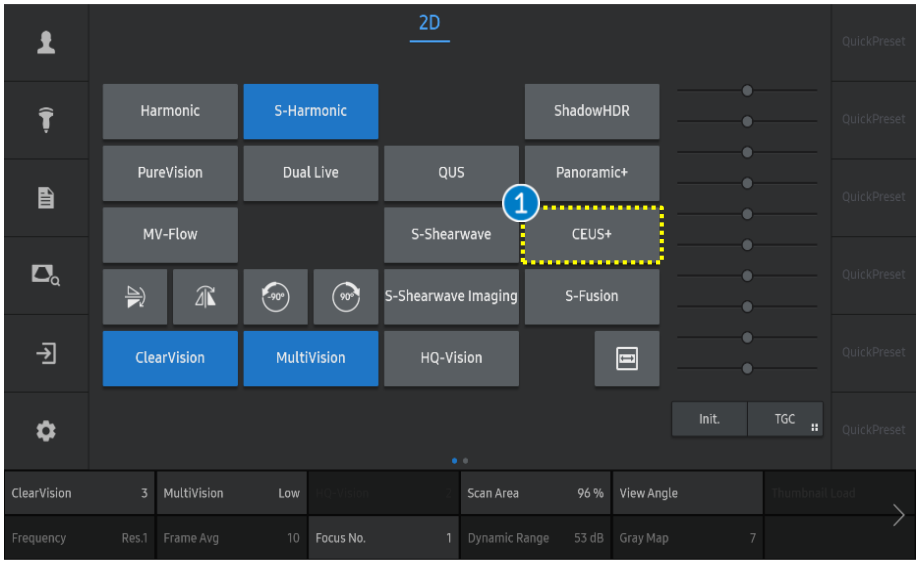
SAMSUNG

CEUS+

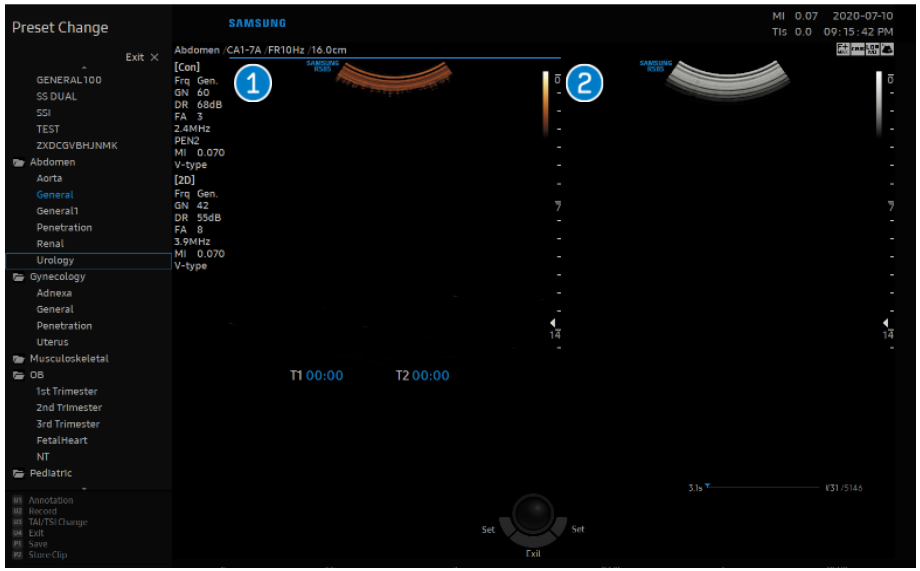
RS85 Prestige **Quick Guide**

Produced by Clinical Training Center / SAMSUNG MEDISON CO.,LTD

1. Start CEUS+

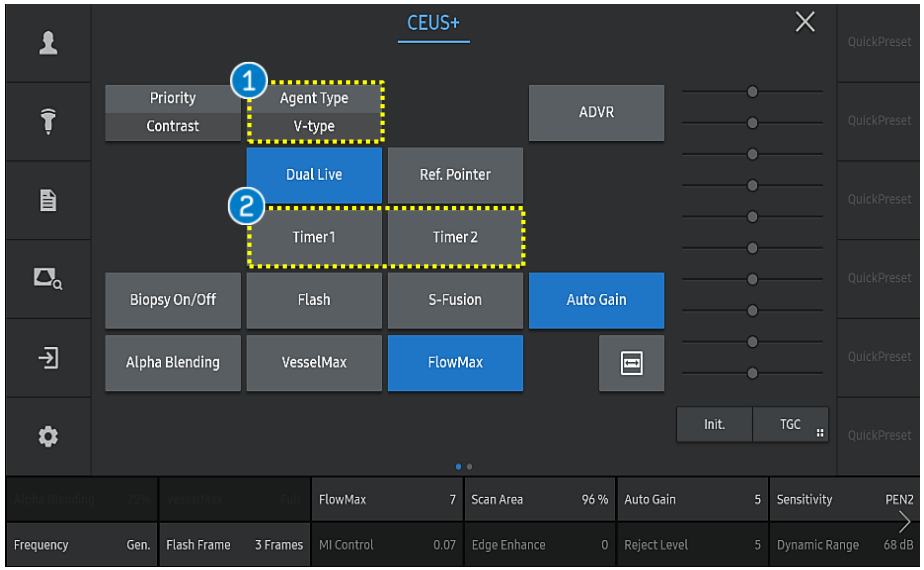


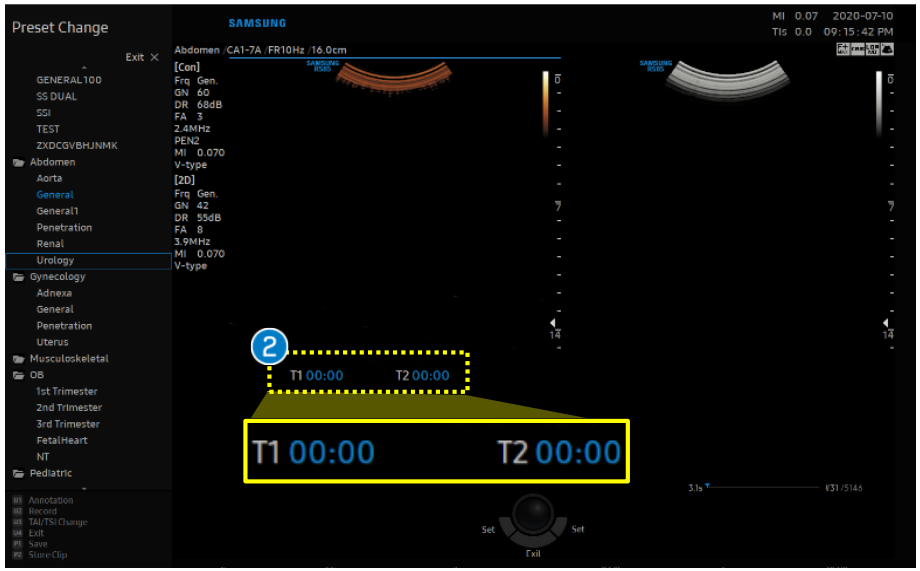
① CEUS+	Tap the [CEUS+] on the touch screen. When entering the [CEUS+] mode, Dual mode is activated as a default.



① CEUS+ mode	Contrast Enhanced Ultrasound image will be displayed on the left screen.
② 2D mode	2D image will be displayed on the right screen.

