

StereoViewer User Manual

iPhone

Version 1.0 | Build 26
22 October 2026

StereoViewer at a glance

StereoViewer brings the experience of a classic View-Master®¹ to your iPhone: a modern way to explore photographs in three dimensions, using your own photo collection and a compatible stereo headset.

Choose an album in Photos or a folder in Files. The app recognises Spatial HEIC, side-by-side and anaglyph images. It also tries to turn ordinary 2D photos into stereo views automatically, using depth estimated on your iPhone. Files that cannot be processed are skipped. Browse by swipe or spoken commands, swap the eye views and briefly display available photo information. Each eye receives its own image, creating a sense of depth. Your original photographs remain unchanged.

Start here

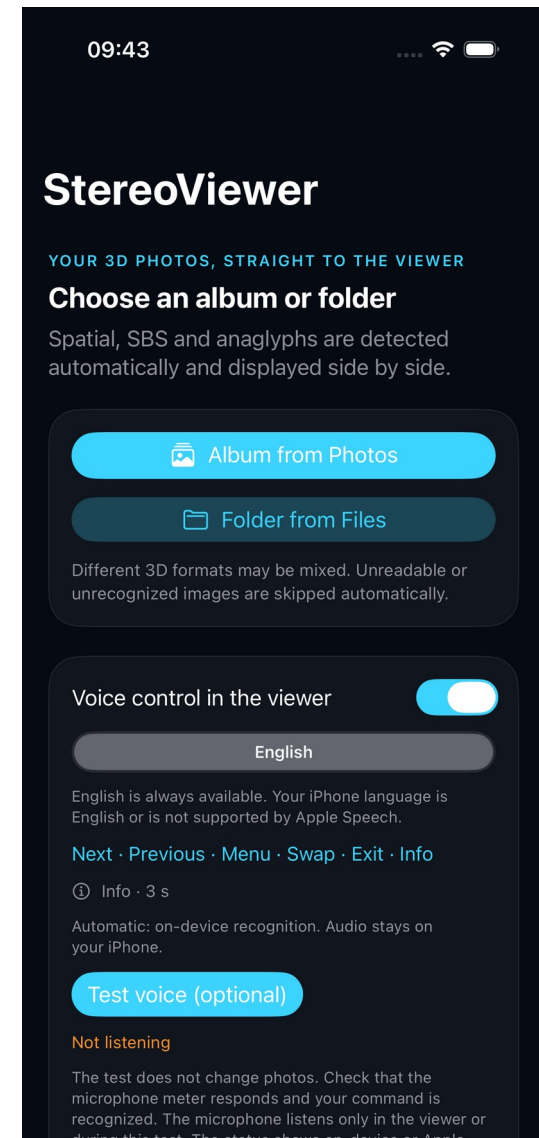
Choose your album or folder before putting on the headset. Select the command language, check the preview and start the viewer. For a first session, read Appendix A and adjust the physical headset until the image is clear and comfortable.

What you need

An iPhone running iOS 17.6 or later, photographs and a headset that securely holds your phone. Internet access may be needed for iCloud files or Apple online speech recognition.

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¹View-Master® is a registered trademark of Mattel, Inc. The name is used solely for comparison. StereoViewer is an independent product and is not affiliated with, sponsored by or endorsed by Mattel, Inc. or Basic Fun!



StereoViewer start screen in English

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Quick start

1. Open Album from Photos or Folder from Files. Choose the collection you want to view.
2. Leave detection and 2D conversion to the app. Wait for processing and check the stereo preview.
3. Choose the voice language. Test voice is optional; allow microphone and speech access when requested.
4. Tap Start stereo viewer, rotate the iPhone to landscape and secure it in the headset.
5. Say Next, Previous, Menu, Swap, Exit or Info as individual words. Swipe whenever the screen is accessible.
6. Remove the headset if the image is unclear or uncomfortable. Adjust it before continuing.

