Electro Optical Components, Inc.
5460 Skylane Boulevard, Santa Rosa, CA 95403
Toll Free: 855-EOC-6300
www.eoc-inc.com | info@eoc-inc.com

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Drone Hyperspectral Imaging System

EOC-SI-9010

Features:

Integrated VIS camera： support the montage of flight path and realize 3D modeling

Centimeter positioning accuracy: employs RTK technology，GPS positioning accuracy at a class of centimeter.

Push-broom Camer： High working efficiency Full load synchronized trigger: hyperspectral camera, vis camera, POS system synchronized trigger, and accurate GPS data

Remote control： use Bluetooth of laptop or tablet to remote control drone loading

Cloud platform： self-designed double-axis cloud platform

Customized development： Stable cloud platform and loading are available in customized development.

Application:

Monitor Agriculture: plant diseases and insect pest, disaster, categories ID etc.

Forestry: Tree categories identification, Phytomass, nutrient elements, forest health etc.

Water Environment: Water quality parameters, water waste spatial distribution and migration analysis

Soil Pollution: heavy metal waste

Minerals: Mineral mapping, ingredients explore, metallogenic prognosis etc.

City geological substances classification and identification

Description:

It employs EOC-UAV-M600Pro Drone-borne hyperspectral remote system, which is perfect combination of hyperspectral camera, vis camera and EOC-UAV-M600Pro, through independent cloud-platform. Our self-developed cloud platform structure and individual POS modular can both in stable control and RTK, rather than depending on drone, as a result it reserves more ports for flying platform. The system fits to large area hyperspectral data synchronization archive, and available in customized development.

Datasheet

EOC-SI-9010:

SN	Components	Items	Specification	Remarks
1	**Hyperspectral Camera**	Spectral Range	400-1000nm	
2		Spectral Resolution	**<2.8nm**	Optional
3		Spatial Resolution @35mm lens	0.7mrad@300m	changeable with flying height
4		Spatial Channels	400	4pixels binning
5		Spectral Channels	270	4pixels binning
6		Dynamic Range	12bit	
7		Frame Rate	120Hz	
8		FOV width @35mm lens	15.2°	

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9		Focus	16, 25, 35, 75mm	Customized
10	**GPS**	Accuracy	Positioning accuracy of meter	
11	UAV	Life Span	>15minutes	
12		Max flying height	500m	
13	**Reflectance Calibration Board**	Reflectance	50%, 15% , 30%, 75%, 95%	Customized
14		Size	0.5m×0.5m	Customized
15		Quantity	1	Customized
16	**Cloud Platform**	Self stability axis	2 axis	
17		Working time	40min	
18		Motors per axis	2	
19	**UAV Loaded Data & Control System**	CPU	I5	
20		Memory	8G	Customized
21		Hard disk	120G	Customized

ATH9010-Attachment Lists Standard Attachments	
1	EOC-SI-9010 hyperspectral camera *1
2	EOC-UAV-M600Pro（remote controller included） *1
3	UAVs battery *1 group
4	Ipad *1

5	Standard Board *1
6	Cloud platform battery *1
7	35mm Lens
8	Sky control data acquisition and control software
9	UAVs battery charger *1/ipad charger *1/cloud platform charger *1
10	Wireless mouse *1
Optional Attachments	
1	Standard Board/cloth（Reflectance 10%/20%/30%/40%/50% customized available）
2	Cloud platform battery
3	Lens（focal length 16mm/25mm/35mm）
4	Illuminometer
5	Wind gauge
6	UAVs battery
7	UAVs remote controller

EOC-UAV-M600 Pro Specification:

