OCTavius
Sales Presentation

The Introduction to OCTavius

Prepared by : Huvitz OM Part

Contents

1. Change Summary

Introducing the New OCT

Launch of Huvitz's upgraded all-in-one OCT device : OCTavius

Huvitz

Product : HOCT-1F(68K)

Model No. : HOCT-1F

Brand Name : N/A

Product : HOCT-1F(80K)

Model No. : HOCT-1F

Brand Name : OCTavius

OCTavius: Unlocking the Vision Within

The new Huvitz OCT elevates scan speed, angiography quality, and imaging performance.

Advantages of OCTavius

1. **High-Speed A-Scan Acquisition**
   A-scan speed increased from 68,000 to 80,000 A-scan/sec (+17%), Significantly reducing patient wait times and reducing re-scan rates.
2. **Fundus Enhancement Lv.4**
   Advanced Central Brightness and Gamma fine-tuning functions allow for enhanced visualization of subtle lesions.
3. **Triple Angiography**
   Integrated Motion Correction, Retina Tracking, and Noise Reduction technologies deliver sharper, more reliable angiography images.
4. **Enhanced Anterior Image**
   Smarter signal optimization provides improved edge definition in the anterior segment for greater measurement accuracy.
5. **Embedded PC**
   Equipped with a intel 13th Gen CPU and SSD for enhanced data stability and faster overall performance.

Product Update Summary

Overview of OCTavius Enhancements

HOCT-1F

HOCT-1F	Specifiation	OCTavius
68,000 A-scan/s	Scan Speed (A-Scan)	**80,000 A-scan/s (+17%)**
Level 1~3	Fundus Enhancement	**Includes Level 4**
Scan Speed		
Normal : 1.4s, Fine : 1.6s	Macular Line	Normal : 1.3s, Fine : 1.4s **(+10%)**
Normal : 2.5s, Fine : 3.5s	Macular 3D	Normal : 2.0s, Fine : 3.0s **(+17%)**
Angio Scan Speed		
11.2s	384x384 (3.0mm)	7.4s **(+34%)**
7.9s	384x384 (4.5mm)	5.5s **(+31%)**
12.6s	384x384 (6.0mm)	8.2s **(+35%)**
Improved Image Quality by Mode		
-	Anterior Radial	Enhanced anterior edge clarity for improved thickness-map accuracy.
-	Topography	Reduced Segmentaion Errors.
HW Upgrade		
SLD Output 2.5mW	Light Source	SLD Output 5.0mW
HDD	Storage	SSD
Intel 7th Gen	CPU	Intel 13th Gen **(+35%)**

OCTavius

2. Our Story

Product Development Background

OCTavius builds on the proven all-in-one architecture of the original HOCT Platform

Patient Pain Point

- Discomfort from long scan wait times
- Frequent repeat scans caused by eye tremors or patient movement
- Reduced diagnostic confidence due to low image clarity

Patients experience discomfort due to long wait times and frequent retakes.

Clinician Pain Point

- Delays in scan acquisition, data storage and analysis reduce clinic throughput and lower patient satisfaction.

Clinicians face decreased workflow efficiency from mode switching and delays in data analysis.

Solution

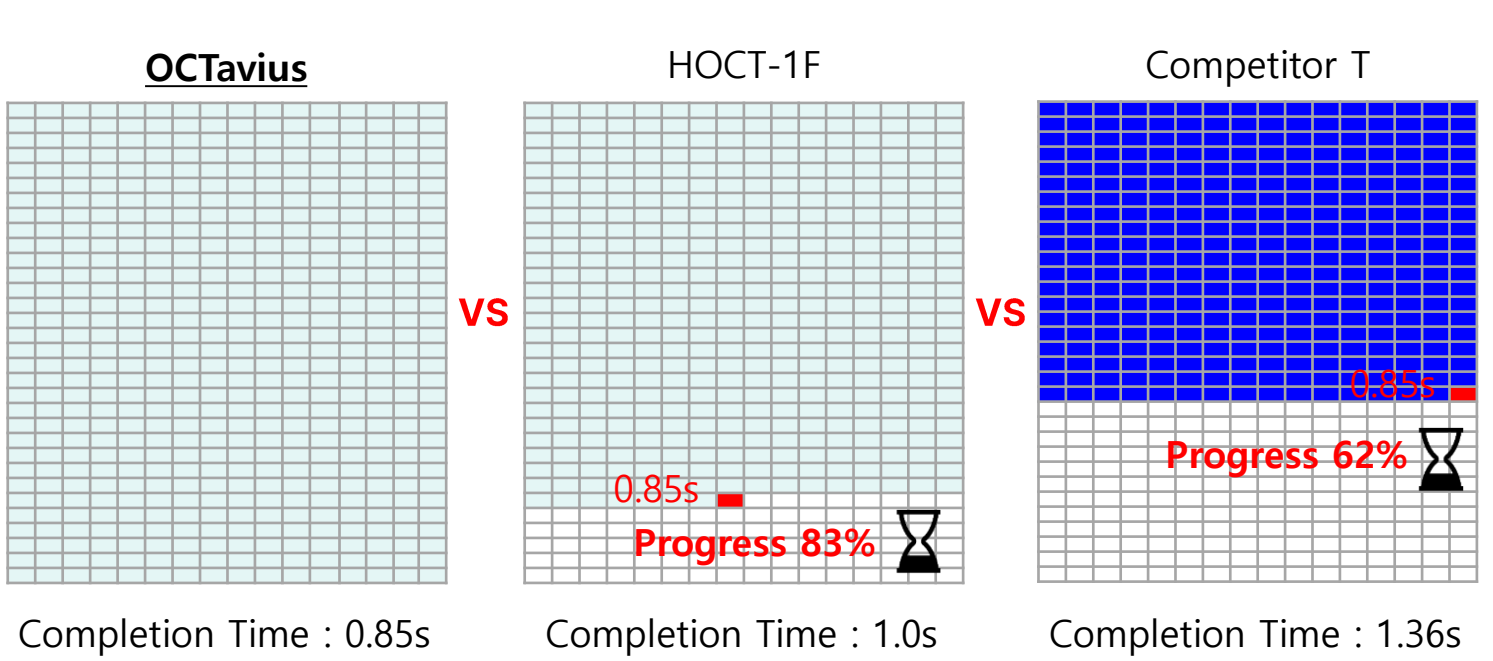
OCTavius is Huvitz's next-generation OCT platform, engineered to elevate scan speed, image quality, and data reliability comprehensively resolving the challenges faced by both patients and clinicians.

OCTavius upgrades speed, image quality, and data reliability to eliminate all of these pain points.

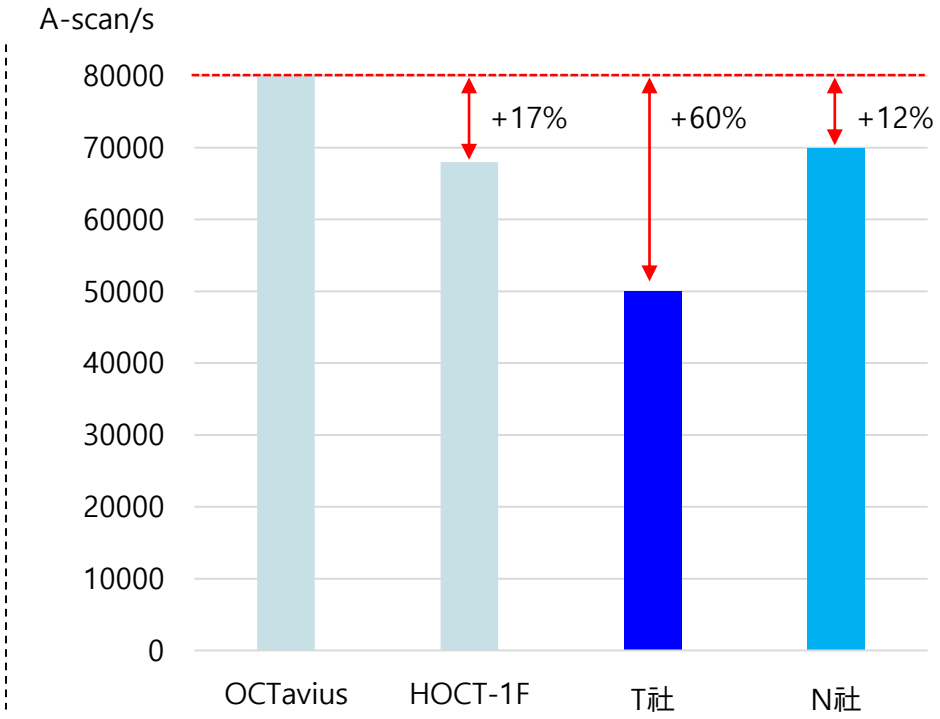
3. Product Change Overview_HW

1. High Speed A-Scan Acquisition

Same Time • Same Density Protocol • Faster Scan Rate



* Under identical resolution conditions (512 A-Scans)



At the same scan time (0.85s), OCTavius samples 62% more data than competitor T

OCTavius saves 0.15s per scan vs. HOCT-1F and 0.51s vs. competitor T

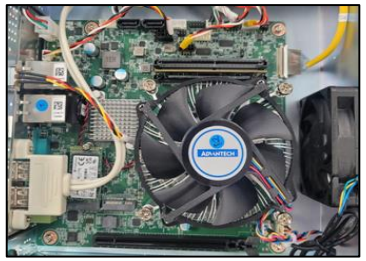
OCTavius Speed

13% faster than previous version

Category			Time
Macular Line (1024x1, 15times)	HOCT-1F	Normal	1.4s
	OCTavius	Normal	1.3s **-10%**
	HOCT-1F	Fine	1.6s
	OCTavius	Fine	1.4s **-10%**
Macular 3D (512x96)	HOCT-1F	Normal	2.5s
	OCTavius	Normal	2.0s **-17%**
	HOCT-1F	Fine	3.5s
	OCTavius	Fine	3.0s **-17%**