Demo Data for StereoViewer

Start with the free demo collection on stratakernel.nl if you want to try StereoViewer before preparing your own photographs. The ten examples include ordinary 2D photos, Spatial HEIC, side-by-side stereo pairs and a red/cyan anaglyph illustration.

Open stratakernel.nl, choose Support / Documentation, then Demo Data for StereoViewer. Direct link:

<https://stratakernel.nl/Support/stereoviewer-demo-data.html>

Download and open the demo collection

1. Open the demo page in Safari on your iPhone and tap Download all demos. Safari normally saves the ZIP to its configured Downloads folder without asking you to choose a location.
2. Open Files and find StereoViewer-Demo.zip in iCloud Drive > Downloads or On My iPhone > Downloads. If necessary, check Settings > Apps > Safari > Downloads. To use another location, touch and hold the ZIP, choose Move and select your folder.
3. Tap the ZIP in Files. It extracts a folder named StereoViewer Demo. In StereoViewer, tap Folder from Files and select that folder containing the images, rather than the ZIP or a parent folder.
4. Check the stereo preview, tap Start stereo viewer and position your iPhone in a compatible headset. The webpage also offers individual original-image downloads.

Royalty free images and attribution

The demo images are available royalty free: no image royalty is payable for use allowed by the stated licence. Attribution and the other licence conditions still apply. Check each image's Licence, Source and original credit on the demo page or in README-and-credits.txt inside the ZIP. New Horizons, Pluto and Charon is licensed under CC BY 2.0; the other collection entries state CC BY 4.0. Royalty free does not mean copyright free.

Choosing an album or folder

Album from Photos

1. Tap Album from Photos and allow Photos access when iOS asks.
2. Choose an album from the list. Full Photos access lets StereoViewer list your albums. Limited access provides a collection of only the photographs you have allowed.
3. Wait for the first usable image. Originals stored in iCloud may need to download before they can be examined.

The app uses the order supplied by Photos. Ordinary edited photos follow the current crop and rotation in Photos; genuine Spatial originals retain their two eye views. The album and originals are not modified.

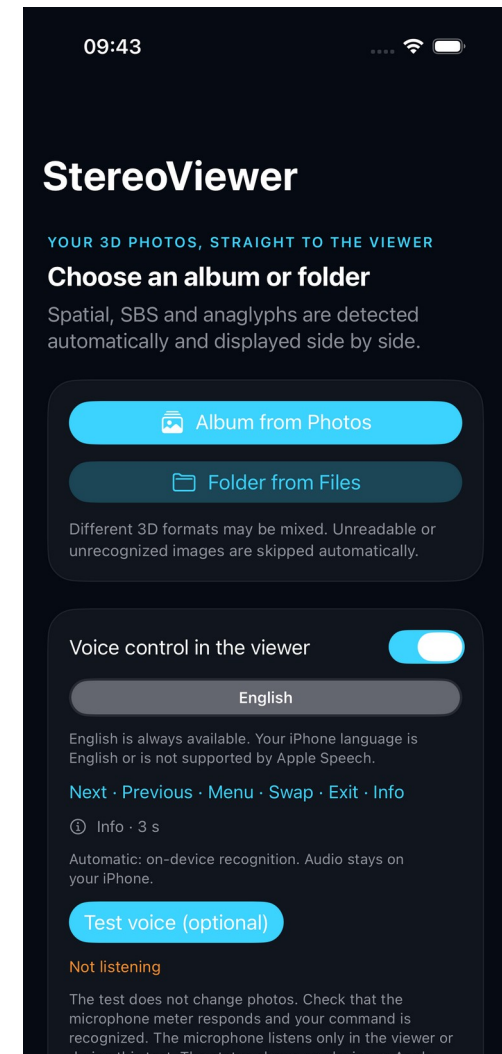
Folder from Files

1. Tap Folder from Files. In the iOS picker, browse to the folder and confirm your selection.
2. Choose a folder containing the images themselves. StereoViewer does not search its subfolders.
3. Allow a cloud or file provider time to make files available. An unavailable file may be skipped.