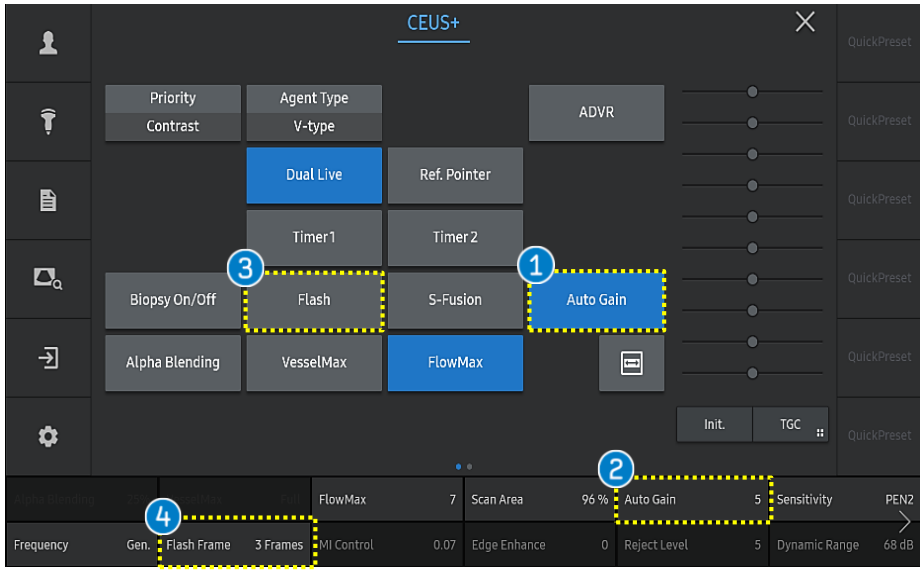
2. Select a Agent Type and Timer





1 Agent Type	Tap the [Agent Type] button on the touch screen.	
	V-Type	A contrast agent used in a **low MI** environment. (approximately below 0.1)
	Z-Type	A contrast agent used in a **medium MI** environment. (approximately above 0.1).
2 Timer	Tap the [Timer1] or [Timer2] button on the touch screen to start the timer. When touching the button again, the timer is reset.	

3. Adjust parameters (1)

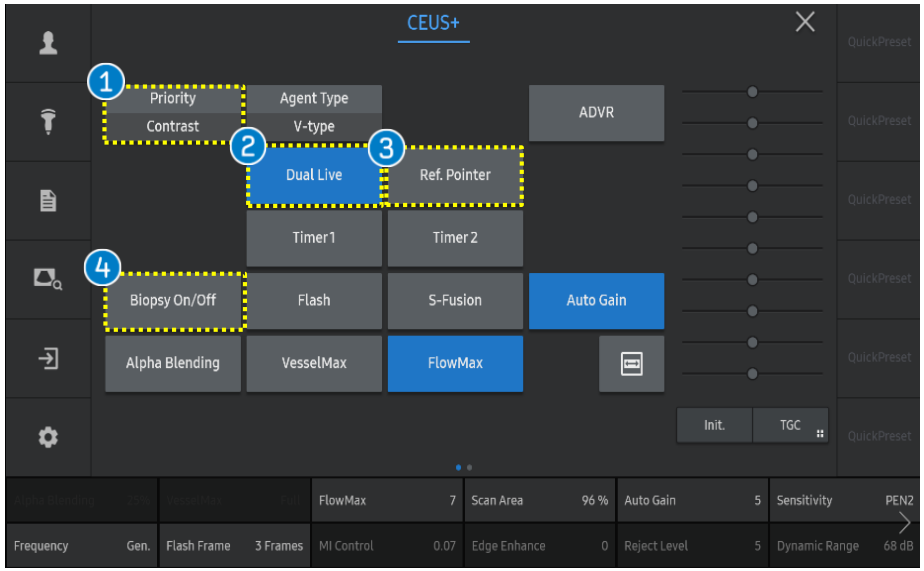


Notes

Auto Gain is available depends on the probe and preset.

