CHART 2020

THE PREMIER VISUAL ACUITY AND OCULAR PERFORMANCE TESTING PLATFORM

SHEMESH HEALTH SOLUTIONS

GOOD-LITE®

Instructions for Use

Experience the power of simplicity from the expansive depth of testing "Libraries",
iPad preview – control – gestures – near testing,
and the available self-guided, self-reporting "Wizards".

Only from Chart2020.

Version 10.7.3

Welcome to the Chart2020 User Experience.

Like no other visual acuity testing system, Chart2020 provides a remarkable departure from early generations of electronic acuity systems requiring multi-button remotes in which you must memorize dozens or hundreds of FUNC+key combinations in order to find the appropriate testing strategy for your patient. Chart2020 is one-button simple … controlled by a state-of-the-art, gesture-driven iPad Connect application, a simple mouse motion exposing self-hiding docks, again with only one button, a standard keyboard, a minimalist Apple TV remote, or a Chart2020 IR remote. With the rich Library of tests and media, drag and drop organization of common sequences, multi-doctor personalization, and multi-lane convenience, the vision testing user experience substantially enhances productivity while being actually fun to use. Enjoy the experience!

Stephen Meyerowitz, CEO, Shemesh Health Solutions

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What's New in Version 12.00

Waggoner Color Vision Screening Removed

HRR Color Vision Screening Added

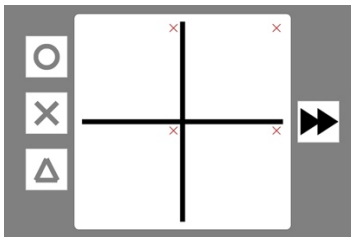
HRR Color Vision Screening

Introducing color vision screening in Chart2020 in association with Good-Lite. The only computer based color vision testing system for HRR. The plates can be randomized for order and orientation, making to impossible to cheat on the test.

The HRR (Hardy Rand and Rittler) Pseudoisochromatic Test, 4th Edition provides several very important features to provide the most advanced color vision, test available: congenital and acquired testing, identification of the type of defect and diagnosis of the extent of the defect as well as quick positive classification of normals. The HRR employs a sophisticated test strategy that virtually eliminates the potential for memorization and malingering. The figures used by the HRR Pseudoisochromatic Plates are independent of language and suitable for both adults and children.

The HRR Pseudoisochromatic Plate Test 4th Edition supports very efficient color deficiency screening. The first four plates are used to show the patient how the test works. The fourth plate in this demonstration series has no figure and serves to potentially uncover attempts to memorize this test. The next six plates (screening series) present the most difficult Protan, Deutan and Tritan (red, green, yellow, and blue) targets. Success with these plates defines the subject as having 'normal Color Vision,' and completes the test. The subsequent 14 plates are the diagnostic series and provide diagnostic as to the extent (mild, medium or strong) and type of defect (Protan, Deutan, Tritan).

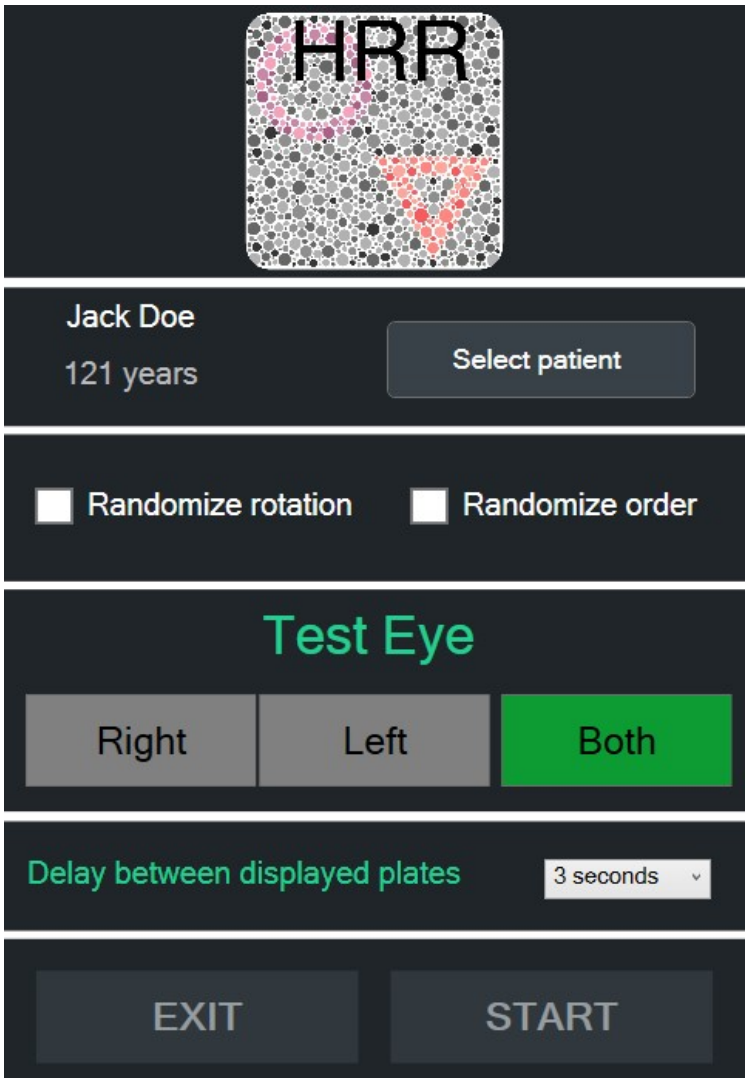
The tests are auto scored by the system. The doctor or patient simply drags and drops the symbol seen in the plate to the answering quadrant, after each color plate is presented.



PDF reports are generated after the screening which allow the doctors to add some notes, and upload to their EHR system

Chart2020 has an in-app calibrator for monitor brightness and a color calibrator for color accuracy. This insures standardized outcomes.

The test starts by choosing from the following settings



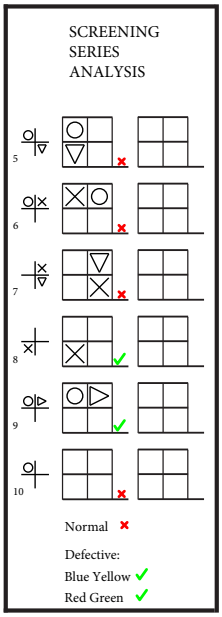
The reports are stored in the system and can be retrieved for future reference.

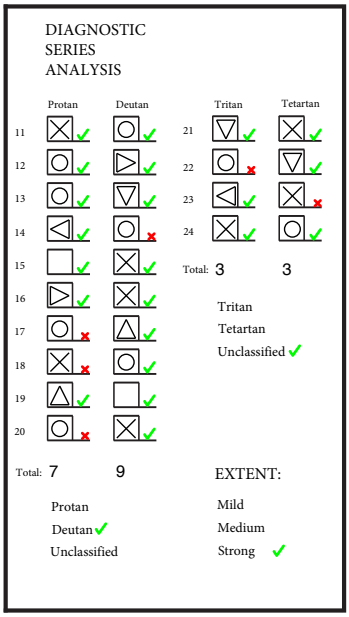
Report Samples

a HRR evaluation of color vision deficiencies

Color Vision Test Report

a	Tel: 423423		8/9/2021 | 4:35 PM date | time	A18 test ID
Default Default patient name	31 age	HRR 4th Edition method	Delay - 3 s, Randomized, Auto Rotated test conditions	
 patient ID	Male gender	Both Eyes	8/9/2021 calibration info	3:55 total test time



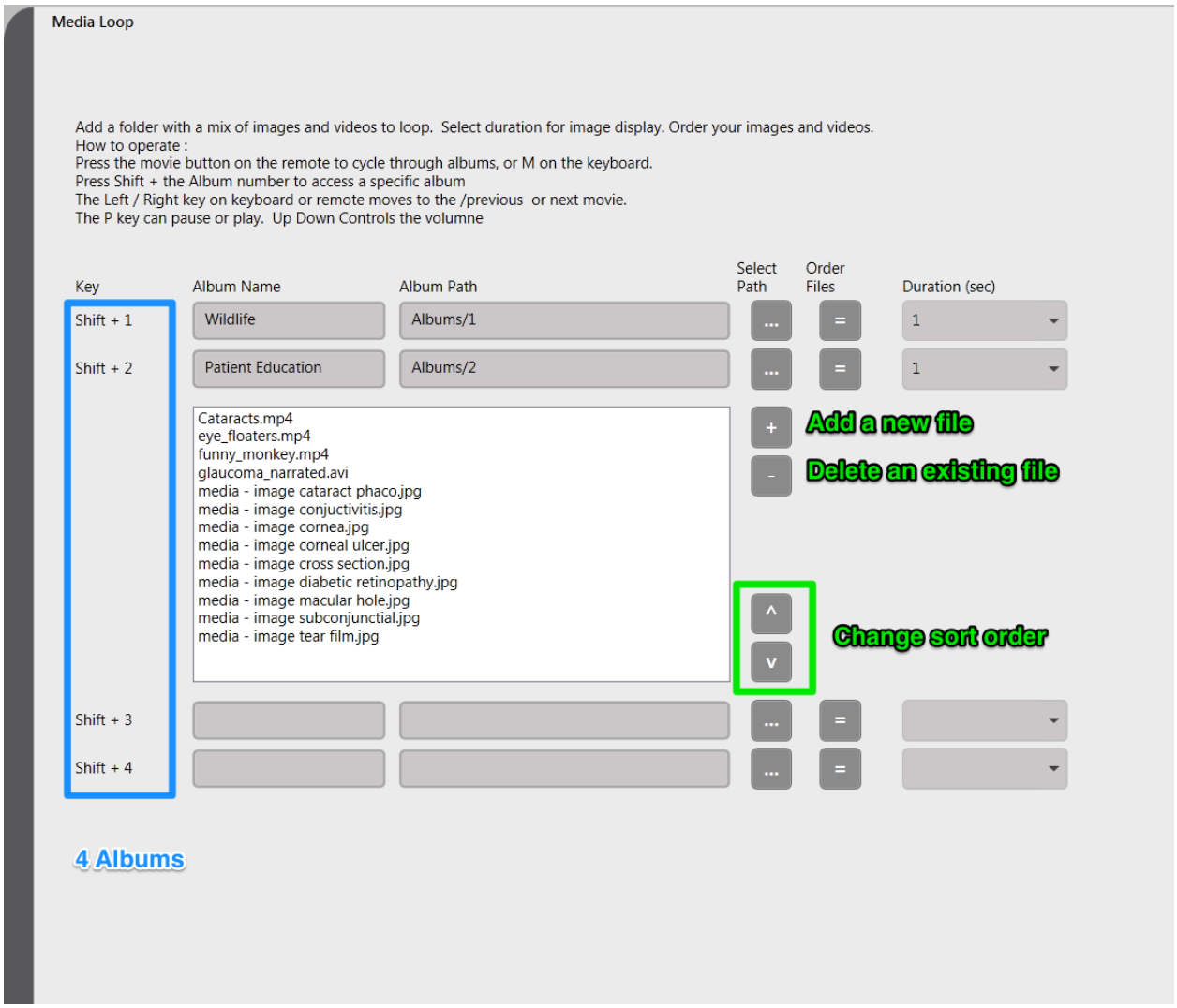


Notes

dsvfdaf

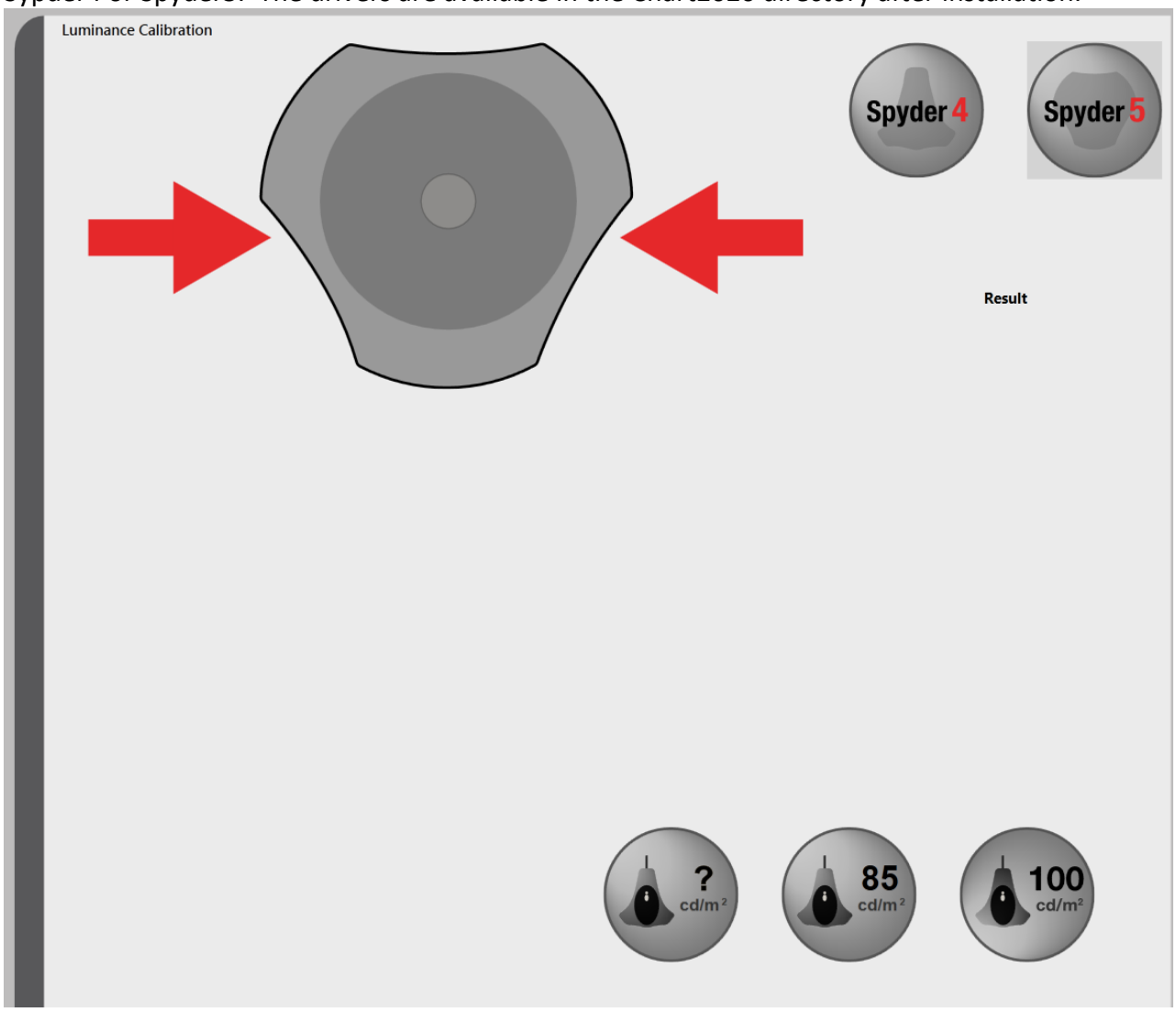
Enhanced Media Loop

We have added the ability to customize 4 albums. 2 Albums have been added by default. The first album is of gorgeous wildlife pictures. The 2nd album is a mixture of videos and images for patient education. You can customize these albums and change the sort order of the displayed looping media. You can also set the length of duration for each image. Using the remote control you can cycle between the albums by repeatedly press the movie button . You can also press the M key on the keyboard to cycle through the albums. Controlling an album is easy. You can use the up, down, left, right and center buttons to move next/previous or pause at a particular point with the center button on the remote or the P button on the keyboard. Up and Down controls the volume.



