

 <p>VISTA IMAGING INCORPORATED</p>	PREPARED BY:	CHRIS DOPP (VISTA IMAGING INC.)		
	NAME:	VISTAFA2 INSTALLATION & VcVIEWFA2 USER MANUAL		
	DATE:	FEB 15, 2013		
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VistaFA2 Installation & User Manual

Version 1.1

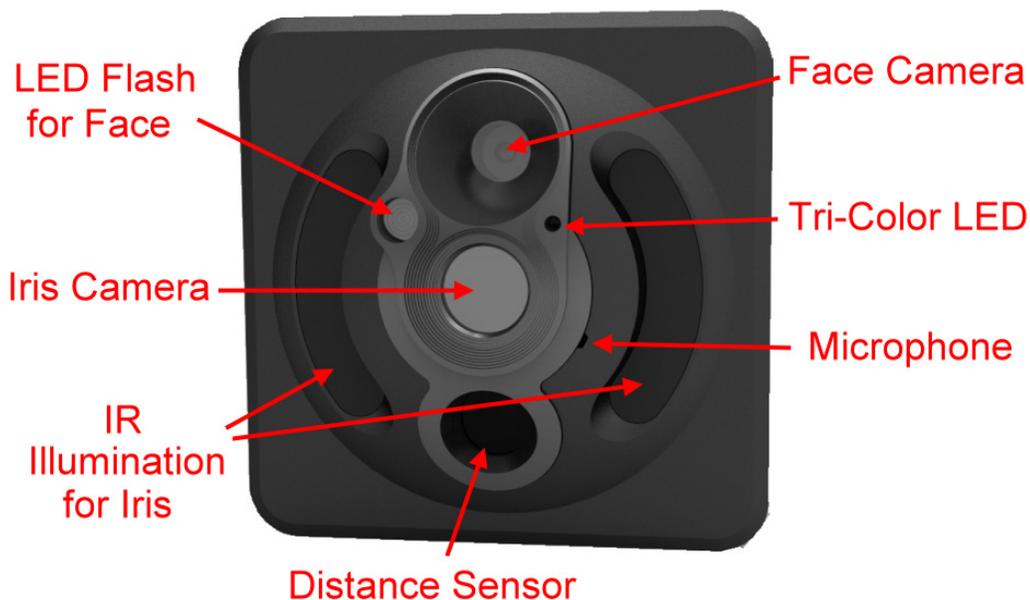
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VistaFA2 Overview

The VistaFA2 multi modal imaging device is integrated into a housing intended for fixed location use on a tripod or similar mounting apparatus, and is not designed or intended for free handheld operation. The VistaFA2 provides a high quality solution for iris and face image capture for biometric applications. The main features of the VistaFA2 device are:

- Single iris camera – placed behind a cold mirror to allow the user to easily align them selves for automatic iris acquisition. Nominal distance to the eye from the VistaFA2 device is 10 inches
- Face camera – located above the iris sensor, the 3MP full color face sensor with integrated flash allows easy capture of the user’s face at a nominal distance of 24 inches.
- Acoustic distance sensor allows the user to easily determine and position themselves to the correct distance from the VistaFA2 device for easy auto acquisition of the iris images.
- A RGB LED to assist the target user with the auto acquisition process during dual iris captures. The tri-colored LED provides an intuitive indication to the user of their distance to the VistaFA2. It is Blue when the user is too far away, Red when the user is too close, and Green when the user is in the correct distance range and the detail of the image is acceptable. If the user is in the correct range but the detail is not sufficient to produce a quality iris capture, then the RGB LED will be Red & Blue at the same time.
- Integrated microphone on the front & integrated speaker on the rear
- Detachable USB 2.0 interface on the rear.



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VistaFA2 Installation Procedure

Following is the procedure for installing the VistaFA2 demo utilities, connecting and enumerating the VistaFA2 device, and operating the VcViewFA2 application.