Folders follow natural filename order, for example 1, 2, 10. Ordinary 2D photos and supported stereo formats may be mixed in the same collection.

When an image is skipped

The app moves to the next usable image and reports a skipped-file count. If no image can be displayed after one pass, choose another source. Re-select the source to retry skipped files after a download or access problem has been resolved.



Choose the source before putting on the headset

Supported images and automatic conversion

There is no input-format or display-mode selector. StereoViewer examines each file as it is loaded. Supported images are displayed side by side, with one view for each eye.

Input	How StereoViewer handles it	What to expect
Spatial HEIC	Reads the embedded stereo views and eye assignment.	The original stereo file is needed; a flattened export may contain only one view.
Side by side image	Recognises and separates the two neighbouring eye views.	Common inputs are JPEG and PNG. A wide ordinary photograph is not automatically stereo.
Red cyan anaglyph	Separates red for the left eye and combined green/blue for the right.	The separated eye views are grayscale.
Red green anaglyph	Separates red for the left eye and green for the right.	Blue is not used for the right-eye image.
Red blue anaglyph	Separates red for the left eye and blue for the right.	The right-eye view comes from blue rather than an absent green channel.
Ordinary 2D photo	Estimates depth locally and generates two eye views when possible.	Synthetic depth varies in quality; unsuccessful conversions are skipped.

Preparing a collection

Keep the original Spatial file when transferring images. If you have two separate left and right photographs, combine them into one SBS file before adding them: this version does not offer a separate-pair picker. For a first session, use clear scenes with a distinct foreground and background. You may include ordinary photos.

Conversion limits

Automatic detection and estimated 2D depth can be wrong. Very dark, low-detail, unusually processed or unreadable files may be skipped. Anaglyph separation cannot recover missing colour or remove existing ghosting fully. Conversion happens during browsing; no Spatial HEIC or other converted file is exported.

Ordinary photos in 3D

You may mix ordinary photographs with stereo images in the same album or folder. StereoViewer estimates depth on your iPhone, creates two eye views and displays them as SBS. There is no extra conversion setting.



An ordinary 2D landscape shown as generated SBS. The iOS microphone indicator is visible because voice control is active.

What to expect

The first conversion can take a few seconds. Recent results are held temporarily in memory for returning to a photo. Nothing is saved to Photos and the original stays unchanged. The depth model is included in the app and needs no internet connection.

Depth is estimated rather than captured by two cameras. Hidden surfaces, hair, glass and thin objects can produce errors. Unusable conversions are skipped. Both eye views keep the source proportions and use the largest size that fits the screen without stretching.

Voice commands and language

Turn on Voice control in the viewer before starting. Say one word at a time; you do not need to form a sentence. A recognised command appears briefly in both eye windows. Leave about one second between repeated identical words. A 0.7-second repeat guard reduces accidental double actions; the first command acts immediately and different commands remain available.

English command	Dutch example	Action
Next	Volgende	Show the next usable photograph. Navigation wraps at the end.
Previous	Vorige	Show the previous usable photograph. Navigation wraps at the beginning.
Menu	Menu	Show or hide the headset controls.
Swap	Wissel	Exchange the left and right eye views when depth appears reversed.
Exit	Sluiten	Close the viewer, stop listening and return to the start screen.
Info	Info	Show the original format, date, source resolution and caption for three seconds.

Choosing the language

English is always available. A second option follows the first preferred iPhone language and region when Apple Speech supports it. If that language is English or is unsupported, only English is shown. Use the command words displayed for your chosen language; the app's own interface follows the same choice. iOS dialogs and album names keep their system or original language.