5. Embedded PC

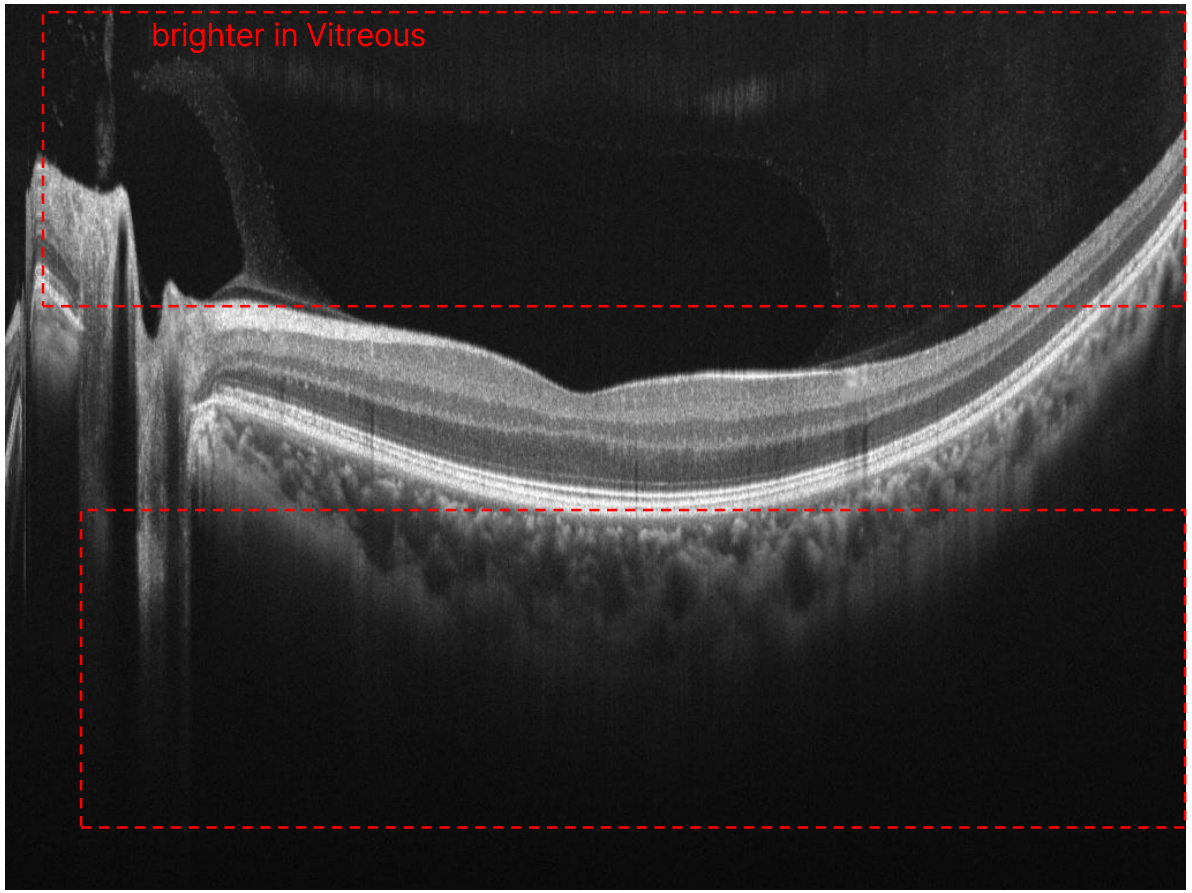
No need for a separate desktop PC thanks to built-in embedded PC, maximizing examination space efficiency.

Part	Before	After	Description
CPU			• Equipped with Intel 13th Gen i3, delivering a 35% increase in processing speed and performance.
spec	i7-7700 (7th Gen)	i3-13100 (13th Gen)	
Storage			• Booting and image saving speed doubled. • Minimizes waiting time. • Improved durability and reliability compared to HDD.
spec	HDD	SATA SSD	

4. Product Change Overview
_Improved Image Quality

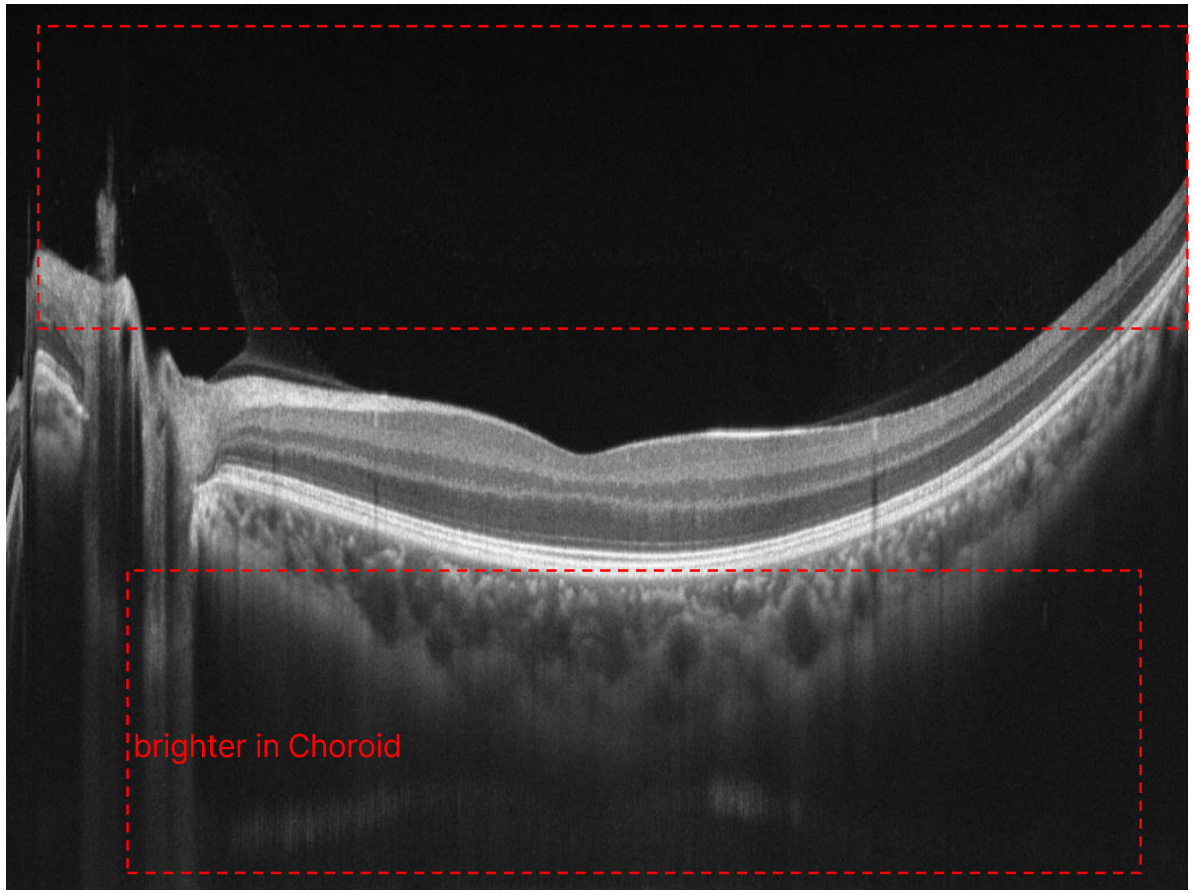
OCTavius Enhanced Choroidal Imaging(ECI) mode

New Mode to Enhance Signal Sensitivity in the Retinal and Choroidal Layers



[Normal Mode]

-brighter in Vitreous region



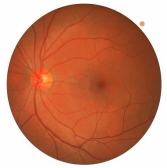
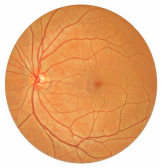
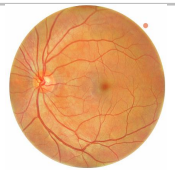
[ECI Mode]

-brighter in Choroid region

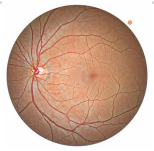
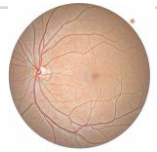
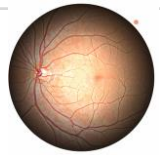
2. Fundus Enhancement Lv.4

