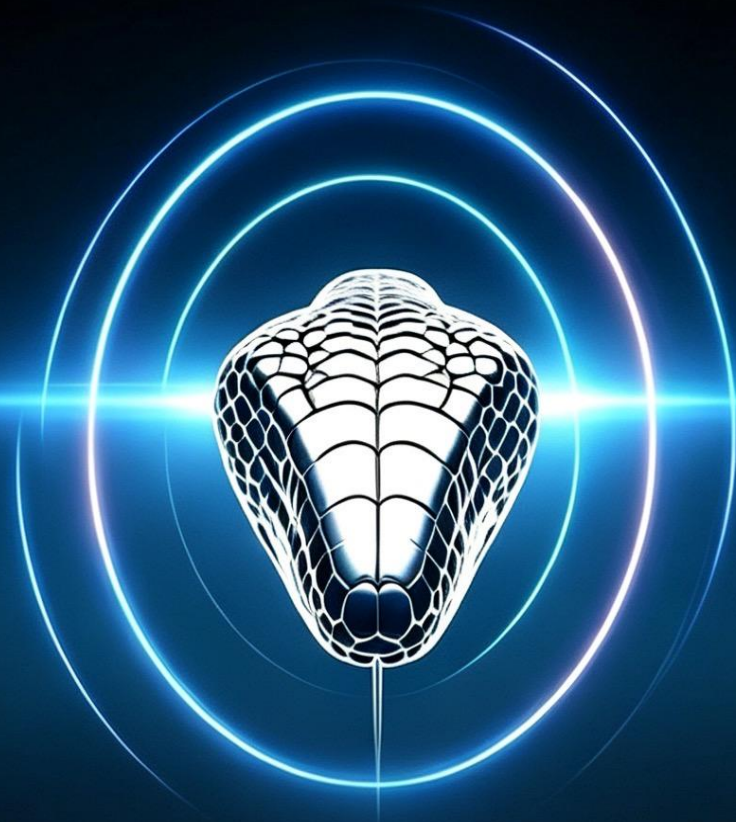


COBRA



COBRA X



Built For The Field
Productivity Tool



COBRA S

COBRA SLAM Scanner

OVERVIEW

Cobra is a new-generation high-performance handheld SLAM LiDAR scanner. It deeply integrates LiDAR, multi-view vision, high-precision IMU and RTK positioning modules. It is a professional surveying instrument built for 3D data acquisition in complex environments.

METHODOLOGY

Making 3D scanning a high efficient productivity tool.

Hardware

A unified hardware, capable of optional LiDAR modules including Mid360, XT16/XT32 and future LiDAR upgrades. It supports handheld, backpack and vehicle-mounted modes.

Software

MX-Fusion covers the full workflow: data processing, true-color texturing, 3D viewing and measurement export. It efficiently processes massive data and rapidly outputs standardized 3D deliverables.



NEW features

01



Gravity Calibration

Open and Scan

No initialization required, start Scanning immediately after power-on, boost efficiency

02



5"AMOLED Screen

Real-time Data

Real-time preview of point cloud and pre-check of scan completeness

03



Low-light Camera

Complex Condition

Wide-D Low-light cameras Deliver high texture images under Complex and dim environment

04



Dual Mode Scan

Static & Rotational

Support static and rotational scan, even specific angles scan mode

05

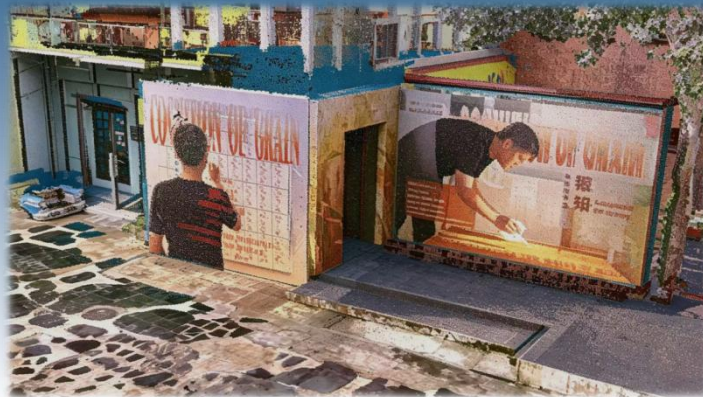


Ergonomic Design

Comfortable Grip

LIDAR facing straight ahead, reducing the arm strain, and easily watching the screen

Core Technology



MM-Level Accuracy

HBA+CNN Algorithm

Bottom-up local optimization+top-down error propagation. Balances global geometric consistency and computation speed for long-range scanning.