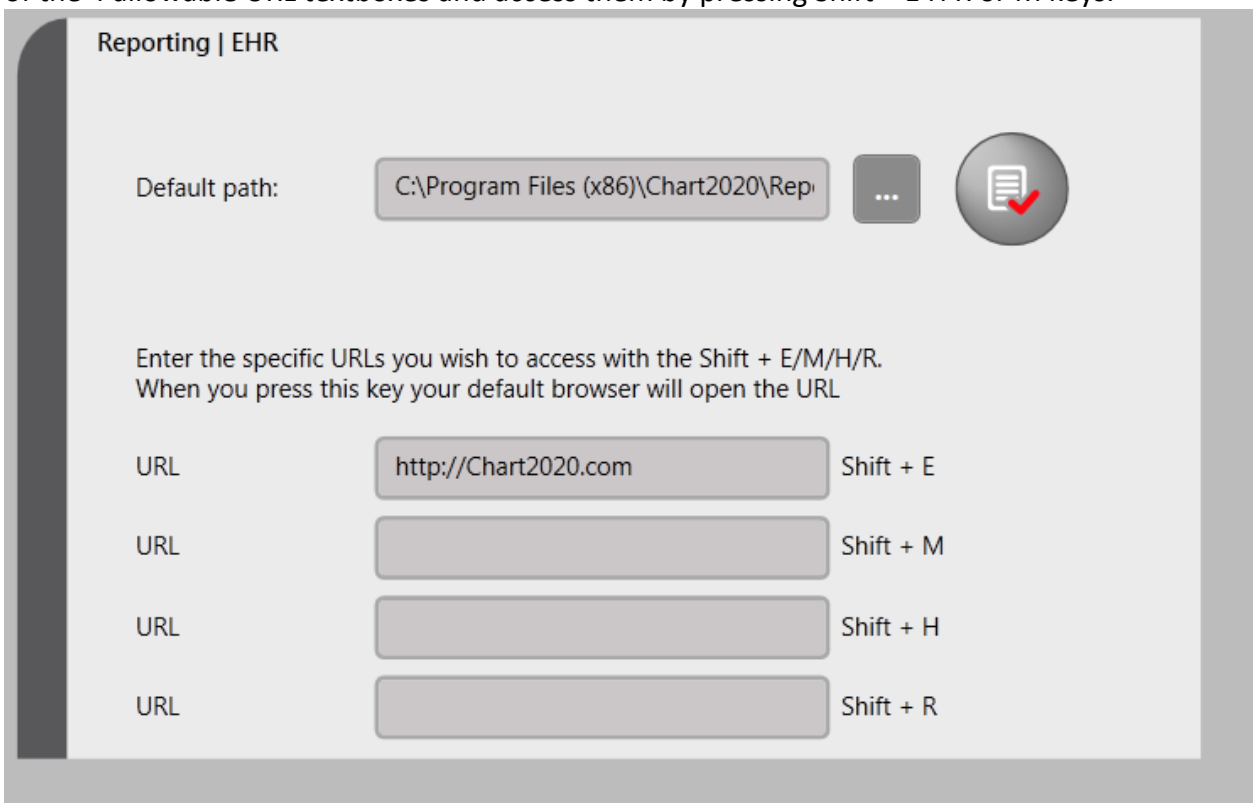
Luminance Calibration for Color Testing

Color testing is meant to be performed at 100 cd/m$^{2.}$ Chart2020 acuity charts are shown at 85 cd/m^2. Now you can calibrate to both levels and the system will automatically adjust to the correct luminance depending on which test is being performed. Chart2020 now works with Sypder4 or Spyder5. The drivers are available in the Chart2020 directory after installation.



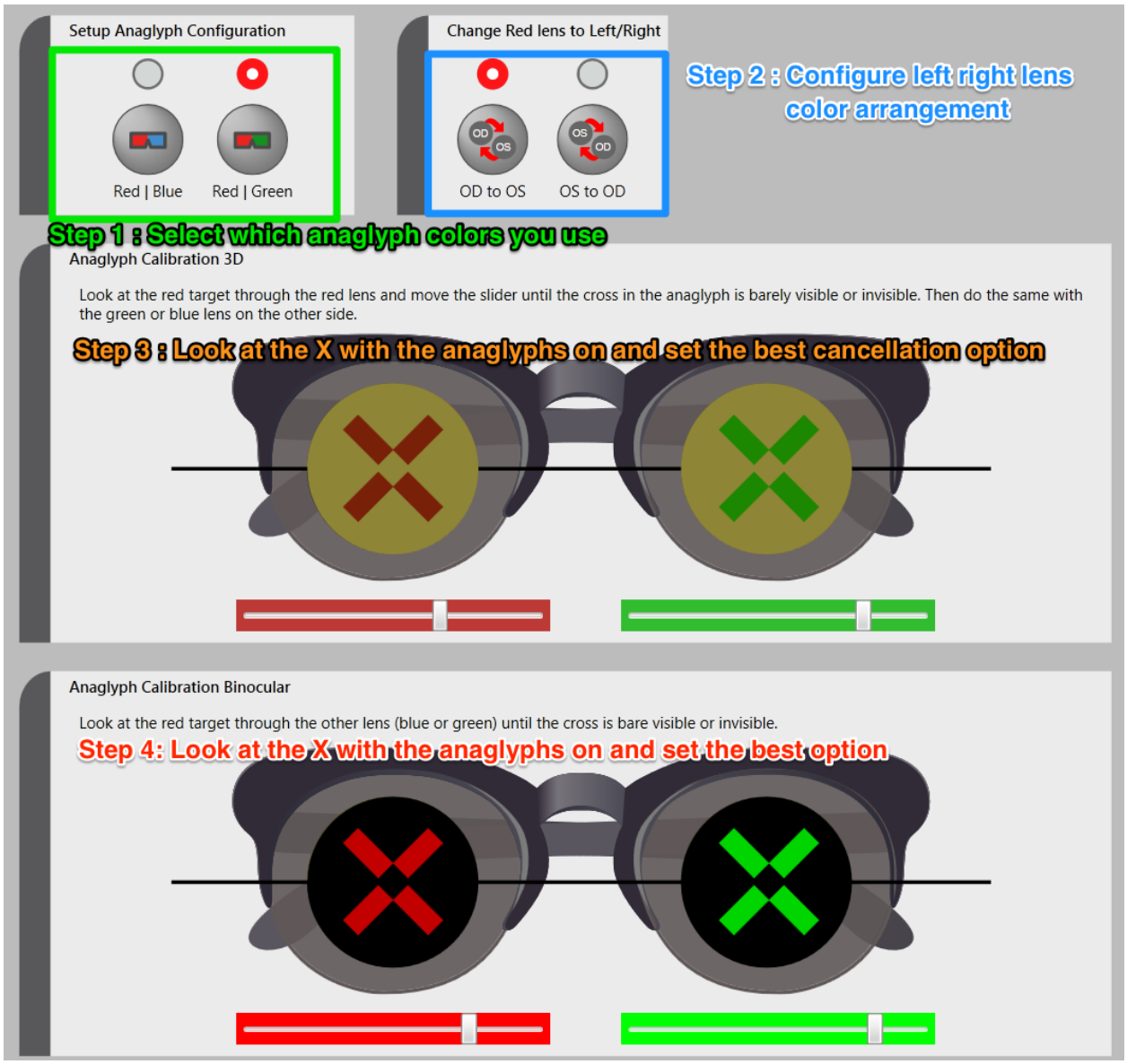
EHR | EMR Shortcut integration

You can now program 4 shortcut quick access URLs. You can copy your own EHR URL into one of the 4 allowable URL textboxes and access them by pressing Shift + E H R or M keys.



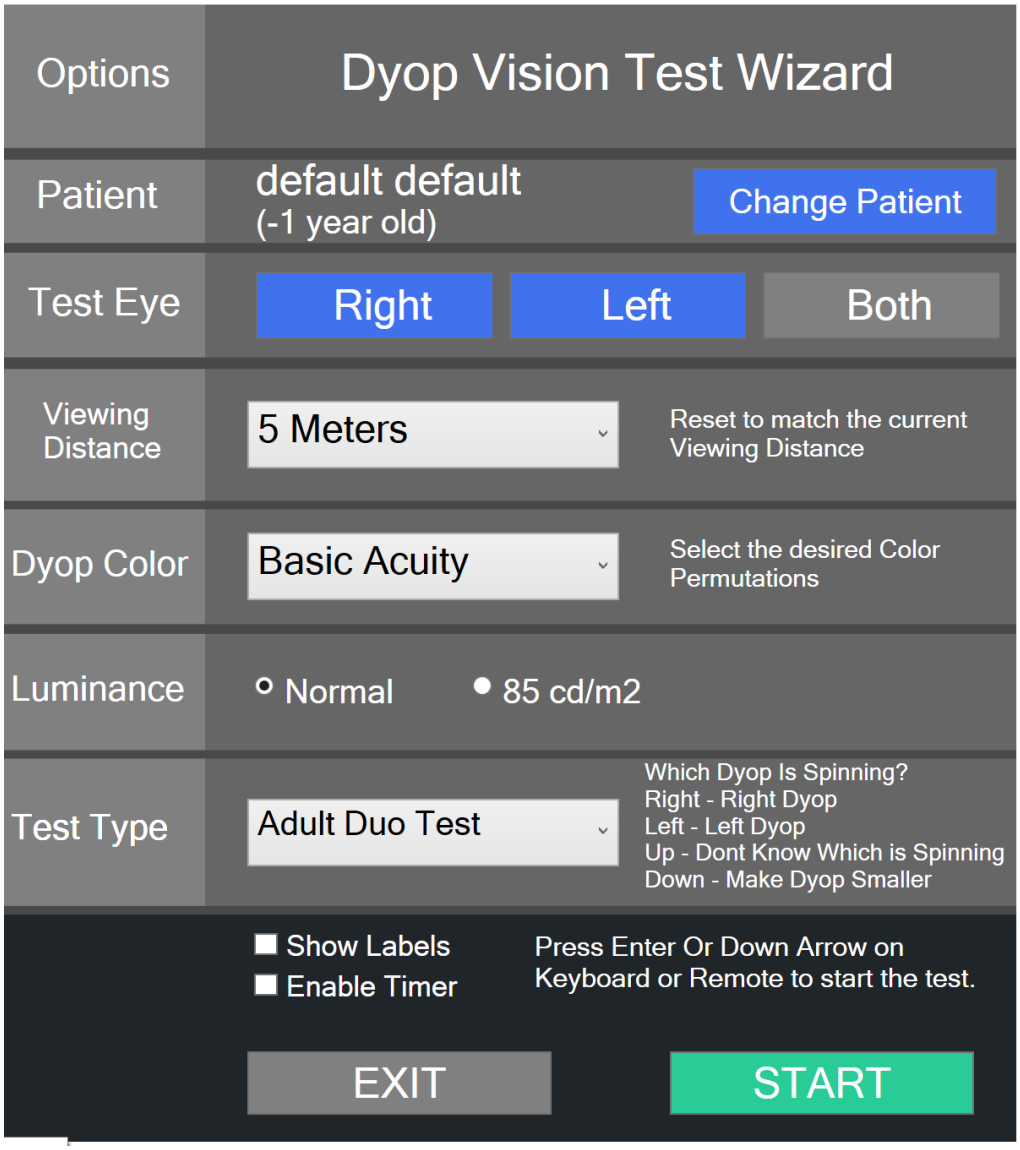
Fixed Anaglyph to Monitor Calibrator

Added an extra slider. Now 3d and binocular targets have their own calibration sliders and is more intuitive to use.



What's New in Version 11

Dyop Form and Algorithm added



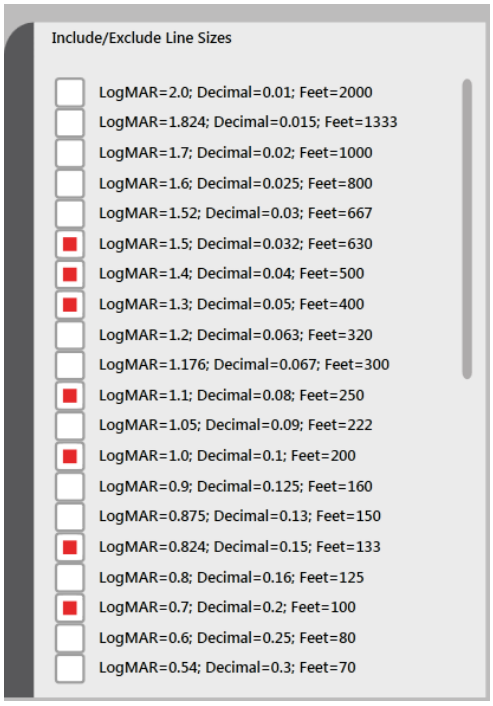
What's New in Version 10

Randomization

We changed randomization in horizontal and triple mode to never have O and C on the same line and H and N. We attempt to do this in full mode also, but since the characters above and below can get affected, we are not always able to guarantee that these letter combinations in full mode are randomized without these letter combinations on one line.

Bug Fix Customized LogMAR

We fixed the problem when certain lines were still being displayed in the logMAR chart even if removed from the customization.

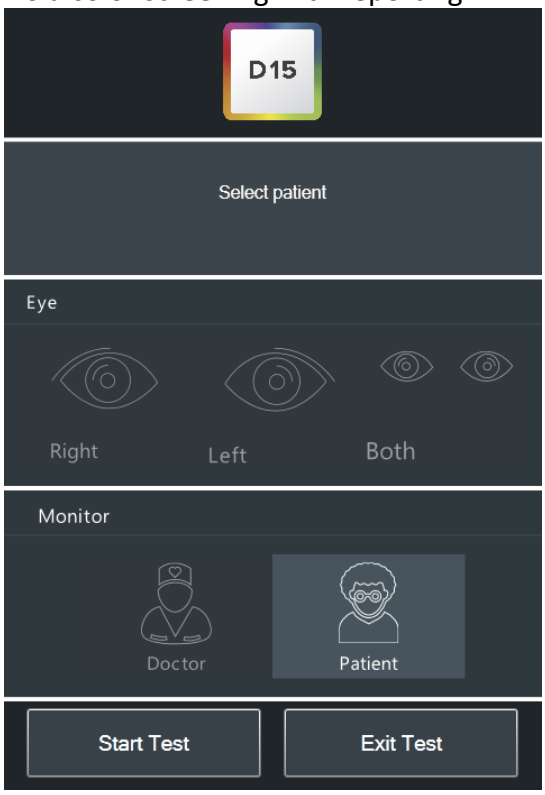


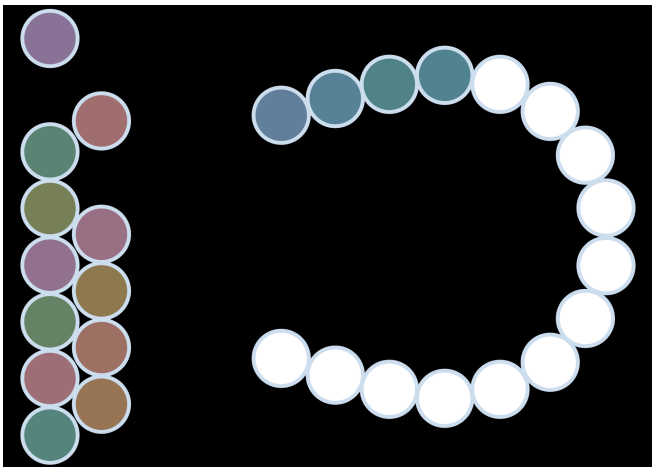
Spyder 5

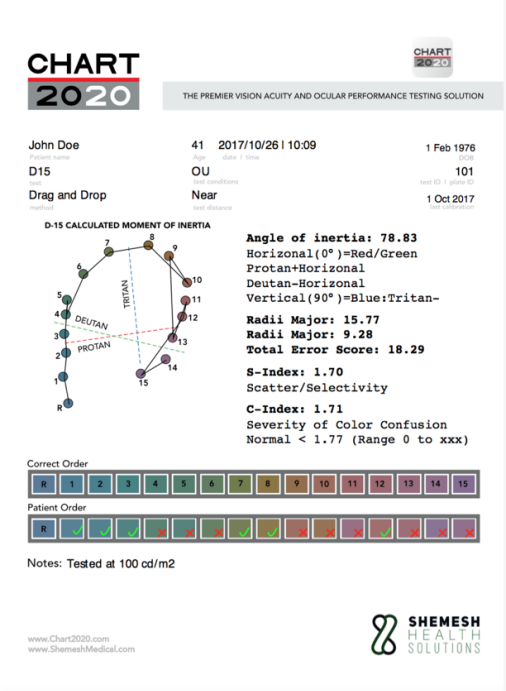
We have added the ability to do luminance calibration with Spyder 5. Spyder 4 is no longer available to be purchased.