Five Customizable Modes Tailored for Clinical Scenarios and User Preferences

Previous Modes

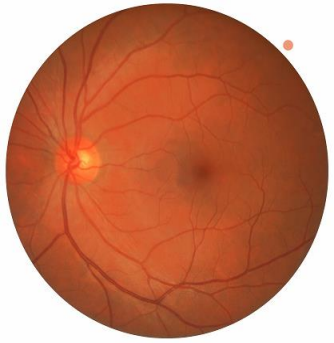
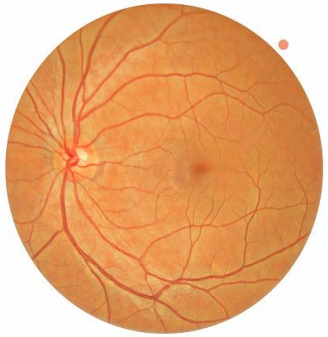
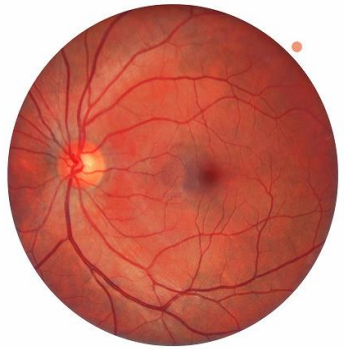
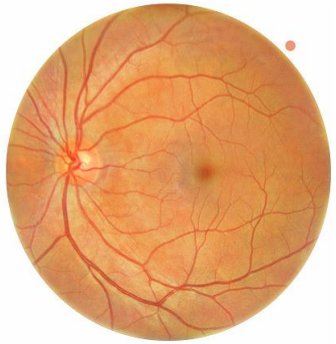
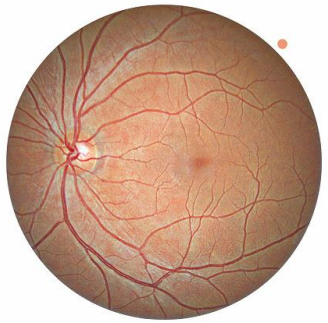
Categories	Image	Advantages	Recommended Use
Non		• Maintains Original Tone BrightnessProvides a Baseline Reference	➢ Baseline Reference
Level 1		• Gamma correction + CLAHE applied • Uniform Tone Across Viewers	➢ Consistent Image Tone for Image Comparison
Level 2		• White Balance applied • Enhanced Color SeparationFacilitates Observation of Vascular Lesions	➢ Observation of vascular lesions
Level 3		• Domain Transform+Fusion • Enhanced details and lesion visibility	➢ Detailed retinal structure analysis (e.g., RNFL and retinal thickness)

New Mode (Level 4)

Categories	Features			
Technical Overview	• Corneal Flare Removal • Domain Trasform + Image Fusion • White Balance Application • Central Brightness Adjustment			
Setting Path	• Setting -> Analysis -> Fundus Enhancement 			
Custom Settings	**Central Brightness** • Adjusts brightness in the central area • Brightens the entire image • Range : 0~4.0 (0.01 Increments)		**Gamma** • Enhances Vessel-Lesion Contrast • Balances Brightness and Contrast • Range : 0.5~1.5 (0.01 Increments)	
Image	Basic 	Case 1 	Case 2 	Case 3 
Central Brightness	0.0	0.0	0.5	4.0
Gamma	1.0	1.5	1.0	1.0

2. Fundus Enhancement Lv.4

Five Customizable Modes Tailored for Clinical Scenarios and User Preferences

Category	Image				
	Non	Level 1	Level 2	Level 3	**Level 4**
Fundus Image					

2. Fundus Enhancement Panorama

Panoramic view generated from 2–7 fundus images

•Wide-Angle Panorama Synthesis

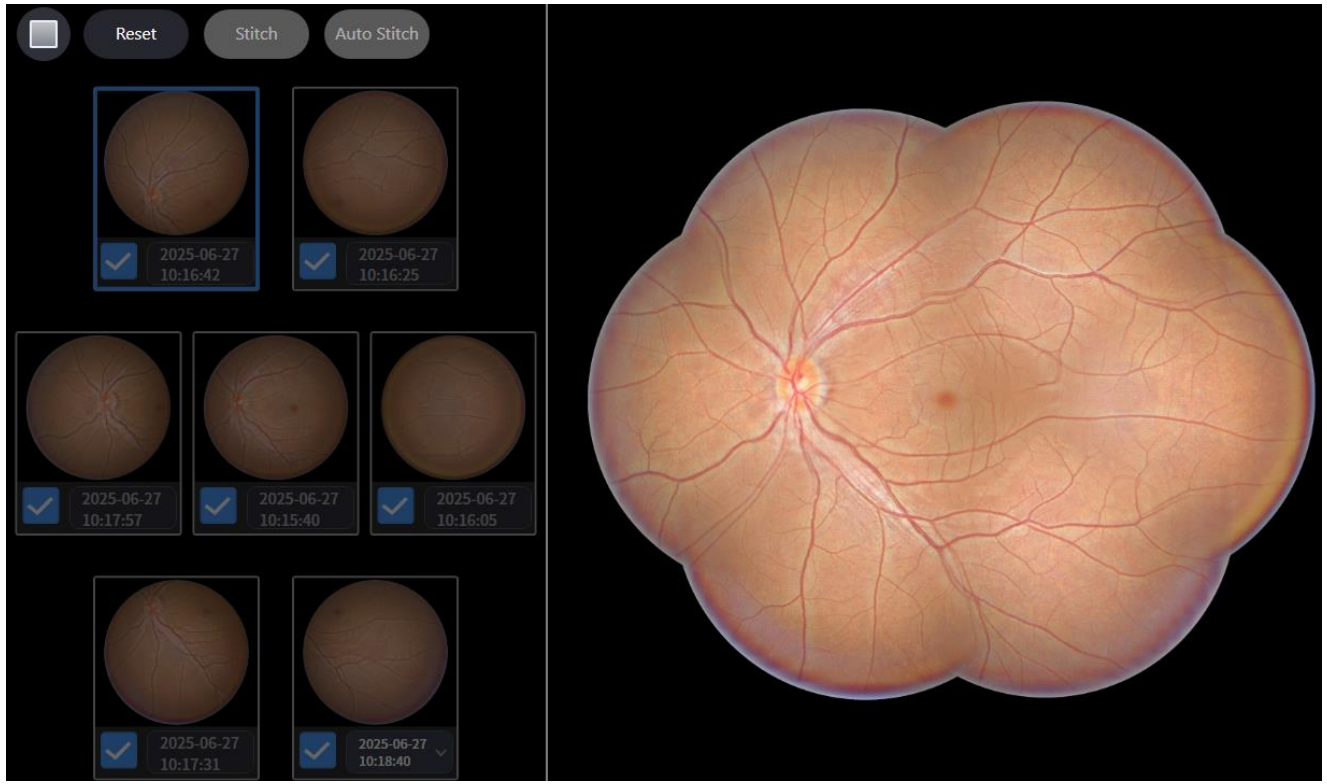
Combines a minimum of 2 and up to 7 fundus captures into a single panoramic image.

a. 2 image composite: 80° field of view

b. 7 image composite: 120° field of view

•Auto-Stitch Functionality

Automatically merges up to 7 images with a single click of Auto Stitch.



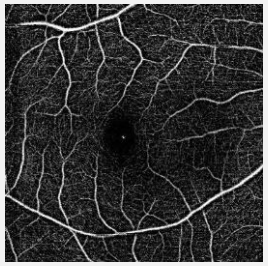
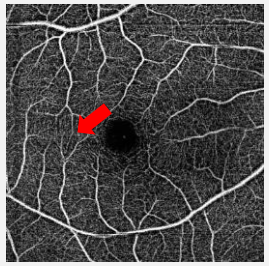
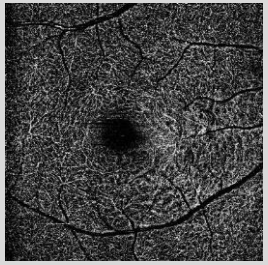
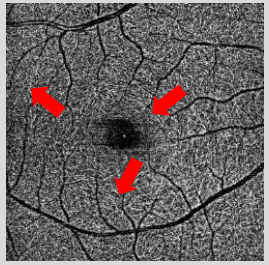
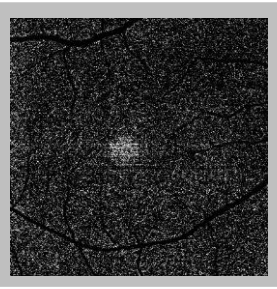
Angio Enhancement Summary

Motion correction, Retina tracking, Noise reduction

Category	Enhancement Item	Effect
Speed Improvement	Angio Scan Speed	Improved Scan Speed by Location
Software Measurement Stability	Real Time Retina Tracking	Real time Position Correction During Scan with 30 fps IR Camera
Image Quality	Enhanced Retina Vessel Signal Contrast	Slab-based Vessel Signal Enhancement Foveal Reflection Suppression
	Motion Correction	Post-Acquisition B-Scan Registration Restoration of Disrupted Vessels
	Enhanced CNV Signal Contrast	Improved Despeckling Emphasis on True CNV Structures Only
Noise Suppression	Motion Artifact Removal	Suppression of Horizontal Stripe Noise Ghost Artifact Removal
	PAR	Removal of Superficial Vessel Shadows Enhanced Outer Retina Delineation
Analytical Accuracy	Improved Retinal Layer Segmentation	Precise segmentation of OCTA regions

