



维佳软件
WEIJIA SOFT

SMART CONTAINER YARD · LIVE OPERATION SENSING

APEX-SRMS

Stacker Real-Time Monitoring System

Turn Every Container Stacker into a Real-Time Yard Data Source

High-precision RTK and multi-sensor recognition capture equipment location, bay/row/tier, single/twin lifts, container size and pick/place events in real time—reducing manual checks and improving yard slot data reliability.

Make Yard Operations More Transparent

01

Actual Slot Verification

Combine RTK positioning with tier detection to link handling locations to their corresponding yard slots.

02

Less Manual Recording

Auto-record single/twin lifts, container sizes and pick/place events to reduce manual input.

03

End-to-End Traceability

Link each move to equipment, time and location for review and reconciliation with Yard/Terminal operating systems.

CORE CAPABILITIES

Core System Capabilities

01 RTK Positioning

Live equipment location

02 Bay / Row / Tier

Verify actual handling position

03 Auto Single / Twin Detection

Recognize single and twin lifts

04 20 / 40 / 45 ft Detection

Support different container sizes

05 Auto Pick / Place Detection

Generate handling event records

06 Standard API Integration

YMS / TOS / Tally / Digital Twin

±10 cm

Horizontal Positioning Accuracy

≥98%

Operation Recognition Accuracy

-50%

Manual Tallying Workload

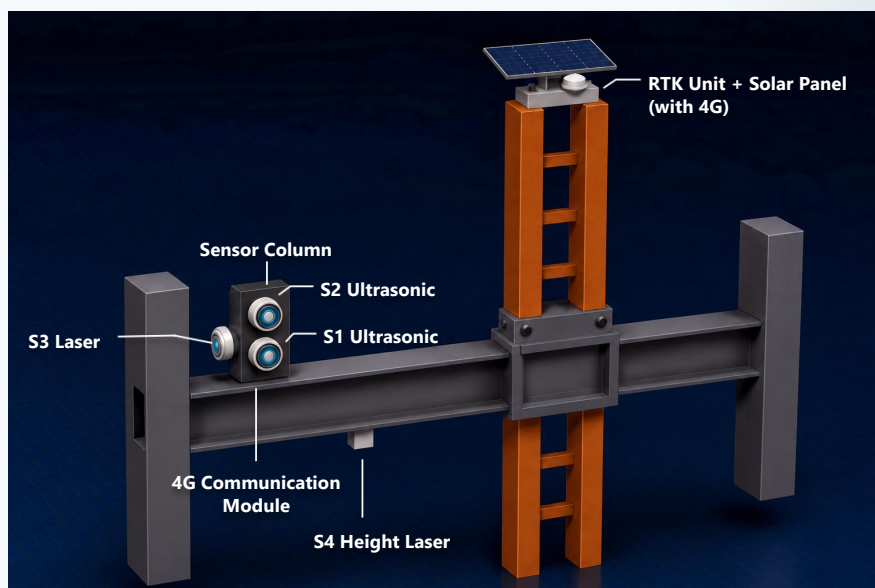
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01 / SPREADER SENSOR LAYOUT



* Illustrative installation only. Final mounting positions must be confirmed on site for each equipment model.

S1/S2 Ultrasonic

S1 detects container presence; S2 identifies twin lifts.

S3 Laser Ranging

Measures spreader extension to identify 20 / 40 / 45 ft sizes.

S4 Height Laser

Measures spreader-to-ground distance to determine stacking tier.

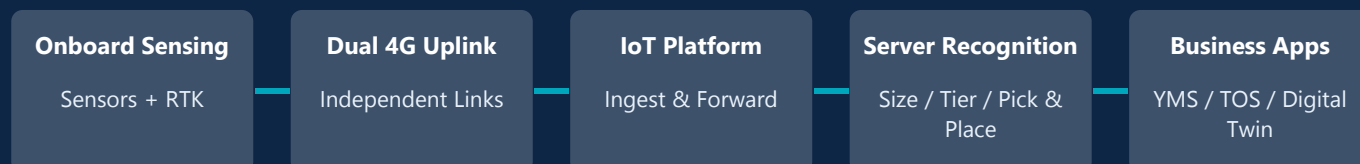
4G Communication

Uploads sensor data via 4G; powered by the spreader's 24 V supply.

RTK + Solar Power

Solar-powered RTK with BMS monitoring and backup mains charging.

02 / END-TO-END DATA FLOW



RTK corrections enable precise positioning, while operation recognition and event logging are handled server-side.

03 / KEY TECHNICAL SPECIFICATIONS

Horizontal Accuracy	±10 cm	Communication	Dual 4G links (spreader / RTK)
Vertical Accuracy	±30 cm	System Interfaces	HTTP / WebSocket / MQTT
RTK Reporting Rate	Configurable (Default: 1Hz)	Protection Rating	IP65
Recognition Accuracy	≥98% (Single/Twin, Size, Pick & Place, Tier)	Operating Temperature	-20°C to +60°C
Sensor Configuration	Ultrasonic ×2 + Laser ×2, RTK Unit ×1	Power & Installation	Solar + Li-ion battery (RTK); 24V (sensors); Magnetic Mounting + Vibration Damping