D15 Color Test

Do a color screening with reporting

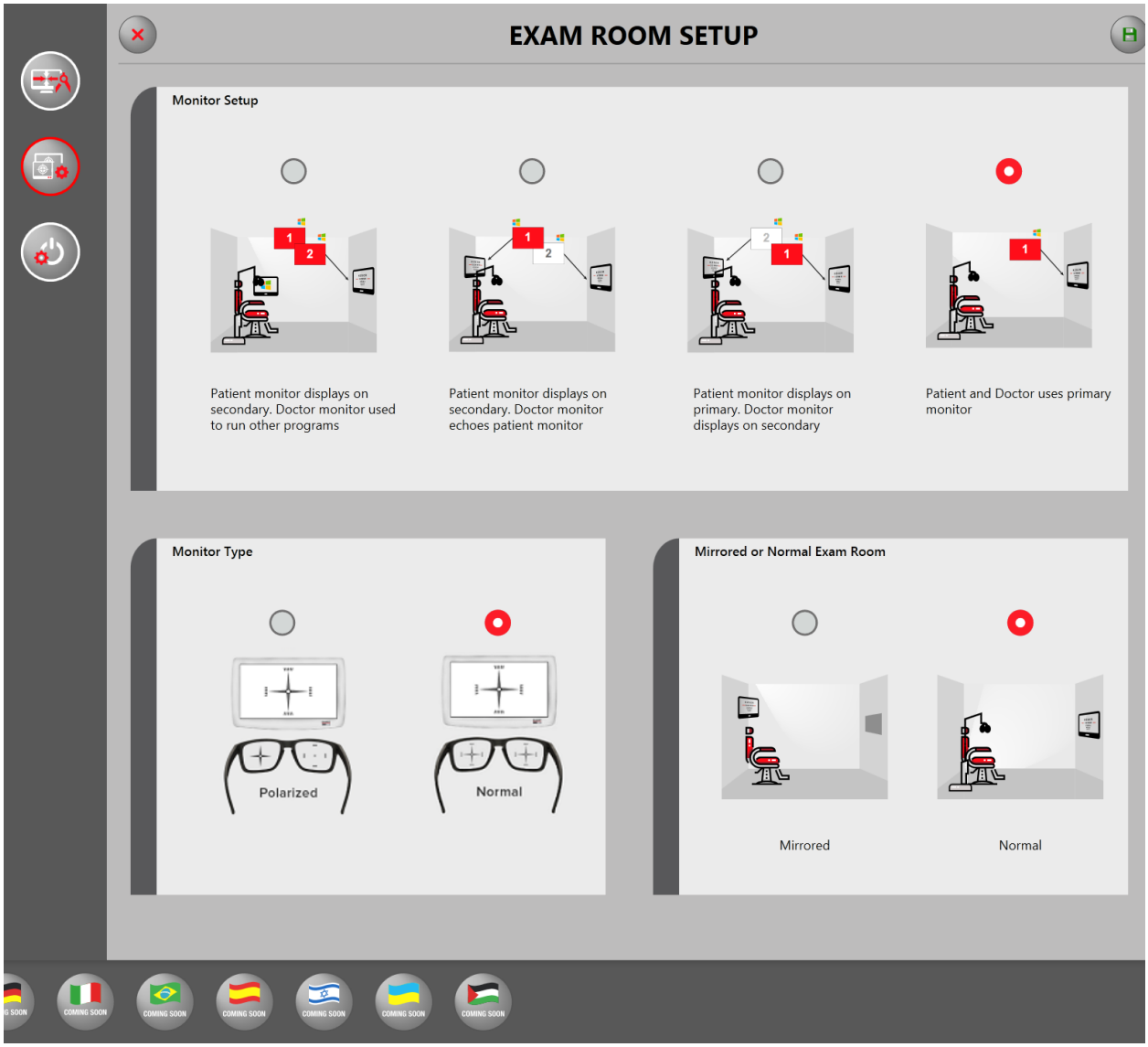


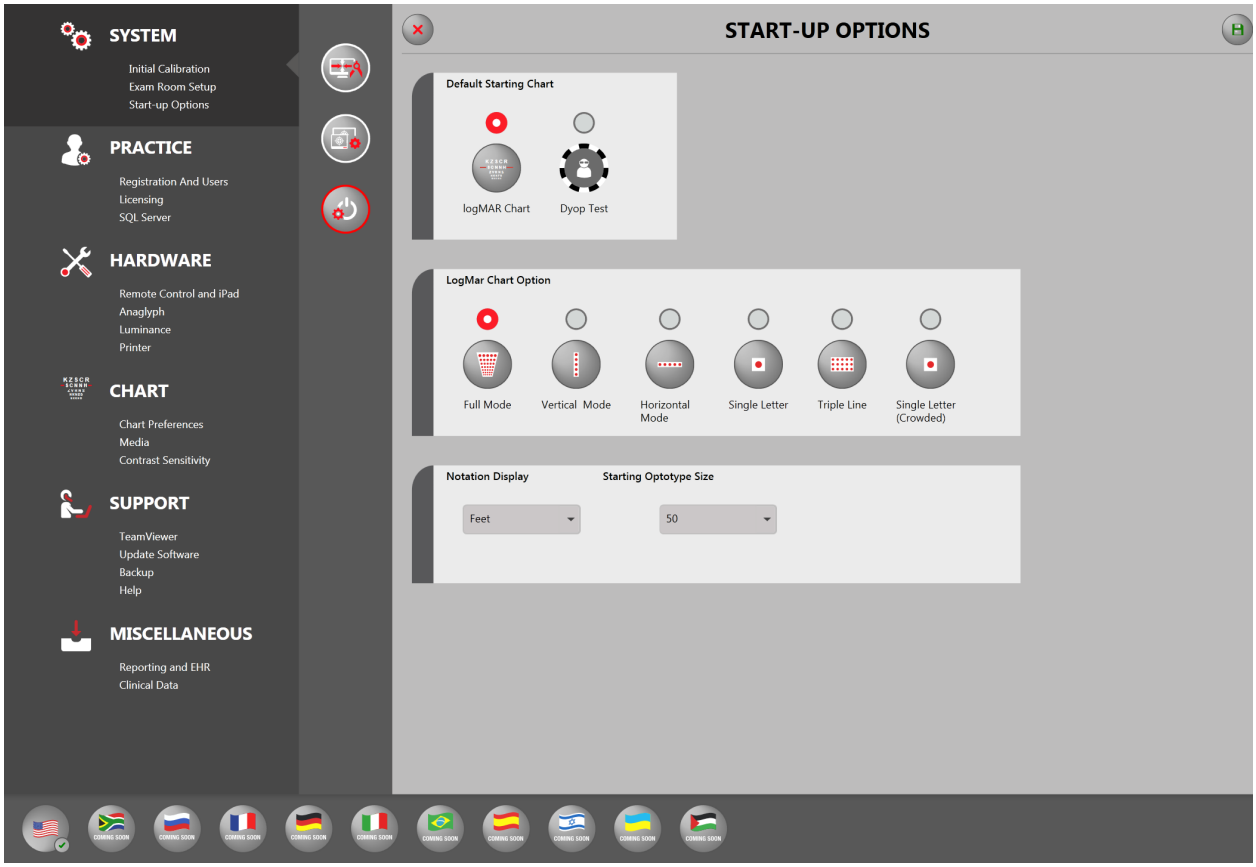




New Settings form layout – Multi-lingual

Example of System Setup


EXAM ROOM SETUP
Monitor Setup
Patient monitor displays on secondary. Doctor monitor used to run other programs
Patient monitor displays on secondary. Doctor monitor echoes patient monitor
Patient monitor displays on primary. Doctor monitor displays on secondary
Patient and Doctor uses primary monitor
Monitor Type
Polarized
Normal
Mirrored or Normal Exam Room
Mirrored
Normal
COMING SOON



Remote buttons have more cycle options

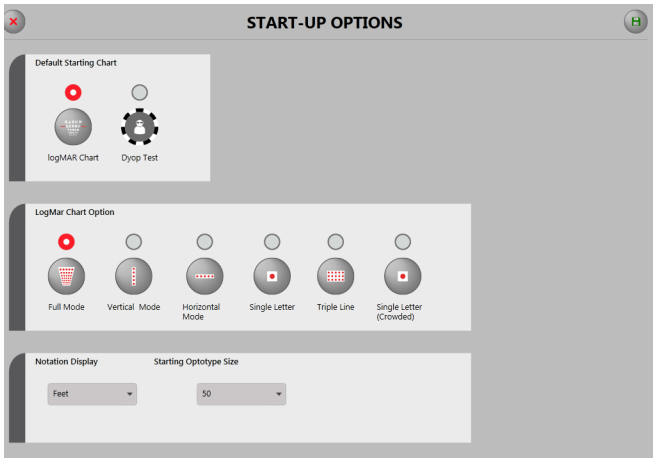
Pressing DUO-Circles buttons in a cycle will open DUO-Circles and then horizontal and vertical phoria. So you can access more options from the remote. Next version we plan to allow you to customize the remote options on certain buttons.

What's New in Version 9

Default Startup Choices

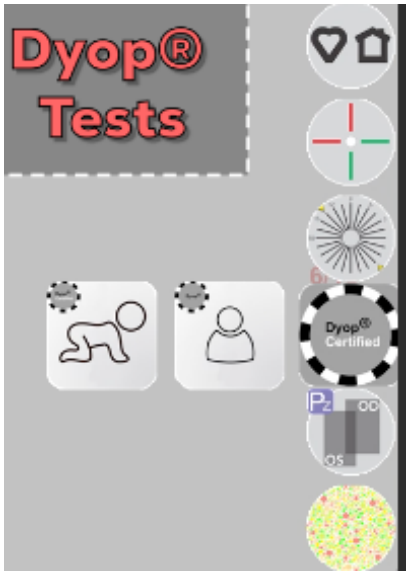
When your Chart2020 system starts each day, you can now select the Default Startup Chart. Choose between Dyop or the logMAR chart.

Furthermore, you can also choose how the logMAR chart will start on startup or each time you return to the test. Select which isolation type you prefer to use. You can also keep the default Full Mode option which doesn't isolate the levels.



Dyop® Infant Acuity Test

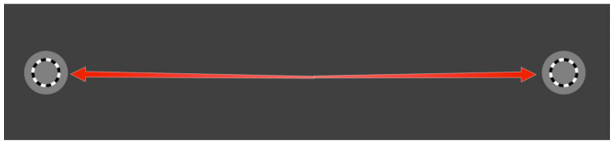
The Dyop Menu now has the the Normal Dyop test as well as the Infant Test.



The Dyops for the Infant Test are displayed on the extreme sides of the screen for Preferential Looking. Each time the size of the Dyop is changed, the location (left or right) of the spinning Dyop alternates. The Infant Acuity test is is best done at a 3 foot (1 meter) viewing distance. Further than 4 feet, it becomes easier to see both images with minimal or no changes in head movement and minimal changes in eye movement. Which defeats the purpose of the test.

Dyop Main Test

Dyop Infant Test

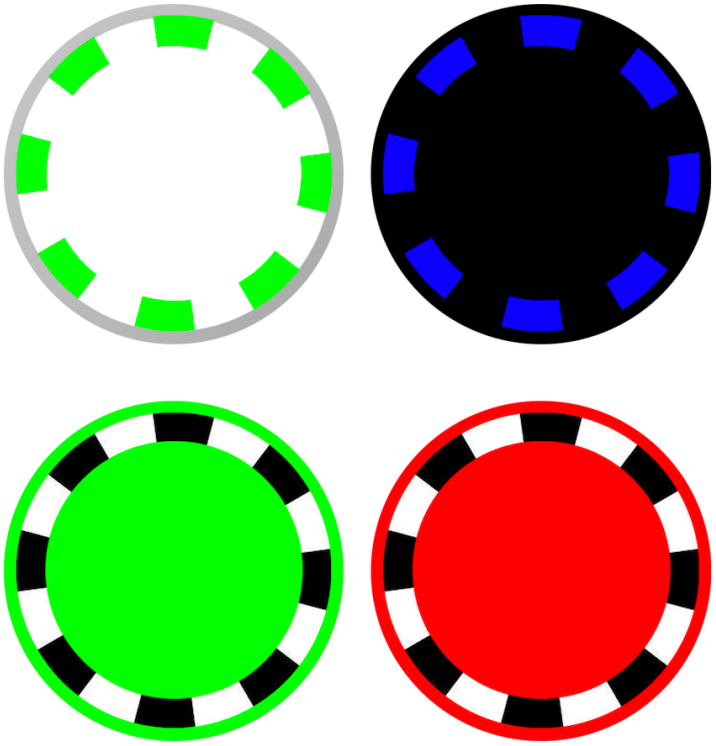


Dual Colors added to Dyop® Test

The Left and right Dyops are displayed simultaneously in Dual Colors. In the dual color mode the Dyops operate differently. Both the left and right Dyop will rotate.

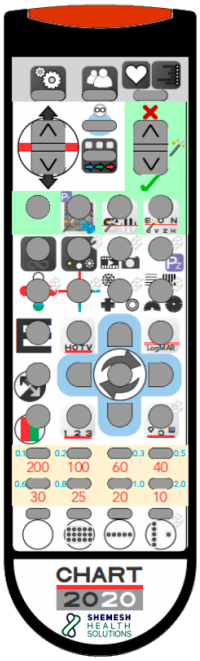
In single color mode only 1 Dyop rotates at any point.