3. Triple Angiography

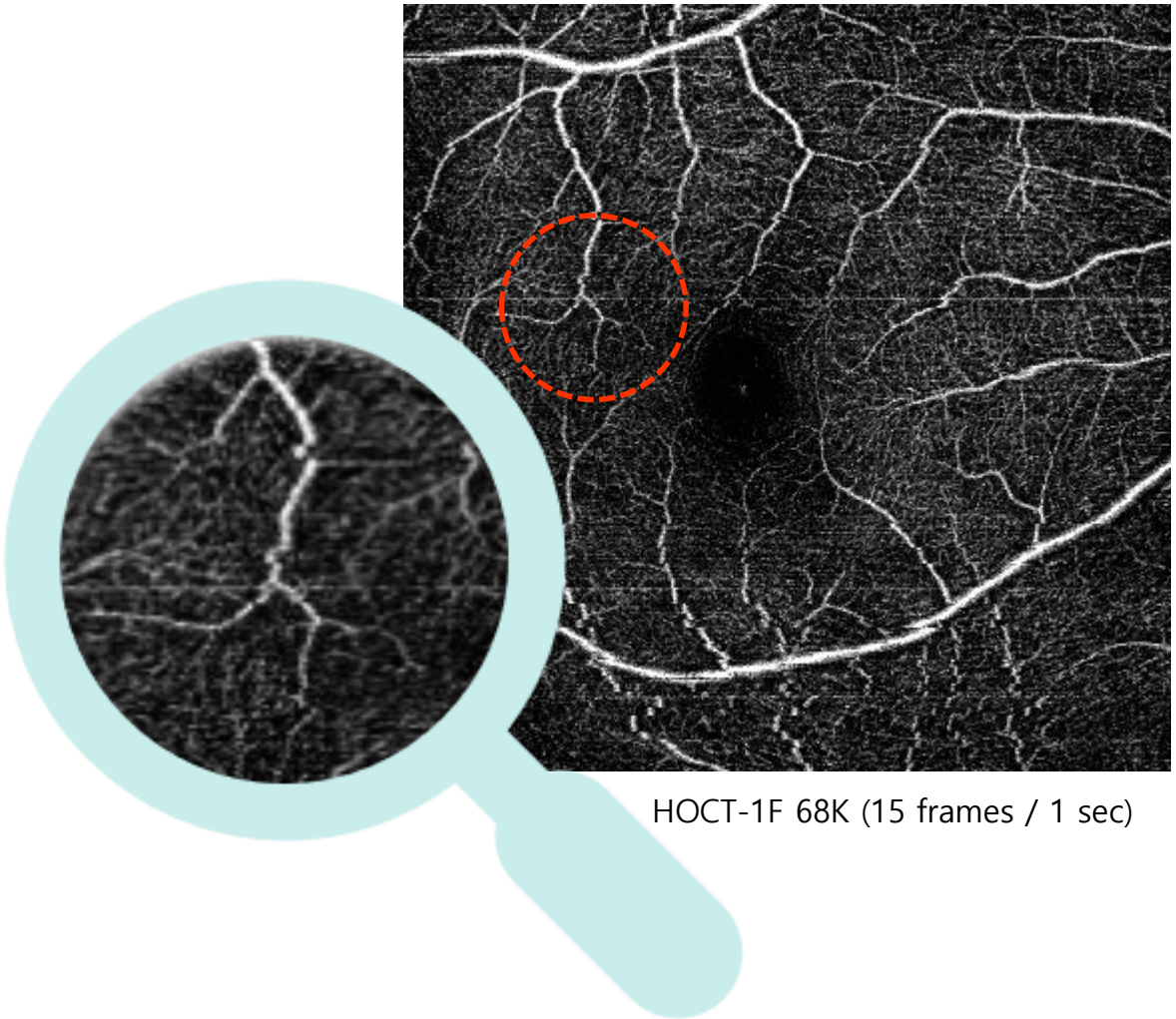
Motion correction, Retina tracking, Noise reduction

Category	HOCT-1F	OCTavius	설명
Superficial Capillary Plexus			• Motion correction: compensates for micro-eye movements, enhancing vessel-boundary continuity • Retina tracking: improves inter-scan positional alignment • Noise reduction: suppresses background noise, sharpening microvascular detail
3mm (384x384) Time	11.2s	7.4s	➢ **-34% Reduction**
Deep Capillary Plexus			• Noise reduction: increases vessel-to-background contrast and enhances fine-structure visibility
4.5mm (384x384) Time	7.9s	5.5s	➢ **-31% Reduction**
Outer Retina			• Noise reduction: suppresses backscatter, improving visualization of outer-retinal (choriocapillaris) microvasculature
6mm (384x384) Time	12.6s	8.2s	➢ **-35% Reduction**

3_1. Real-time Retinal Tracking

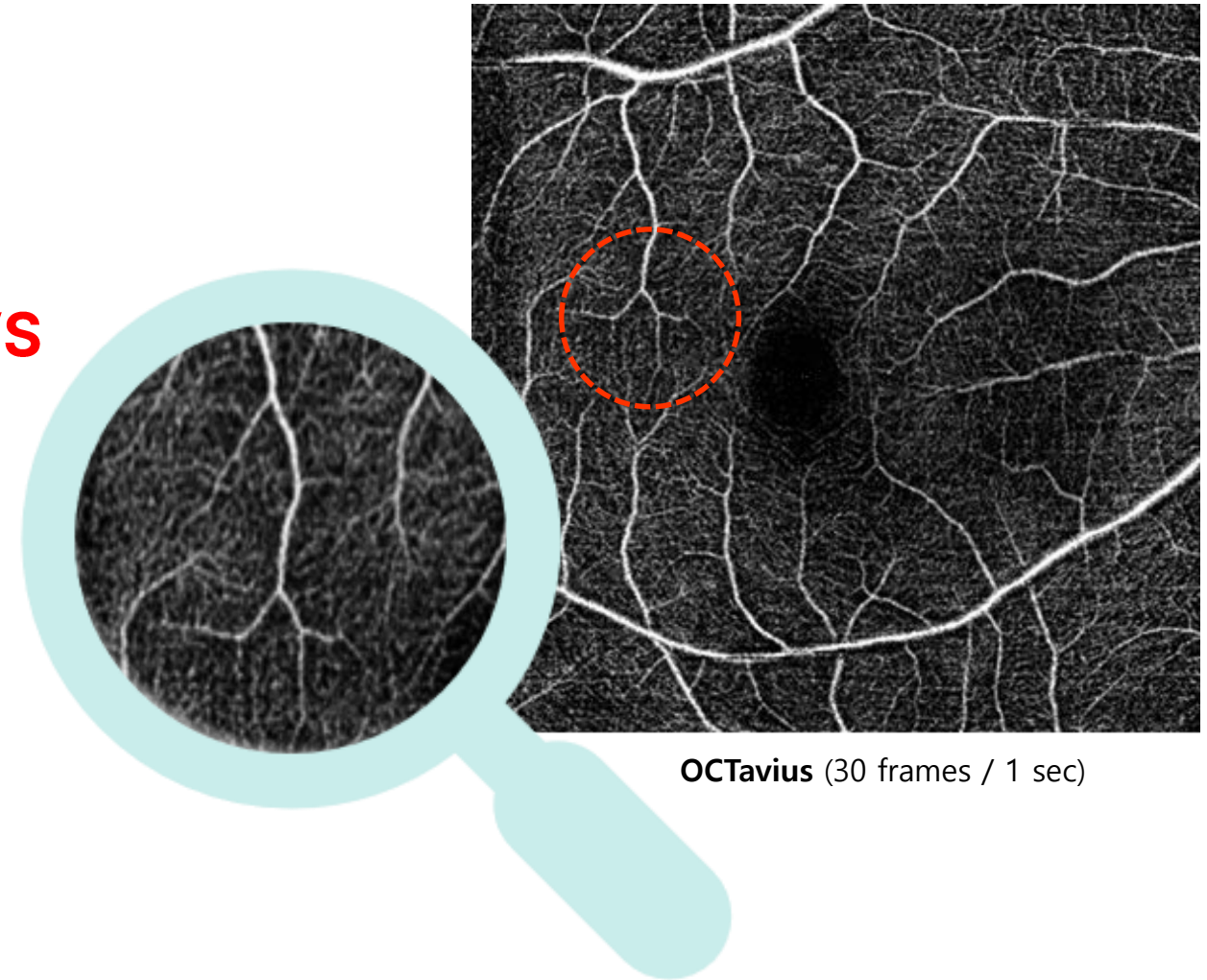
Precise visualization of microvasculature through real-time positional correction

- Doubled frame rate with real-time tracking and correction applied during acquisition
- **Reduced motion blur and suppression of stripe artifacts, enhancing continuity and edge sharpness of fine capillaries**



HOCT-1F 68K (15 frames / 1 sec)