- Place the content of the VcViewFA2 demo application into a unique directory on you Windows system. The unzipping process of the “VcViewFA2_Demo_YYMMDD.zip” archive will create the following directory structure:
 - VcViewFA2_Demo
 - Exe
 - Redist
 - Install
 - Uninstall
- If you have ever had a demo application installed on this computer run the “uninstall.bat” batch file located in the UNINSTALL directory.
- Place the VistaFA2 device on a tripod or similar mount device and connect the VistaFA2 device to a USB port on the Windows system.
- When asked for the VistaFA2 device Drivers, choose a specific location and browse to and then select the INSTALL directory as the location for the VistaFA2 Drivers. Windows will go through a process of installing the drivers on the target system. If Windows repeats its request, again point to the INSTALL directory as the location for the VistaFA2 Drivers. After this process is complete Windows will then install the USB Audio Class Drivers to support the audio I/O features of the VistaFA2, and inform you that the VistaFA2 device is installed and ready for use.

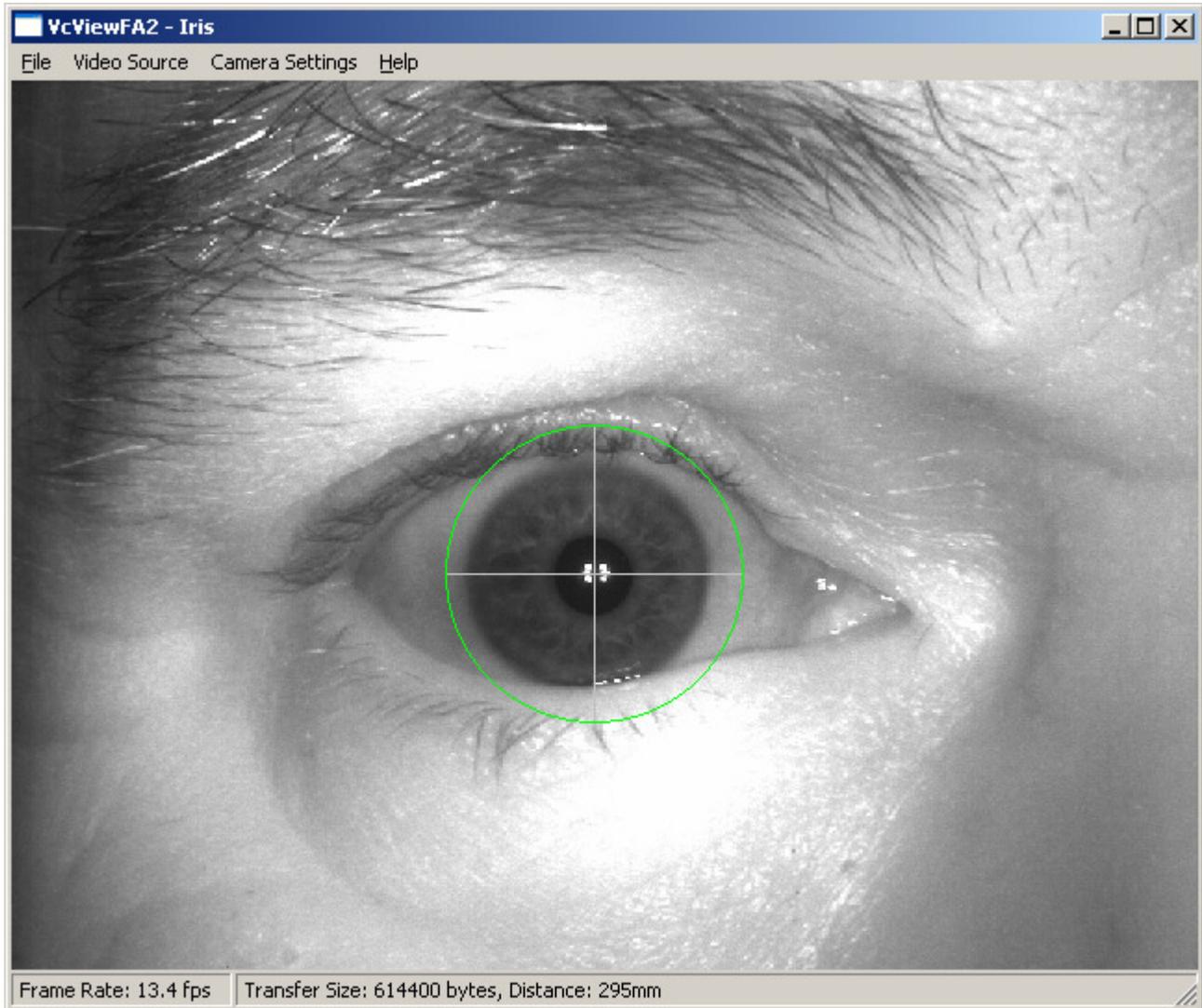
VcViewFA2 Application Overview

The VcViewFA2 demonstration application provides a software solution for testing and evaluating Vista Imaging’s VistaFA2 multi-modal imaging device on your Windows system. To launch the application go to the EXE directory created in the installation process above, and run the “VcViewFA2.exe” application. If the VcViewFA2 application fails to start it may be necessary to install the Visual Studio Runtime utilities located in the Redist directory.

