Your Quick Reference Guide for the ALOKA ARIETTA 850
Premium Ultrasound Processor

The information contained in this guide was created to help you better understand your premium ultrasound processor. Information is broken out into eight color-coded sections to make it easy to use.

- GETTING STARTED
- IMAGE CONTROLS
- MEASUREMENTS
- ANNOTATIONS
- DOPPLER
- IMAGE MANAGEMENT
- ADVANCED FEATURES
- ERGONOMICS

☑ Indicates quick resource tip
1. PLUG
2. POWER
3. PATIENT
4. PROBE/PRESET
The 4 Ps are the steps to set up the system: (In this order)

1. **PLUG** the scope(s) into the port(s)

2. **POWER** on the system

3. **PATIENT DATA** - Enter the patient ID on the input screen that appears on startup OR select the New Patient button and then enter the data

4. **PROBE/PRESET** - Choose the appropriate preset from the Touch Screen

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Note: When changing scopes (within the same patient), freeze first, change scopes, press the Probe/Preset button and choose the appropriate Preset.

Note: If no patient information is desired, click on the X at the top right of the patient data screen.
TOUCH SCREEN

Types of Controls

- **On**
  - Turns items On/Off

- **Off**
  - Choose one or the other

- **7**
  - Increases or decreases choices

- **Up/Down**
  - Takes you to a submenu

- **Medium**
  - Left/Right

- **0deg**
  - Rotate

Rotary knob controls
CONTROL PANEL

Control Panel Lights
(Including Touch Screen)

Orange – In use

Blue – Available for use

Unlit – Not currently available for use

Note: Control Panel lights will change depending on the imaging mode and when switching between frozen and live scanning.
BASIC IMAGE CONTROLS

- **PRESET** – Are you using the correct preset? Probe (on bottom left) and Preset (on bottom right) should match on the main monitor.

- **eFOCUSING** – The ultrasound beams are focused with subsequent improvement in image definition throughout the depth of field.

- **COLOR MAP** – Offers different color options to the gray scale that can help differentiate subtle tissue changes.

- **GRAYMAP** – Offers a variety of graymaps.

- **MENU** – Returns Touch Screen to the Main Menu.

- **HI ZOOM** – A higher resolution zoom feature. Press HI Zoom button, use trackball to position over area of interest, and then press HI Zoom a second time.

- **DYNAMIC RANGE** – Increases or decreases the contrast in the gray scale.

- **STC** – Adjusts the gain at varying depths. They should always start in the center.

- **FOCUS** – The small green arrow on the side of the image should be placed across from the area of interest (not active if eFocusing is on).

- **DEPTH** – Adjusts how many centimeters of tissue are displayed on the screen.

- **PAN** – Can be used to reposition the center of the radial scope (press down on the button first).

- **GAIN** – Increases or decreases the image brightness.

- **FREQUENCY** – Should be set higher for the near field and lower for the far field.
ADVANCED IMAGE CONTROLS

- **AGC** – Constantly adjusts the brightness level as you move through different tissues.

- **SEARCH/CINE** – (Post Freeze)
  - Use the trackball (left/right) to review images.
  - Rolling the trackball up quickly will play the loop. The trackball (up/down) now controls the playback speed. Depressing Store while the loop is playing will record a video clip on the HDD.
  - Cine is immediately available upon freezing. If it becomes inactive, press the Search button to reactivate.

