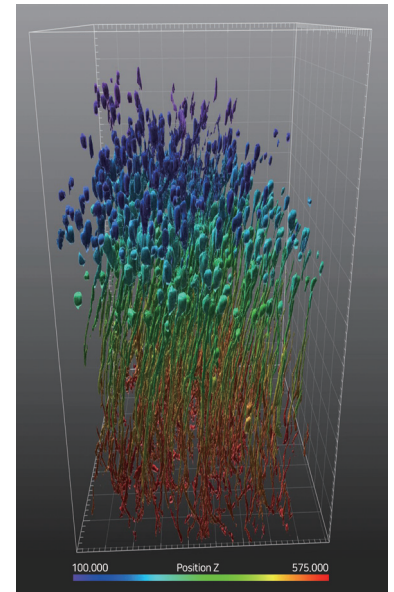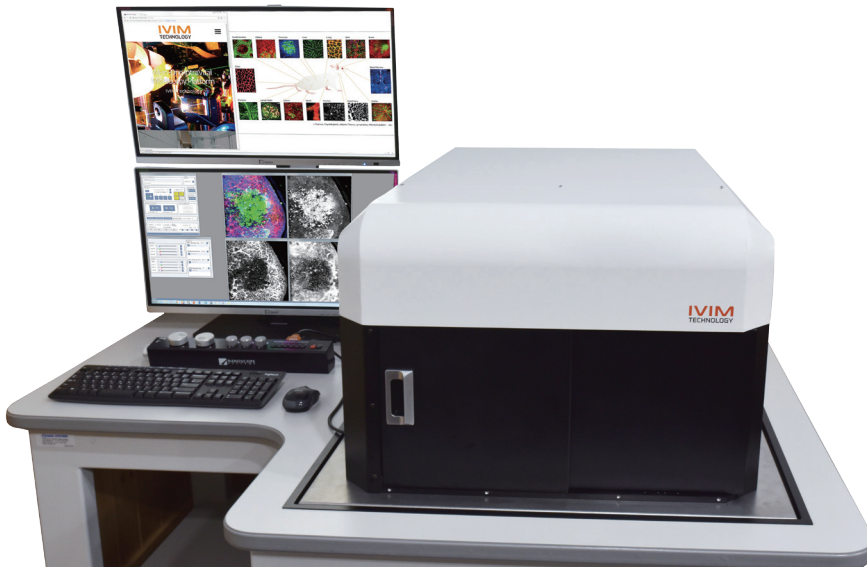# IVM-MS (Two-Photon Smart Ver.)
Compact Two-Photon Imaging Platform

IVIM TECHNOLOGY
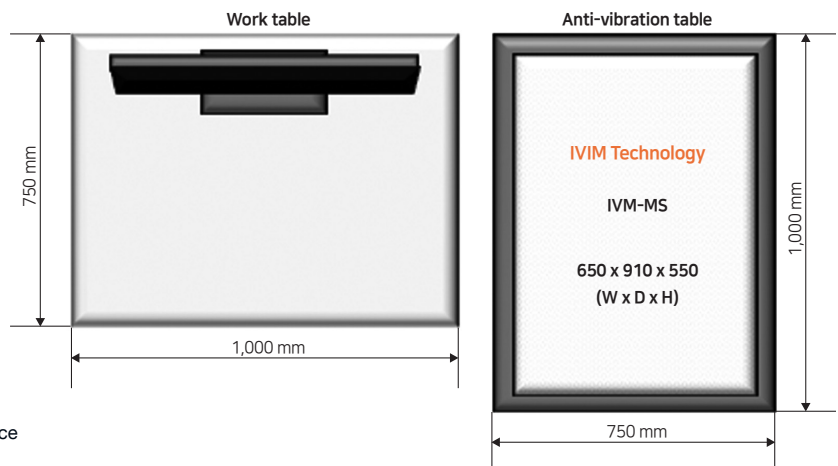

A new compact high-efficiency Two-Photon system

IVM-MS is the All-in-One IntraVital Two-Photon Microscopy System, optimized for in vivo imaging experiments and equipped with a new compact high-efficiency fs-pulse laser module. Especially, because it integrates a compact high-stability maintenance-free fs-pulse laser into a single box, the IVM-MS is the ideal solution for customers in need of a two-photon microscope with limited resources of space and budget.