VS

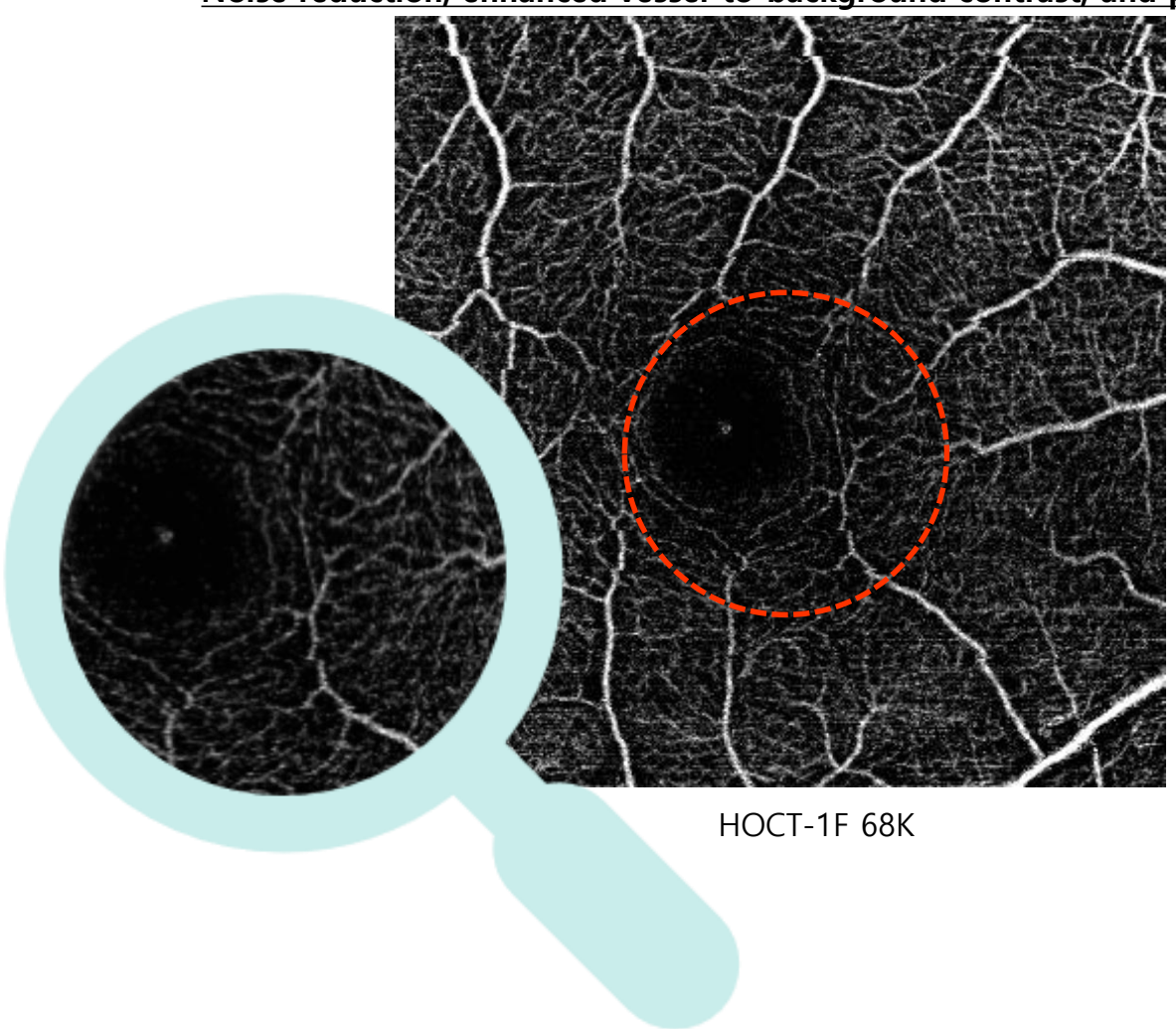


OCTavius (30 frames / 1 sec)

3_1. Enhanced CNV Signal Contrast

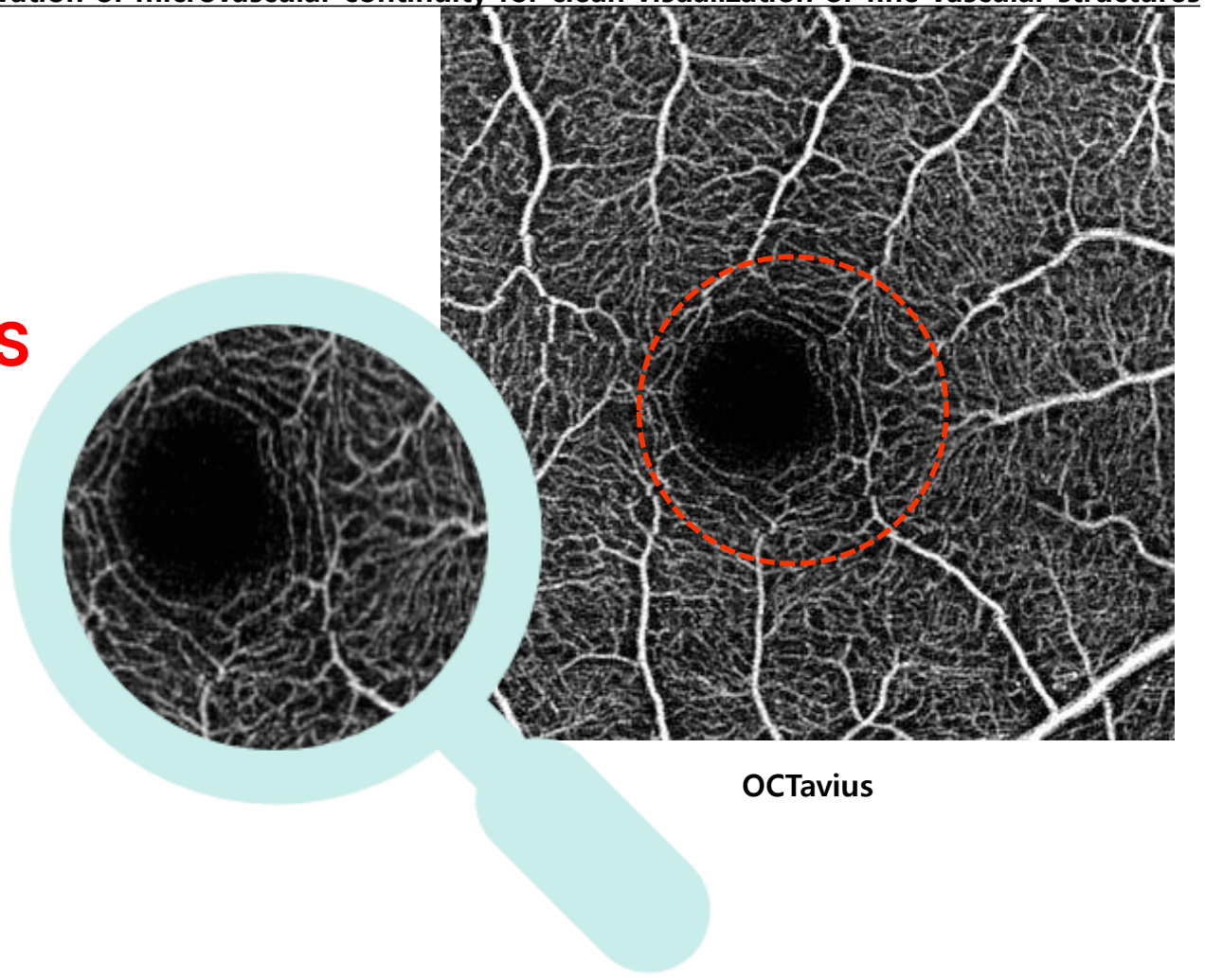
Enhanced CNV Signal Contrast in the Outer Retina Layer

- Optimized processing of vascular signals within the selected OCTA slab
- Suppression of noise sources such as specular reflections at the foveal center of the macular region
- **Noise reduction, enhanced vessel-to-background contrast, and preservation of microvascular continuity for clean visualization of fine vascular structures**



HOCT-1F 68K

VS

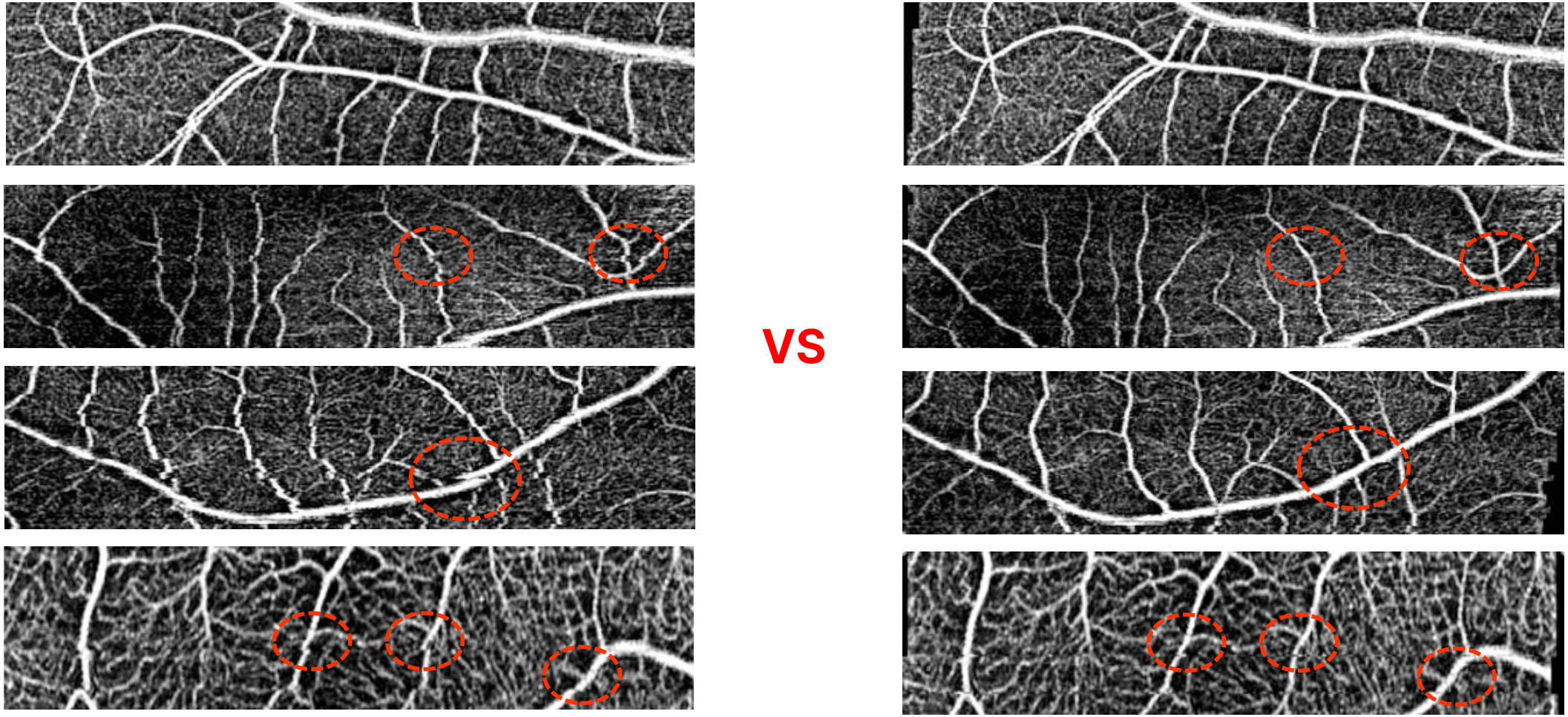


OCTavius

3_1. Motion Correction

Reconnects disrupted vessels, removes stripe artifacts, and enhances boundary clarity through motion correction