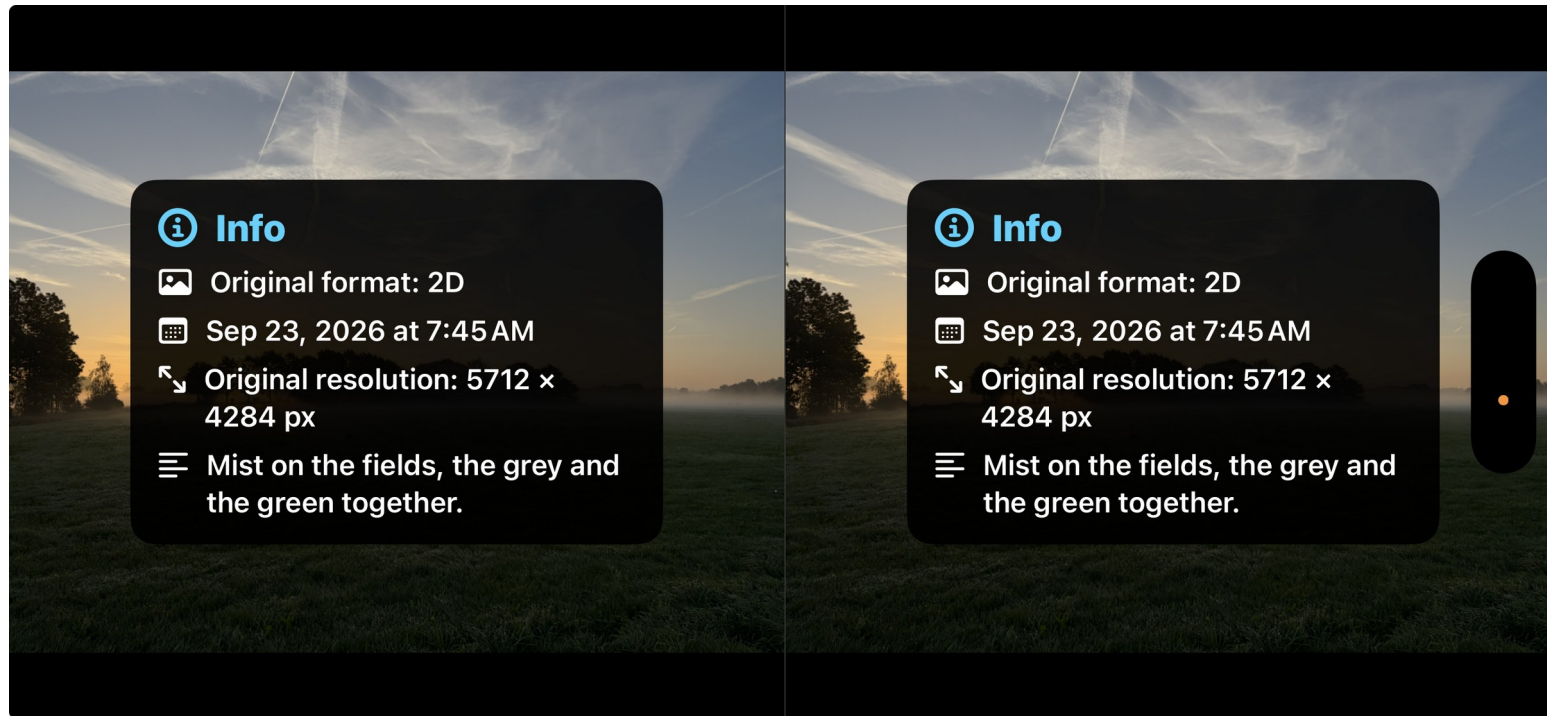
The voice test is optional

Test voice lets you check the microphone level, selected input, heard text and recognised command before wearing the headset. It does not change photographs. Stop the test when finished. You may start the viewer directly; the app checks the required permissions automatically.

Local or Apple online

The app selects recognition automatically. On device keeps recognition on the iPhone. Apple online sends microphone audio to Apple and needs internet access. The status identifies the active route. No separate online switch is required.