Key features of IVM-MS (Two-Photon Smart Ver.)

- World's 1st all-in-one IntraVital Microscopy for live animal model
- Ultra High-speed Imaging (max. 100 fps - 512x512 pixels)
- 4D Animal Motion Compensation (X,Y,Z & Time)
- Simple hand-free turn-key operation of 920 nm NIR fs-laser for deeper tissue imaging
- Cost-saving, Space-saving, Hands-free, Maintenance-free

Webpage www.ivimtech.com | **Contact** information@ivimtech.com
TEL +82-42-825-7450 | **FAX** +82-42-825-7451

Specifications

Laser	Compact Two-Photon Laser Unit	• Air cooled fs-fiber laser system • Wavelength : 920 nm, Pulse width <100 fs, Rep. rate : 80 MHz • Avg. power >1 W, Dispersion compensation : 0 to -30,000 fs²
Fluorescence Detector	Two Photon Detector	• Wavelength : 185 - 760 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) • 4 High quantum efficiency PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current)
	Variable Emission Filter (optional)	• 6 or 2 emission filters can be mounted on each of four detectors
Scan Head	Scanner	• Polygonal mirror (Fast axis scanning, Max. 66 kHz) • Galvano scanner (Slow axis scanning, Max. 200 µs/step)
Imaging Head	Objectives	• Max. 6 objectives are mountable on S/W controlled motorized turret (1X – 100X) • Compatible for commercial objectives
Image	FOV	• 100 x 100 µm2 - 10 x 10 mm²
	Pixel Resolution	• Max. 2,048 x 2,048 pixels
	Imaging Speed	• 30 fps @ 512 x 512 pixels (Max. 100 fps), 15 fps @ 1,024 x 1,024 pixels (Max. 50 fps)
Sample Stage	3D Stage	• Travel Range : 50,000 x 50,000 x 75,000 µm (XYZ) • Micromanipulation (Max. 0.2µm resolution) • 3-axis independent control with Jog Dial & S/W
	Specimen Holder	• Flexible-design universal specimen holder can be mounted
		In vivo • U-shape window bracket for skins and inner organs • (optional) Homeothermic warming system with heating pad and body temperature probe • (optional) Small animal inhalation anesthesia system • (optional) Long term imaging holders for transplanted window chamber (e.g. Cranial window, Abdominal imaging window, Dorsal skinfold chamber, etc.)
		Ex vivo In vitro • A single glass slide or culture dishes
Motion Correction	4-D In Vivo Imaging Motion Compensation & Tracking	• XY motion compensation : Averaged image acquisition with motion artifact compensation • Z motion compensation : Image-based sample Z position adjustment for long-term intravital microscopic imaging & sample tracking (Feedback-loop automatic stage control) • T motion compensation : Image-based image XY position adjustment for long-term intravital microscopic imaging & sample tracking (Feedback-loop automatic stage control) • Combination of above three compensation for 4D in vivo motion compensation
Studio Software	Image Display	• Independent 4 single channel display (RGBA channel) • Overlay channel display (Selection among RGBA channel)
	In Vivo Imaging Mode	• Mosaic imaging (XY), Z-stack imaging (Z), Time-lapse imaging (T) • Time-lapse imaging at Multi-position (T- M), • Time-lapse & Z-stack imaging (TZ), • Time-lapse & Z-stack imaging at Multi-position (TZ- M)

Work table

750 mm

1,000 mm

Anti-vibration table

IVIM Technology

IVM-MS

650 x 910 x 550
(W x D x H)

1,000 mm

750 mm

AXT PTY LTD
Authorised Distributor
IVIM Technology
Australia & New Zealand

1/3 Vuko Place
Warriewood
NSW 2102 Australia

+61 (0)2 9450 1359
axt.com.au
info@axt.com.au

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IVIM Technology, Inc. All rights reserved.
Webpage www.ivimtech.com | **Contact** information@ivimtech.com
TEL +82-42-825-7450 | **FAX** +82-42-825-7451