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TOKNAV



Mechanical Control

TMC10

Dozer 3D Guidance System

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Dozer 3D Guidance System

TMC10 Dozer 3D Guidance System pairs high-precision Beidou GNSS technology with construction machinery. It precisely tracks the blade's position and orientation, aligning with 3D digital plans to guide users via digital readouts or indicators. Utilizing global navigation and embedded technology, the system offers real-time control over dozing tasks, boosting accuracy, efficiency, and safety. It's ideal for road and rail grading, dam construction, riverbed leveling, and land preparation in large-scale projects and agriculture.

CHARACTERISTIC

High Precision

The system leverages GNSS positioning and sensor fusion, integrated with modeling algorithms and electro-hydraulic controls, for centimeter-accurate control, enhancing performance.

24-Hour Continuous Operation

The system supports 24-hour continuous operation and allows reliable operation at night.

Real-time Monitoring and Control

The system uses cutting-edge sensors to track the blade's status and the worksite environment continuously. This data feeds into the control system for precise blade management, keeping operations at peak efficiency.

Stakeless Operation with Increased Efficiency

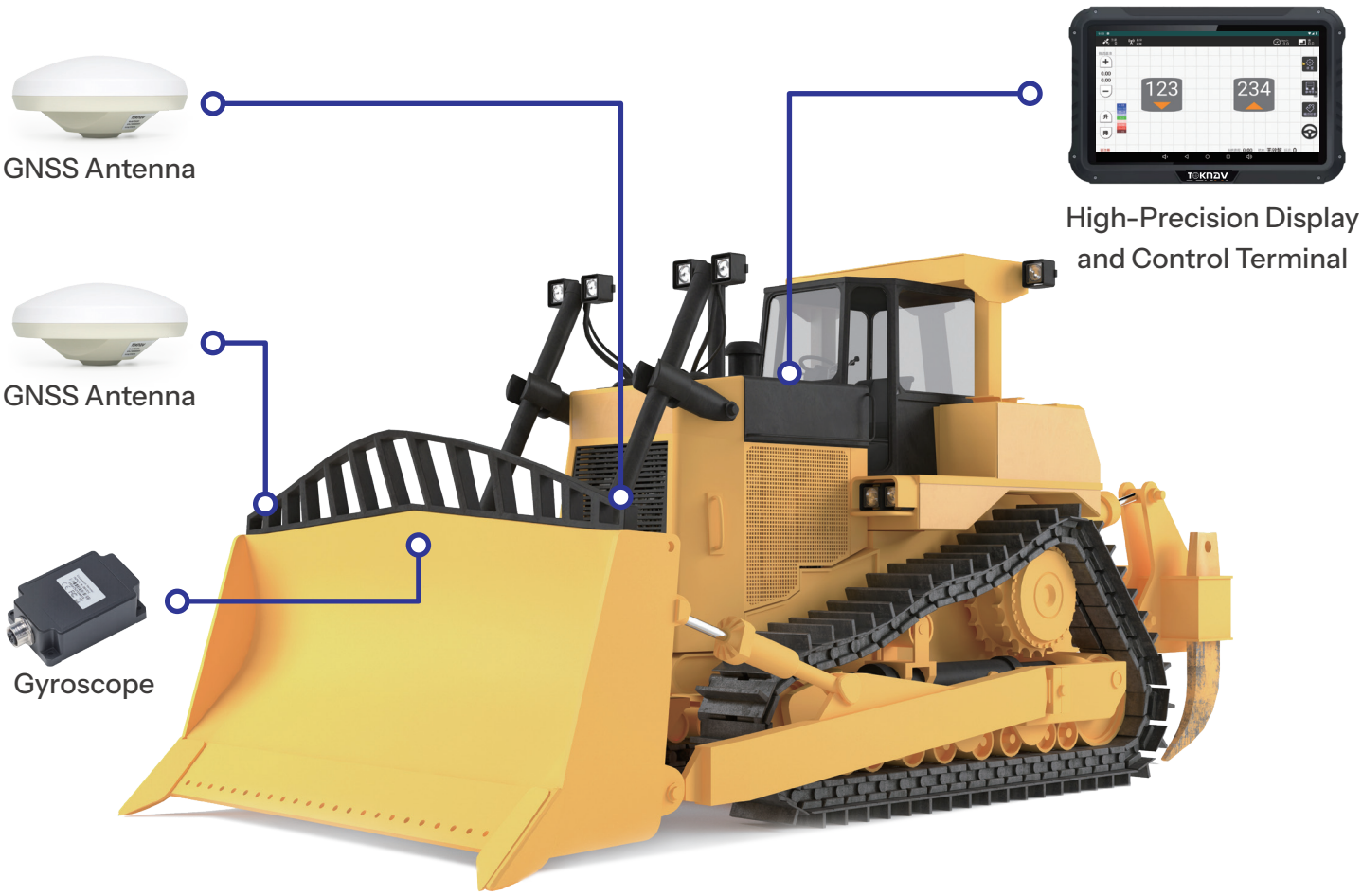
The system integrates algorithms with 3D plans for digital guidance, removing the need for professional surveyors. It enables quick bulldozer leveling, saving labor costs and boosting efficiency by over 50%.