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SN	Description	Specification	Remarks
1	External Dimension	1668mm×1518mm×727mm	Propellers & arms unfoldable
2	Symmetrical engine wheelbase	1133mm	/
3	Weight	10kg	Includes 6 blocks of battery
4	Max. Flying weight load	15.5kg	/
5	Hovering Accuracy	Vertical ±0.5m; Horizontal ±1.5m	/
6	Hovering Time	Unloaded lasting 32min	/
7	Max pitch angle	25°	/
8	Max Rotation angle	Pitch axis 300°/s；heading axis 150°/s	/
9	Max lift speed	5m/s	/
10	Max descending speed	3m/s	/
11	Max horizontal fly speed	65km/h	Wind-free
12	Max wind speed	8m/s	/
13	Remote controller max communication distance	5km	Non-interference & block
14	Working Temperature	-10~40℃	/

Datasheet

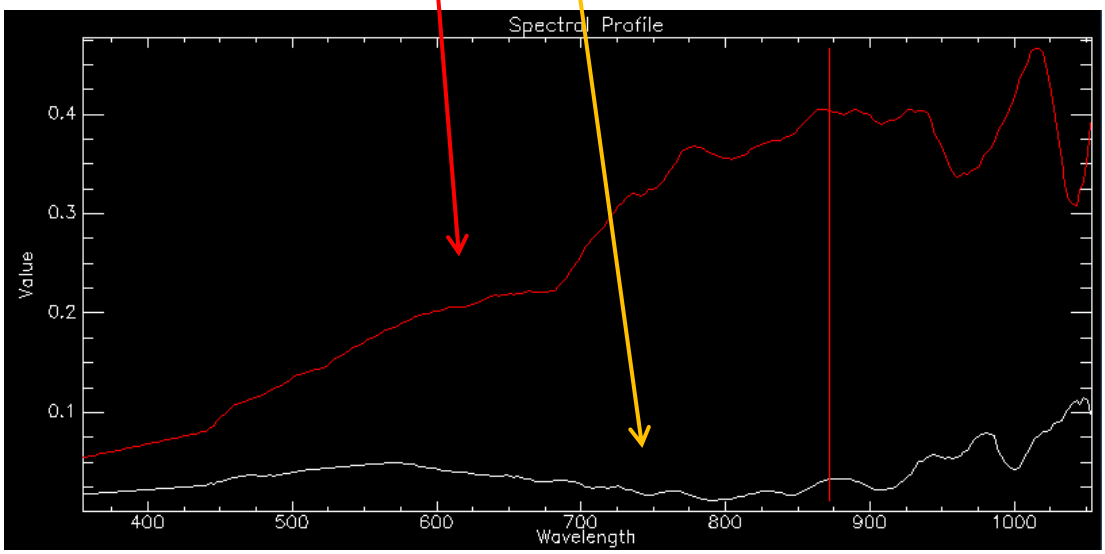
1. Application

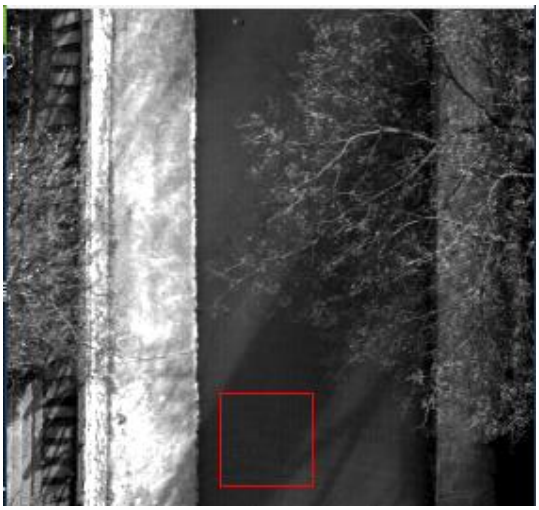
1.1 Airborne Hyperspectral System

Datasheet

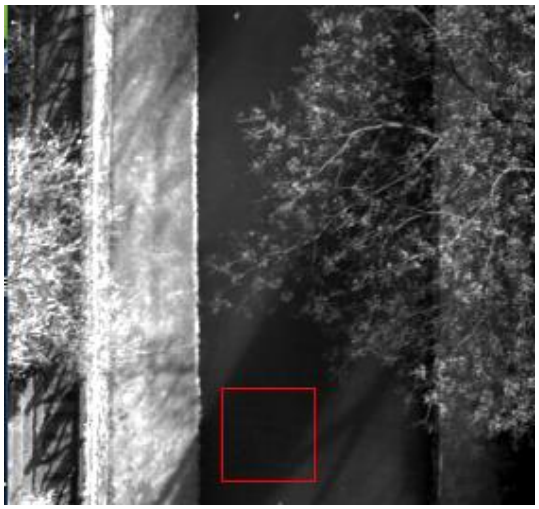
Datasheet

RGM combined image



