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Introduction

This Quick Reference Guide contains brief descriptions and instructions for the functions most commonly used to perform 2D and Doppler exams. This supplement contains both standard and optional features but is not a substitute for the system User Manual.

Image Disclaimer

Images used in this guide are for educational purposes only. They have been modified or compressed, and may not reflect the actual image quality of the system.

Note: This guide shows multiple workflow options (keyboard and mouse) for Release 3.0. UI refers to the Control Panel and is noted UI.



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Press the Power On/Off Switch on the upper left side of the UI to turn the system on and off. A green blinking light indicates the power is on. The **Standby** option will quickly turn on, or shut down the system, within 30 seconds.



Patient Registration Button



Patient Registration Icon

Begin an Exam

- 1. Press the Patient Registration button on the UI or click the Patient **Registration** icon on the toolbar
- 2. Enter the patient name, ID and other exam information
- 3. Press the **TAB** key *or* roll the trackball to move to the next data field
- 4. Select the proper Transducer and Study type from the drop-down menus
- 5. Select a Workflow Protocol from the **Protocol** list (optional)

6. Click **OK** or press the **Store** button on the UI to start the exam



Optional if Using the Patient Scheduler (Modality Work List)

1. Press Patient Browser (F2) to open the **Patient Browser** \searrow



- 2. Double-click on the Patient Scheduler icon to view an updated Work List
- 3. Highlight the patient name (press the first letter of the last name to quickly scroll the list)
- 4. Click on the Patient drop-down menu and select Register
- 5. Select the appropriate transducer and Study Type on the Patient Demographic page

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6. Click **OK** or press the **Store** button on the UI to start the exam

Note: If the patient name does not appear in the Work List:

- a. Click on View at the top of the page
- b. Select Patient based work list query
- c. Enter the patient last name
- d. Click on Get Work List

Store and Review Images

1. Press the **Store** button to save a static image on the local database



2. Press Clip Store to acquire and save a clip to the local database



Print an Image

• Press the **Print** button to print the onscreen image



Note: Use the system configuration menu to assign print and/or store functions to the Print button.

Review an Image



• Press the **Review** button during an active exam to view and delete images

Note: The system must be preset to transfer images at end of exam, in order to delete images from Review mode.

 Press the Review button or double-click a thumbnail image to activate Review mode during an active exam

Activate Review on a Previous Exam

- 1. Press Patient Browser (F2) to open the **Patient Browser**
- 2. Click on the Patient Folder
- 3. Double-click the **Image** icon to load the patient exam into Review

Use Compare Mode

- Available on the **Review** screen under **Tools** -
- 1. Press the **Review** button
- 2. Click on two images from the thumbnails
- 3. Click on **Compare** to display the images side-by-side



2D Controls

Basic System Optimization

• The chart below identifies presets that can be customized and saved to the **Image** knob.

Items in the table below are arranged alphabetically.

To Adjust / Control	Do This	Image Knob
2D Sector Width Increase line density/ frame rate	 Press the Priority key to select 2D FOV Roll the trackball to sector in the width of the image Press the Next key to go between Size and Position of 2D FOV Press the Select key to lock the image size Note: Manually re-size the image to return to full screen. 	No
Depth	Rotate the Depth control	No

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Dynamic Range Adjust grayscale levels within an image	 Toggle the Dynamic Range key up or down to add or remove the amount of grayscale levels Note: Can be used on live or frozen images. 	Yes
Dynamic TCE Provides speckle reduction and contrast enhancement	 Rotate the second LED control on the left side of the UI Note: Settings include Off, Low, Medium and High. As the level is increased, both Dynamic TCE speckle reduction and contrast enhancement are increased. 	Yes
Edge	• Rotate the third LED control on the left side of the UI Note : Range is 0 – 4 ; 4 applies the most edge enhancement.	Yes
Focal Zones Control position and number of focal zones	 Rotate the Focus control for position Press the Focus control to select the number of focal zones 	No
Frequency	Toggle the MultiHz key up or down on the UI to adjust the frequency	Yes
HD RES (Write) Zoom	 Press the Zoom control to initialize HD RES Rotate the Zoom control to adjust the size of ROI box Press Zoom again to activate RES Note: When RES is activated, HDZ appears on the lower right corner of the screen. 	No