- After ANGIO scan acquisition completes, image processing reunites disrupted vessels
- Improves accuracy with a novel method for registering consecutive B-scan frames
- **Reduces motion artifacts and horizontal stripe noise, enhancing microvascular continuity and vessel-to-background contrast**



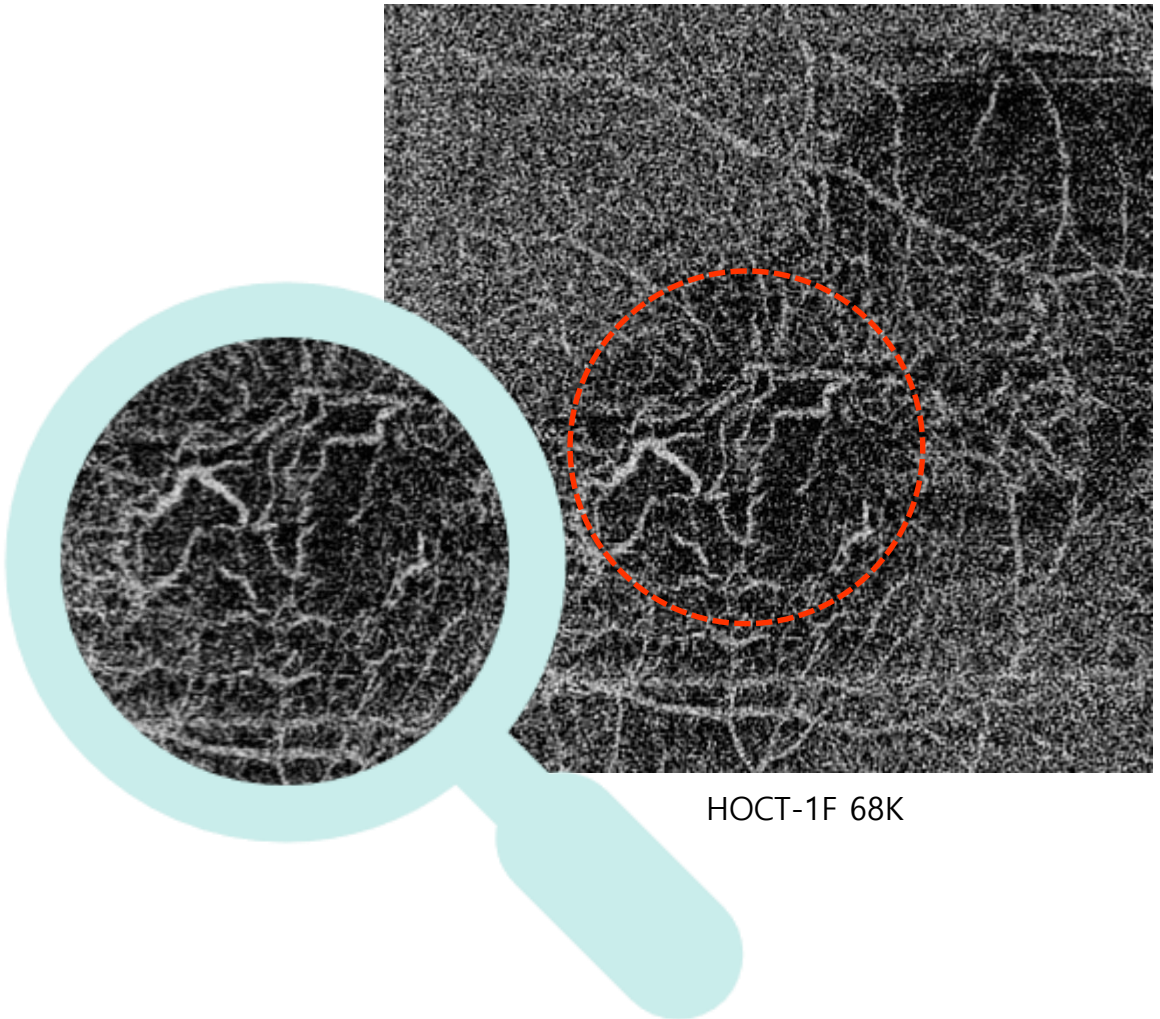
HOCT-1F 68K

OCTavius

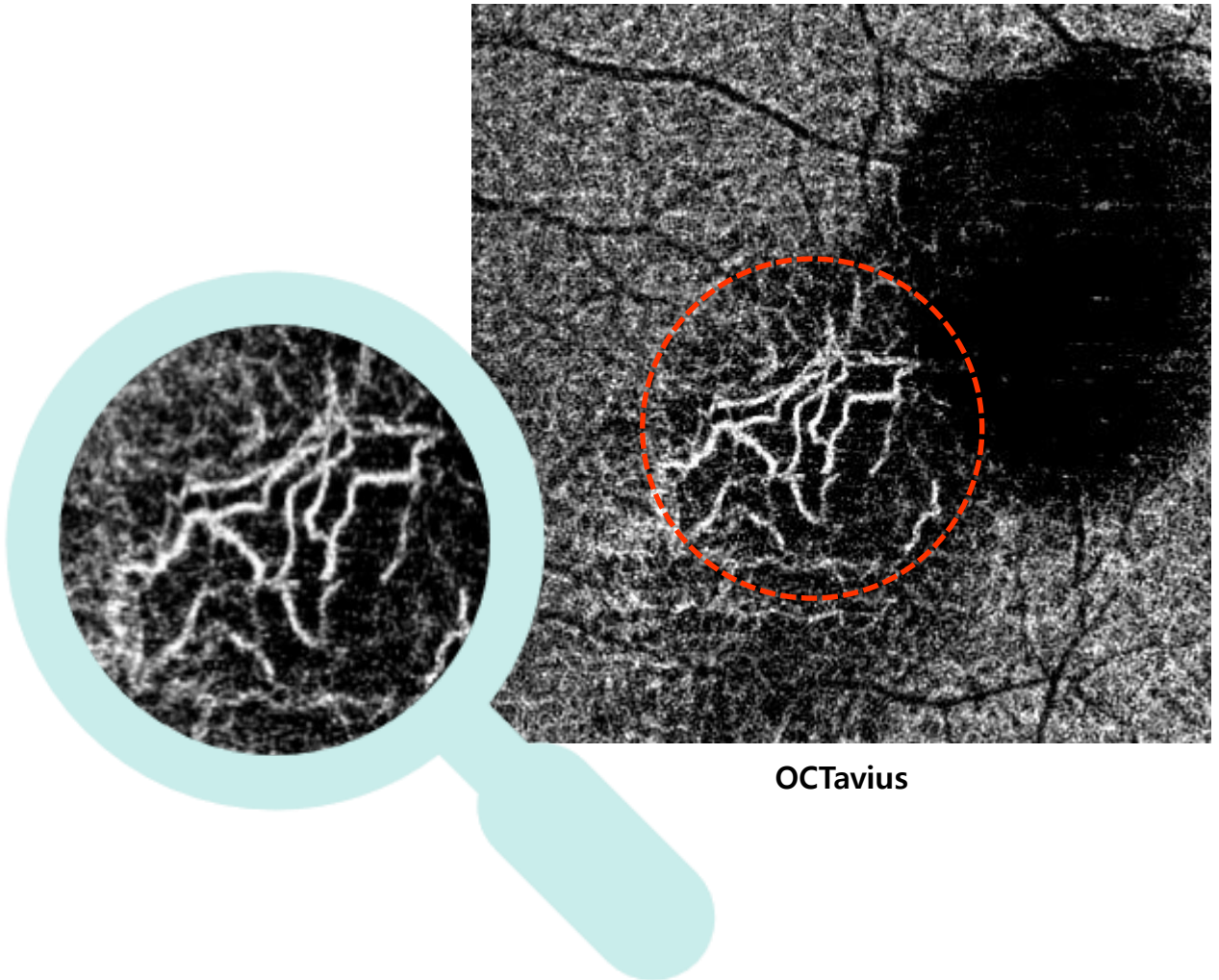
3_1. Improved CNV Signal Contrast

Speckle Suppression for Enhanced CNV Contrast & Continuity

- Enhanced signal contrast of neovascular (CNV) structures in the outer retina
- Emphasis on true vascular structures only via improved despeckling
- **Cleaner background with enhanced continuity and contrast of CNV networks**