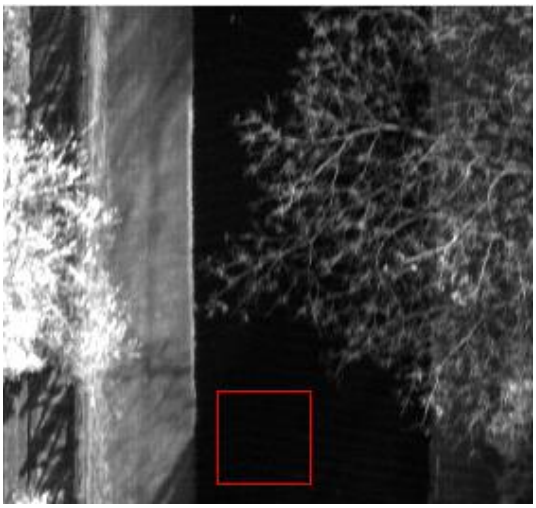


50 Band



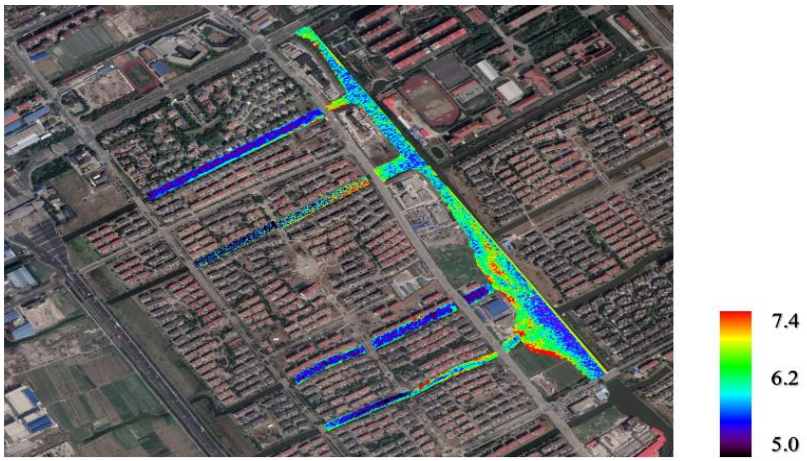
100 Band

Datasheet

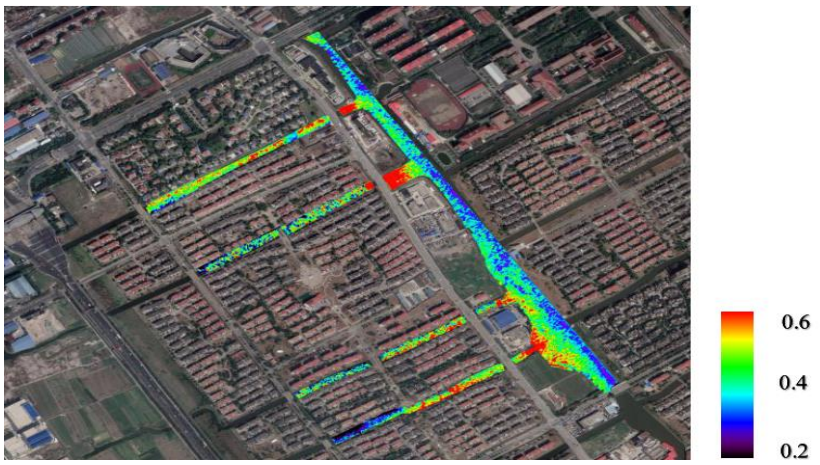


200 Band

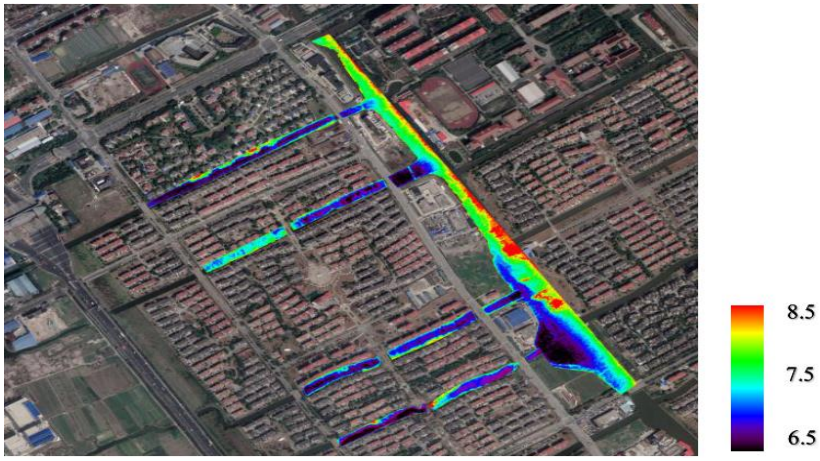
TP concentration distribution



CODMn concentration distribution

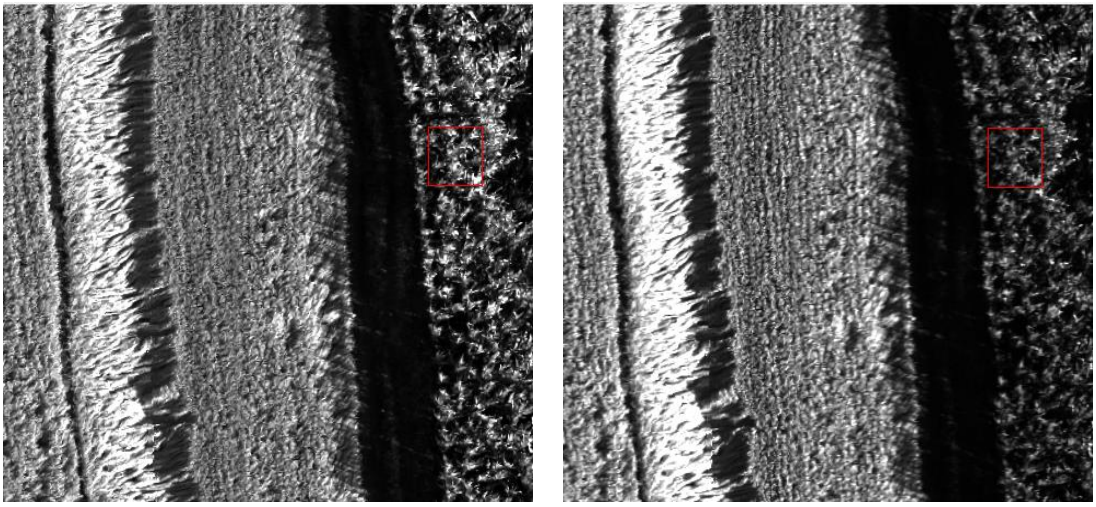


NH3-N concentration distribution



DO concentration distribution

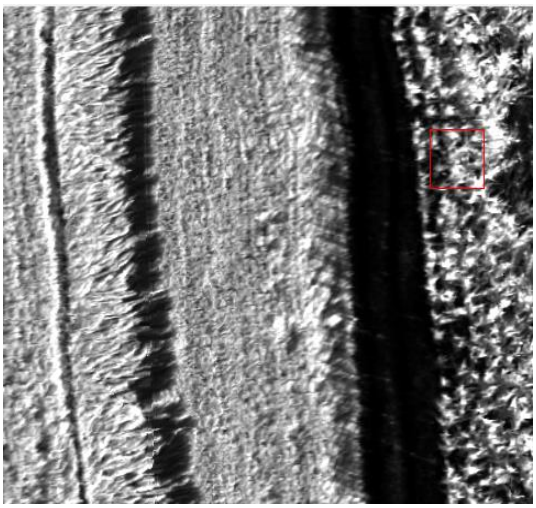
1.2 Airborne Hyperspectral Imaging System Monitors Agriculture



