LiAir X3

Intelligent Autonomous Transmission line Inspection System

LiAir X3 is the newest smart mobile scanning unit in the LiAir series by GreenValley International featuring automated transmission line inspection functioning. It adopts a new integrated design style and integrates lightweight LiDAR, self-developed inertial navigation, high-resolution mapping camera and cutting-edge computing and autonomous systems. The LiAir X3 can carry out autonomous line patrol operations in specific environments, without route planning, simplifying the operation process and greatly improving the operation efficiency.

Advantages

❚ Lightweight & Simple

Integrated simple yet rugged design, allowing for protection against the elements with an IP54 rating. The operation interface is straightforward, allowing one touch operation for maximum efficiency.

❚ New Camera, providing ultra-clear picture quality

Built-in new high-resolution custom mapping camera, the image resolution is upgraded from 24 Megapixels to 26 Megapixels, allowing for high-quality true-color point clouds as well as orthophotos for Photogrammetry.

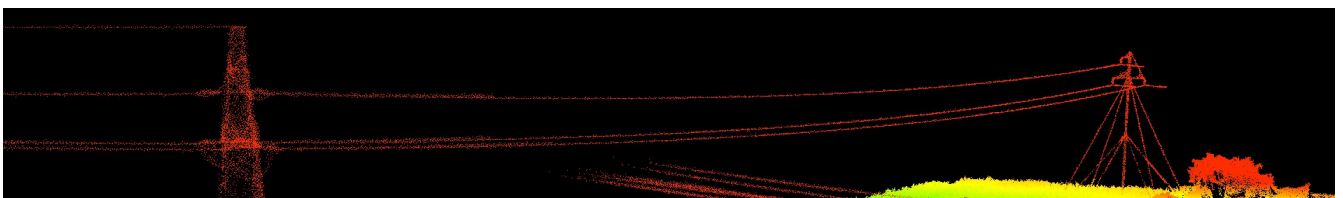### ❚ Cutting-edge Computing Power, for collision avoidance

With powerful computing capabilities, the system supports real-time vegetation and obstacle detection, and can display vegetation encroachment danger points and distances in real-time on LiPlan.

❚ LiPlan Flight Assistance Software, making field work easy

LiPlan supports real-time point cloud display, parameter adjustment, and status monitoring. It can be directly installed on the M300 RTK remote controller and used in conjunction with the X3 to help operators control the site conditions in real time.

❚ L3 Autonomous Powerline Inspection

Newly developed AirPilot intelligent L3 autonomous flight algorithm of GreenValley International achieving automated powerline inspection with automatic identification of bifurcated lines, interactive selection of flight lines and automatic turns.

Specifications

System Parameters

Detection Range	190m @ 10% reflectance 450m @ 80% reflectance	System Accuracy（Vertical）	5cm @ 70m
Suggested Detection Height	15m (Above transmission tower)	Typical Flight Speed	2-6m/s
Weight	1.25kg	Internal Storage	256G TF Card
Voltage	12 ~ 24V, 0.9A @ 24VDC	Power Consumption	22W
Operating Temperature	-20 ~ 50℃	Storage Temperature	-30 ~ 60℃
Dimensions	136*106*138mm		

LiDAR Sensor Technical Parameters

Wavelength	905nm	Laser Class	Class 1
Range Accuracy	2cm (1σ@20m)	FOV	70.4° (Horizontal) ×77.2° (Vertical) 70.4° (Horizontal) ×4.5° (Vertical)
Scan Rate	240,000 points/s (Single return)	Returns	Up to 3 returns
Scan Method	Non-repetitive Scan (Automated Powerline Inspection) Repetitive Scan (Normal Operation)		

Inertial Navigation System

GNSS	GPS，GLONASS，BeiDou	Azimuth Accuracy	0.038°
Attitude Accuracy	0.008°	IMU Data Frequency	200HZ

Camera

Image Sensor	APS-C	Pixels	26 Megapixels
Focal Length	16mm/24mm	Image Size	6252x4168

Software

Post-Processing	LiDAR360/LiPowerline	Pre-Processing	LiGeoreference
Flight Planning and Control Software	LiPlan		