Image Presets	 Rotate the Image control on the UI to change the image preset Press the Image control to see a list of currently available image presets 	
Overall Gain Press the TEQ button Rotate the 2D control Rotate the Gain Freeze / Cine wheel Adjust the DGCs Note: Adjust according to user preference.		No
Persistence Weighted average of frames over time	 Select the Persistence option located on the 2D tab of the onscreen Image Menu Rotate the Menu control to change the level (0-4) Note: Can only be adjusted when using SieClear 2, and not when using Advanced SieClear Spatial Compounding (ASSC). Increased persistence averages more frames over time, creating a smoother image. Decreased persistence, averages fewer frames over time, creating a grainier image. 	Yes
Post Processing Maps Selects a processing curve that assigns echo amplitudes to grayscale levels Rotate the second LED control on the right side of the UI to select and apply Note: Maps range from A-F and can be adjusted on live or frozen images and in M-mode and PW Doppler.		Yes

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SieClear Spatial Compounding and Advanced SieClear Spatial Compounding Utilizes multiple lines of sight to provide improvements in contrast resolution and border detection	 Rotate the first LED on the left side of the UI to change the compounding level Note: The selected transducer determines how many levels of compounding are available. 	Yes
Space/Time Spatial resolution vs. temporal resolution	 Rotate the first LED control on the right side of the UI Note: Increase for better spatial resolution and decrease for better temporal resolution. 	Yes
Tints Colorizes the grayscale image	 Rotate the third LED control on the right side of the UI Note: Tints range from 0-15 and can be adjusted on live or frozen images and in M-mode and PW Doppler. 	Yes
Tissue Harmonic Imaging (THI) Reduces noise clutter with better contrast enhancement and improved axial resolution over fundamental imaging	 Press the soft key on the home base to turn on or off Toggle the MultiHz key up or down 	Yes

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Zoom	 Rotate the Zoom control to increase or decrease image magnification Roll the trackball to pan the image 	No
	Note : Zoom magnifies from the center of the onscreen image; use pan to bring in the area of interest. Available on live or frozen images and in M-mode and PW Doppler.	NO

2D Imaging Features

Items in the table below are arranged alphabetically.

Feature	To Use Feature
ASC Dual	Click on the ASC Dual option in the 2D tab of the onscreen Image menu to
Display two live	display
Display two live images side-by-side with and without compounding	Note : The left side displays the image without spatial compounding and the right displays with spatial compounding. Can only be used when a level of ASSC 3 or higher is selected.
Dual	Press the Dual key to activate dual screen display
Side-by-side imaging	■ Toggle the Update key to go between left and right images
	Note : Color must be activated before entering Dual mode.

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	Live Dual Display two live images side-by-side			1	e Dual" option in the ed with color at an		ne onscreen lmage n	nenu
	SieScape Imaging	Panoi	ramic	 Press the Upda Scan through a Press Gain Free Note: Once an inscroll wheel or a to original size. 	ate key to start acq area of interest in a eze/Cine to stop th mage is frozen, rol Zoom control to zo	uiring image a long axis of t e acquisition I the trackball om. Use Resto to measure o	to rotate the image. ore to bring the image. n a SieScape image.	Use the le back
	Steer Ima Linear tra Improve t insonance anatomy ultrasoun	nsduc he ang e betw and th	gle of veen ne	Roll the trackb	ity key to activate all to steer the FO\ be off <i>or</i> set to SC	/ left or right		
				1	key to activate Trap key to go betweer	-		

Color Doppler & Spectral Doppler Optimization



Color Doppler Imaging
Items in the table below are arranged alphabetically.