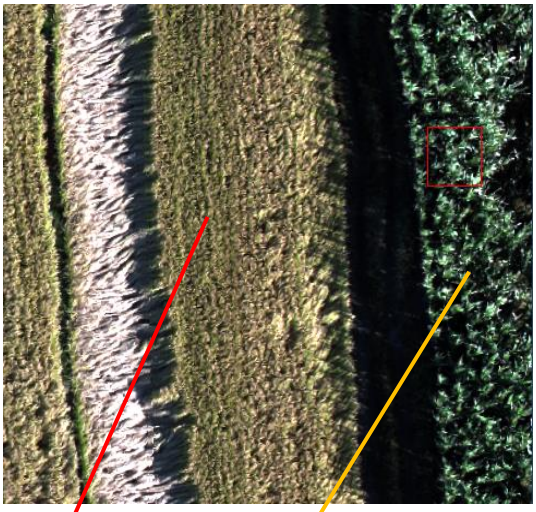
30 Band

90 Band

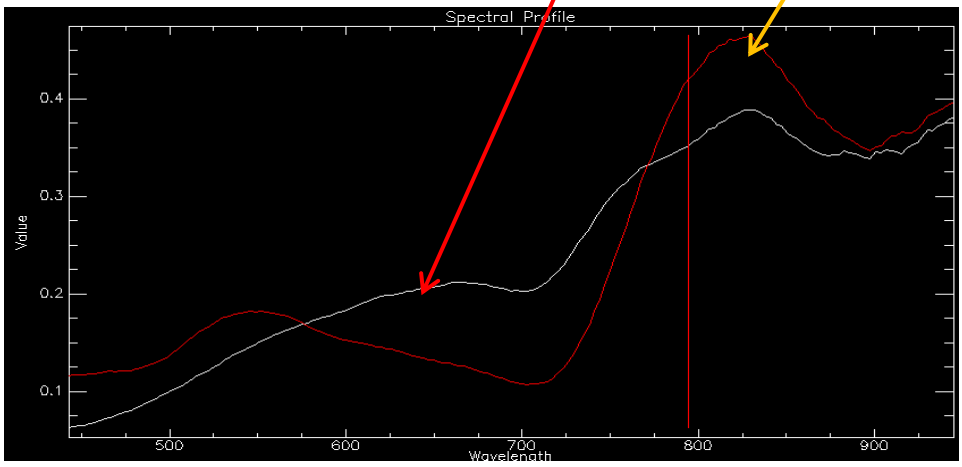
Datasheet



120 Band

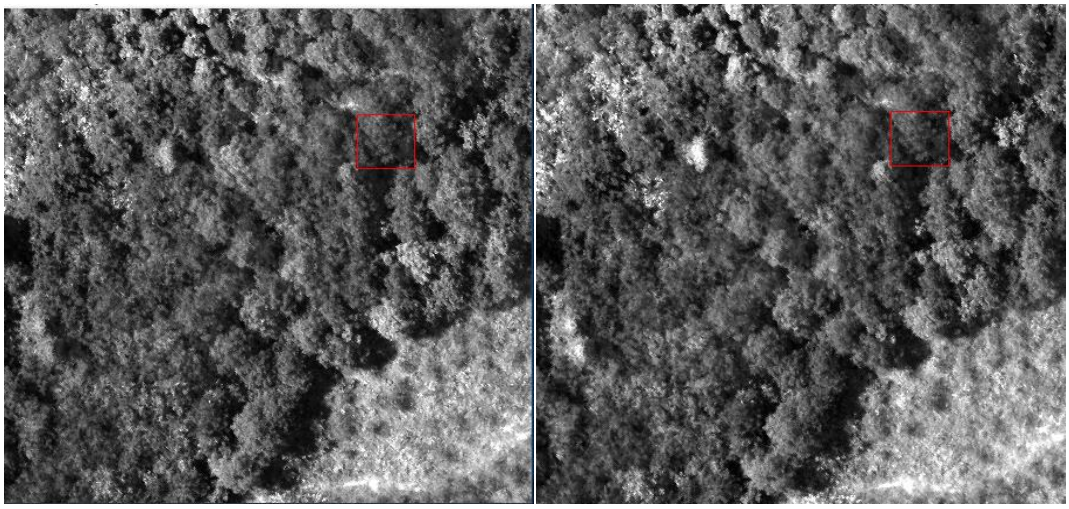


RGM combined image