The Home Key on the Keyboard is used to cycle the colors

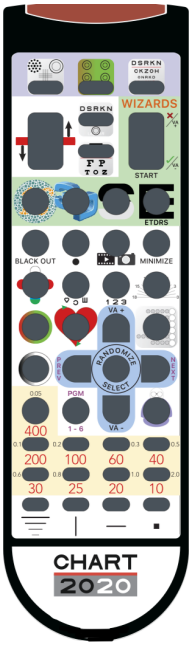


IR Remote Control Features Added

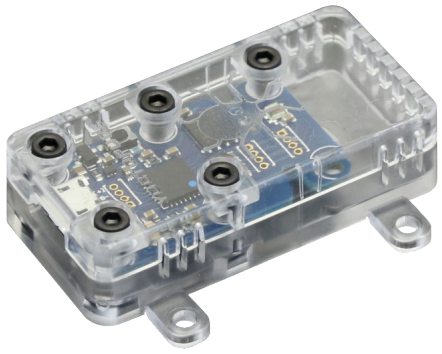
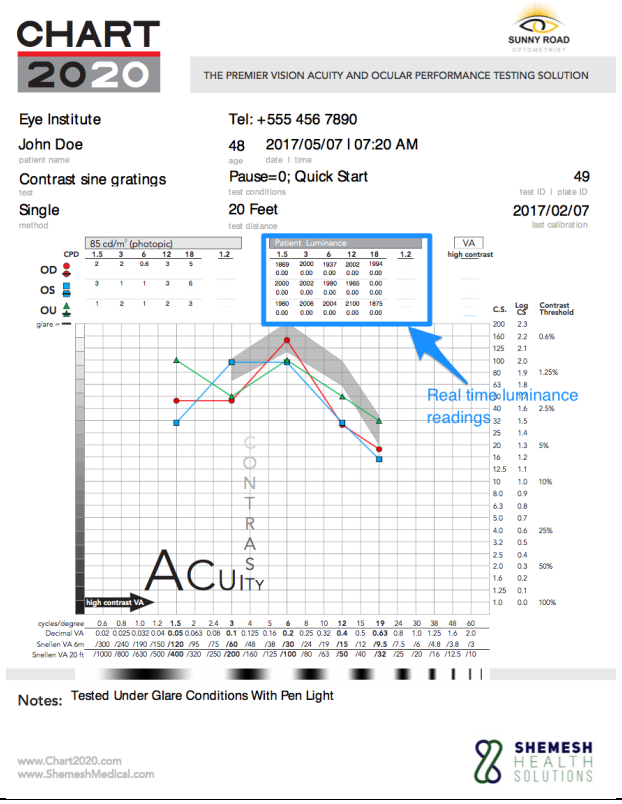
Pressing the logMAR button multiple times, cycles through all the isolation modes, starting with your preferred choice. After your preferred choice it then cycles to vertical, horizontal, triple and single letter isolation modes.



Choose between the existing remote control layout or the new layout.

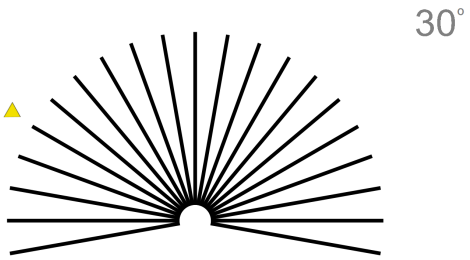


Luminance USB Real Time Recorder

Used for contrast acuity studies, to record real time luminance value for glare contrast sensitivity. The reader is placed at the patient end of the room to detect the exact luminance that is projected onto the patient.	
The luminance reading for each at the time of each answer during the study is saved to the PDF report.	

Fan Chart Fixes and Improvements

The Fan lines were made bigger and the numbering system goes from left to right in increasing increments of 10 degrees.



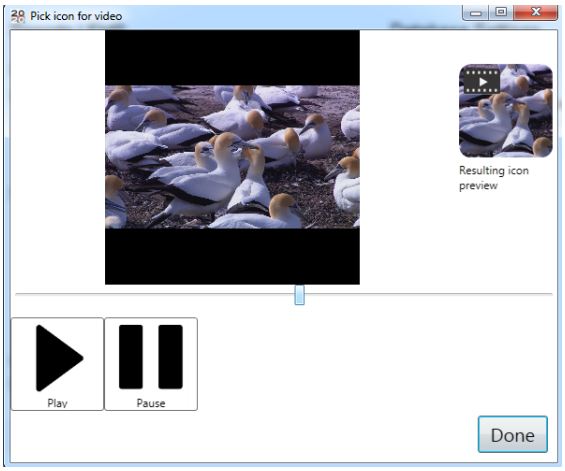
Additional Codec Support for Movies

When you add your own movies, they can be any format now.

Create Thumbnail for Custom Videos Added

After adding a movie, you will be presented with a live view icon maker.

You can slide through the video viewing choosing the exact frame of the video will look awesome in your video library on the right hand side menu. You can cycle through all movies by clicking on the M button or the remote control movie button, to select the correct movie to show your patient. You can also select a mode to loop all movies, for patient hold or marketing.



Prevent Screen-saver from Activating and Set Windows Power Options

This option prevents the screen saver from loading or monitor from powering down if not used.

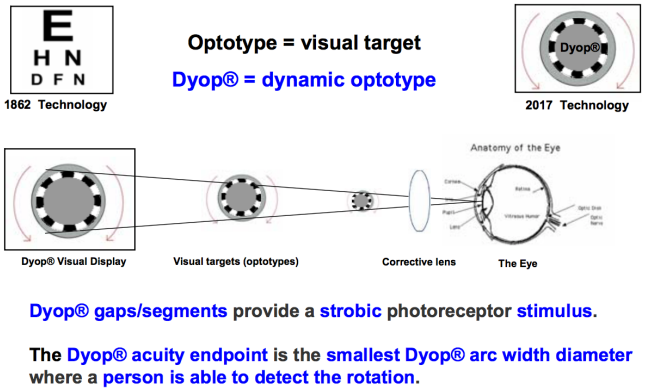
Browser to Display PDF reports

If you don't have Adobe reader installed, Chart2020 will now display the PDF reports generated by the auto-guided strategies in your default browser. Your browser needs to support this option.

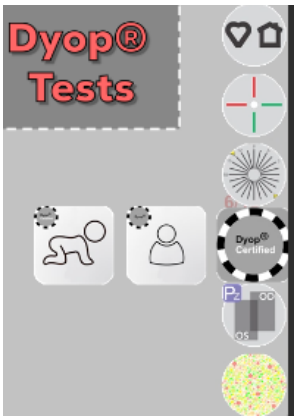
What's New in Version 8

The Dyop® Test

Unlike static image vision tests, such as a logMAR or Snellen chart, a Dyop, or dynamic optotype, is a segmented, circular figure composed of equally spaced segments that rotates at constant velocity. A patient is presented with 2 Dyops, side by side, one moving and one static and is asked to determine the direction and/or location of the spinning Dyop.



Press the W key on the keyboard or select the test from the right hand side library to start the test



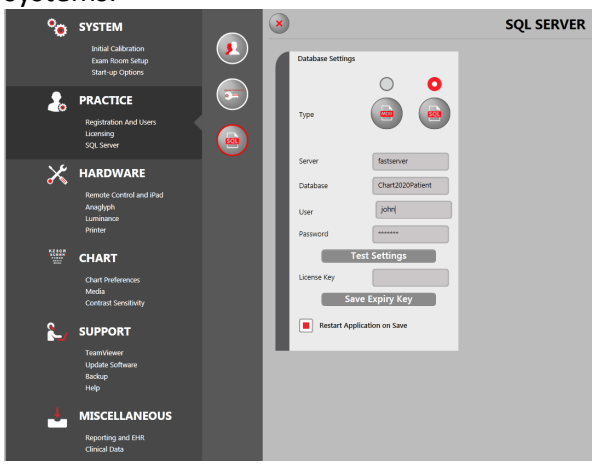
Patient Module – SQL Server Version

The patient module stores basic information about your patients and keeps detailed information to track of changes in Acuity, Contrast and Stereo Vision.

The SQL Server edition of the software facilitates, loading of patient load from EMH | EMR or your own practice management system, and this patient information can be accessed from all Chart2020 installations on the network. You can connect your existing practice management software by storing the key to your patients in Chart2020.

PDF reports can now be saved to a network file server, so tests done in one test room are accessible from another test room, or directly from back end systems.

Patients can be flagged by back end processes to allow for easy patient selection, to present at the top of the initial list without searching. This can be done by setting the appointment date of the patient in your backend systems. PDF reports can now be saved to a network file server, so tests done in one test room are accessible from another test room, or directly from back end systems.



Contrast Sensitivity Test – Patient Administered Mode.

In the **pairs test mode,** two targets are displayed side by side; one target has no sine gratings, while the other target is displayed with vertical, horizontal, 35° or 135° sine gratings. The patient answers by indicating which target displays the sine-wave gratings. In this mode, the test can be **self-administered** by the patient, who presses the left or right arrow on the remote depending on their answer. This option assists in removing bias and reduces staff overhead.

Customizable Overlay for age linked normative values. A grey area is painted over the graph results, and helps to assess whether the patient is in normal contrast range.

Stereo Acuity – Color Separation

Previously our Stereo Acuity module was only available to operate on circular polarized monitors. Chart2020 now introduces stereo acuity on any monitor. Using color separation and an anaglyph to monitor calibrator, you can setup the tests for the 4 Shapes, 3 Poles, or Random Stereo Dots to operate with Red Green or Red Blue anaglyphs.

iPad companion App – Live View

The doctor's mini viewer on the iPad refreshes without trouble.

What's New in Version 7

Soft Remote

iOS and Android mobiles and tablets can be used to control Chart2020

Create your own templates
Use our collection of templates
Use as a mouse pointer
Use a mini viewer of the patient screen
Shutdown or Startup Chart2020
Many additional features

What's New in Version 6

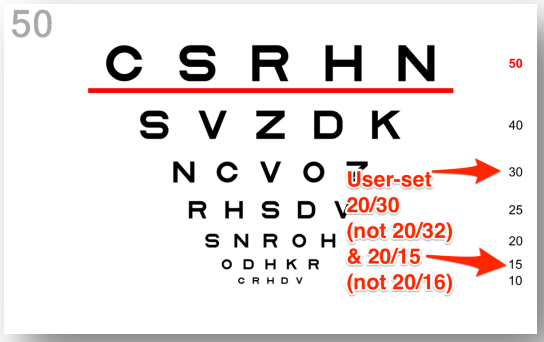
Product Offered in PRO LITE versions.

What's New in Version 5.6

New Chart Formats

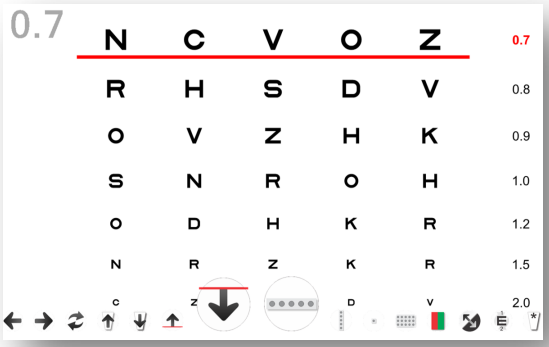
Preferred Sloan Chart Display

We had a number of requests for deviations from the strict conventions of LogMAR charts, as examples displaying 20/30 rather than 20/32 line. You can now have it your way. From Chart Preferences select "Preferred Sloan" chart format and check which lines you prefer to have displayed still using Sloan characters and the spacing conventions (intra-line and inter-line) from LogMAR.



Rectilinear Chart Display

There are more than a few docs that just want to keep the same ordered vertical format common with slide projectors. We prefer contemporary LogMAR conventions, but again, you can have it your way. You can even use Chart Editor to drag and drop the exact letter sequence that you know by heart from the slide projector and mimic the order exactly. But it is not exactly the same: Chart2020 characters are razor sharp and never have dust-degraded optics from the projector system.

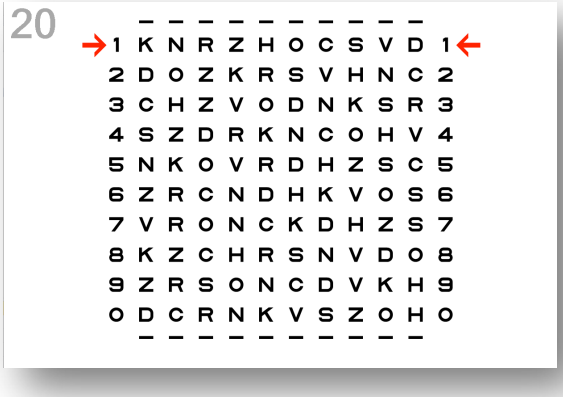


LogMAR is Persistent

Even if you selected your own Preferred Sloan or Rectilinear letter presentation, the pure LogMAR chart (labled "LogMAR" of course) always is available from Acuity Library section for clinical studies and purist visual acuity testing.

Sloan Aviation BUMED

Now the old printed BUMED magnetic charts no longer need to be dusted off for Aviation Flight Physicals. Chart2020 Aviation BUMED specification features the 10X10 letter matrix at 20/20, crowded characters on all outside characters, inclusive of Sloan numbers on each line and intelligent one button randomization. Try to memorize these letters to pass a flight physical!



Enhanced Sine Grating Settings for Contrast Sensitivity Wizard

We have added dithering methods to the grey scale attenuation strategy of the sine gratings to enhance the sinusoidal affect.

Global Optotypes Have a New Home

Another great suggestion from a customer has been added: when Global Optotypes (Japanese, Korean, Arabic, Russian, Hebrew, and Greek) are used in the practice, it would be rare to need to change this setting on the fly and select from many other languages. Global Optotypes have moved into Chart Preferences where you will select which of the alternate character sets will appear in the visual acuity library. A separate Library selection is no longer needed and the Library has been further simplified.

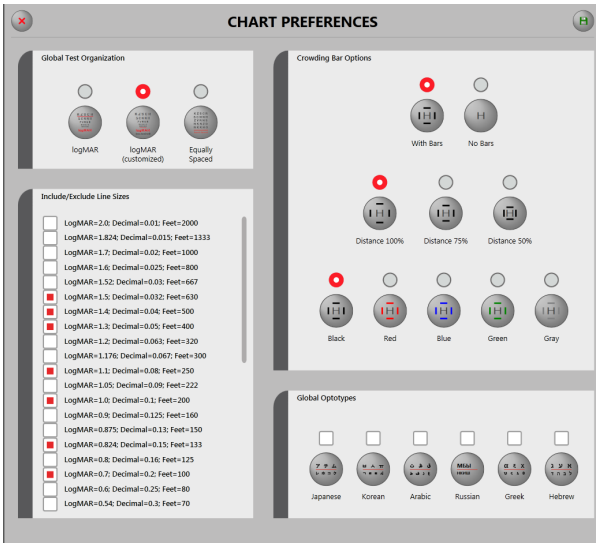


Chart Preferences Selections

The Chart Preferences area has been given a clean up.

User Added Media: Delete

Any user-added media (images or videos) can now be easily removed from the Media Library by using the mouse and right clicking on the media file. A dialog box will popup to confirm the removal.

Chart2020 CONNECT More New Testing

If you have not yet downloaded the Chart2020 CONNECT app from iTunes, you should do so before reading the next page. The most advanced iPad test controller for eye testing.

Preview videos show additional available features such as NEAR VA, Amsler 3D. Check it out

http://chart2020.com/ipad/

Overview – Chart2020 Docks

Chart2020 is an advanced icon driven application that allows significant depth in testing strategies with a paradigm that is both simple and flexible.

The heart of the control system is four "docks" that are dynamically exposed and hidden on each screen edge:
Library (right),
Context Controls (bottom),
Sequence (top), and
System (left)

Docks are displayed by moving the mouse to the relevant edge of the screen. Icons displayed, as delimitated below, are also used with other control options such as the multi-button remote.