To Adjust / Control	Do This	Image Knob
Baseline	Toggle the Baseline key up or down	Yes
Color Doppler Energy and Color Doppler Velocity	• Press the soft key to cycle between (CDE) and velocity color (CDV)	No
Color Gain	Rotate the C control	No
Engage Color Doppler	Press the C control	No
Exit Color Doppler	 Press the PW control or press the 2D control to return to imaging 	No
Frequency	Toggle the MultiHz key up or down	Yes
Image Presets	 Rotate the Image knob to change image presets Press the Image knob to view a list of all available image presets 	Yes

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Invert Change the orientation of the Color Doppler velocity display	• Press the Invert button	Yes
ROI Size and Position	 With color active, press the Next key to alternate between Size and Position Roll the trackball to adjust size and position 	No
Scale Pulsed Repetition Frequency (PRF)	 Toggle the Scale key up or down to increase or decrease 	Yes
Spatial Resolution and Speed	Rotate the first LCD control on the left side of the UI Note: Spatial resolution is inversely proportional to temporal resolution.	Yes
Steer	 Press the Priority key to activate C ROI Press Next and select Steer Roll the trackball to get to the proper angle 	No



PW Doppler

Items in the table below are arranged alphabetically.

To Adjust / Control	Do This	Image Knob
Angle Correct	 Press the 0/60° control to cycle through angle correction Rotate the 0/60° control to fine tune the angle 	Yes
Baseline	Toggle the Baseline key up or down	Yes
Frequency	Toggle the MultiHz key up or down	Yes
Gate Size	Roll the Scroll wheel up or down	Yes
Overall Doppler Gain	Rotate the Doppler (PW) control	No
PW Doppler	 Press the PW control to engage PW Doppler Roll the trackball to position the cursor Press PW again to start spectral waveform or press Update Note: Press Next to go between Position and Steer. Press the PW control or press the 2D control to exit PW Doppler and return to imaging 	No
Scale Pulsed Repetition Frequency (PRF)	Toggle the Scale key up or down to increase or decrease	Yes

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Steer	 Press the Priority key Select the PW gate Press Next to steer Roll the trackball to adjust the steer angle Press Select to lock in the angle 	
Sweep Speed	• Rotate the LCD control on the right side of the UI Note: Sweep speed can be adjusted during real-time <i>or</i> on a frozen M-mode Doppler strip.	Yes
TEQ	Press the TEQ button	No



M-mode
Items in the table below are arranged alphabetically.

To Adjust / Control	Do This
M-mode	Press the M control to engage M-mode
	Roll the trackball to adjust the position of the M-mode cursor
	Press the M control again to activate spectral waveform
	Press the M control to exit, <i>or</i>
	Press the 2D control to exit and return to 2D imaging

M-mode Cursor	Press Next to select Size or Position				
	Roll the trackball to make adjustments				
	Note : The active function is displayed in green. Sweep speed can be adjusted during real-time or on a frozen M-mode Doppler strip.				
Overall Gain	Rotate the M control				

Measurements & Calculations

General Measurement Tools

Activate Calculations (one of two methods):



 Press the Calcs button to activate the measurement function on real-time or frozen images

or

 Press the Gain Freeze/Cine button to automatically go to Calcs (must be preset in the Setup menu)

Perform an Unlabeled Measurement

- 1. Roll the trackball to place the first caliper in the area of interest
- 2. Press **Next** for the second distance caliper *or* ellipse control
- 3. Press **Select** to anchor a caliper *or* enter a measurement
- 4. Press **Next** to go between the active calipers
- 5. Press **Priority** to reactivate locked caliper sets *or* scroll through different caliper sets

Tip: To delete the caliper set, press the **Delete** soft key or **Cine** back one position.

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Perform a Labeled Measurement and Add it to the Report Package

Note: Application-specific measurements are particular to one study type.

- The measurement tools and labels are organized by the active imaging mode and application (e.g., abdomen)
- Only labeled measurements are copied to a patient report
- 1. Press the Gain Freeze/Cine button
- 2. Click on a measurement label (e.g., Liver)

Note: A measurement label can also be selected after calipers are placed.