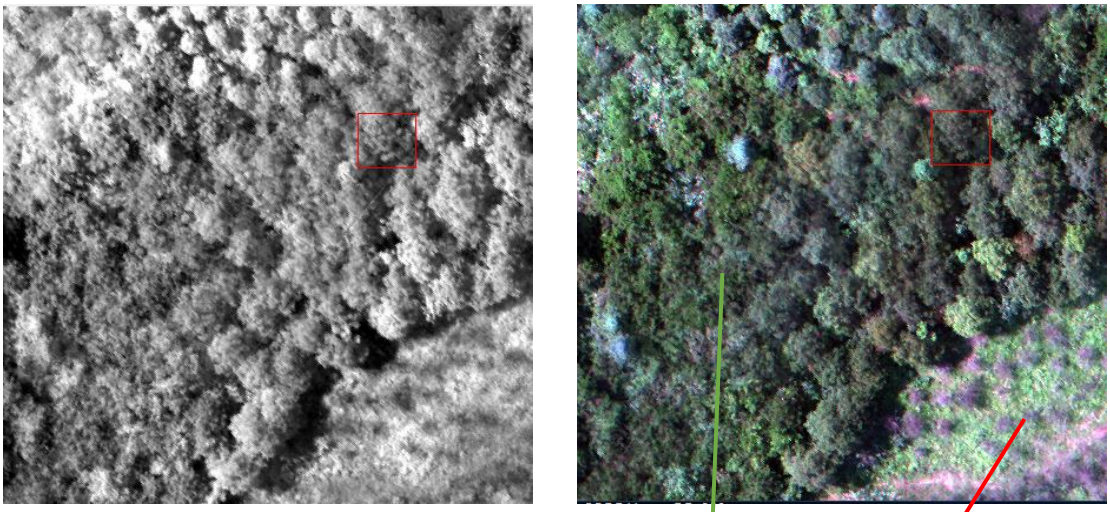


Comparison of spectral curves

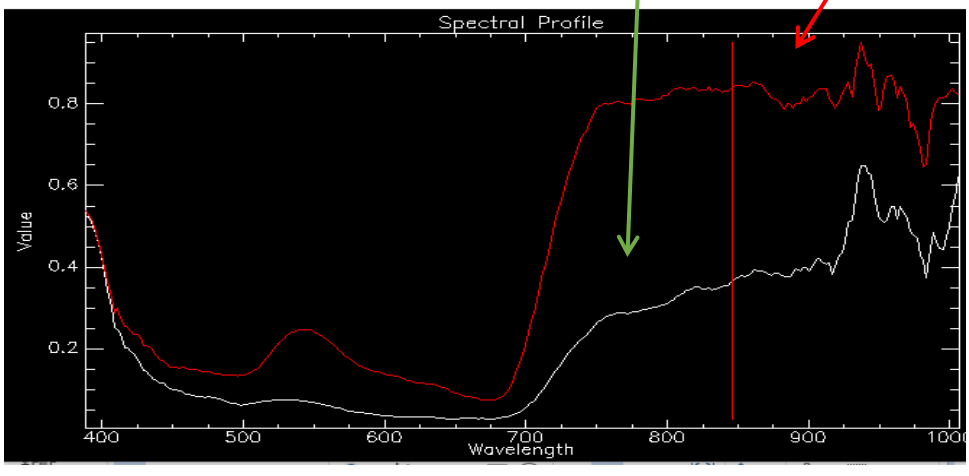
1.2 Airborne Hyperspectral Imaging System Monitors Forestry