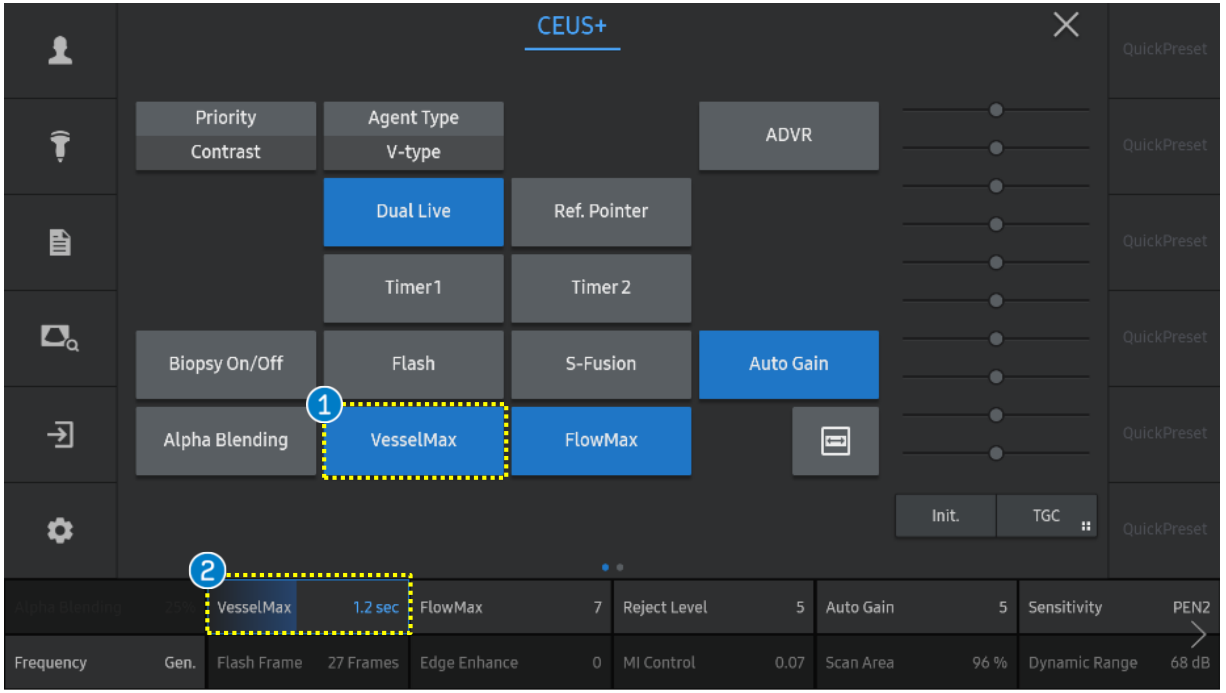
① Auto Gain	It suppresses the saturated signals and provides proper brightness with automatic brightness control.
② Auto Gain (Offset)	It adjusts the offset of auto gain. ▪ Low level: Image is getting darker with heavy suppression on bright signals. ▪ High level: Image is getting brighter with mild suppression on bright signals.
③ Flash	Bursts the micro-bubbles of contrast agent within the scan area by generating a high MI pulse.
④ Flash Frame	Select a flash duration. It bursts the bubbles for a selected frame(duration).

3. Adjust parameters (2)



① Priority	Tap the [Priority] button on the touch screen to adjust parameters of the selected Priority setting. ▪ Contrast: CEUS image ▪ 2D: 2D image
② Dual Live	Tap the [Dual Live] button to select image format dual or single. ▪ Dual: Displays the 2D and contrast enhanced US image. ▪ Single: Displays the CEUS or 2D as full screen depends on the priority.
③ Ref. Pointer	Ref. Pointer can be used as a synchronizing tool in Dual Live mode. It can help to check the location of the lesion on both windows.
④ Biopsy On/Off	If you want to display the biopsy guideline, tap the [Biopsy On/Off] button.