- 3. Roll the trackball to place the first caliper in the area of interest
- 4. Press **Next** to activate the second caliper
- 5. Press **Select** or **Store** to complete a measurement and send the value(s) to the Report

6. Press **Priority** to reactivate locked caliper sets or scroll through different caliper sets

Additional Measurements

- 1. Activate the Report page
- 2. Click on the Page 1 drop-down menu on the imaging screen
- 3. Scroll down to the desired page
- 4. Press **Select** to activate page

Perform Advanced Measurements. e.g, Volume Measurement

- 1. Select the Compound drop-down menu from the top left-hand side of the screen when Calcs are active
- 2. Select the appropriate measurement from the drop down list: Stenosis, Volume, Area Ratio, Distance Ratio or Volume Flow

Calculation Reports

- Calculation worksheets and reports are offered for each preset when labeled measurements are entered
- 1. Press **Report (F1)** to activate Reports
 - ports F
- 2. Scroll to view the Report pages
- 3. Click on **Store Report** to capture the entire formalized worksheet
- 4. Click **End Exam** to close the patient study

Note: Transfer Report will send DICOM measurements to structured reporting in PACS (customers must have structured reporting capabilities).

Import Images into the Report

- 1. If necessary, press **Report (F1)** to activate Reports
- 2. Scroll down to the bottom of the Report screen and click on an image in the thumbnails

- 3. Roll the trackball to drag the image into appropriate square
- 4. Press **Select** to anchor the image

Note: Click on the **Format** icon to display up to 16 images on the Report page.

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Enter Text

1. Press the **Text** key to activate Clear the cursor



- 2. Roll the trackball to place the cursor in the appropriate place in the image
- 3. Type the text and press **Select**, *or*, if configured, press the appropriate Text button

Note: Text A, B, C, and D can be customized and reordered for each exam preset.

• The system can be preset to automatically enter the Text Menu by pressing the Gain Freeze/Cine button

Tip: When typing, press **Tab** to auto-complete the annotation.

• The annotation can be configured to be on or off

Move Text

- 1. If necessary, press the **Text** key to activate the cursor
- 2. Roll the trackball to place the cursor within the text
- 3. Double-click **Select** to highlight (text is highlighted in green)
- 4. Roll the trackball to the new location and press **Select**

Drag and Drop Text

- 1. If necessary, press the **Text** key to activate the cursor
- 2. Position the cursor in the text to move
- 3. Double-click **Select** to highlight (text is highlighted in green)
- 4. Roll the trackball to move the selection over the text to be replaced and press Select

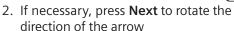
Delete Text

1. If Calcs is active, press the soft key, and select either Clear Screen, Delete Word or **Delete Line**

Tip: If Calcs is not active, press and hold the **Text** key until the screen is cleared.

Place an Arrow(s)

1. Press the **Arrow Up** button on the Clear bottom right side of the keyboard



3. Roll the trackball to position the arrow and press **Select**

Note: Use the steps above to place additional arrows.

Delete an Arrow(s)

1. Press the **Delete Arrow** or the **Clear Screen** soft key

Note: The Delete Arrow soft key deletes one arrow at a time, starting with the last arrow placed onscreen.

Add a Pictogram(s)

1. Press the **Body Marker** key on the Gear bottom right side of the keyboard \ \frac{1}{17}



- 2. Rotate the **Scroll wheel** to cycle through pictograms
- 3. Press Next to go between Position and Rotation of the marker
- 4. Roll the trackball to position the marker on the pictogram and press **Select**

Delete a Pictogram

1. Press the Delete Body Marker or Clear **Screen** soft key

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Restart an Exam

- 1. Press Patient Browser (F2) to open the **Patient Browser**
- 2. Select the patient name and click on the middle yellow folder
- 3. Click on the Patient drop-down menu and select **Register**
- 4. Select the transducer and operator initials
- 5. Click **OK**

Note: Restart is available at all times. New images can be added to the existing patient exam.

End an Exam

- 1. Press the **Review** button
- 2. Click on End Exam

Note: Starting a new patient also ends a current exam.

Send Patient Exam to PACS

- 1. Press Patient Browser (F2) to open the Patient Browser
- 2. Select the **Archive To** icon
- 3. Select **Destination**
- 4. Select Archive To

Note: This can be done before closing the study.

Tip: Closing a study will automatically send to PACS if the system is preset to "Send on study close".

Delete Images from an Active Case

- 1. Click on an image from the thumbnail
- 2. Click on the **Delete** icon located on the lower right of the screen

Note: The system must be preset to "Send at the End of Exam" or the image will not be deleted.