- **PERSISTENCE** – Controls how many frames will be overlaid to form each image. A higher number will result in a smoother image.
1. Freeze
2. Caliper
3. Trackball
4. Enter
**MEASUREMENT STEPS**

1. **FREEZE** image

2. Press **CALIPER**

3. Place caliper using **TRACKBALL**

4. Press **ENTER**

5. Place second caliper using **TRACKBALL**

For a second measurement, repeat steps 2-5.
1. **FREEZE** image
2. Press the **ABC ROTARY KNOB**
3. Use **TRACKBALL** to move to the desired location
4. Choose the desired annotation from the Touch Screen or enter using the keyboard or virtual keyboard
   - **KB, ANNO.+KB OR ANNO.** can be chosen using the tabs along the top of the Touch Screen
   - An arrow can be placed by using the **ABC ROTARY KNOB** to change the direction of the arrow and then pressing the **ENTER** key
   - **FONT SIZE** can be chosen from the Touch Screen
   - The **HOME** position for the cursor can be set using **SET HOME**
DOPPLER CONTROLS

Available Doppler modes: Color, Power, eFlow and Pulsed Wave

- **FLOW GAIN** (Color, Power, eFlow)
  - Controlled by the rotary knob surrounding the CF button

- **PULSED WAVE GAIN**
  - Controlled by the rotary knob surrounding the PW button

- **ROI** (Region of Interest) **BOX**
  - Can be moved using the Trackball
  - Can be resized by pressing Enter, then using the Trackball
    - Up/Down controls height
    - Left/Right controls width
  - Press Enter again to reposition

- **DUAL CF**
  - Activated on the Touch Screen
  - Displays simultaneous gray scale images: one with color, one without
IMAGE STORAGE AND MANAGEMENT

- **STORE**
  - Store images by pressing the Store button
  - Frozen images will be stored as a single frame image
  - Real-time (live) images will be stored as a video clip
    - Start and stop recording with the Store button
  - Single images can be captured anywhere within a Cineloop
  - Video clips can be stored when playing back a Cineloop

- **PRINT**
  - Print images using the Print button

- **PRINT & STORE**
  - Images can be printed and stored simultaneously using the button labeled REC
Review Screen

- USB
- USB (Copy)
- USB (PC Format)
- Delete
- Deselect all
- Select/Deselect All
- Disk Remain
- Archive Setup
REVIEWING IMAGES

1. Press the **REVIEW** button to access stored images
2. Current exam’s images will be displayed
3. Select/Deselect images as desired
4. Images can be sent to a PACS system or copied to an external media in a variety of formats
   - Single Frame: JPEG, BMP, TFF
   - Video: AVI, MPEG

USB Ports located behind the Touch Screen
(use any of the 3)
Elasto Pressure Bar
(Must choose the appropriate preset. Note: Pressure Bar has fewer options.)

Strain Graph
1. Obtain a good B mode image (depth and gain) with respiratory variation perpendicular to the ultrasound beam

2. Touch the **ELASTO** button

3. Adjust the ROI position and size using the **ENTER** key and **TRACKBALL**
   - Press **ENTER** to switch between size and location
   - Include normal gastric/duodenal wall
   - Omit fluid-filled structures (i.e. vessels)

- When using the Pressure Bar, try to achieve 4, 5 or 6
- When using Strain Graph, the goal is to obtain at least one sine wave that does not go above or below the reference line
ELASTOGRAPHY TIPS

- **STRAIN GRAPH** – A good elastography image is one filled with the most persistent colors and has a consistent sine wave on the strain graph.

- **AREA RECONFIG** – Allows relocation of the ROI on a frozen image using the trackball.

Tips to select the best elastography image:

- **SELECT FRAME** analyzes the stability of the curve on a strain graph and the amount of sampling data.  
  - Press Update or Select Frame (Touch Screen) to see the most stable frames.