3. Adjust parameters (3)

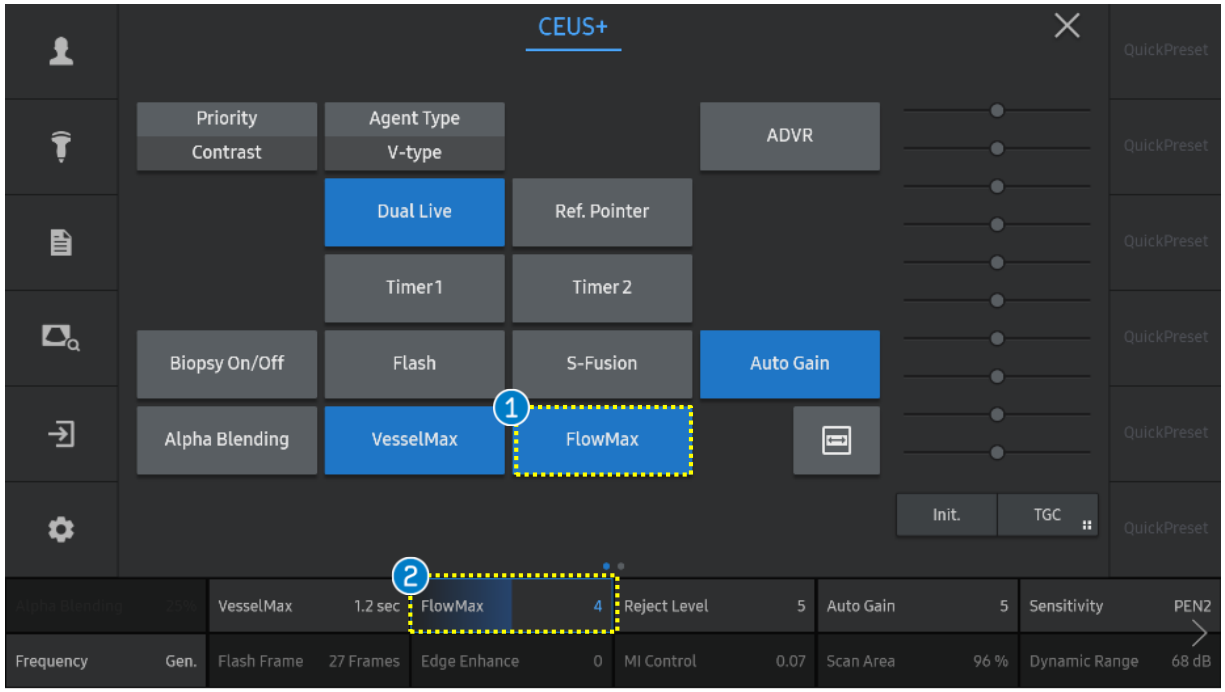


① VesselMax	Tap the [VesselMax] button to activate it. It accumulates contrast image frames over time to provide a visualization of small vessels clearly.
② VesselMax (Time duration)	Available to adjust the time duration ▪ Low level: Accumulates the frames less. ▪ High level: Accumulates the frames more.

Notes

VesselMax can be adjusted on freeze and unfreeze(active mode) status both.

3. Adjust parameters (4)

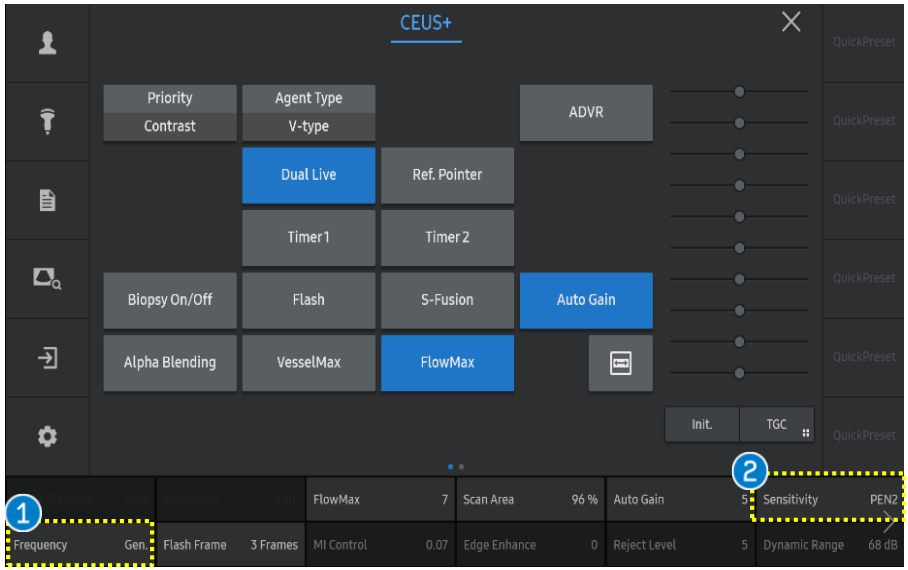


① FlowMax	Tap the [FlowMax] button to activate it . It suppresses the saturated signal which comes from the tissue, not the contrast agent.
② FlowMax (Index)	Available to adjust the FlowMax index ▪ Low level: Suppresses the tissue signal less. ▪ High level: Suppresses the tissue signal more.

Notes

FlowMax can be adjusted on freeze and unfreeze(active mode) status both.

3. Adjust parameters (5)



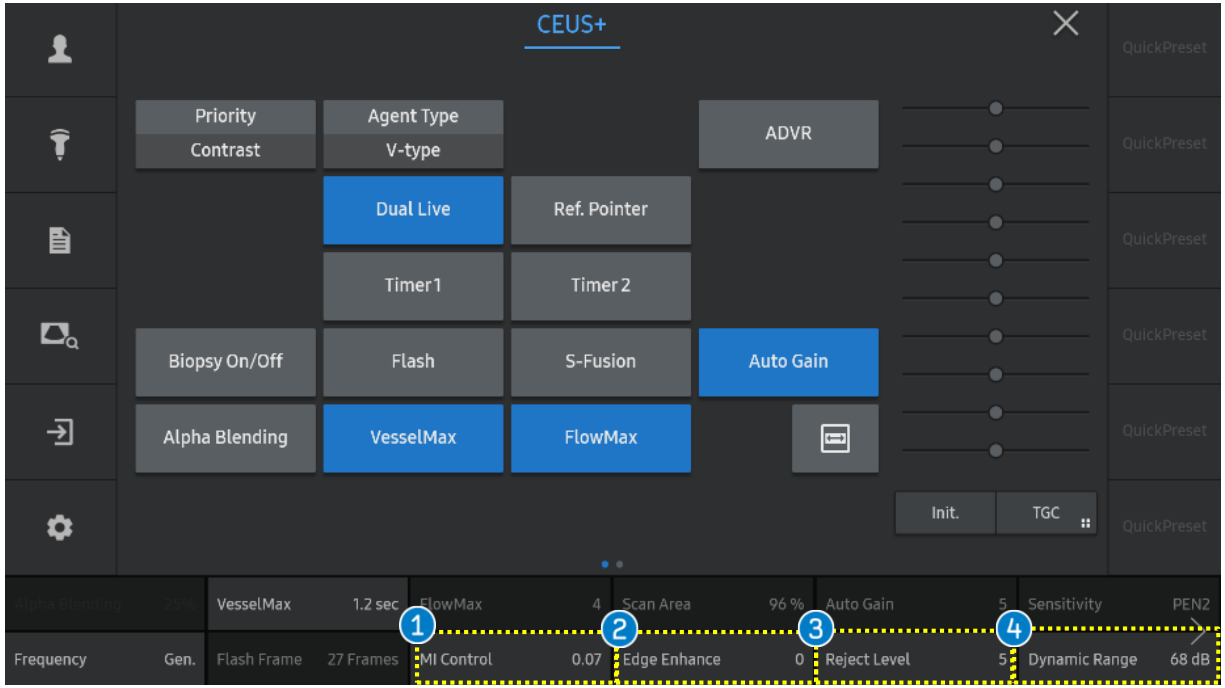
① Frequency	Select the [Frequency] for CEUS. Available Frequencies are variable depending on the selected Sensitivity.
② Sensitivity	Select the [Sensitivity] of the contrast agent as GEN, PEN1, PEN2.