Delete Images from Review During an Active Exam

- 1. Press **Review**
- 2. Click and highlight the image to delete
- 3. Press the **Delete** soft key

Transfer an Exam from the Hard Drive to CD-R/DVD

- 1. Insert the CD-R/DVD
- 2. Press Patient Browser (F2) to open the Patient Browser and Local Database
- 3. Select the patient name/s

Tip: Hold CTRL to select more than one patient name.

4. Use one of the following transfer methods below

Transfer in DICOM Format

1. With patient/s selected, select the Transfer drop-down menu

2. Select Archive to CD-R

Note: syngo fastView and Showcase DICOM viewers will be burned onto the CD-R/ or DVD.

Transfer in PC Format (AVI or JPEG)

- 1. With the patient(s) selected, select the Transfer drop-down menu
- 2. Select Export to CD in PC Format

Transfer to a USB Drive in PC Format

- 1. With the patient(s) selected, select the Transfer drop-down menu
- 2. Select Export to USB in PC format



Note: The USB must have an export folder on it to accept images.

Import All Images from a CD to the Local Database

- 1. Insert the CD-R/DVD
- 2. Press Patient Browser (F2) to open the Patient Browser

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3. Click on CD

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- 4. Click on the Transfer drop-down menu
- 5. Click on Import from Off-line

Note: Image(s) will be removed when the exam is closed.

Resend an Exam to PACS

- 1. Press Patient Browser (F2) to open the Patient Browser
- 2. Click on Local Database
- 3. Click on the patient name
- 4. Click the **Archive to** icon or select **Archive** to from the drop-down menu
- 5. Select the destination
- 6. Select Archive to

De-Identify a Patient (Teaching Files, Name Changes)

- 1. Press Patient Browser (F2) to open the **Patient Browser**
- 2. Click on Local Database
- 3. Click the patient name
- 4. Click on the image folder
- 5. Click on Patient drop-down menu and select **De-Identify**
- 6. Rename the exam
- 7. Click **OK**

Note: The new case will be added to the Local Database within minutes. 3D/4D volumes will not be transferred for re-manipulation.

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Clarify Vascular Enhancement Technology (purchasable option)

- 1. During 2D imaging, press the **Clarify** soft key
- 2. Roll the trackball to place the ROI box
- 3. Press **Next** to go between **Size** and **Position**
- 4. Roll the **Scroll wheel** to adjust the level of sensitivity:
 - 1 = least sensitive, 7 = most sensitive

syngo Auto OB (purchasable option)

- 1. Ensure the **OB** exam type is selected ——
- 2. Press the Calcs button

Note: Available Auto OB measurements are

highlighted in green.

- 3. Click on the desired measurement (semi-automated measurements are live onscreen)
- 4. Press **Next** to go between the cursors (active and available)
- 5. Press **Select** to lock in the measurement and transfer it to the Report page

Tip: Press **Store** to transfer the measurement.



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syngo eSieCalcs Native Tracing Software (purchasable option)



- 1. During 2D imaging, press the Gain Freeze/ **Cine** button
- 2. Press the Calcs button
- 3. Select the eSieCalcs menu option
- 4. Roll the trackball to move the cursor into the image
- 5. Press the **Next** key to activate ROI box

Note: Next toggles between the two active calipers allowing movement of the ROI box and a change in size.

6. Press **Select** to calculate and display the measurement

Adjust an eSieCalc Measurement

- 1. Press **Next** to reactivate calipers
- 2. Roll the trackball to trace a new area of interest
- 3. Press **Select** to recalculate measurement Tip: When placing the ROI box over the area of interest, do not make the box too big.

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Global Siemens Headquarters

Siemens AG Wittelsbacherplatz 2 80333 Muenchen Germany

Global Siemens Healthcare Headquarters

Siemens AG Healthcare Sector Henkestr. 127 91052 Erlangen, Germany Phone: +49 9131 84-0 www.siemens.com/healthcare

Legal Manufacturer

Siemens Medical Solutions USA, Inc. Ultrasound 1230 Shorebird Way Mountain View, CA 94043 USA Phone: +1-888-826-9702 www.siemens.com/healthcare