Textured Color Point Cloud

SLAM + SfM Algorithms

Project 3D points onto images via SfM features, sample RGB values and balance color across cameras to generate naturally textured colored point cloud.

Robust Reconstruction

Hierarchical RANSAC

Automatically filter outliers and bad matches, stable reconstruction under low-light and low-texture environments for long-range scanning.

Hardware Specification

Display	5-inch AMOLED, 960×544, 5-point capacitive touchscreen
Processor	8-core 64-bit processor, up to 2.5GHz main frequency
System Storage	64GB eMMC
Operating Temperature	-20℃ ~ 50℃
Ingress Protection	IP54
Power Supply	45.36Wh; 14.4V; 100 mins operating time; TypeC 30W
Camera Total Pixels	25.2MP
Data Interface	CFexpress card (512GB)

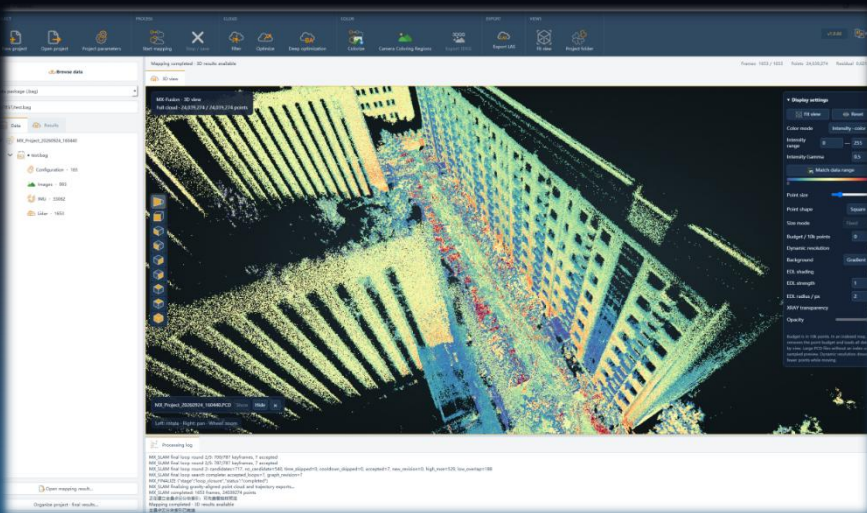
COBRA S with LIVOX Mid360	COBRA X with HESAI XT16/32
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FOV: 360°H × 59°V	FOV: 360°H × 30°V
MAX Range: 40m	MAX Range: 120m/300m
Point Rate: 200,000 pts/s	Point Rate: 320,000 pts/s-XT16 & 640,000 pts/s-XT32
Weight: 1.28kg	Weight: 1.92kg
Size: 350mm×133mm*180mm	Size: 350mm×133mm*192mm