GEN	Good resolution with fine pixel size.
PEN1	High sensitivity with good penetration.
PEN2	Well balanced setting between sensitivity and resolution.

Notes

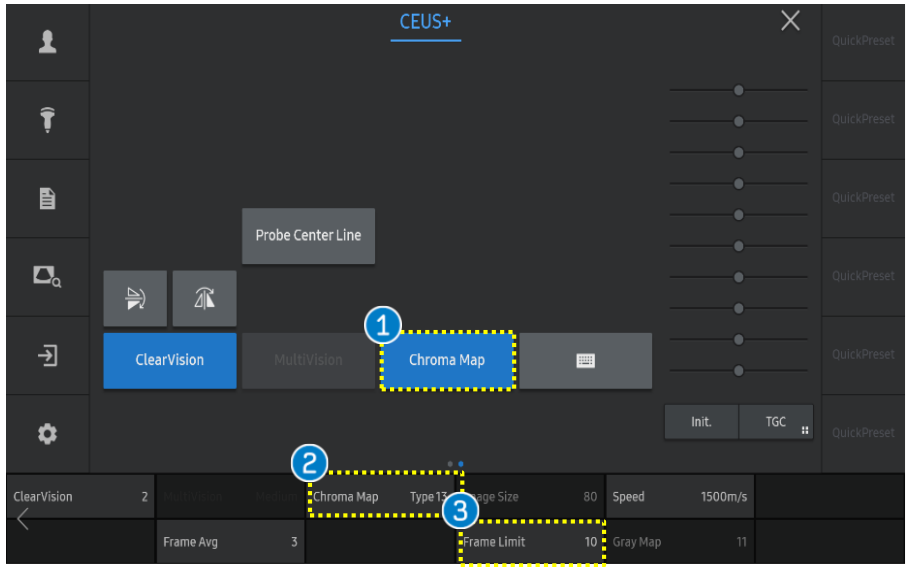
Sensitivity parameter is activated in particular probe and preset.

3. Adjust parameters (6)



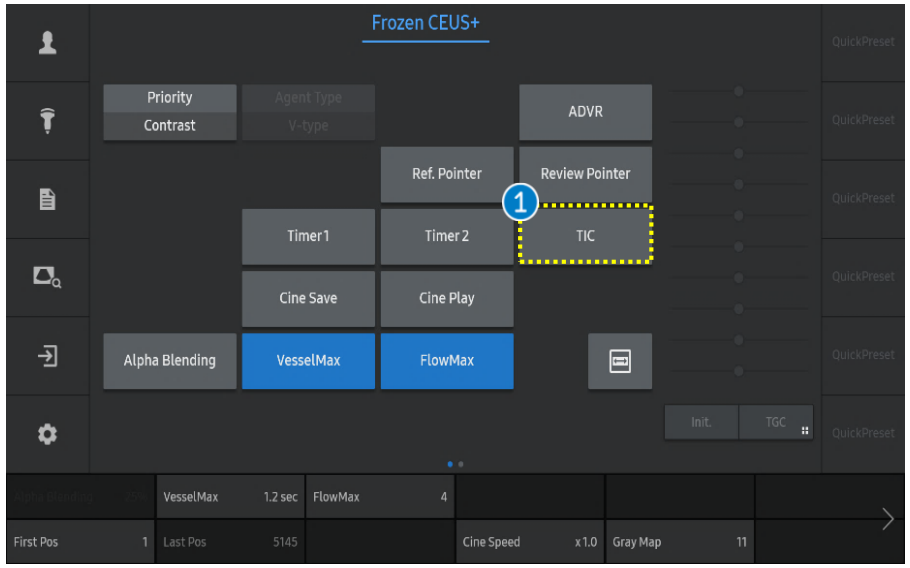
① MI Control	Defines the Mechanical Index of the Ultrasound beam.
② Edge Enhance	Enhances the edge of image on contrast mode or 2D mode (depends on the selected Priority).
③ Reject Level	▪ Removes low signals on contrast mode or 2D mode (depends on the selected Priority). ▪ As reject level is increased both tissue and contrast signals will be rejected.
④ Dynamic Range	Adjusts the dynamic range on contrast mode or 2D mode (depends on the selected Priority).