Iris Capture Process

It will automatically detect the presence of the VistaFA2 device on your system and start a live preview of the dual image camera in a reduced resolution for preview, as illustrated in the below image.

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The VcViewFA2 comes with default setting which will allow the device to auto acquire iris images when the distance is correct and the iris position and quality is assessed as acceptable.

The VistaFA2 device incorporates an acoustical distance sensor to determine the distance from the camera to the target user to control the illumination for power & safety, and to assist with the iris auto acquisition process. For the iris illumination if no target user is detected within 15 inches in front of the VistaFA2 for at least 3 seconds, the VistaFA2 will automatically turn off the illumination to save power (especially useful in portable applications). Also if the target user is too close to the device (7 inches or less), the VistaFA2 will automatically turn off the iris illumination to protect the user's eyes from unneeded NIR (Near Infra Red) emission as a safety measure.

As described above, the VistaFA2 incorporates an RGB LED to assist the target user with self alignment in the auto acquisition process during dual iris captures. The tri-colored LED provides an intuitive

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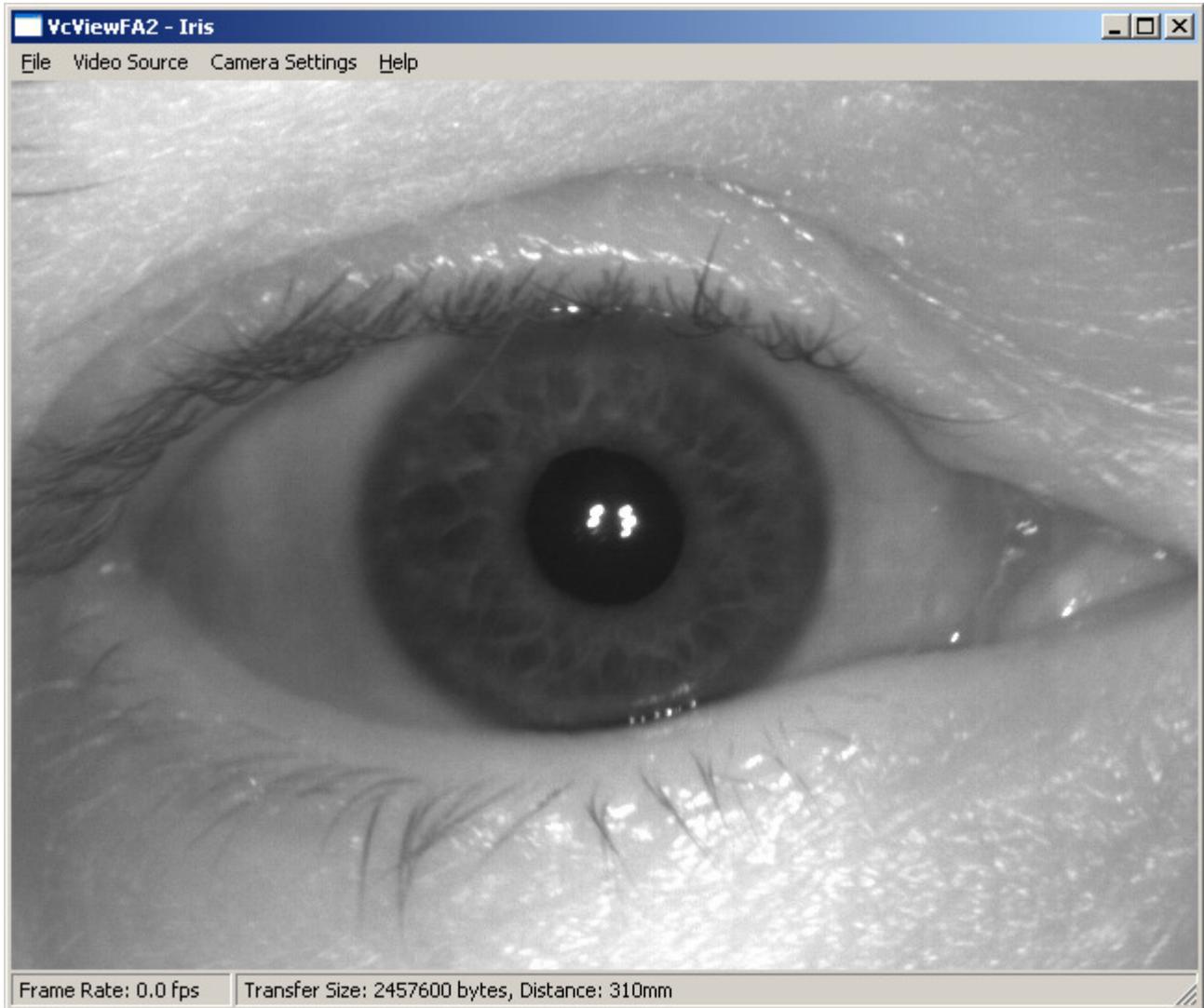
indication to the user of their distance to the VistaFA2. It is Blue when the user is too far away, Red when the user is too close, and Green when the user is in the correct distance range and the detail of the image is acceptable. If the user is in the correct range but the detail is not sufficient to produce a quality iris capture then the RGB LED will be Red & Blue at the same time.