Viewing photographs and using Info



Info appears in both eyes for three seconds. This 2D source was converted to SBS; the original resolution and caption are retained.

Browsing and the menu

Swipe left for Next or right for Previous, both on the preview and in the viewer. Swiping remains available with voice control off. When the phone is enclosed, use spoken commands or remove it to reach the screen.

Tap the picture to show or hide the menu. Use its buttons for navigation, Info, Swap and Exit. Navigation requested during loading is queued.

What Info shows

Info shows Original format (2D, SBS, Spatial or Anaglyph), the available date and time, Original resolution in pixels and the caption. It omits missing fields, the filename and GPS coordinates. Say Info again to restart the three-second display; Next, Previous or a swipe closes it immediately.

Source resolution is measured before resizing or splitting; edited Photos images use the current crop. Photos captions are read directly on iOS 27 or later; older versions can show an embedded file caption. [3]

Example Stereo headset



VR-1 controls from the manufacturer's Quick Setup Guide [1]

No	Part
1	Head strap attachment
2	Focal point adjustment
3	Lens distance adjustment
4	Phone holder cartridge
5	Lenses
6	Foam face padding

Before inserting the phone

The TERRATEC VR-1² was used for StereoViewer testing. Check that your particular iPhone and case fit securely, with the screen centred and the holder fully closed. Testing with one phone does not establish that every iPhone or case will fit.

1. Prepare the album or folder in StereoViewer. Set the command language and, if wanted, run the voice test.
2. Start the viewer and rotate the iPhone to landscape. Open the holder and seat the phone with the screen facing the lenses.
3. Align the split between the two eye views with the middle of the headset. Avoid pressure on buttons or obstruction of the microphone.
4. Refit and secure the holder. Adjust the straps, lens position and focus in small steps until both views are clear. See Appendix A.

Which parts of the headset guide apply

The manufacturer describes a QR code for compatible VR apps. StereoViewer 1.0 does not scan that code or load a headset profile. Use the VR-1's physical controls for fit and focus. The front camera flap is not needed for still-photo viewing.

Follow the manufacturer's handling and safety instructions. Keep the headset away from direct sunlight, heat and moisture. The VR-1 is not a toy. [1]

²TERRATEC is a brand of ultron AG. The TERRATEC name and logo and the VR-1 photographs, controls diagram and Quick Setup Guide [1] remain subject to their respective holders' trademark and copyright rights. They are included for product identification and explanation. StereoViewer is not affiliated with, sponsored by or endorsed by TERRATEC or ultron AG. See Sources and illustration credits.

Troubleshooting

What happens	What to check
An album is missing	Review Photos access. Full access is needed to list your albums; limited access shows only allowed photographs.
A file is skipped	Check that the file is downloaded and readable. Ordinary 2D photos are attempted too, but not every photo yields usable estimated depth. Re-select the source to retry.
The whole collection is rejected	Try a known stereo file or a clear 2D scene with foreground and background. Check cloud availability and whether Spatial files were flattened during transfer.
A command is missed or misheard	Check the selected language, microphone input and recognised text in Test voice. Reduce background noise. Check internet when Apple online is active.
Next occasionally moves two photos	Pause about one second between repeated Next commands. A 0.7-second guard filters rapid duplicates. If it still jumps twice, go back once and report the language and recognition route; touch browsing remains available.
The microphone is interrupted	Read the status and use Resume voice when offered. Calls, route changes, locking and moving the app out of the foreground can interrupt recognition.
Depth looks inside out	Try Swap once. Keep the version that gives the scene natural foreground and background depth.
The picture is doubled or one eye is blurry	Check phone centring, lens position, focus and the original stereo alignment. Remove the headset rather than forcing your eyes to compensate.
Info has no caption or resolution	Missing metadata is omitted. Direct Photos captions require iOS 27 or later. Resolution is read from the source, not the displayed eye image. GPS is no longer shown in Info.
An orange dot is visible	iOS shows this while the microphone is in use. Turn voice control off before starting if you want to browse without microphone access. [2]

When asking for help, include the iPhone model, iOS version, StereoViewer version/build, chosen language, recognition route, input type and the exact steps. A screenshot or a sample image you are permitted to share can help.