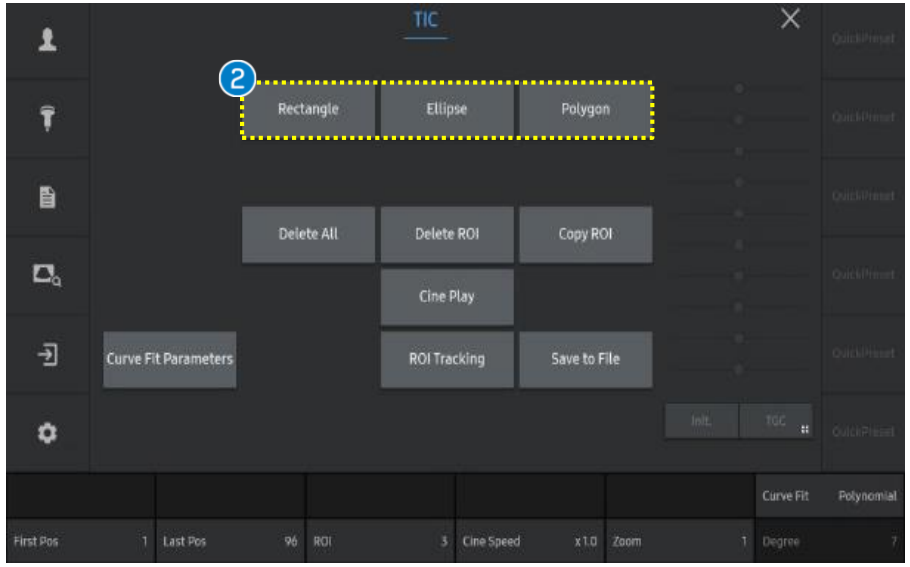
3. Adjust parameters (7)



① Chroma map	Tap the [Chroma Map] button to adjust the color-map of the CEUS image or 2D image (depends on selected Priority).
② Chroma map type	Select a type of Chroma map for your preference.
③ Frame Limit	The [Frame Limit] controls frame rate. Select a frame limit from 2 to the maximum frame limit for the current scan mode. Maximum frame limit depends on the current imaging parameter. ▪ Low level: Set the low frame rate. ▪ High level: Set the high frame rate.

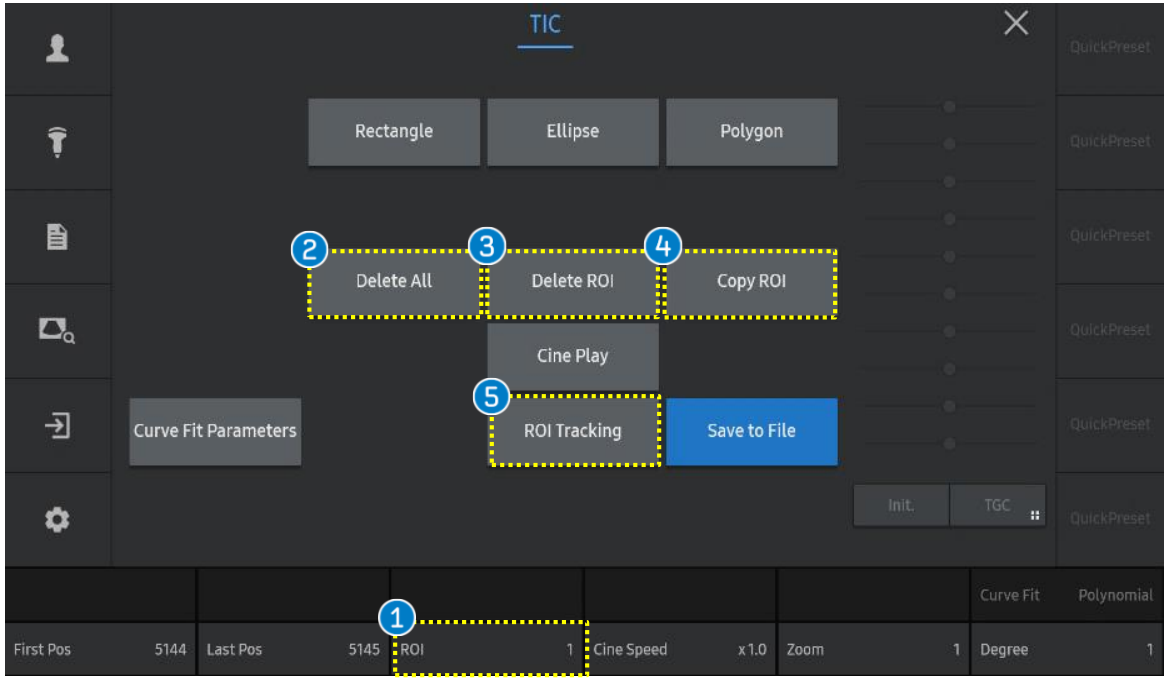
4. Time Intensity Curve (1)





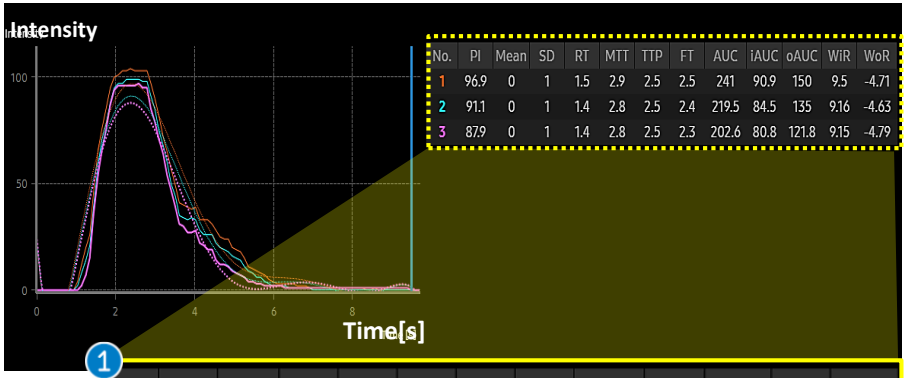
① TIC	Tap the [TIC] button on the touch screen in the freeze status. ▪ TIC(Time Intensity Curve) is a curve that represents the change of the average intensity within ROI over time.
② ROI Type	Select the ROI type on the touch screen. ▪ **Rectangle** and **Ellipse** Press the [Set] button to put the start point of ROI. Then adjust the size of ROI using trackball. Press the [Set] button again to complete ROI. ▪ **Polygon** Press the [Set] button on the start point and every angular point of the lesion. To fix the ROI, press the [Exit] button on the control panel.

