

SAG20

Precision Agriculture

○ Agricultural Satellite Land Leveling System



SAG20 *Agricultural Satellite Land Leveling System*

SAG20 Agricultural Satellite Land Leveling System is a high-precision navigation solution designed for agricultural machinery, ideal for leveling operations across diverse terrains such as farmlands, highways, railways, airports, and industrial sites. Utilizing multi-satellite signals (such as GPS and GLONASS), it enables precise positioning and attitude control for graders, supporting continuous 24/7 operation with a coverage range of up to 30 km. It supports multi-unit synchronization, automatic terrain recognition, and benchmark adjustment, while offering real-time mapping and route planning capabilities. With internet connectivity for cloud-based management and compatibility with various grading blades, it delivers high efficiency and accuracy in complex terrain, making it a top-tier choice for precision agricultural operations.

Comprehensive Network Signal Coverage



The GNSS receiver is designed to be compatible with multiple satellite constellations, ensuring robust signal reception, with a reference station coverage radius of 30 km which significantly reduces the need for relocating conventional base stations or laser transmitters. This setup allows for simultaneous service to multiple units, enhancing operational efficiency. Moreover, no extra base stations are needed for long-distance operations, saving 15% in labor costs.

Multi-Purpose System Integration



It is highly adaptable, enabling tractors to perform precise positioning and integrate seamlessly with a variety of grading blades. This versatility allows for not only basic land leveling but also extended functionalities like autonomous operation, intelligent spraying, and enhanced navigation. The multi-purpose capability significantly reduces labor and material costs by 30%-50%.

24/7 Continuous Operation



It is built for round-the-clock, all-weather performance, maintaining peak functionality in harsh conditions, including high winds, sandstorms, and low visibility, ensuring continuous work regardless of day or night.

Auto-Height Control & Smart-Benchmarking



It features automated terrain recognition and dynamic benchmark adjustment, ensuring leveling accuracy within ± 2.5 cm across both flat and sloped terrains. Compared to manual operations, the high degree of automation increases work efficiency by 20%.

GNSS

Characteristic



- It ensures that land is leveled to a uniform plane, achieving precise and consistent grading.



- It provides real-time visualization of agricultural machinery operation trajectories and terrain elevation maps, enabling precise and visible land leveling.



- The intelligent display tablet features a 10.1-inch high-definition screen with multi-touch instant response. It is water-proof, dust-proof, and shock-proof.



- The ECU controller enables multi-system control and real-time monitoring and adjustment of sensors.

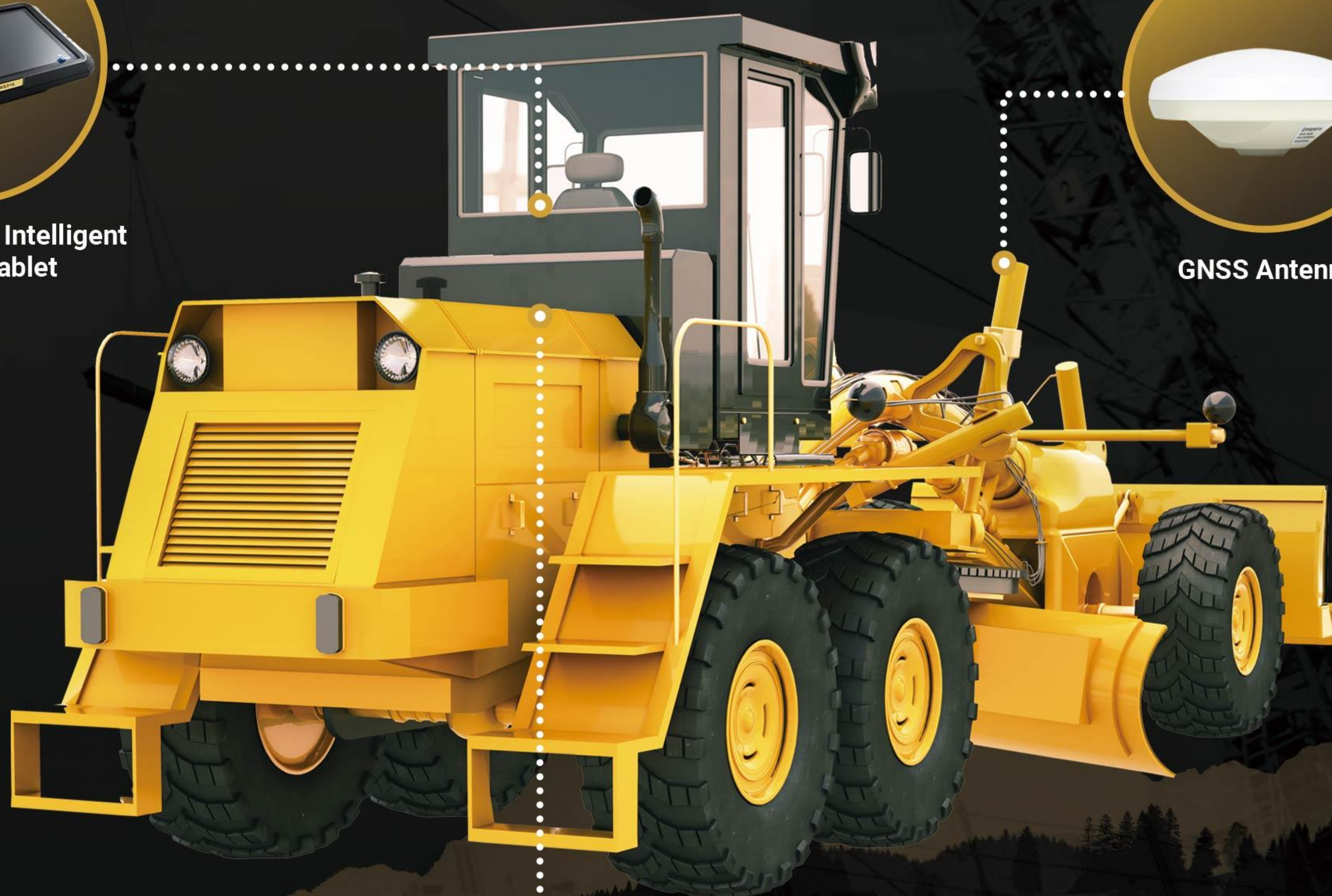
System composition



High-Precision Intelligent Display Tablet



GNSS Antenna



Electronic Control Unit



ITEM		SPECIFICATION	REMARKS
SATELLITE SYSTEM	GPS	L1, L2, L5	
	GLONASS	L1, L2, L3	
	BDS	B1I, B2I, B3I, B1C, B2a, B2b*	
	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 TABLET	Display Screen	10.1-inch, Support 5-point capacitive touch	
	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 ignitio	
ECU CONTROLLER	Dimensions(L*W*H)	16cm* 10.8cm*4.5cm	
	Input Voltage	9-36V	
	Hydraulic Output Voltage	12V	
	Hydraulic Output Voltage	A highly integrated leveling control unit and radio communication unit. The leveling control unit is equipped with an on-board ARM processor and industrial-grade communication chip, ensuring stable performance and robust anti-interference capability. The radio communication unit incorporates mainstream measurement-grade communication modules, compatible with domestic and international standard measurement base stations.	
ACCESSORIES	Tablet	1 Unit	
	ECU	1 PCS	
	Gnss antenna	1 PCS	
	Hydraulic control valve	1 PCS	
	Tablet Holder	1 PCS	
	Power cable	1 PCS	
	Hydraulic valve cable	1 PCS	
	Gnss antenna cable	1 PCS	

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