HOCT-1F 68K

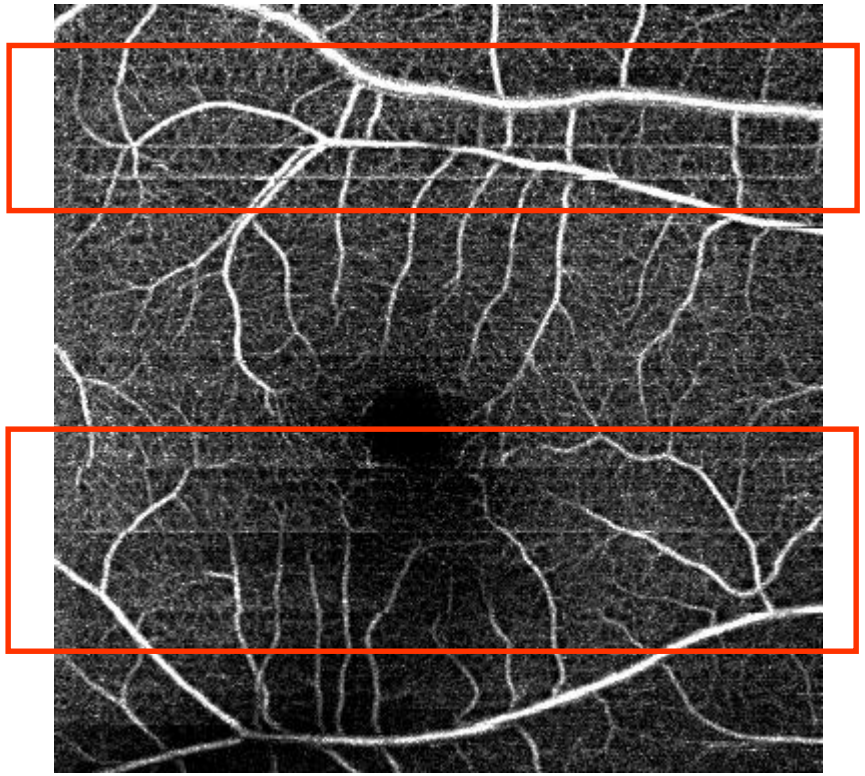


OCTavius

3_1. Motion Artifact Removal

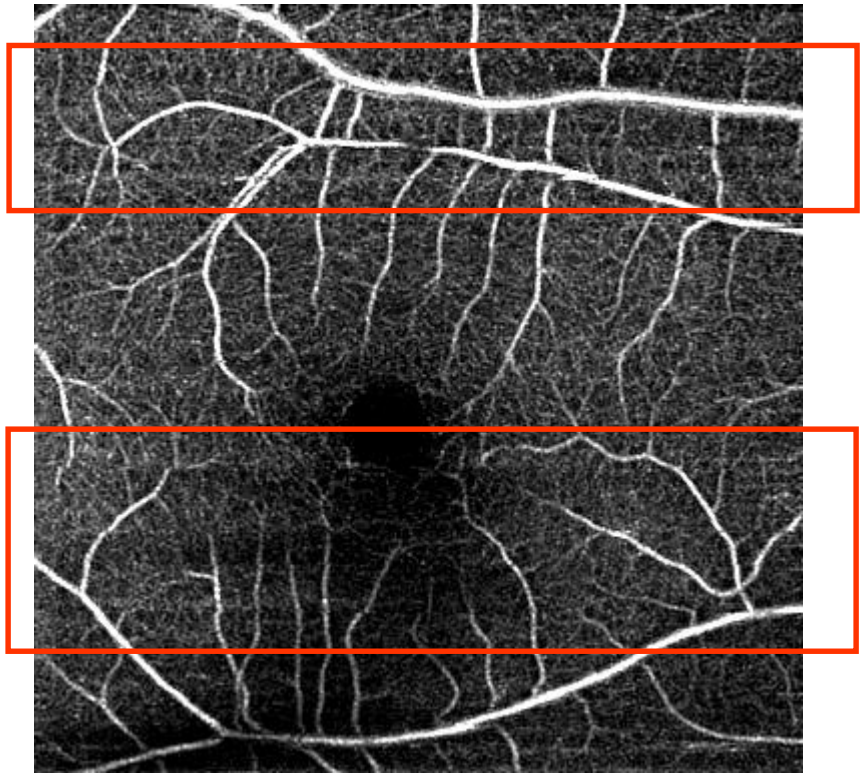
Stripe Noise Reduction

- Corrects micro-eye motion artifacts occurring during ANGIO scanning via image processing
- **Reduces horizontal stripe noise in OCTA images**



HOCT-1F 68K

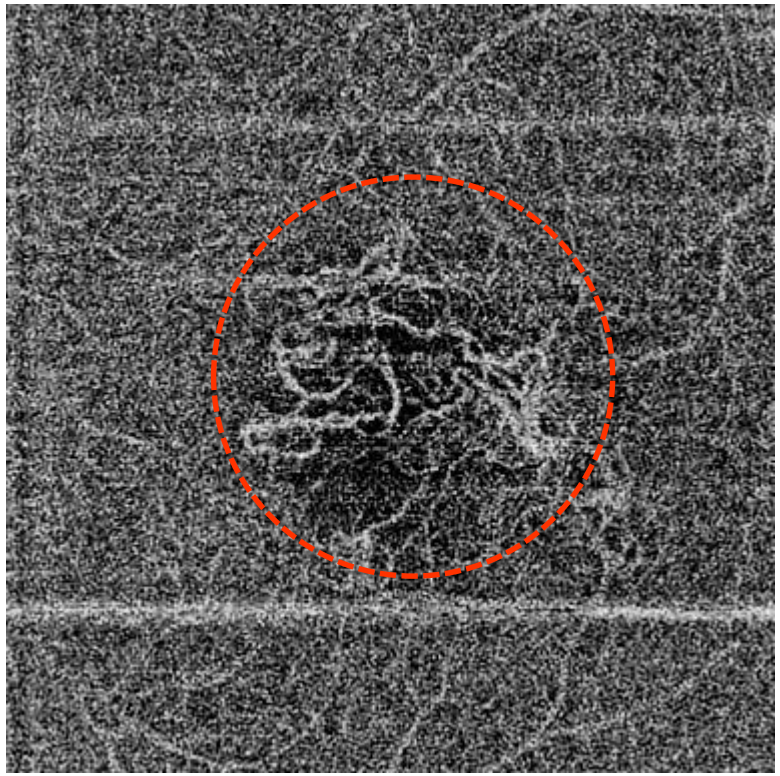
VS



OCTavius

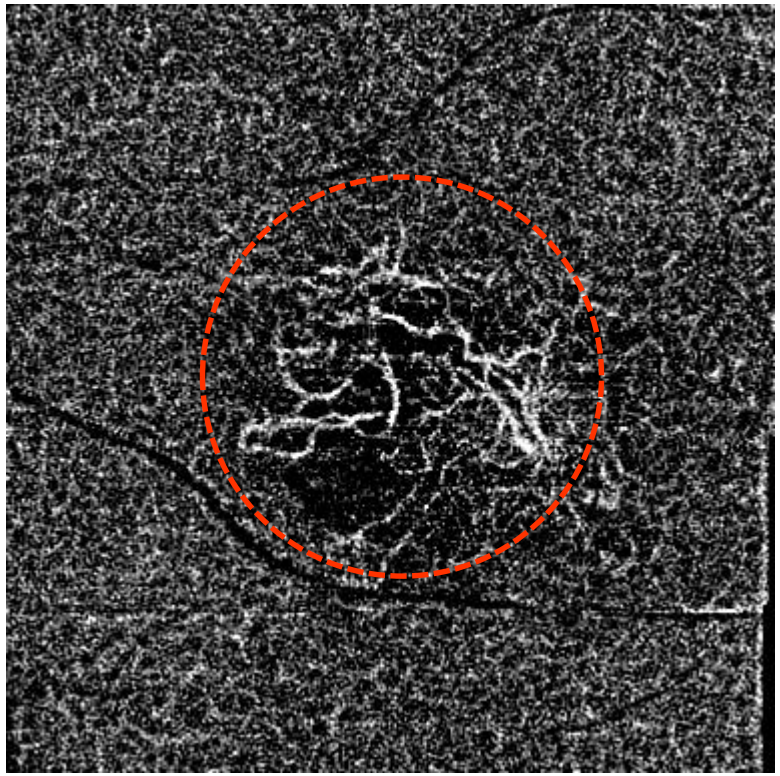
3_1. Projection Artifact Removal (PAR)

- Phenomenon where superficial retinal vessel signals cast shadow-like projections onto deeper structures in OCTA images
- PAR enhancement improves discrimination of vascular signals, such as CNV, in outer retina images



HOCT-1F 68K

VS

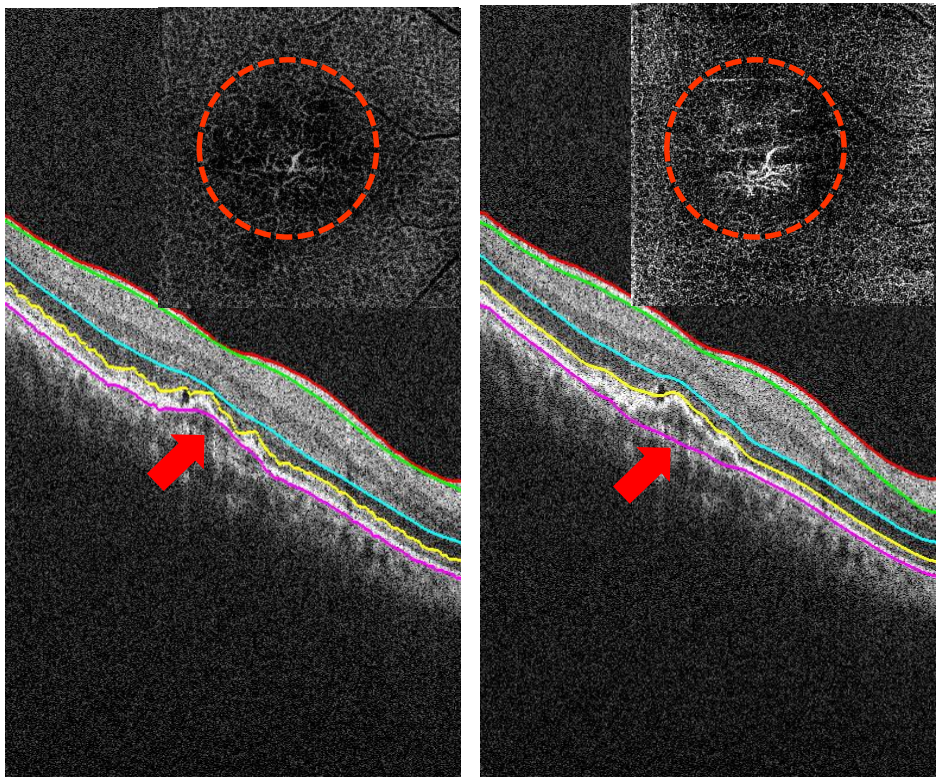


OCTavius

3_1. Improved Retinal Layer Segmentation (RPEDC)