4. Time Intensity Curve (2)



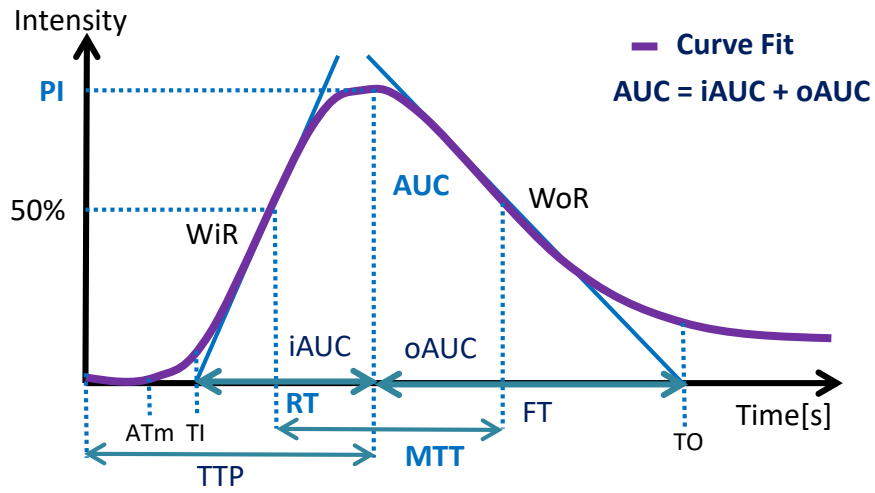
1 ROI	To copy or delete ROI, select the ROI index.
2 Delete All	Tap the [Delete All] to delete all ROIs.
3 Delete ROI	Select the ROI and tap the [Delete ROI].
4 Copy ROI	Select the ROI and tap the [Copy ROI] to copy the selected ROI.
5 ROI Tracking	Updates the ROI location automatically by tracking the tissue movement.

4. Time Intensity Curve (3)



1

No.	PI	Mean	SD	RT	MTT	TTP	FT	AUC	iAUC	oAUC	WiR	WoR
1	96.9	0	1	1.5	2.9	2.5	2.5	241	90.9	150	9.5	-4.71
2	91.1	0	1	1.4	2.8	2.5	2.4	219.5	84.5	135	9.16	-4.63
3	87.9	0	1	1.4	2.8	2.5	2.3	202.6	80.8	121.8	9.15	-4.79

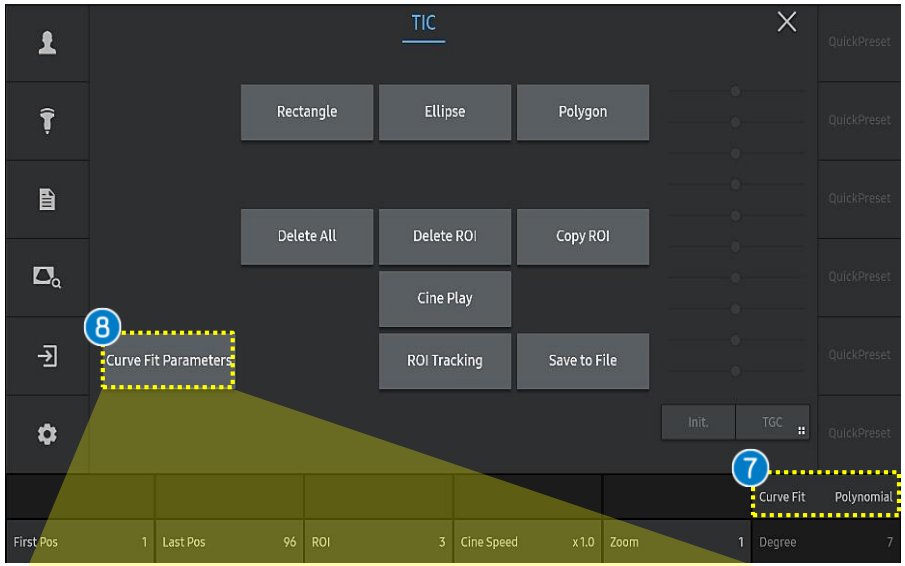


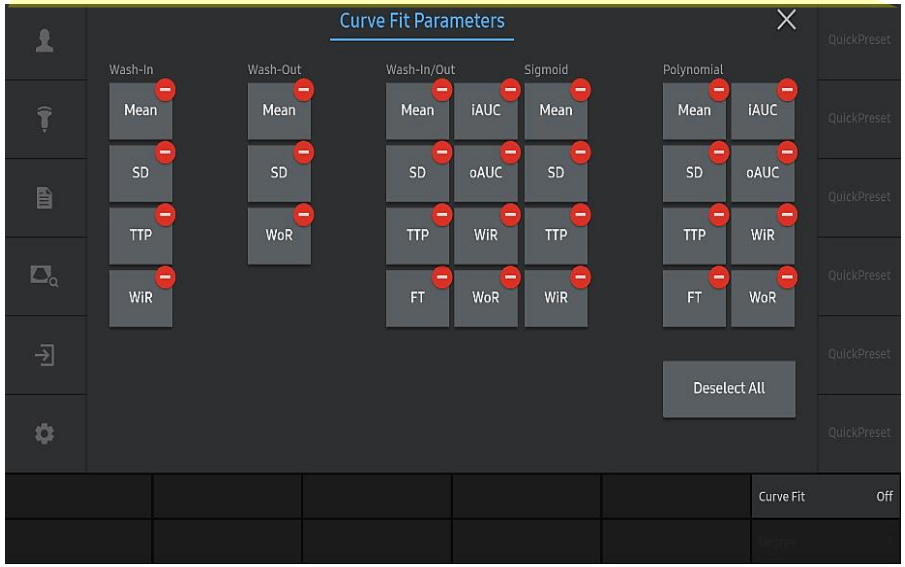
① TIC Parameter

The TIC parameters are displayed differently depending on curve fit you selected.

