YUSENSE®

Suitable for ndustrial Applications

MS600 V2

6-Band Universal Multispectral Camera

6-Band Universal Multispectral MS600 V2

Six narrow-band spectral bands,sapphire optical Windows, large apertures, low distortion, broadband transmission,all-glass lens and an aluminum camera housing.In addition, MS600 V2 has a large dynamic range of intelligent dimming performance, which can meet the application needs of precision agriculture, forestry monitoring, river monitoring, ecological protection, target recognition and other industries.

◾ Product Features

- ◆ Six band Multi-spectral bands.

- ◆ Ground resolution 8.65 cm @ h120m.

- ◆ 12bit raw data and global shutter.

- ◆ 100MB network port/TTL serial port.

- ◆ Calculate reflectance in real time.

- ◆ Downlink light sensor(DLS).

- ◆ Fastest 1s synchronous imaging in all bands.

- ◆ Standard with 64GB TF card, maximum support 128GB TF card.

- ◆ Multiple trigger modes for external, timing, and overlap ratio.

- ◆ Compatible with multi-type rotary-wing and fixed-wing UAV platform.

Spectral Remote Sensing Hardware System 8Air + MS600 V2

Integration of Remote Sensing and Mapping

It is equipped with a multi-spectral camera MS600 V2 and a small mapping camera to acquire high-definition RGB and multi-spectral images at the same time.

Multi-directional Obstacle Avoidance to Ensure Flight Safety

Forward obstacle avoidance: binocular vision + 100m multi-target millimeter wave radar + 600m laser ranging radar;
Downward looking obstacle avoidance: binocular vision + laser ranging;
Terrain Data Obstacle Avoidance: Automatic Route Optimization.

Long Endurance, High Adaptability, Suitable for Large Area Remote Sensing

Taking off and landing at an altitude of 4800 meters @ force 5 wind, cruising at an altitude of 7500 meters @ force 6 wind, the maximum operation duration under typical working conditions is 6 hours @ 1 kg, perfect system monitoring and warning, up to 28 fully automated emergency handling strategies, and field safety is guaranteed.

Applicable groups: government and enterprise users, large and medium-sized farmers, remote sensing service teams.

Data Preprocessing Software Yusense Map
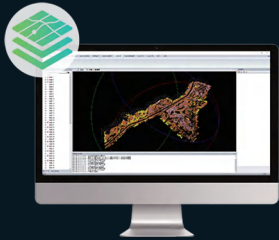
Yusense Map is a powerful, easy-to-operate multi-spectral image processing software for UAVs. Without too much manual intervention, it can complete a series of tasks such as camera parameter reading, aerial triangulation, Band alignment, orthophoto generation and precise DSM.

Band alignment： Photogrammetric theoretical adjustment solution, automatic precise matching of homonymous image points, and sub-pixel multi-channel registration.

split joint： Automatic aerial triangulation, high-precision screening of matching points, seamless orthophoto stitching.

Multi-source data processing： It can process multi-spectral, thermal infrared, visible light and other data.

Spectral index calculation: Support free editing of index formula.

High-precision radiometric correction: Accurate radiation correction, synchronous calculation of real reflectivity, scientific restoration of the essential characteristics of the target.

Typical Application

Condition monitoring

By using vegetation factors such as NDVI and LAI, quantifying the consistency of vegetation canopy status at different spatial scales, and using characteristic spectra of vegetation in different health states to quantitatively assess vegetation growth,which can provide data support for irrigation, fertilization, plant protection, yield evaluation and other work.


Discolored pine monitoring

Using spectrum and texture information to achieve efficient suppression of the environmental background of soil, withered grass and other objects and high-precision identification of color-change pine. By accurately extracting the location, spatial distribution and canopy area of color-changing pine trees, we can provide data support for the management of diseased trees.

Black and smelly water monitoring

By referring to the evaluation standard of surface black and smelly water, using the characteristic spectrum of black and smelly water to construct the classification index to achieve black and smelly water classification inversion and spatial information statistics. This technology can assist in analyzing the influence of domestic sewage and industrial wastewater on surrounding water, and finally help pollution source investigation and water environment assessment.
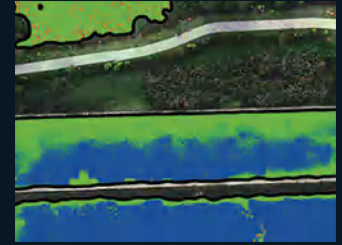
Water eutrophication monitoring

Referring to the eutrophic state evaluation standard, the classification index is constructed by using the characteristic spectrum to realize the classification inversion and spatial information statistics of water eutrophication, to assist the analysis of the impact of farmland wastewater, fishery and aquaculture on the surrounding water body, and to assist the investigation of pollution sources and water environment assessment.

◼ Product Parameters

Band configuration	Six multispectral channels	Power supply mode [2]	12V
Target surface size	1/3"	Power consumption	≤10w@12V
Effective pixels	1.2Mpx	Image format	16bit original TIFF image & 8bit reflectance JPG
Shutter type	Global shutter	Video format	—
Quantitative figures	12bit	Data processing software	Yusense Map/Yusense Map Plus
Viewing Angle	49.5°×38.1°	Control method	WIFI (WEB interface access)/Ethernet/UART
GSD	8.65cm@h120m	Picture mode	External trigger, Timed trigger, Overlap rate trigger, Cascade trigger
Image size	110m×83m@h120m	Frequency of taking pictures [3]	1Hz
Spectral band[1]	450nm@30nm,555nm@27nm,660nm@22nm 720nm@10nm,750nm@10nm, 840nm@30nm	Storage medium	Standard with 64GB，A maximum of 128GB is supported (The transfer speed of the SD card needs to be U3 or higher)
Optical window	Sapphire optical window	Operating ambient temperature	-10°C~+50°C(Relative wind speed≥1m/s)
Size	≤80mm×75mm×55mm	Storage Environment Temperature	-30°C~+70°C
Weight	≤280g	Environmental humidity	RH(%)≤85%(Non condensation)
Installation interface	4×M3	Product certification	CE、FCC、RoHS

Note: [1] Standard wavelength, The following 18 wavelengths are allowed to be assembled and customized (consult YUSENSE marketing personnel for detailed assembly method and cost): 410nm @ 35nm, 450nm @ 30nm, 490nm @ 25nm, 530nm @ 27nm, 555nm @ 27nm, 570nm @ 32nm, 610nm @ 30nm, 650nm @ 27nm. 660nm @ 22nm, 680nm @ 25nm, 720nm @ 10nm, 720nm @ 15nm (high pass), 750nm @ 10nm, 780nm @ 13nm, 800nm @ 35nm, 840nm @ 30nm, 900nm @ 35nm, 940nm @ 30nm (tolerance ± 5nm).
[2] Please consult the marketing staff of Yuchen for details if other voltages are used for power supply.
[3] Test results of storage media with data transmission speed rating of U3 and above (read and write speed ≥ 60MB/s).

Let every drone have the right spectral camera