

# Machine Control Solution for Earth Construction



Tablet



Antenna



Receiver



Angle Sensor



# Industrial Smart Solution

Empower your machines with intelligent control solutions



Simple and Intuitive  
Use Interface



Quick Installation  
and Setup



Reliable and Seamless  
Communication



Streamlined  
Workflow

## Earth Construction Streamline Your Workflow

Offering a complete line of high-performance control systems from excavators to pilers and drillers, these intuitive systems are user-friendly and fully customizable to meet users application requirements. The fully digitized equipment is integrated to bring the field to the office, reducing reworks and increasing efficiency and profitability.

With the series of high precision GNSS receivers, angle sensors, compaction sensors and temperature sensors installed in the equipment, the system uses algorithms to solve high-accuracy target coordinates with various types of real-time data to assist and guide operators effectively.

## Applications



# Excavation Guidance System

## ECS-E30

Maximise the performance of the SatLab ECS-E30 with high-precision positioning and 3D visualisation technology to reduce rework and increase efficiency. The system features user-friendly software that allows operators of any skill level to work faster. Even on the most complex excavation projects, the software visualisation allows the user to work in low visibility areas, such as underwater or at night.



Full Constellation  
Centimeter-Level Accuracy



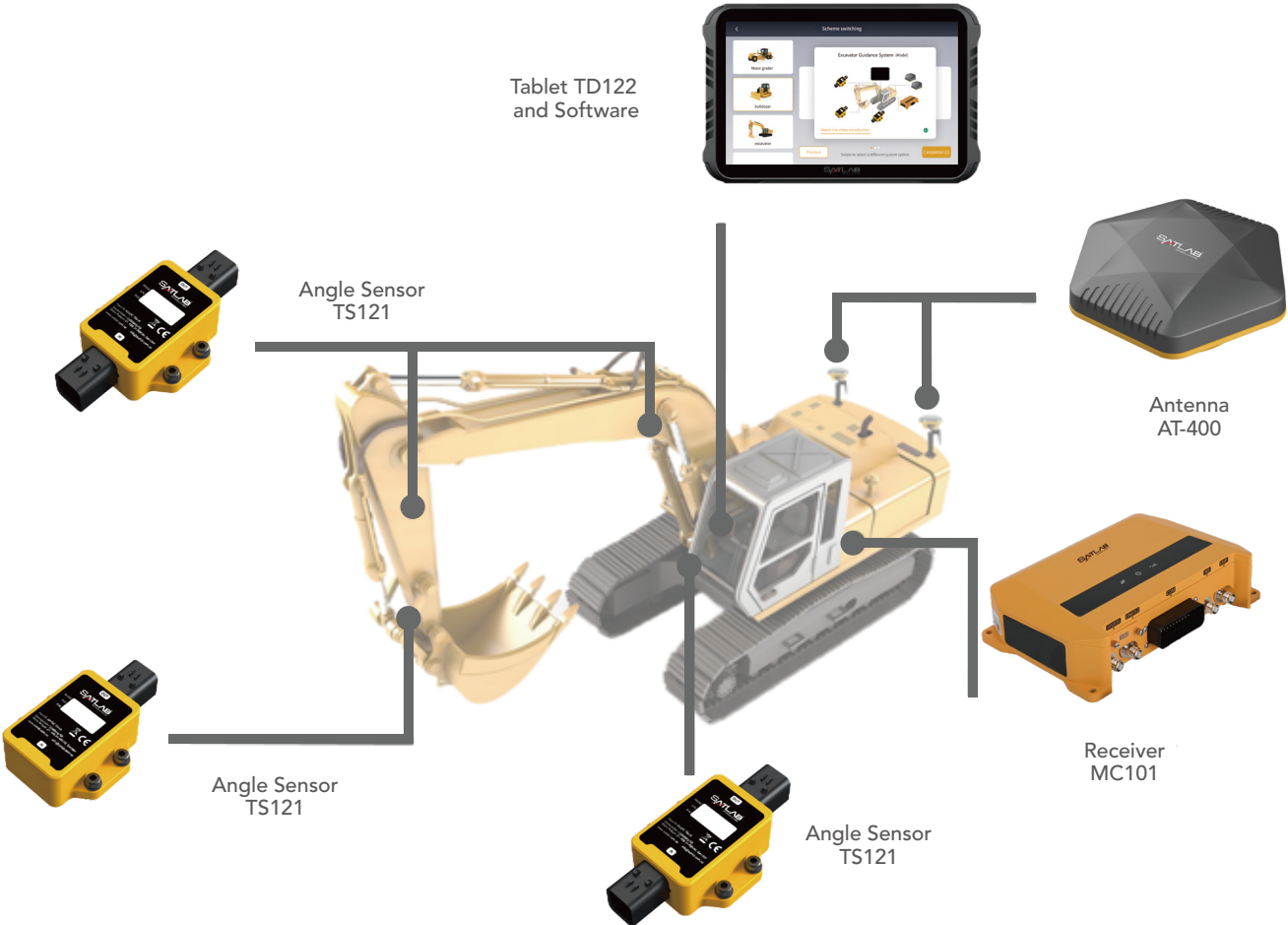
6-axis Sensor



Dual  
GNSS Antenna



Integrated Multi-module  
Intelligent Control Box



# Bulldozer Guidance System

## ECS-D30

— Combined with grader, SatLab ECS-D30 system is another helping hand for your projects. Allowing the user to achieve efficient coverage and precise guidance to maximise productivity. With a comprehensive project overview, the system reports the quality of the job area with analytics of the sampling points.