To assist the system operator to help direct the target user with alignment VcViewFA2 provides a live preview as detailed in the above image. If the Preview Overlay is enabled, then we overlay a small RGB rectangle (illustrated in the above images by the Green rectangle) that the operator can monitor to determine the current relative distance to the target user. This allows the operator to direct the user to move closer or further away from the VistaFA2 to get into the optimal range for the iris capture. As with the RGB LED detailed above, the rectangle color Red indicates too close, Blue indicates too far away, and Green indicates the target user is in the optimal range.

The intended steps of the iris auto acquire procedure are very straight forward and are as follows:

1. With VcViewFA2 running in live preview, place your face in front of the VistaFA2 so you can see your eye center in the round cold mirror.
2. You should start out approximately 12 to 14 inches away from the VistaFA2. This will cause the RGB LED to turn Blue and the iris illuminators will turn on when you are sensed in front of the VistaFA2 camera. Slowly move your face closer to the VistaFA2 keeping your eye centered in the cold mirror until the RGB LED turns Green. If it goes Green and then turns RED you have moved in too fast and overshoot the optimal distance of approximately 10 inches from the VistaFA2, where the irises are optimally captured. If so, pull back until the RGB LED turns green. You need to be in the optimal distance for approximately one second for the auto-acquire process to complete.
3. The VcViewFA2 application will detect the auto acquire satisfied state of the camera and capture a large 1280 by 960 image from the camera, then it will locate the irises within this large dual eye image and produce individual VGA (640x480) images for the eye and save an image to the directory on the Windows system where the VcVewFA2 applications is located. It will then stop the live preview and display the found iris image as illustrated below.

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4. To restart the process, simply press the space bar.
5. If for what ever reason you want to force a capture while the live preview is in process, simply press the space bar and the VcViewFA2 application will capture an iris image, if it can find an iris it will extract it into a 640x480 size, if not it will capture the selected still resolution, then save the image to the system, stop live preview, and display the captured image.

Face Capture Process

The VistaFA2 also incorporates a 3MP full 24bit color face camera to facilitate facial image captures with a flash illumination feature. You select the face camera under the Video Source Menu.

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The initial version of the VistaFA2 does not include a flash illumination for the face camera, but production units will have this feature.

The face camera on the VistaFA2 does not include an auto acquire feature as in the iris camera. So you must manually invoke a capture by pressing the space bar or the STILL button in the control panels.

The optical distance to the face from the VistaFA2 is approximately 24 inches.

Camera Control Panels

The VcViewFA2 also incorporates Control Panels selectable in the Camera Setting Menu for each camera to allow you to alter and control the format, resolution of preview & still captures, and control over all of the camera features. Feel free to play with the controls to see what effect they have. If you need to restore the setting back to the default state simply choose the Load Defaults in the Camera Setting Menu.