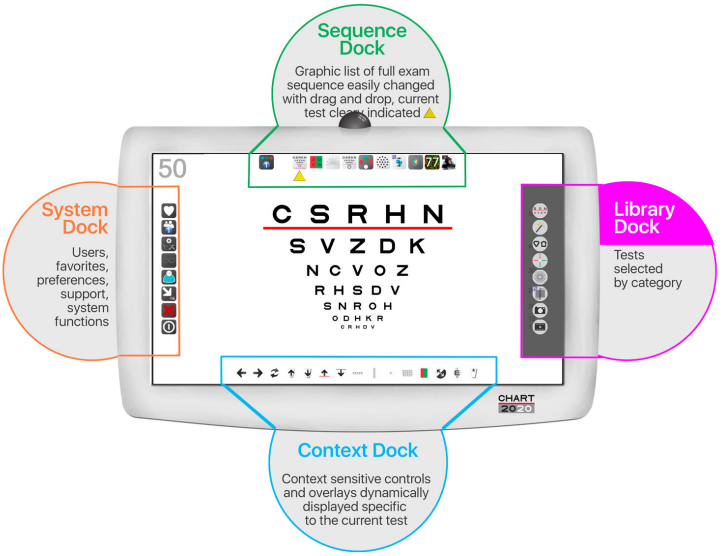
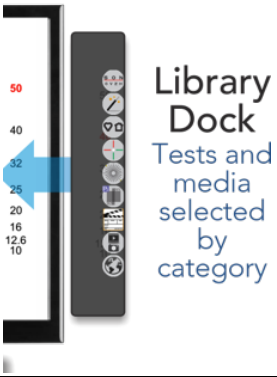


Figure 1: Chart2020 control features accessed by self-hiding "docks"

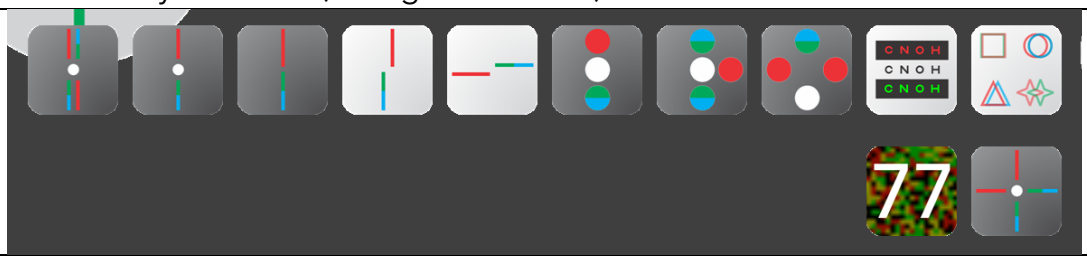
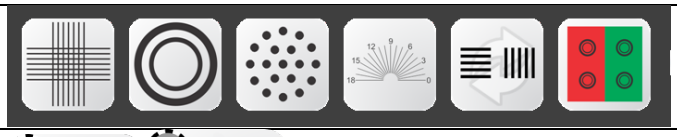
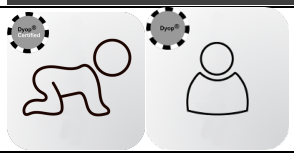
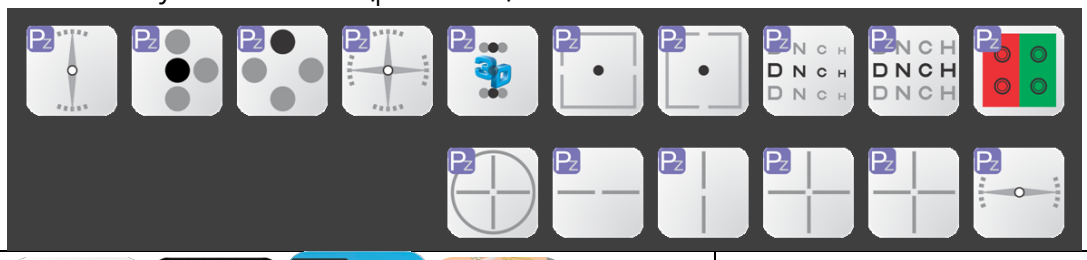
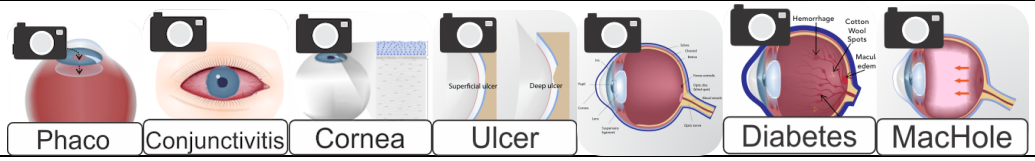
Library Dock

The Library is exposed by using the mouse to move to the **right edge** of the application or by selecting the Library key.

The Library shows all tests and media files organized by Category as follows:

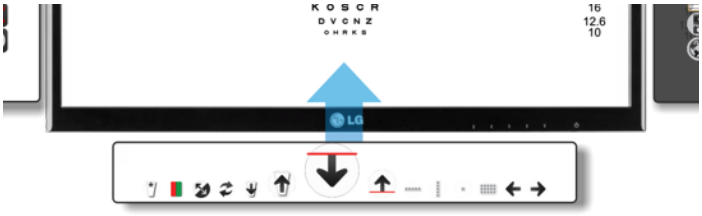


Catagory	Acuity Optotypes, Tests, Fixation Targets, Media Files
	Acuity | Fixation
	Wizards -
	Acuity - Illiterate

	Binocularity	Balance (red –green or blue) 
	Astigmatism 
Dyop®	
	Binocularity and Balance (polarized) 
	Add your own movies with special icon maker
	

Context Control Dock

The Context Control dock is context sensitive in that the control buttons shown are minimized only to those that pertain to the current test. These controls are all available from the docks (mouse), the keyboard, remote control, or the iPad CONNECT app.



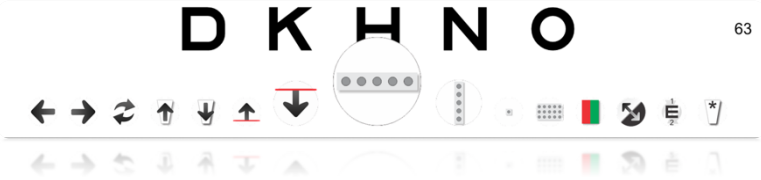
Context Dock

Context sensitive controls and overlays dynamically displayed specific to the current test

As examples of two commonly used contextual controls:

Acuity Charts Context Controls

When an acuity chart is being displayed and the Context Control dock is activated from the bottom edge of the application, the controls are constricted to only those that are relative to visual acuity testing.



Last Test (Sequence)	Next Test (Sequence)	Randomize	Chart Up	Chart Down	Highlight Up	Highlight Down	Horizontal Overlay	Vertical Overlay	Single Letter Overlay	Three Line Overlay

Astigmatism Context Controls

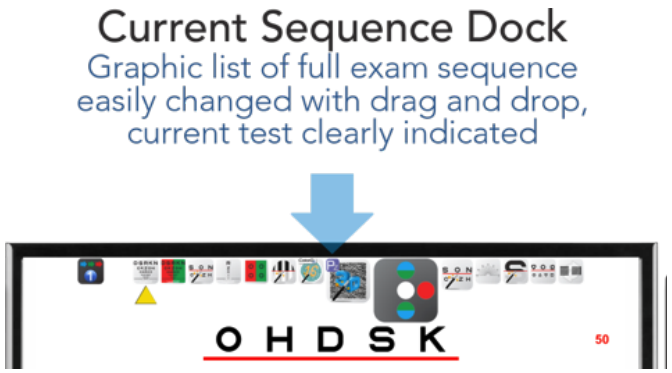
(Spinning Block)

When an astigmatism (Spinning Block in this case) target is being displayed, controls specific to the astigmatism test are displayed.

Chart Up	Chart Down	Last Test (Sequence)	Next Test (Sequence)	1 degree steps	2 degree steps	5 degree steps	Reset to default (180)

Sequence Dock

The Sequence dock is a fully editable dock in which a series of ordered tests commonly performed in a standard examination process are organized on demand, at any time, by the user by simply dragging and drop tests from the Library onto any indicated position on the current Sequence. Tests can also be rearranged to a different order or removed by drag and drop.



The first icon on the left shows the current Sequence, which in this example is Sequence 1.

The yellow triangle indicates which test is currently selected.

System Dock

The System dock provides overall system controls and includes the following functions:

	Favorites
	Users (four can be defined)
	Preferences I Chart Editor
	Black Screen On / Off
	Patient
	Minimize Chart2020
	Exit Chart2020
	Exit and Power System Down

Input / Control Devices

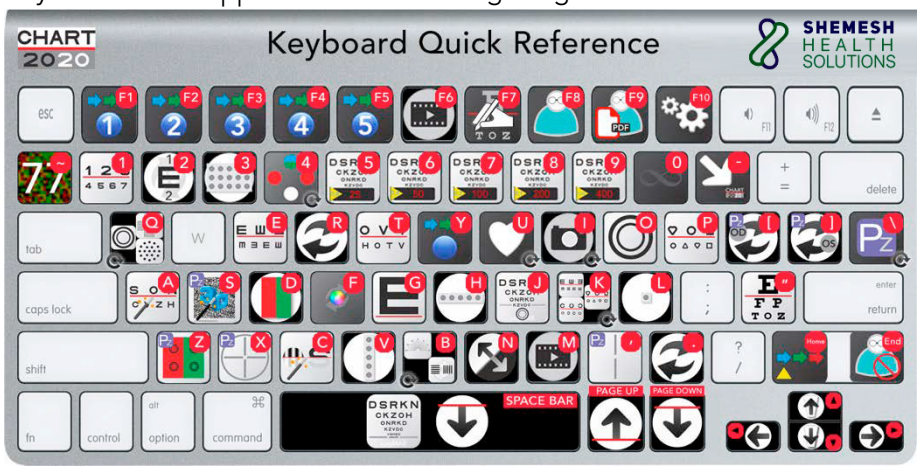
Soft Remote

iOS and Android mobiles and tablets can be used to control Chart2020

Create your own templates
Use our collection of templates
Use as a mouse pointer
Use a mini viewer of the patient screen
Shutdown or Startup Chart2020
Many additional features

Keyboard

Keyboards are mapped with the following assignments.



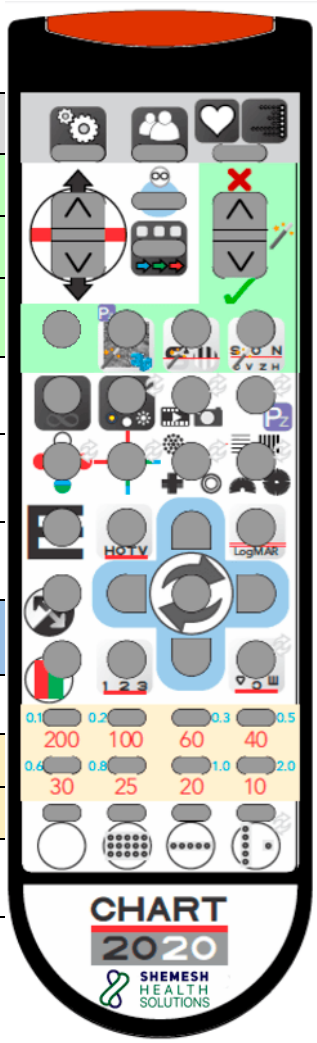
F1 Seq. 1	F2 Seq. 2	F3 Seq. 3	F4 Seq. 4	F5 Seq. 5	F6 Movie	F7 Chart Editor	F8 Patient Select	F9 Print PDF	F10 Prefer-ences			
~ RDS Anaglyph	1 VA – Sloan Numbers	2 Switch to Alt Optotype	3 Overlay 3 lines	4 Worth 4 Dot	5 VA 20/25	6 VA 20/50	7 VA 20/100	8 VA 20/200	9 VA 20/400	0 Black Screen	- Minimize App	
					25 0.8	50 0.4	100 0.2	200 0.1	400 0.05			
Q (cycle) Astig	W Start Dyop	E VA Tumbling E	R Randomize	T VA HOTV	Y Sequence	U Favorite	I Media Images	O Astig O	P VA Ped	[Change to OD	] Change to OS	\ Pz Tests

A Wizard VA (e)ETDRS	**S** Wizard Stereo	**D** Overlay CONNECT- Chrome	**F** Fixation Dynamic	**G** VA Low – Vision	**H** VA Overlay Horiz	**J** VA Sloan+ Astig	**K** (cycle) VA Illiterate	**L** VA Overlay 1 Letter		**"** VA Snellen		
Z Pz Balance	**X** Pz Vert / Horiz	**C** Wizard Contrast Sensitivity	**V** Overlay Vertical Line/ Single	**B** (cycle) Astig Fan to Block	**N** Overlay Reverse Blk-Wht	**M** Cycle Movies (multiple press)	**,** Pz Lat Phoria	**.** Cycle		**Home** 1st test in Seq	**End** Default Patient	
Space VA LogMAR	**Page Up** VA Highlight Up	**Page Dn** VA Highlight Down	**←** Sequence Last Test	**↑** VA Chart Up	**↓** VA Chart Down	**→** Sequence Next Test	W					

Chart2020 Multi-button Remote

Shemesh's Multi-button remote uses the same icon controls as the keyboard, docks, and iPad CONNECT app.

	Preferences		Users		Favs | Library (cycle)		
	VA: Highlight Up		Patient		Wizard X = No		
	VA: Highlight Dn		Sequence		Wizard ✓ = Yes		
Dyop			Wizard: Stereo		Wizard: Contrast Sens		Wizard: (e)ETDRS
	Overlay: Black		Fixation Targets (cycle)		Movies (cycle)		Minimizes Chart2020
	Worth Dots (cycle)		Binocularity (cycle)		Astigmatism (cycle)		Astigmatism (cycle) Interactive
	VA: Snellen Layout		VA: HOTV		VA: Chart Up		VA: LogMAR/Cycle
	VA: Invert Bkgd		Sequence: Last Test		Randomize / Enter		Sequence: Next Test
	Overlay: Red Green		VA: Sloan Numbers		VA: Chart Down		VA (cycle): Illiterate
200 0.1	VA: 20/200 | 0.1	100 0.2	VA: 20/100 | 0.2	60 0.3	VA: 20/60 | 0.3	40 0.5	VA: 20/40 | 0.5
30 0.6	VA: 20/30 | 0.6	25 0.8	VA: 20/25 | 0.8	20 1.0	VA: 20/20 | 1.0	10 2.0	VA: 20/10 | 2.0
	BUMED / 10x10 Grid		Overlay: 3 lines		Overlay: Horiz Line		Overlay: Vertical Line/ Single



IMPORT NOTE: the Chart2020 remote does not require "multiplier" keys such as "CNTRL", "CTR", "FNC", or "FUNC" to cover the functions of the system. Importantly this also means that users do not have to memorize dozens of arcane rules such as "FNC + SGL button equals Sine Wave Contrast Test" as is the convention on most older, legacy systems. Chart2020 manages this simply and intuitively by directly accessing the Library Dock where any test is immediately selected as well as having all of the tests you most commonly use in order brought up sequentially (the "Sequence") by pressing the right arrow.

iPad Chart2020 CONNECT App

Chart2020 is perhaps most elegantly controlled and augmented with a Retina display iPad or iPad Mini. With Chart2020 CONNECT, you have a live preview of what the patient is seeing, without turning away from facing the patient, intuitive control functions using gestures, and augmented display showing expected answers (examples are very small optotypes, low contrast targets, and obscured stereo acuity and color vision screening content). Chart 2020 CONNECT utilizes a Wi-Fi connection on the same Wi-Fi network shared by the Chart2020 application and the iPad CONNECT app.