Permissions privacy and support

Access or service	Why it is used	Your choice
Photos	Lists permitted albums and reads the current ordinary photo or genuine Spatial original and available metadata.	Allow full access for your album list, or use limited access / a folder.
Selected folder	Reads image files inside the folder you choose.	Choose a different folder or source when needed.
Microphone and speech recognition	Recognises commands during the test or headset viewing.	Turn voice control off and browse by touch instead.
Internet	May download cloud photos, provide Apple online recognition or open document links.	Download photos beforehand. The included 2D depth model works offline; online speech and web documents need a connection.
Image processing	Detects formats and generates stereo views on the iPhone. No images are uploaded for 2D conversion.	Originals stay unchanged; no converted copies are saved to Photos.

Microphone indicator

An orange indicator is an iOS privacy signal that the microphone is active. It can remain visible in landscape and through headset optics. StereoViewer cannot hide this system indicator while continuing to listen. The app does not save audio recordings. Apple online recognition still transmits audio to Apple when that route is active. [2]

Photographs and settings

Images and estimated depth are processed on the iPhone with the included model. A few recent generated stereo pairs are held temporarily in memory. StereoViewer does not modify originals, save converted copies to Photos or upload images for conversion. The chosen speech language is remembered locally. Cloud storage providers and Apple speech services process their own requests.

Version information and support

The bottom of the start screen shows version/build, copyright and links to the Privacy Policy, Legal Notice and User Manual PDFs on stratakern.nl. Opening them requires internet access. Check these details when reporting an issue. Publisher and contact information are available at <https://stratakern.nl>.

This guide describes version 1.0, build 26. It covers stereo stills and automatic conversion of ordinary 2D photographs. It does not describe video playback, a panoramic VR environment, app-based IPD calibration, lens correction profiles or downloading demos from within the app. Demo downloads are available separately on the website as described in Demo Data for StereoViewer.

Appendix A Understanding stereo viewing

A stereo photograph contains two views of the same scene from slightly different positions. For an ordinary 2D photo, StereoViewer estimates depth and synthesises those views; it cannot recover all hidden detail. The headset directs one view to each eye. Your visual system combines those differences into a single scene with depth.