MX-Fusion Multi-Processing Software

LiDAR + IMU + GPS + Camera · Dense Colour Point Cloud · v1.0.90

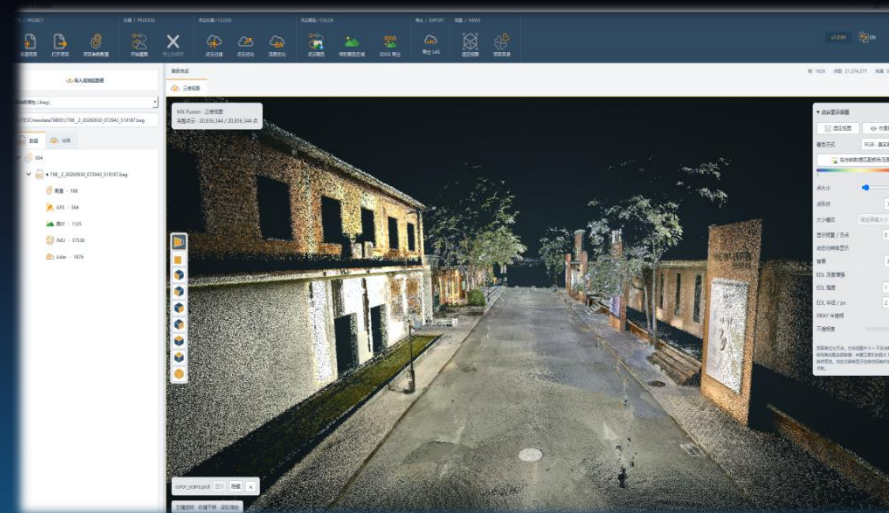


Multi-source data fusion

support .bag packets and
synchronous access to LiDAR / IMU /
GPS / images

Multi-format result export

Standard LAS/LAZ/E57/PLY colored
point cloud · 3DGS Gaussian splash
format export



Automatic Process

SLAM Optimization & Global
Alignment Denoising & Outlier
Removal & Fine Registration &
Refinement Downsampling /
Upsampling

BA optimisation

Optimize LiDAR and visual
constraints to correct SLAM drift
and refine camera poses and
point coordinates for globally
consistent reconstruction

CNN Depth Estimation

Delivering a high-density, accurate,
noise-free colored point cloud.
Depth Estimation
Semantic Segmentation Feature
Enhancement / Denoising

Point cloud Colorization

Color Projection
Low-Light Camera Fusion
Multi-frame Texture Fusion
Color Equalization
Balance Calibration

Scenario

Construction Engineering

Support BIM modeling & comparison, construction inspection and project acceptance.

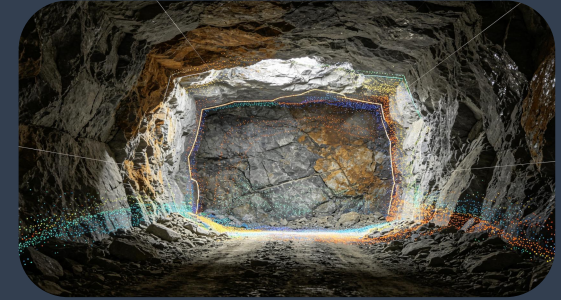


Digital Twin

Build realistic 3D scene models rapidly. Provide reliable high-fidelity and reliable data for digital twin systems.

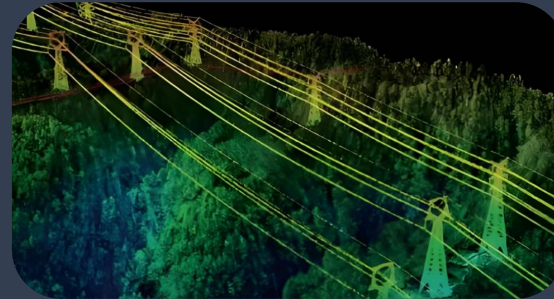
Mine & Stockpile

Scan open-pit, underground mines, stockpiles. Calculate earthwork volume and monitor slope safety.



Surveying & Mapping

Seamless indoor and outdoor scanning. Generate high-precision colored point clouds for topographic and field survey.



Power & Forestry

Collect 3D data for power tower inspection. Measure tree height and canopy density for forest resource.

Cultural Heritage

Capture detailed 3D colored point clouds of relics. Support digital archiving, restoration and virtual display.





ModeXion Technology is an AI-powered hardware manufacturer that specializes on innovation in the spatial measurement and digital twin industries. Relying on LiDAR and multi-dimensional vision fusion technology, it provides customers with integrated solutions for high-precision 3D measurement and intelligent utility inspection.

Built For the Field



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