Real-time Display  
Pass Track



10Hz Refresh Rate



Global Reach  
Satellite Tracking



Rugged Antennas,  
Bases and Cables



# Grader Control System

## ECS-G60

The automation of machine control introduces a new age of grading. The SatLab ECS-G60 integrates the latest in GNSS grade control, digital terrain model and real-time data process, to enable the grader to achieve accurate grading with minimal manual intervention. This ensures quick construction adjustments, reducing material waste and operating costs.



Centimeter Level and  
0.1° Heading Accuracy



Automatic Blade  
Control



Real-time 3D  
Visual Guidance



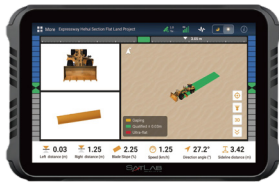
Real-time Sensor  
Feedback



# Machine Control Components

## ● TD122

Compact Engineering Tablet



Rugged and Compact Vehicle-mount Tablet



Large 10 inch Anti-glare Touch Screen



Multiple I/O Ports (RS485, RS232, ETH, CAN, USB)



IP65 Protection

## ● MC101

Intelligent Management Controller



Built-in Dual Antenna GNSS Positioning Board



WiFi/Data Radio/4G Module



LED Indicator and UPS Power Supply



TNC Connector

## ● TS121

High Resolution Angular Sensor



High-precision MEMS Angle Measurement Unit (Up To 0.05° Output Resolution)



Gyro Automatic Compensation



Independent Sealing



Shockproof and Stable

## ● AT-400

High Performance Geodetic Antenna



Full Constellation Satellite Tracking



Supports All Working Frequency and L-Band



IP67 Protection



Right-handed Circular Polarization (RHCP)

## ● HV122

Highly Reliable Hydraulic Valve



Universal Connectors



Fast Current Response



Integrated Shock/ Anti-cavitation Valve

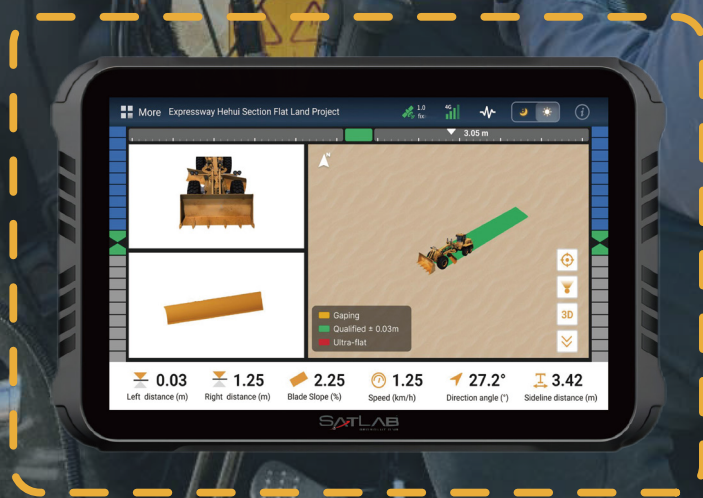


Increased Control of Negative Loads

# Machine Control Software



— The engineering software, which integrates the whole series of SatLab's machine control system, has a unique design style, intuitive operation interface, and rich project features to meet customers' requirements. It also supports the combination of SatLab's Receiver and Total Station, sharing project files with one key, and realising the intelligence of construction projects.



# Technical Specifications

## TD122 Tablet

System	Android 11.0, Storage 16 GB
Display	10.1" 5-Point Touch
Resolution	1024*600 P
Dimension(W*H*D)	281*181*42 mm
Weight	1.5 KG
Power	9-36V DC Input

## Machine Receiver

Satellite System	BDS: B1I/B2I/B3I/B1C/B2a/B2b GPS: L1/L2/L5/L6 GLONASS: L1/L2 GALILEO: E1/E5a/E5b/E6 QZSS: L1/L2/L5/L6 SBAS: L1C/A
RTK(RMS)	Horizontal: 0.8 cm + 1 ppm, Vertical: 1.5 cm + 1 ppm
Network	LTE 4G, WiFi 802.11 a/b/g/n, 2.4 GHz
Bluetooth	4.2
Radio	410-470 MHz, Channel 116, Editable from 100 to 115
Connector	4x TNC (GNSS, UHF, GSM), 1x NANO SIM Card
Indicator	3x LED (Satellite, Correction, Power)
Dimension(W*H*D)	220*135*57 mm
Weight	1.5 KG
Power	9-36V DC Input
Protection Level	IP67
Environment	Operating Temp: -40 C ~ +75 C, Storage Temp: -40 C ~ +85 C

## TS121 Sensor

Range	Pitch $\pm 90^\circ$ , Roll $\pm 180^\circ$
Static Accuracy	0.1°
Dynamic Accuracy	0.5°
Dimension(W*H*D)	11*8*4 mm, 14*8*4 mm
Weight	0.4 KG
Protection Level	IP68

## AT400 Antenna

Band	1164 MHz~1300 MHz, 1525 MHz~1615 MHz
Connector	TNC
Dimension(W*H*D)	156.2*140*55.5 mm
Weight	634 g
Protection Level	IP67



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