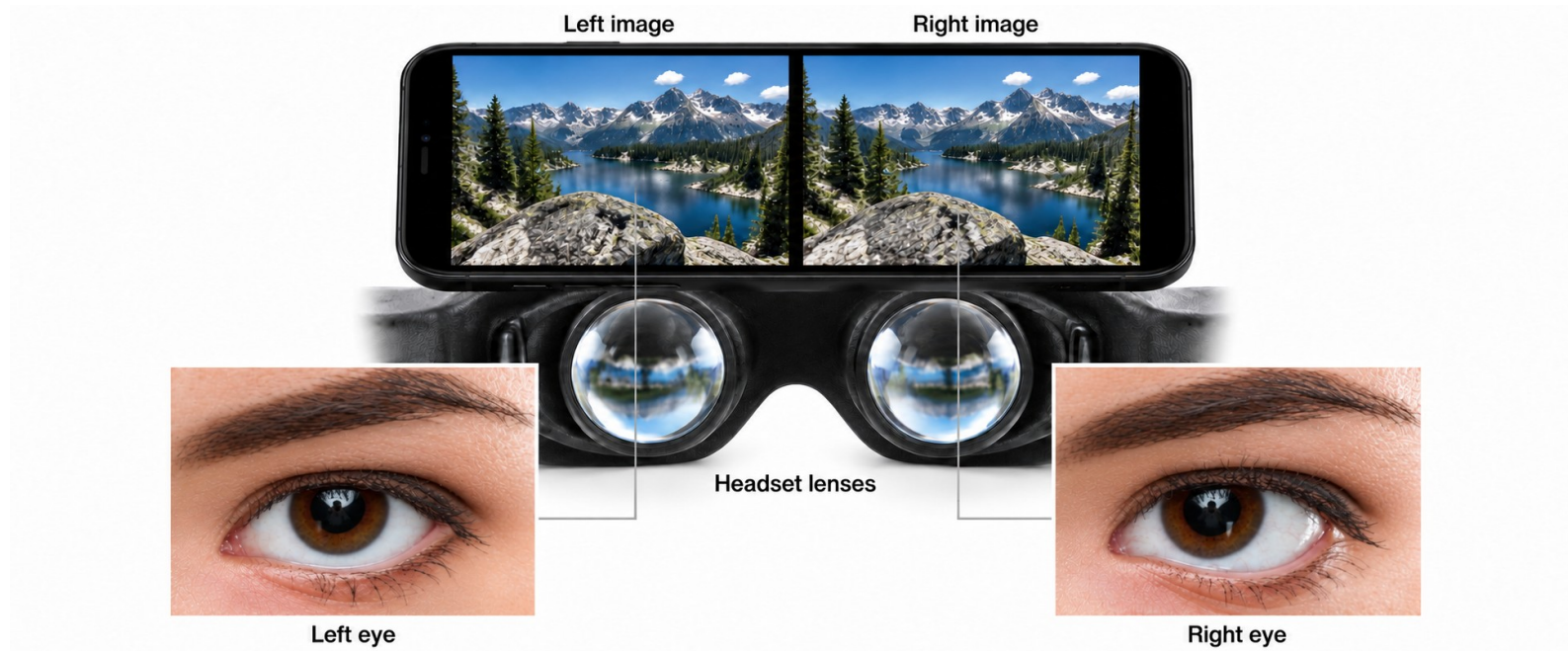


Figure A1 Each eye receives a separate view through its headset lens. Explanatory illustration, not a stereo test image.

Why use a headset

A headset magnifies the phone display and shields it from much of the surrounding scene. Each eye sees its intended view through a lens. You do not need to use a free-viewing technique or deliberately cross your eyes to combine the two halves.

Depth quality depends on the original pair or estimated depth, image alignment and headset fit. Images fit each eye window without stretching; black borders may remain. A two-pixel line separates the eyes.

What a still image can show

Foreground objects usually differ more between the two views than distant objects. This difference is called binocular disparity. A scene with a nearby subject and a distant background makes it easier to recognise.

A still photograph keeps the same viewpoint when you turn your head. It is not a tracked virtual environment or a 360-degree scene.

Appendix A Adjusting the headset

Position the phone first

Start with a clear, moderately deep stereo scene. Centre the phone so the screen divider aligns with the middle of the viewer. Keep the phone level and fully seated. A tilted or off-centre screen can make an otherwise good stereo pair difficult to combine.

Match the lenses to your eyes

Interpupillary distance, or IPD, is the distance between the centres of your pupils. If your headset offers lens-spacing adjustment, align the lens centres with your own pupils. The correct setting depends on you; it is not the distance between the cameras that made the photograph.

1. Place the headset squarely on your face. Keep it level and look straight ahead.
2. Adjust the lens position slowly. Both views should look centred and similarly clear.
3. Use the available focus or lens-distance control to sharpen detail. Check each eye in turn without pressing on either eye.
4. Tighten the straps only enough to hold the viewer steady. Recheck the image after moving the headset.
5. Follow the headset maker's instructions for prescription glasses. Keep lenses clean and protect them from scratches.

Let the scene combine naturally

Look at the centre of the scene with both eyes open. Blink normally and allow a few seconds for one stable image to form. Do not force the views together. Blinking can relieve staring, but it cannot correct a misplaced phone or a misaligned stereo pair.