- **FRAME AVERAGE** averages frames within the sector box to produce one elastography image. (Removes noise and improves accuracy for measurement.)  
  - Move the sector box to the desired area on the strain graph, then press Frame Average to average the selected frames and obtain one image.
STRAIN RATIO MEASUREMENT STEPS

1. Obtain a frozen, optimized elastography image
2. Press the MEASUREMENT MENU button
3. Select STRAIN RATIO on the Touch Screen
   - Ensure that the ROI setting method is on MANUAL
4. Place ROI A on the lesion
   - Set the starting point by pressing ENTER
   - Move the TRACKBALL to adjust the size
   - Press ENTER to set the size and location
5. Place ROI B on normal tissue and repeat steps from ROI A to set the size and location
STRAIN RATIO MEASUREMENT TIPS

To move an ROI, before setting the ROI
1. Press the LEFT button
2. Place cursor in center of the ROI
3. Press the LEFT button
4. Move TRACKBALL to reposition
5. Move cursor out of ROI
6. Press ENTER to set

To resize an ROI, before setting the ROI
1. Press the LEFT button
2. Place cursor on small diamond
3. Press the LEFT button
4. Resize using TRACKBALL
5. Press the LEFT button
6. Move cursor out of ROI
7. Press ENTER to set

Assist Strain Ratio (ASR) helps chose the ideal ROI placement
1. Obtain a frozen, optimized elastography image
2. Press the MEASUREMENT MENU button
3. Select STRAIN RATIO on Touch Screen
   - Ensure ROI setting method is on AUTO
4. Move TRACKBALL to place the ROI on the lesion
5. Press ENTER Key
Rectangle
Measurement Menu
Enter
Left
Trackball
Strain
Histogram
Undo
STRAIN HISTOGRAM MEASUREMENT: STEPS & TIPS

**STEPS:**
1. Obtain a frozen, optimized elastography image
2. Press the **MEASUREMENT MENU** button
3. Select **STRAIN HISTOGRAM** on Touch Screen
4. Place + over area of interest (starting point) and press **ENTER**
5. Use **TRACKBALL** to adjust size of ROI and press **ENTER** to set the ROI

**TIPS:**
- To perform another strain histogram measurement on the same image, select **RECTANGLE** on the Touch Screen (this will clear the current measurement data)
- To change location of the ROI before setting:
  1. Hit the **LEFT** key
  2. Move with the **TRACKBALL**
  3. Press **ENTER** to set the ROI after reaching desired location
- To change the size of the ROI before setting:
  1. Hit the **UNDO** button
  2. Use **TRACKBALL** to adjust size of ROI and press **ENTER** to set the ROI
1. Step on the front caster wheels to lock them.
2. Depress the lock pedals for the rear wheels.
   - Green = steer
   - Black = lock
   - Middle = release

1. Adjust the height of the control panel by holding the handle with both hands while stepping on the front center pedal.
2. Release the pedal to secure the height of the control panel.
Grasp the handle while depressing the lever to swivel the control panel up to 25° left or right.

Releasing the lever will lock the panel in place.

System Cleaning Note:
- Monitor should always be dried with a soft cloth following any moist cleaners.
- Between patients: Freeze, unplug dirty scope, unfreeze with no scope plugged in. The system can now be wiped down. Once the next patient’s clean scope is attached, follow the steps to set up for a new patient.

(Specific cleaning instructions are found in the IFU Chapter 5.)
Grasp the frame of the monitor in both hands and move it in a large swinging movement to adjust its height or orientation.

Even when the monitor arm axis is vertical, it is easier to move the monitor if you swing it.
LOCKING THE MONITOR

1. Push the 1st arm to the rear
2. Make the 3rd arm parallel with the base
3. Face the monitor upwards
4. Lower the 2nd arm and insert into lock block
   (The 3rd arm is locked when the arm clicks into position.)
5. Turn the 1st arm to a straight position as seen from the front
   (The 1st arm is locked when the arm clicks into position.)

1) 1st arm
2) 2nd arm
3) 3rd arm
4) Base

Releasing the Monitor
Hold down the monitor lock release button while raising the arm
Raise the monitor
TROUBLESHOOTING

- Can’t turn it on – Check circuit breaker on back of the system near the floor
- Power is on, but menus/controls aren’t working – Use the Probe button to activate the preset
- Image or control issues – Are you on the correct preset?
- Image too bright or too dark – Are the STC slides in the center?
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