Overview

The Chart2020 CONNECT iPad Controller

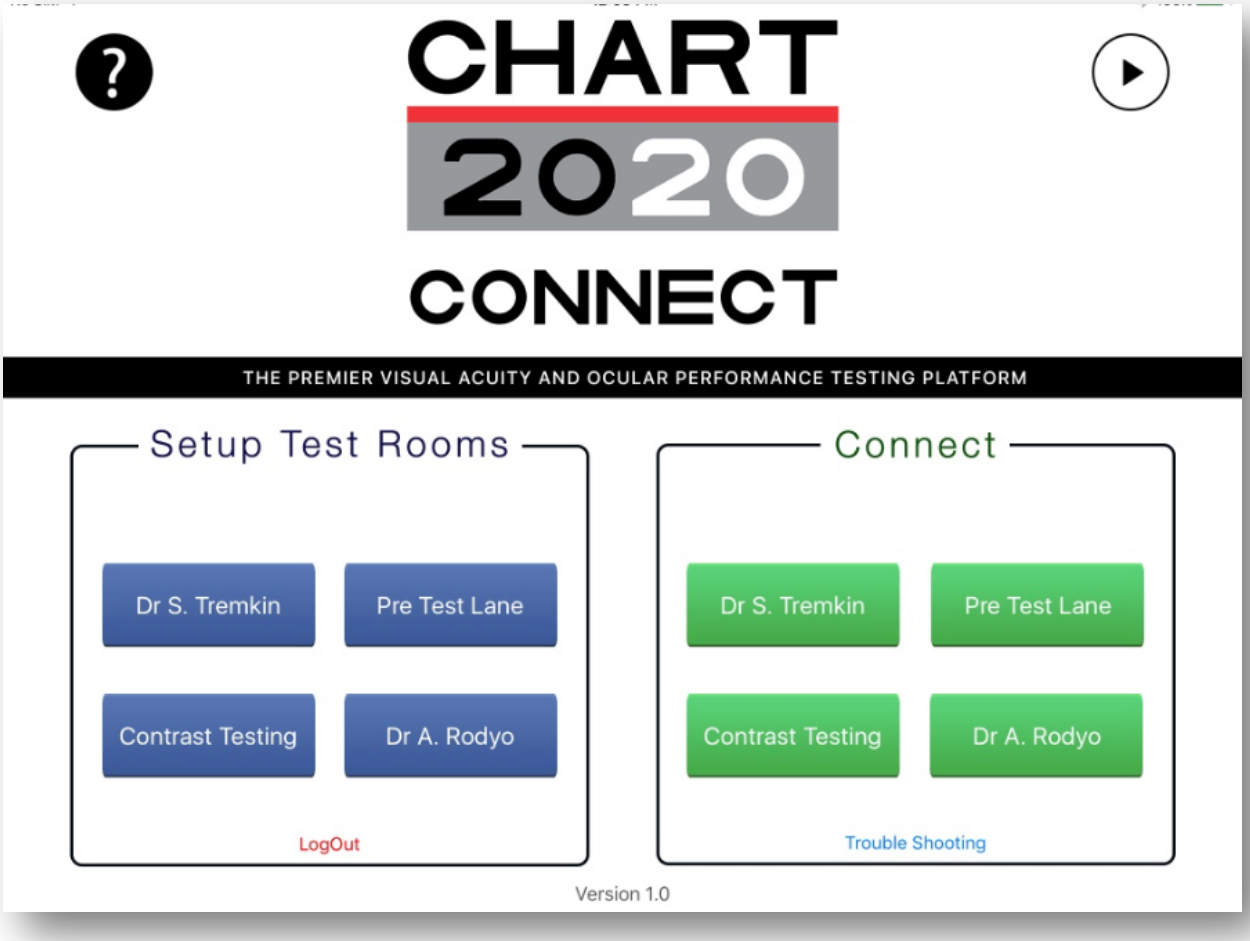


Chart2020 Distance Testing Control Interface

The Chart2020 CONNECT provides the most comprehensive, one-touch control interface for managing your Chart2020 exam. The control interface includes gestures, previews, private answers, and more. See Chart2020 CONNECT app help for more information.

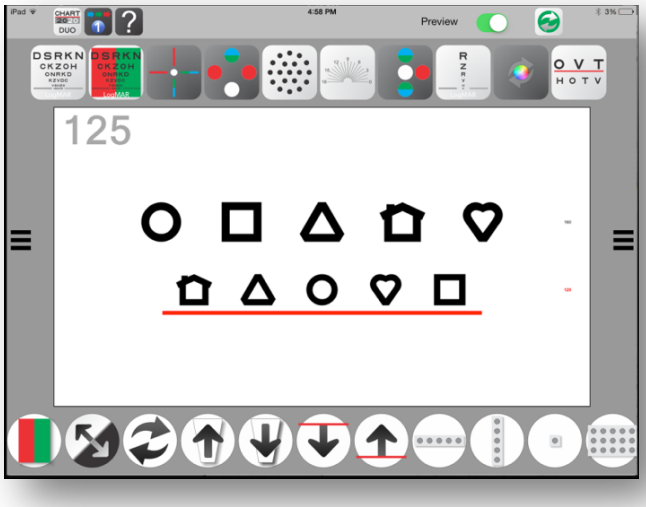
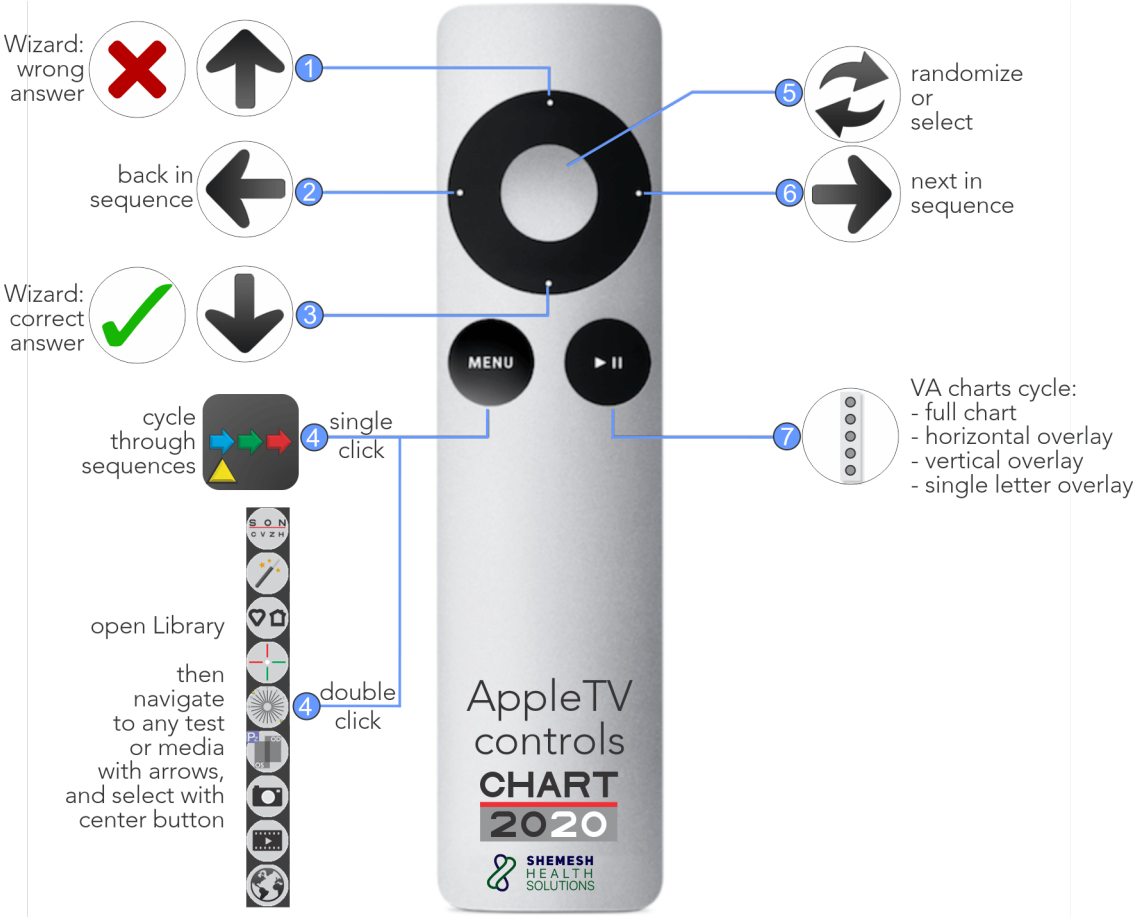


Chart2020 CONNECT app from iTunes

The Chart2020 CONNECT app is available exclusively from the Apple iTunes store listed under Shemesh Health Solutions or Chart2020 CONNECT.

AppleTV Remote

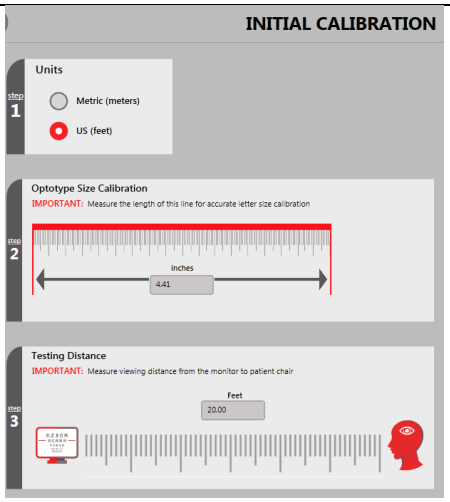
Chart2020 can also be controlled for the most common tasks using the minimalist AppleTV remote (available separately from Apple.com). Simple to use, easy to carry with you, long lasting batteries.



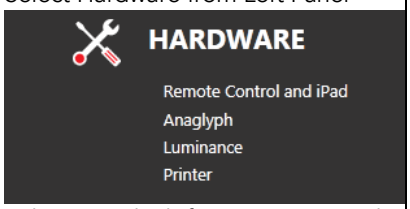
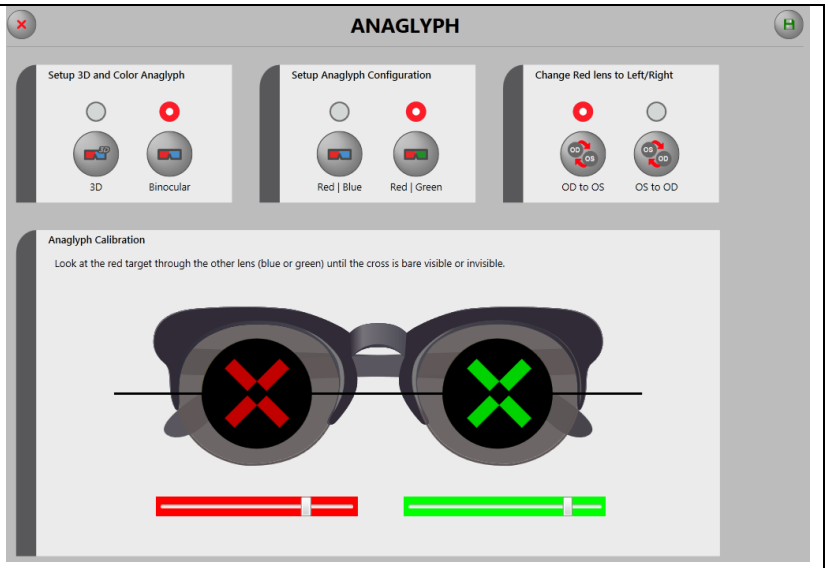
Up | Down			Left | Right
Acuity	Up = larger letters Down = smaller letters		Moves forward or back through the current active Sequence
Binocularity R/G or PZ	Moving lines vertically or horizontally		Center
Wizards	Up = correct answer Down= wrong answer		Randomize LogMAR chart letters Move from Fan to block, maintaining the same angle
Balancing	RG shapes changing the circle		Menu
Stereo R/G or PZ	RDS increases or decreases seconds of arc with a new target each step		Single click: Cycle through Sequences (1-6) Double click: Display Library, then navigate to any test with arrows, and select with Center
Fixation Dots	Cycles: Dynamic, Static, larger, smaller		Play | Pause
Media	Cycles: videos and images		Cycle VA chart overlays: full chart – horizontal mask – vertical mask – single letter mask (crowding bars) – single letter mask

General Setup – Calibration and Configuration

Screen Size, Resolution, and Test Distance

Select Tools Icon from System (left edge) dock. Select 1) System 2) Initial Calibration Measure and record length of red line in either mm or inches. Measure and record the distance from the screen to the patient's eyes.		
Save the calibration or press X		

Anaglyph Colors

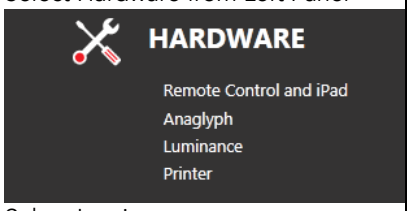
Select Tools Icon from System (left edge) dock. Select Hardware from Left Panel  Select Anaglyph from Centre panel 	

Luminance

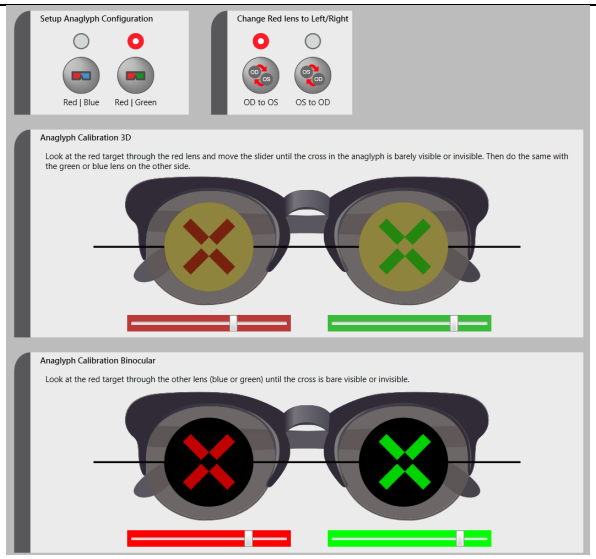
(Required for Contrast Sensitivity Wizard)[1]

Select Tools Icon from System (left edge) dock.

Select Hardware from Left Panel



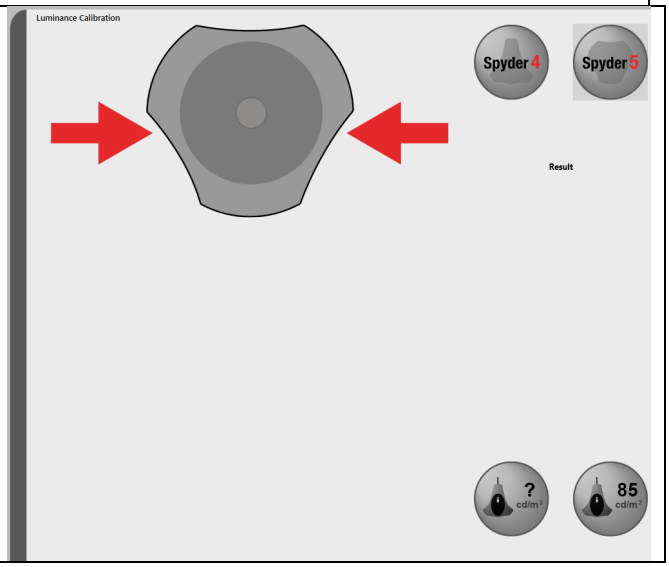
Select Luminance



Select Tools Icon from System (left edge) dock.