50 Band 100 Band



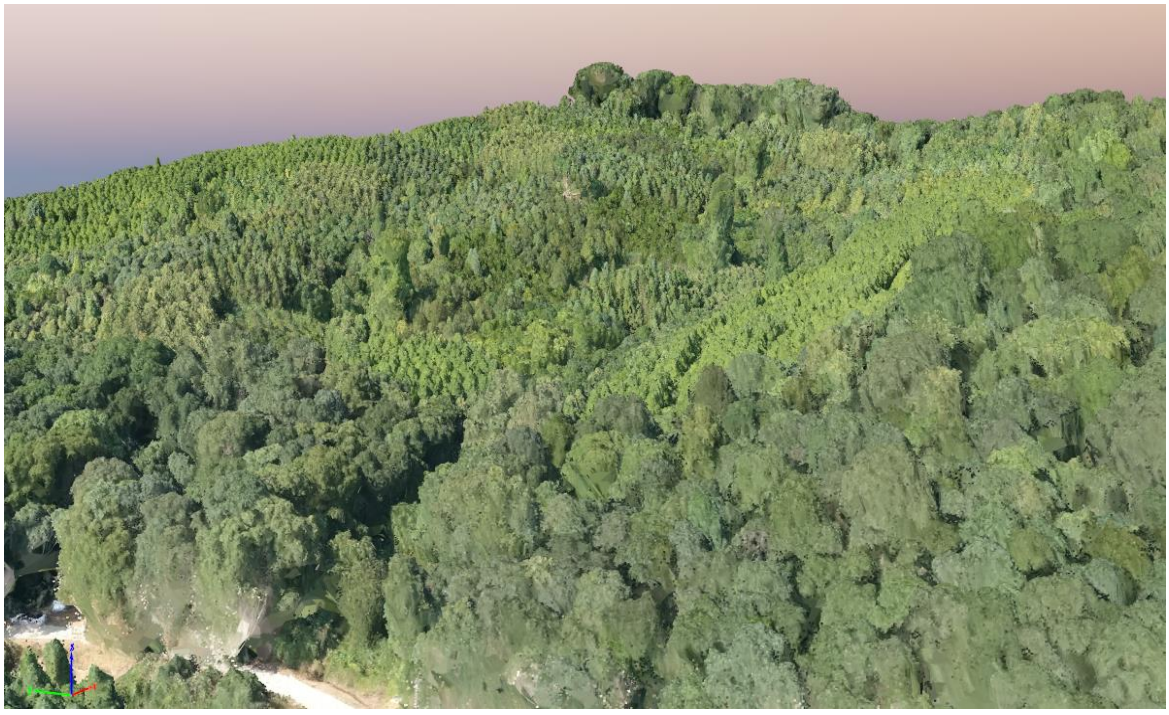
50 Band RGM combined image



Datasheet

Comparison of spectral curves

orthoimage binning



3D modeling