The test headset has physical adjustments. Other headset designs may use different controls. [1]

Adjust the headset rather than your eyes

If you keep seeing two pictures, remove the headset and check the phone, lenses and source image. Try a simpler stereo scene. Stop if a single comfortable view does not form.

StereoViewer currently has no onscreen IPD or optical calibration screen. Swap changes eye assignment; it does not correct focus or vertical image misalignment.

Appendix A Checking depth and comfort

With a stationary image, choose one nearby feature and one distant feature. Keep the headset still. Compare the position of that same nearby feature against the same background while alternating eyes.

LEFT EYE ONLY



Close your right eye.

RIGHT EYE ONLY



Close your left eye.

BOTH EYES



Open both eyes and relax.

Figure A2 Left eye only, right eye only and both eyes. Left and right refer to the person shown.

1. Close your right eye and observe the scene with your left eye.
2. Open your right eye, close your left and compare the same foreground and background features.
3. Open both eyes. Let the two views form one stable scene without strain.

Read the result

A relative horizontal shift supports the presence of stereo disparity. An overall jump of the entire image is not enough. Very distant scenes may contain little visible disparity even when the file is a valid stereo image.

If depth seems reversed, try Swap once. Persistent vertical doubling or double edges call for a check of the original image alignment and headset position.

Comfort comes first

Use the viewer seated in a safe place. Take breaks and stop immediately for eye strain, headache, nausea, dizziness or disorientation. Remove the headset and rest. Seek medical advice if symptoms persist.

Never walk, drive or operate equipment while wearing the headset. Resume other activities only when comfortable and fully oriented. Follow the headset manufacturer's suitability and safety restrictions. [1]

Sources and illustration credits

Headset documentation

[1] TERRATEC VR-1 Quick Setup Guide, article 193539, English page. Source of the headset photographs and numbered controls diagram on pages 9 and 13. See the rights footnote in Example Stereo headset and the illustration credit below.

https://www.terratec.de/media/filer_public/193539-qsg.pdf

Apple documentation

[2] Apple Support. About the orange and green indicators in your iPhone status bar. Explains the microphone and camera privacy indicators.

<https://support.apple.com/en-us/108331>

[3] Apple Developer Documentation. PHAssetExtendedMetadata.caption. The current SDK makes the direct Photos caption property available from iOS 27. This does not guarantee a caption exists for every photo.

<https://developer.apple.com/documentation/photos/phassetextendedmetadata/caption>

App illustrations

The landscape and Info screenshots were supplied for this guide and show StereoViewer on iPhone 17. Earlier start-screen screenshots illustrate unchanged source-selection controls. Captions in photographs are not translated. Figure A1 is a photorealistic explanatory illustration generated for this manual. Figure A2 uses the supplied eye photographs; rights remain with their respective holders.

The TERRATEC VR-1 viewer shown in Example Stereo headset and Appendix A is a third-party product. Its photographs and controls diagram are extracts from the manufacturer's Quick Setup Guide [1], used to identify and explain the example headset. TERRATEC is a brand of ultron AG. Rights in the TERRATEC name and logo, product photographs, diagram and original guide remain with their respective trademark and copyright holders. StereoViewer is independent and is not affiliated with, sponsored by or endorsed by TERRATEC or ultron AG. This credit does not grant permission to reuse the source material.

Depth estimation model

Ordinary-photo conversion uses Depth Anything V2 Small by Lihe Yang and colleagues, in the Core ML F16 form distributed by Apple, under Apache License 2.0. Model notices and the licence accompany the app. This is not Apple Photos' Spatial Scene conversion.

<https://huggingface.co/apple/coreml-depth-anything-v2-small>

Using this guide

The procedures describe the current app. System dialog wording can vary by iOS version and language; physical adjustment controls vary by headset. Keep the headset maker's guide with the device and consult it for handling, suitability and maintenance instructions.

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