Select Luminance
From Preferences tab

Plug the Spyder USB into the Chart2020 USB.
Drape the cord over the top of the screen so that the Spyder hangs from the top flush against the screen in the indicated position.
Follow the onscreen instructions.



[1] Chart2020 recommends that you periodically calibrate your monitor (luminance, color). Power the monitor on for at least 30 minutes prior to commencing. Ensure that there is no bright or direct light shining on your monitor. Plug the Spyder calibration tool into an available powered USB port. Follow on-screen directions. Hang calibration tool over the display using adjustable counterweight and angling the screen to ensure that the tool lies flat against the screen. The date of calibration will appear on CHART2020 test reports.

Mirrored Lane

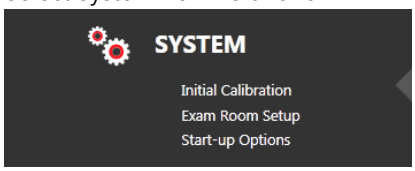
Chart2020 can be configured for use in a mirrored lane environment. Unlike other visual acuity systems, this is a smart configuration as only patient centric screen content is mirrored with all reference tags for the examiner non-mirrored for direct observation.

Secondary Monitor: Doctor and Patient Monitors

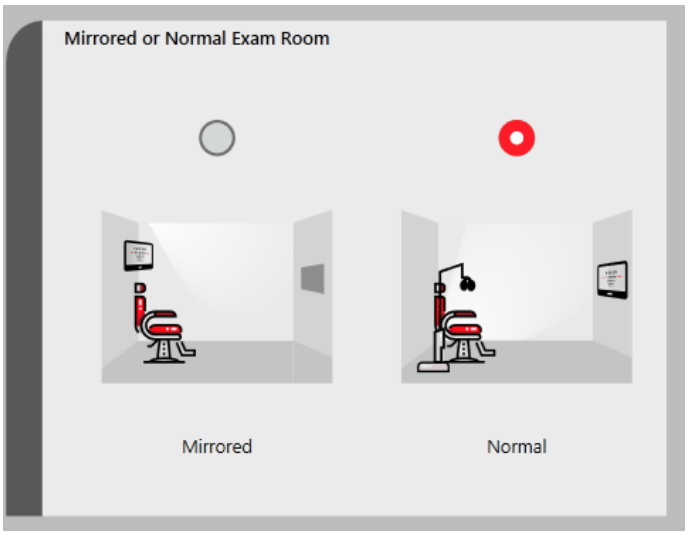
Chart2020 can be configured for use as a primary control (doctor's) monitor and a secondary testing (patient) monitor. Contact Shemesh Customer Service for assistance with setting up Shemesh hardware configurations supporting Secondary Monitors.

Select Tools Icon from System (left edge) dock.

Select System from Left Panel



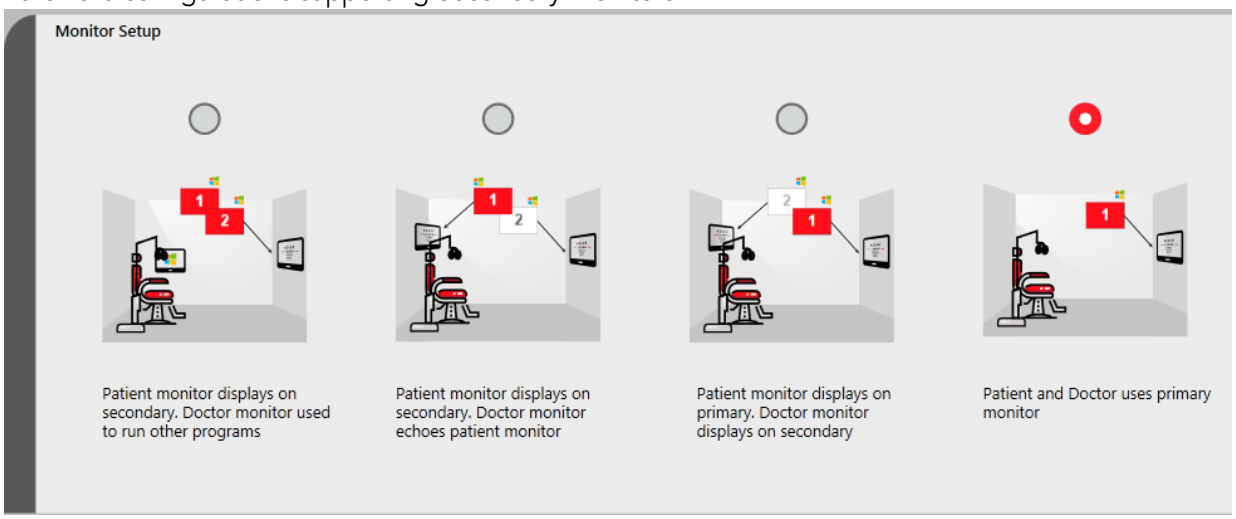
Select Exam Room Setup



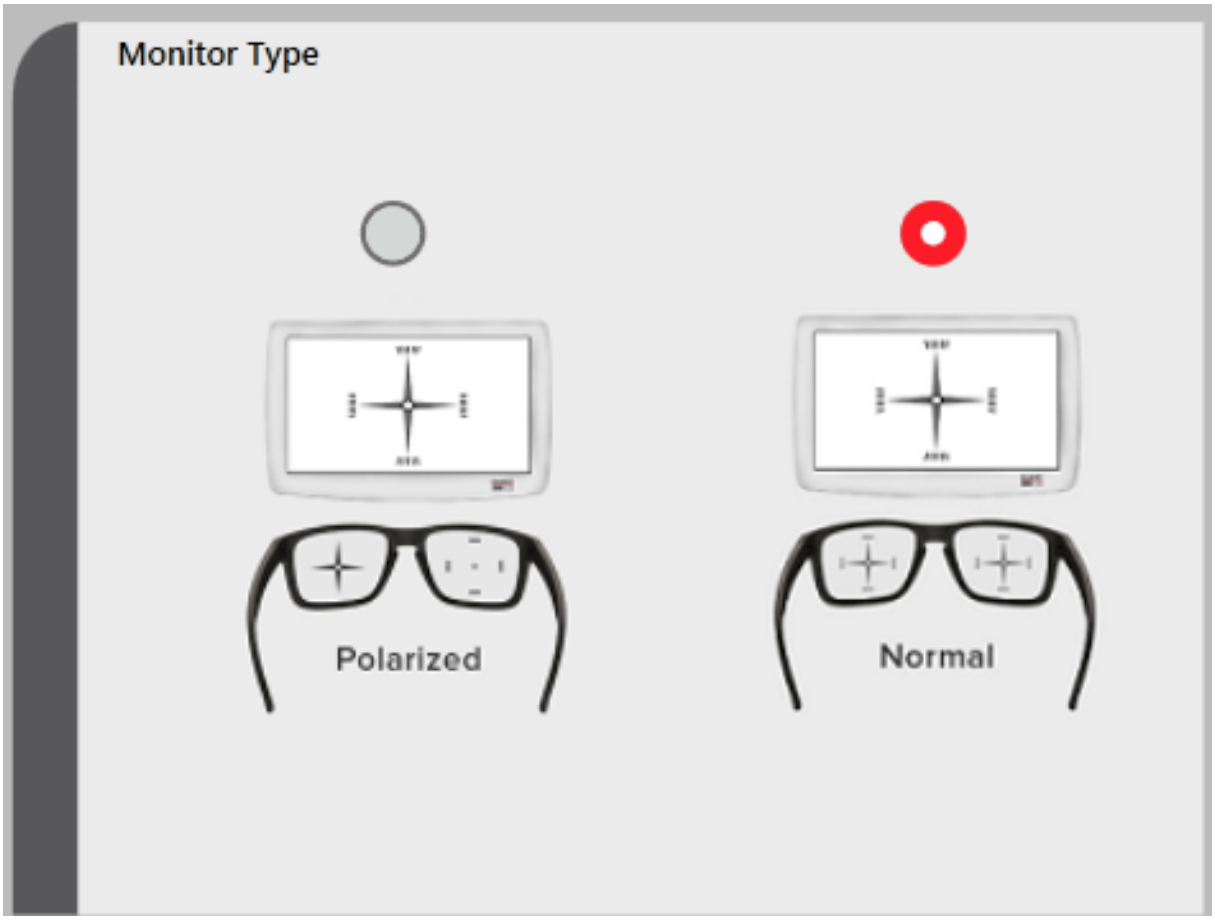
Select "Mirror Lane" to enable mirrored lane configuration.

Secondary Monitor: Doctor and Patient Monitors

Chart2020 can be configured for use as a primary control (doctor's) monitor and a secondary testing (patient) monitor. Contact Shemesh Customer Service for assistance with setting up Shemesh hardware configurations supporting Secondary Monitors.



Monitor Type : Polarized vs Normal



A circular polarized monitor like the LG2343D-PN or other is necessary to used the polarized targets and the stereo acuity wizard in Polarized mode. These monitors have become hard to obtain through normal retail channels. If you are interested in this option, we can obtain specific medical monitors for your use.

Personalization for Clinical Use

Customize User Sequences

Chart2020 is delivered with example Sequences of tests that you should modify to suit your particular preferences for the refraction process. Each of four Users can customize six Sequences easily called up. Examples of the use of Sequences could be:

- Sequence 1: your typical eye exam with acuity, binocularity, balance, fixation for ophthalmoscopy, and education or marketing content
- Sequence 2: specialty exam for young children using Sloan compliant Kids optotypes and other kid-friendly components such as the chimpanzee with glasses movie for ophthalmoscopy
- Sequence 3: Cataract surgery exam
- Sequence 4: Refractive Surgery follow-up exam
- Sequence 5: Low Vision exam
- Sequence 6: Media collection

Select a **Sequence** (1 to 6) to modify from the left side of Sequence dock (mouse to top edge)		
To add a test, from the **Library** dock (mouse to right edge) click and hold a test icon until it magnifies, then drag and drop to the preferred position in the Sequence. Sequences can be rearranged in the same manner.		
To remove a test from a Sequence, click and hold a test icon until it magnifies, and drag it down to the middle of the screen until it disappears.		
Favorites are managed in the exact same manner as Sequences and act as a ready access bin to hold a few tests that you like to randomly access.		

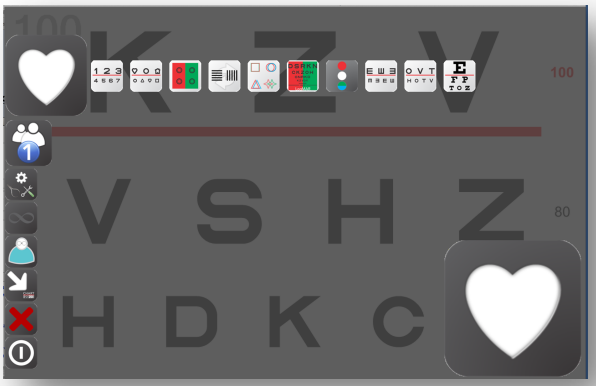
Navigate User Sequences

To step through customized sequence, just move right:
Mouse: right button, **iPad**: swipe right to left, **Keyboard**: right arrow, **Multi-button remote**: right arrow.

You can move back, by moving left. You can also jump to any test by simply selecting it from anywhere in the sequence (if present), selecting from anywhere in the library, or selecting from favorites. Just touch the test.

Customize Favorites

Favorites are a quick access bin to hold specific tests or media files that are used often enough that you would like them easily accessible but are not a part of a typical exam procedure. Access Favorites from the top of the System Dock (left screen edge). Add to or edit Favorites using the same drag and drop method employed for Sequences.

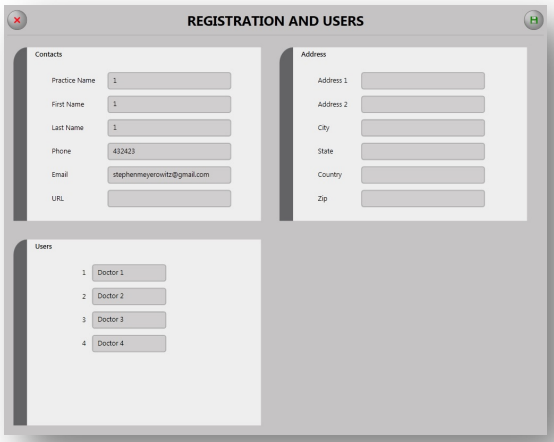


Customize Users

Each Chart2020 application can have up-to 4 Users. Each User may have individualized set of Sequences. Users are selected from the top of the System Dock and the currently selected User is indicated by the badge on the Users Category in the System Dock.

Customize Practice Information / Reports

Customers can easily add customized information to Chart2020 that will appear on any printed reports suitable for patient information, referral documentation, or archival purposes.

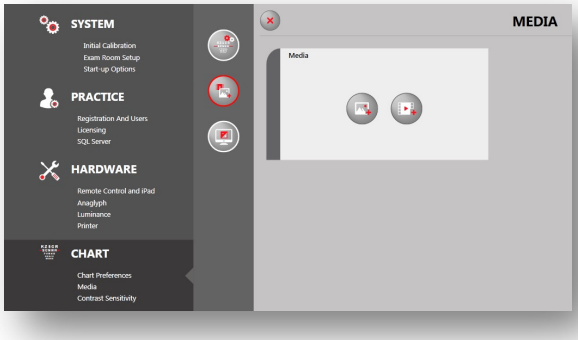


Customize Reports Practice Logo

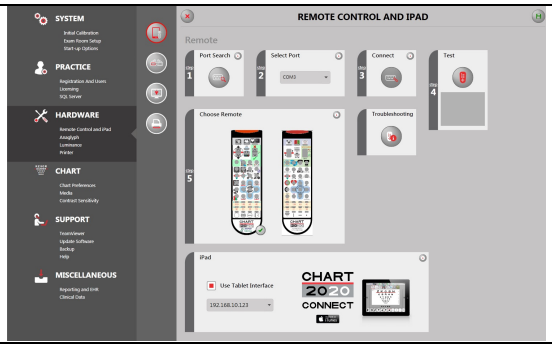
Customers can easily add a practice logo that will appear at the top right of any Wizard printed report. Access logo input button at Preferences / Gears / Practice | Users.

Customize Media: Images and Movies

Customers can easily add their own images and movies for patient education, marketing, and in-exam-room hold messaging. Access Media input buttons from Preferences / Gears / Chart Preferences and select the type of media you would like to add to the library. I dialog box will be presented to select the computer's path to the media for importation.