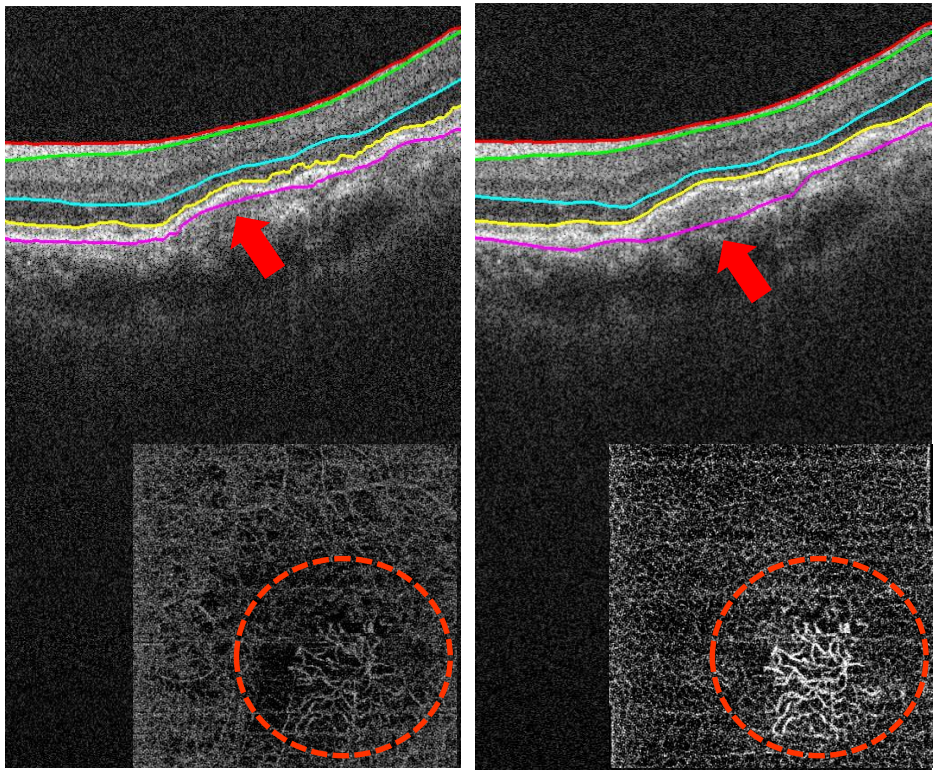
Enhanced accuracy of the RPE/Bruch's membrane boundary with layer segmentation

- Capable of identifying RPEDC (Retinal Pigment Epithelium Drusen Complex) Structures



HOCT-1F 68K **OCTavius**

VS

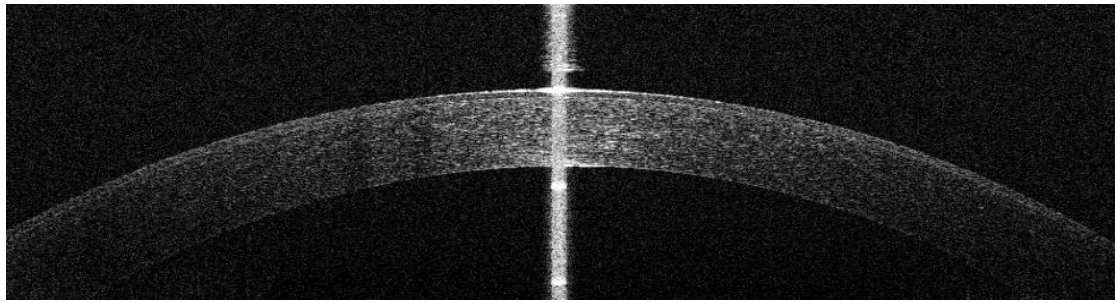
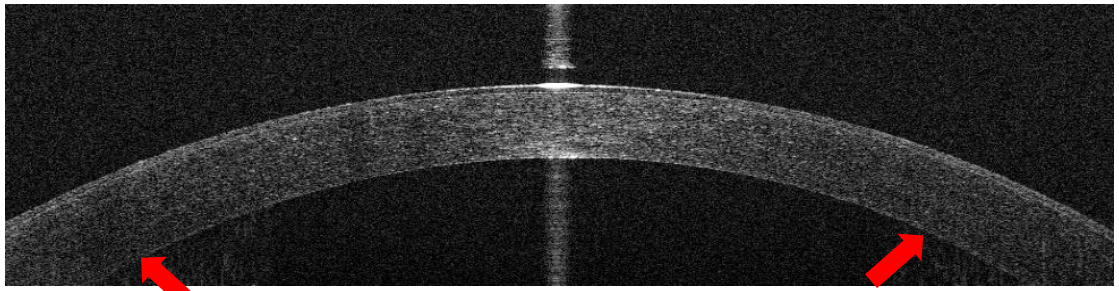


HOCT-1F 68K **OCTavius**

* Macular Angio 384x384, Overlap 3, 4.5x4.5mm, outer, 단국대, 질환 : CNV

4. Anterior Image Enhancement

Smarter signal tuning for clearer, more reliable anterior edge results

Category		
HOCT-1F Image		
OCTavius Image		
-	HOCT-1F	OCTavius
Image Characteristics	• Blurred epithelial boundar • Peripheral edge smearing	• Enhanced epithelial boundary clarity • Improved peripheral edge detail
Enhancement Details		• Uniform signal leveling via smarter signal tuning • Emphasis on peripheral edge detail

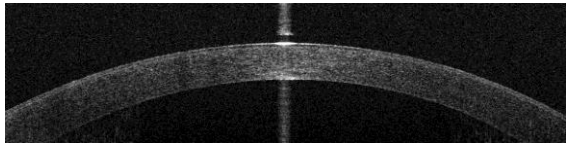
Increased B-Scan Clarity

Enhanced Segmentation Accuracy

Improved Map Quality

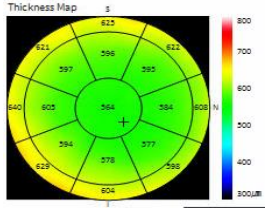
Higher Summary Reliability

- Smarter signal tuning increases cross-section boundary and rim clarity



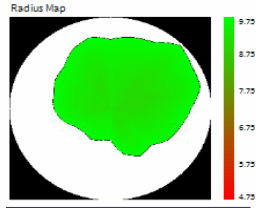
- Sharper cross-sections → reduced segmentation boundary detection errors

[Thickness Map]



- Accurate boundary data → higher pixel-value precision in Thickness/Radius maps

[Radius Map]



- More reliable maps → improved accuracy of parameters such as Center/Average Thickness

Summary Parameter	
Center Thickness	564.59
Avg. Thickness	597.71
Sup. Thickness	596.30
Infer. Thickness	598.17
Horz. Curvature	9.20mm (36.68D)
Vert. Curvature	9.50mm (35.53D)

4. One-Minute Speech

One-Minute Key Highlights

Audience	Key Features
Optometrist	**1. 17% Faster Scan Speed** Reduced examination time and patient waiting with 68K→80K A-scan/s. **2. All-in-One 5-in-1 Capabilities** Enables comprehensive examinations with a single device using multi-mode software. **3. Triple Angiography (Superficial, Deep, Outer Layers) with Motion Correction** **4. Fundus Enhancement Lv.4** Integrates corneal flare removal, white balance, and domain transform, reducing the need for re-scan. **5. Embedded PC** Faster booting and storage, improved workspace efficiency and easier management**.**
Ophthalmologist	**1. High-resolution retinal and microvascular imaging across all three layers (superficial, deep, outer)** **2. Enhanced detection of subtle lesions with Level 4 Mode and precise Central BR/Gamma adjustments** **3. Accurate anterior segment measurement** Improved anterior B-scan delivers higher accuracy for the cornea and anterior chamber **4. Reliable analysis results** Sharper cross-sectional images reduce segmentation errors and improve the accuracy of thickness/radial maps and summary parameters.

One-Minute Speech

Audience	Key Features
Optometrist	OCTavius increases the scan speed from 68K to 80K A-scans (a 17% improvement), significantly reducing patient wait times. With its all-in-one 5-in-1 design, a single device can handle OCT, Fundus, Angiography, Topography, and Biometry modes. Triple Angiography, equipped with advanced motion correction, allows for stable imaging across all three retinal layers (superficial, deep, outer) without the need for re-scans. Fundus Enhancement Lv.4 integrates Corneal Flare Removal, White Balance, and Domain Transform for even clearer lesion visualization. The embedded PC, with an i-7 (7th Gen) CPU and SSD, dramatically boosts boot-up and image storage speeds, enhancing both workspace efficiency and device management.
Ophthalmologist	With Triple Angiography, OCTavius delivers high-resolution retinal and microvascular images of the superficial, deep, and outer layers, enabling easier and more precise structural interpretation. Fundus Enhancement Lv.4, with advanced Central Brightness and Gamma Control, enhances the visualization of subtle lesions, improving diagnostic accuracy. The enhanced anterior B-scan provides greater precision for measuring corneal and anterior chamber boundaries. Increased image clarity also reduces segmentation errors, greatly improving the reliability of thickness/radial maps and summary parameters.

Thank you.

소속 및 결재권자 :

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