Easy Installation and Operation

Featuring straightforward installation and intuitive operation, it's easy for users can quickly become proficient.

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System composition



Intelligent Display Screen



Gyroscope

Manages blade lift with solenoid valves guided by navigation data.

Achieves 2 cm accuracy in positioning.

Facilitates the conversion and import of design specifications.

SPECIFICATION

SATELLITE SYSTEM

BDS	B1I, B2I, B3I, B1C, B2a, B2b*
GPS	L1, L2, L5
GLONASS	L1, L2, L3
GALILEO	E1, E5a, E5b, E6
QZSS	L1, L2, L5, L6
IRNSS	L5
L-Band	

WORKING ENVIRONMENT

Environment	Operating Temperature: -40°C ~ +85°C Storage Temperature: -55°C ~ +85°C
Vibration Standards	Complies with national standards GBT-3871, GBT-2423, and GBT-28046 for vehicle vibration standards

VEHICLE MOUNTED COMPUTER

Display Screen	10.1-inch, Support 5-point capacitive touth
Brightness	750cd/m2
Resolution	1024*600px
I/O	RS232*2 RS485*1 CAN*1/2
Communication	4G WiFi 2.4G BT 4.2, BLE USB 2.0*1
Operating Temperature	-30°C ~ +70°C
Storage Temperature	-40°C ~ +85°C
Protection Level	IP65
Work Humidity	Humidity 95%, non-condensing
Vibration standard (Operational)	MIL-STD-810
Impact standard (Operational)	ISO16750
Power	5-36V DC Input ACC, State detection for ignition

GYROSCOPE

Range	±400°/s
Resolution	0.000055(°/s)/(LSB) Condition: ±400°/s
Zero-drift at Rest	±1°/s Condition: Horizontal Placement
Temperature Drift	±5 (°/s)/°C Condition: -40°C~+85°C
10s Smoothing (Zero Bias Stability)	2.03°/h Condition: Horizontal Static Placement
Allan Variance (Zero Bias Instability)	1.80°/h Condition: Horizontal Static Placement

HEADING ANGLE

Range	Z: ± 180°
Heading Accuracy	0.1°
Resolution	0.0055° Condition: Horizontal Placement

MODULE

Communication Interface	4800bps ~ 230400bps Condition: UART Default: 115200bps
Output Content	Angular Velocity, Angle
Output Rate	0.2Hz ~ 500Hz Default: 10Hz
Stratup Time	1000ms (Max Value)
Operating Temperature	-40°C~85°C
Storage Temperature	-40°C~100°C

ELECTRICAL PARAMETERS

Supply Voltage	3.3V~5.5V Typical: 5V
Operating Current	9.5mA (Typical) Condition: Operating (5V)

ACCESSORIES

Tablet	1 Unit
ECU	1 PCS
Gyroscope	1 PCS
GNSS Antenna	2 PCS
Main Cable	1 PCS
Data Cable	1 PCS
Tablet Power Cable	1 PCS
Antenna harness	2 PCS
Mount	1 PCS
Screw Accessories Pack	1 PCS
Support Rod Kit	1 PCS

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Manufacturers may update parameters at any time, please refer to the latest product information.

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