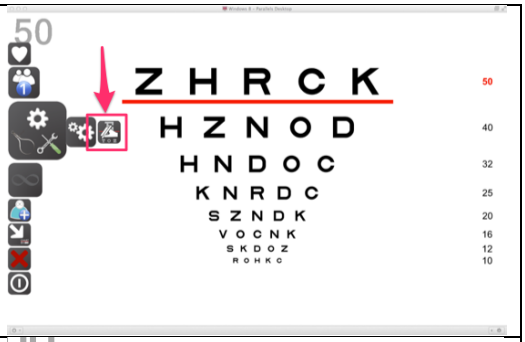
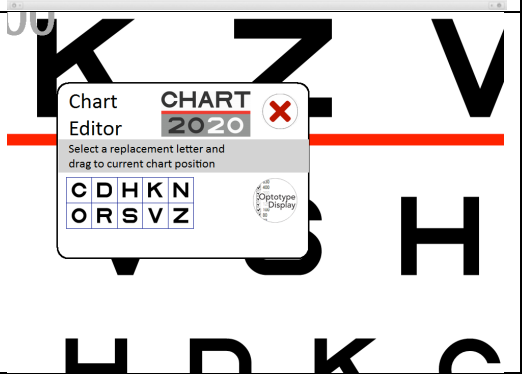
Configuring Communications with iPad Chart2020 CONNECT app

Select Tools Icon from System (left edge) dock. Select Devices From Gear tab	
Under "Apple iPad CONNECT App", select "Use Tablet Interface" checkbox. The Window's Assigned IP address is displayed. Use this IP address in the iPad Settings for the exam room setup.	

IMPORTANT: The Chart2020 application and the Chart2020 CONNECT iPad app must be on the same WiFi router and have good signal to function properly. If in doubt, have reviewed by your network administrator. No response or connection is likely incorrect network settings. Slow responses or intermittent responses are a symptom of a poor signal and is not related to the application.

Chart Editor

The Chart Editor is an advanced feature that should be used carefully. Default letter selections and orders are overwritten in the database. Edits can be recovered to original settings only by resetting to all original settings.

Select Chart Editor Icon from System (left edge), Preferences dock.		
Open the chart that you would like to modify, and then select a letter from the Chart Editor Dialog box and select a Sloan letter and drag this letter to the desired position in the displayed chart.		

Using Chart2020 auto-guided testing strategies

Chart2020 Wizards are self-guided, self-scoring, self-reporting, expert-level tests each designed to convert complex testing strategies to easy-to-use, rapid administration methods.

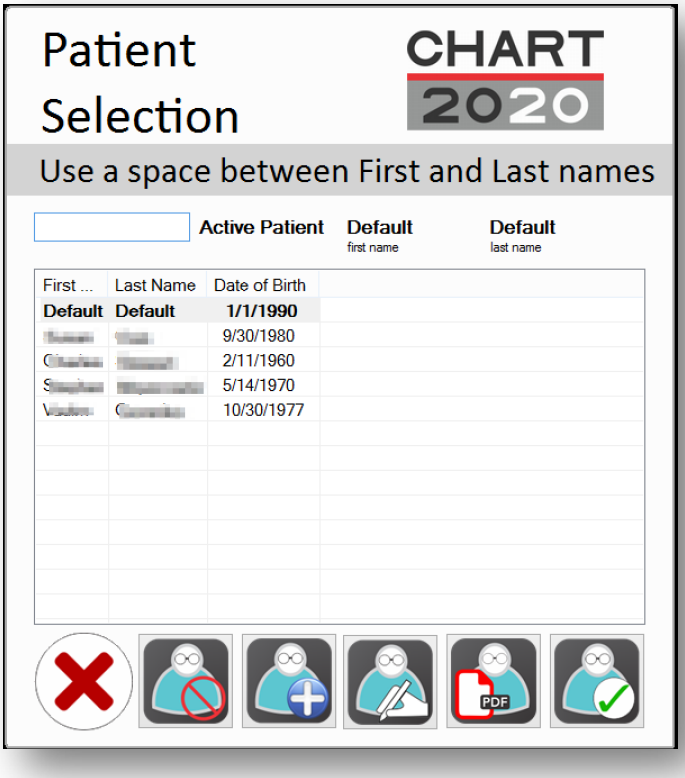
Wizard Patient Selection

Patients are only used for Wizard administered tests and are available to populate information for reports.

The Patient database is accessed by selection of the Patient icon that is the first selection on the Wizard dialog box or always available through the System Dock.

If no Patient has yet been selected, Chart2020 assigns a "Default Patient" to generically populate the report at the end of the test. If a Patient has been selected, it will remain as the current selection until either a new patient is selected (or created) or "Default Patient" is selected again.

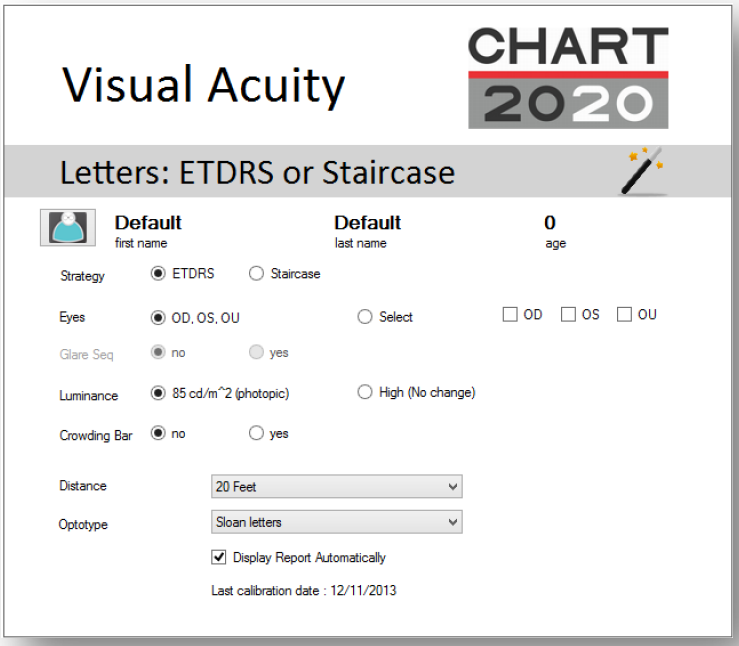
Patient action definitions are as follows:



Exit / Cancel	Assign Default Patient	Add Patient	Edit Patient	Print PDF Report	Select Patient

High Contrast Acuity Wizard: (e)ETDRS, Staircase

The High Contrast Acuity Wizard utilizes two test strategies for assessment of visual acuity.



Select Visual Acuity from Wizard Library Dock (right edge) / iPAD CONNECT / remote to display the Visual Acuity Wizard.		
A default patient is created automatically. You may change the patient for reporting purposes by selecting the Patient Icon. (See Patient section above for more information)		
Select the test strategy: (e)ETDRS or Staircase and any additional test parameters such as test distance and optotype		
Initiate test with Down Arrow.		
Record patient responses as: • Correct (down arrow) • Wrong (Up Arrow), or		

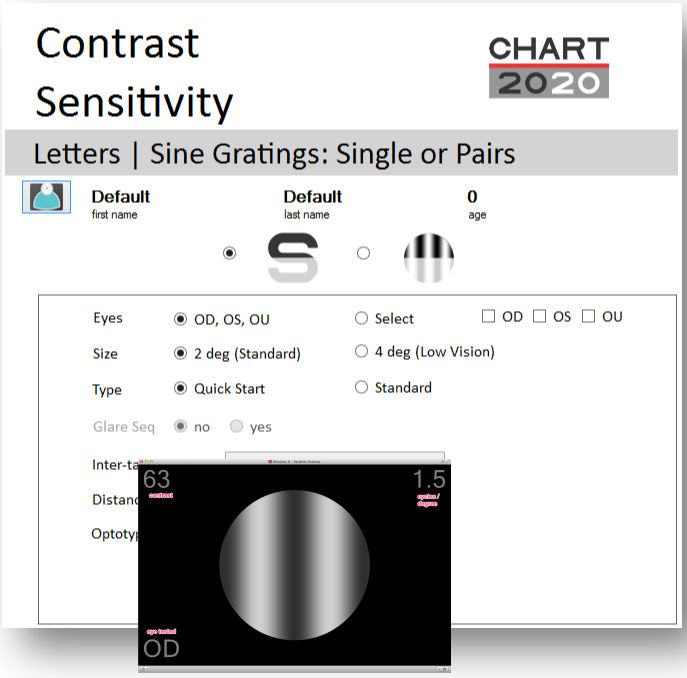
• "Return" arrow aborts the test returning to the Wizard dialog box. Note: down arrow always signifies progression to more difficulty.		

(e)ETDRS Logic (70 character version)

The (e)ETDRS test strategy tests from 20/200 to 20/10 in LogMAR steps with a score of 70 being equal to successfully reading all 20/10 letters and no misses on any larger lines. The test begins with a screening phase to approximate the subject's VA threshold followed by a detailed testing phase in which the approximated threshold is challenged with a "pool" of letters. The pool is comprised of letters at, higher and lower than the approximated threshold that are tested until both an upper LogMAR level (smallest line in which all 5 letters are successfully identified) and lower LogMAR level (largest line in which 0 of 5 letters are successfully identified) are defined. At the conclusion of the test a report is automatically generated with upper, lower and intermediary levels are specified numerically and graphically and the total (e)ETDRS score is calculated.

Contrast Sensitivity Wizard: Sine Gratings, Single Letters

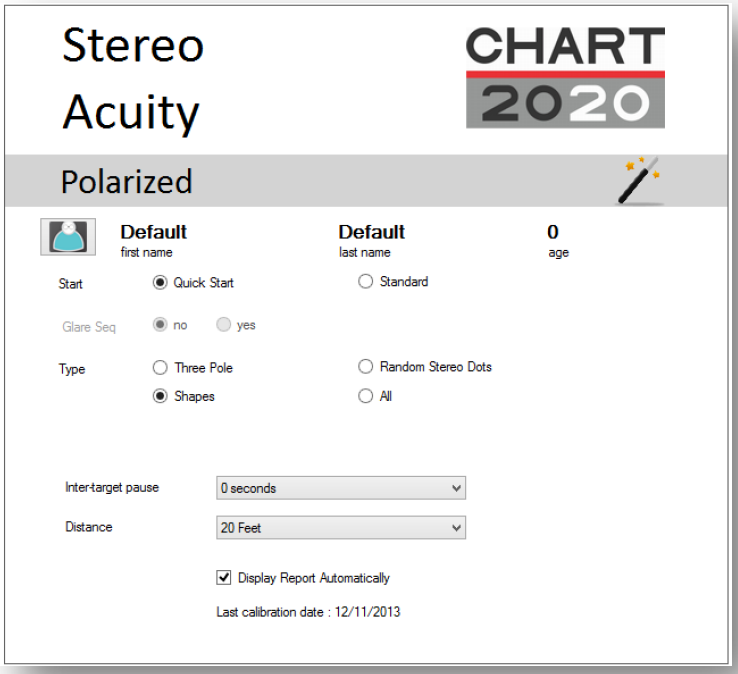
The Contrast Sensitivity Wizard utilizes two test strategies for assessment of contrast sensitivity with a variety of options for optimizing the test for particular areas of contrast visual function.



Select Contrast Sensitivity Wizard from Library Dock (right edge) / iPAD CONNECT / remote.		
A default patient is created automatically. You may change the patient for reporting purposes by selecting the Patient Icon. (See Patient section above for more information)		
Select the test strategy: Single Letters or Sine Gratings and any additional test parameters		
Initiate test with Down Arrow.		
Record patient responses as: • Correct (down arrow) • Wrong (up arrow), or • "Return" arrow aborts the test returning to the Wizard dialog box.		

Dynamic Stereo Acuity Wizard:
Random Dot Stereo, Shapes, Three Poles

The Dynamic Stereo Acuity Wizard utilizes three test strategies for assessment of stereo acuity with a variety of options for optimizing the test for particular areas of stereo acuity function.



Select Stereo Acuity Wizard from Library Dock (right edge) / iPAD CONNECT / remote.		
A default patient is created automatically. You may change the patient for reporting purposes by selecting the Patient Icon.		
Select the test strategy: Three Lines, Random Dot Stereogram, or Shapes and any additional test parameters		
Initiate test with Down Arrow.		

Record patient responses as: • Correct (down arrow) • Wrong (Up Arrow), or • "Return" arrow aborts the test returning to the Wizard dialog box.		

Chart2020 Wizards Licensing

Demos of Chart2020 are delivered with Chart2020 Wizards enabled on a trial basis on all new systems. We encourage you use the no-obligation trial period to explore the enhanced examination features found within each of the Wizards.

Licensing status can be checked in the System Dock Tools under Licensing.

Call **+1 (949) 521-7730** or
email sales@chart2020.com to easily extend the usefulness of Chart2020 by adding any or all of the Wizards.

System Preferences and Support

Contact Chart2020 – Chart2020 Support

Chart2020 can be reached at:
T: + 1 954 246 0653 | +27 11 283 0570
E: sales@chart2020.com
W:www.chart2020.com

The Chart2020 application includes Shemesh Support support for 2 months from date of purchase. Note customer supplied hardware is not support by Shemesh. Shemesh Support is available after initial warranty period for a nominal cost and includes software updates. Please contact support@chart2020.com to enroll in Support. New features that Shemesh licenses from third parties may not be included as an update.

Enabling Remote Access Instance

Navigate to Preferences / Tools / Shemesh Support and select blue remote assistance icon. Contact Shemesh support team to request that support login to your Chart2020 system. Note that Remote Access requires an active internet connection.

Chart2020 Software Versions and Updates

Where to Find

Shemesh Support Status

Shemesh Support Support is included standard with all new software purchases for one year from date of purchase. Products under Shemesh Support are indicated by a check mark under Support as "Licensed". If you support has lapsed, you may contact Shemesh to renew which includes both remote support and product updates.

Software Version Number

Chart2020 Version number is displayed on all Preferences / Tools pages.

Chart2020 Backup

Easily backup your database by selecting Preferences / Tools / Backup.

We STRONGLY RECOMMEND Backup to a network location. Please contact Shemesh Customer Service from for assistance.

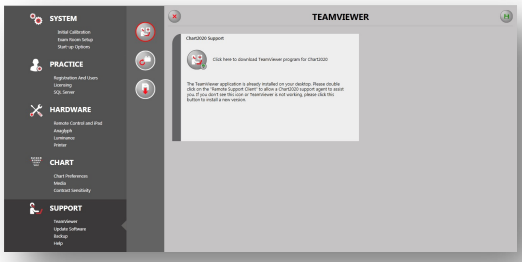
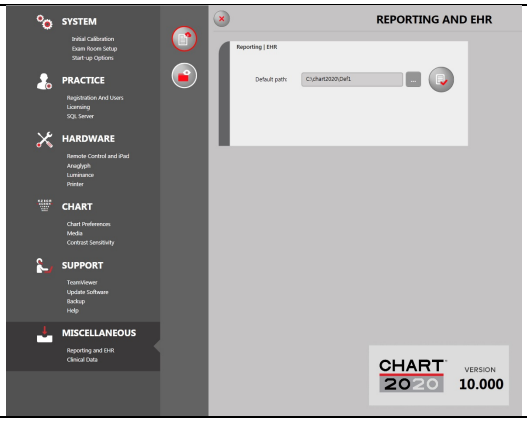


Figure 2: Back up for Chart2020 data files.

Configure EMR / EHR

Easily configure the location to which reports are saved by selecting Miscellaneous / Reporting and specifying the Default Path. We STRONGLY RECOMMEND that all reports are saved to a network location rather than on the local solid state drive	

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תודה
Dankie
Gracias
Спасибо
شكرًا
Merci
Takk
Köszönjük
Terima kasih
Grazie
Dziękujemy
Dėkojame
Ďakujeme
Vielen Dank
Paldies
Kiitos
Täname teid
谢谢
Thank You
Tak
感謝您
Obrigado
Teşekkür Ederiz
감사합니다
Σας ευχαριστούμε
ขอบคุณ
Bedankt
Děkujeme vám
ありがとうございます
Tack

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