PI	Peak Intensity
Mean	Mean Intensity
SD	Standard deviation
RT	Rise Time
MTT	Mean Transit Time
TTP	Time To Peak
FT	Fall Time
AUC	Area Under the Curve
iAUC	Wash in Area Under the Curve
oAUC	Wash out Area Under the Curve
WiR	Wash in Rate (maximum slope)
WoR	Wash out Rate (minimum slope)

4. Time Intensity Curve (4)



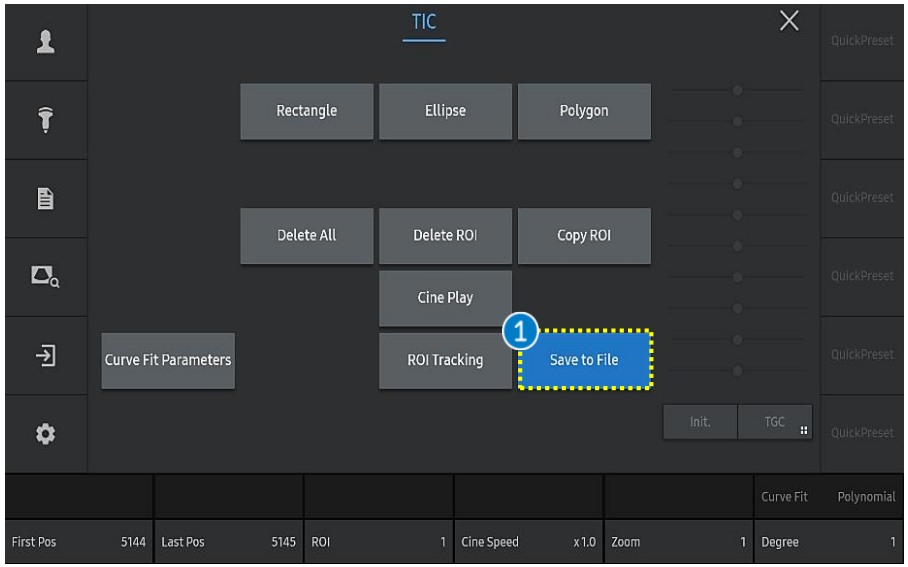


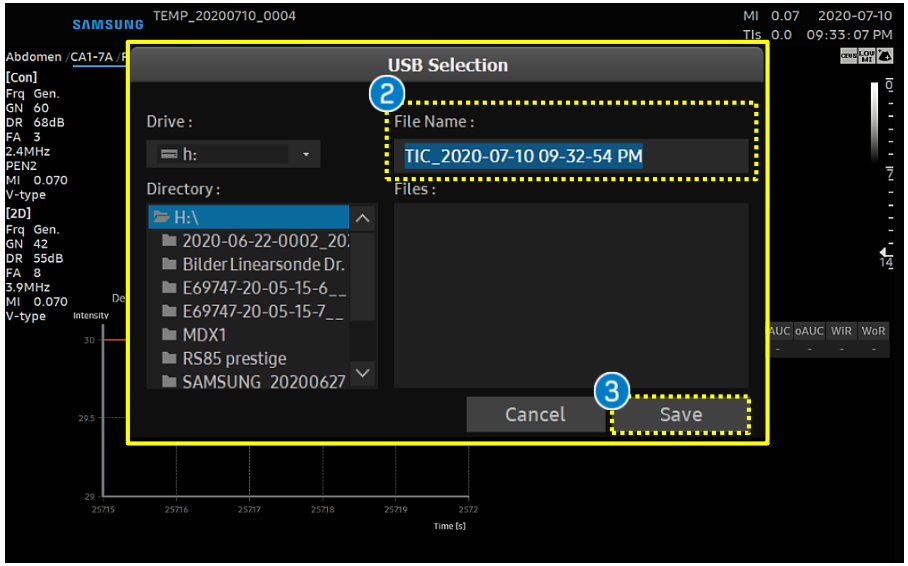
7 Curve Fit	Provides suitable curve shape to measure blood flow parameters accurately and consistently.

Wash-in	Fit the TIC as an increasing curve.
Wash-out	Fit the TIC as a decreasing curve.
Wash-in/out	Fit the TIC as a curve that shows both increase and decrease.
Sigmoid	Fit the TIC in a S-shaped curve.
Polynomial	Suitable for local wash-in and wash- out rate estimation during bolus injection. You can adjust the degree of polynomial from 1 to 10. As the degree increases, curve will be closer to TIC.

8 Curve Fit Parameters	Select the TIC parameters to display on the screen.

4. Time Intensity Curve (5)





1 Save to File	Insert an external memory device into the system before saving to file. Tap the [Save to File] button. TIC is saved in csv file.
2 Directory & Name	Choose directory and name of the file.
3 Save	Click the [Save] button to complete export.

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- The features, options may not be commercially available in some countries.
- Sales and shipments are effective only after the approval by the regulatory affairs. Please contact your local sales representative for further details.
- This Quick guide does not include all of the details of instruction, fore more detail, please refer to RS85 User Manual.
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