

TROUBLESHOOTING

THIS CHAPTER DEALS with known issues you might encounter. We've added a **Camera not connecting properly?** button just below the connection animation that is a concise summary of the following information.

1. App seems inactive:

- **You connected to the mobile device and got distracted, and now you just see the connection logo (and it's not animating).**
 - You didn't respond to the iOS's security question, and now the App can't see the camera. *Solution:* unplug the camera and plug it back in. The Allow-to-connect dialog should re-appear. Select **Allow**.

2. A number of possible issues have to do with how the USB port is set on the camera:

- **App reports that NX MobileAir would like to communicate with the camera.**

- This indicates that **NETWORK > USB data connection** is set incorrectly (currently set to **iPhone**).
Solution: Disconnect the camera from the mobile device, set the USB connection on the camera to **MTP/PTP** and then retry.
- **Camera displays a message about streaming.**
 - This indicates that **NETWORK > USB data connection** is set incorrectly (currently set to **USB streaming (UVC/UAC)**). *Solution:* Disconnect the camera from the mobile device, set the USB connection on the camera to **MTP/PTP** and then retry.
- **App goes into an Allow, nothing, Allow loop. Also: Cameras “now charging light” comes on.**
 - This indicates that **NETWORK > USB data connection** is set incorrectly (currently set to **USB-LAN**). *Solution:* Disconnect the camera from the mobile device, set the USB connection on the camera to **MTP/PTP** and then retry.