

Hardcore Teardown: How GZKEDRO's Sealing Technology Powers High-Performance Waterproof Displays

Exploring the Engineering Approach Behind Reliable Waterproof Display Solutions for Commercial Applications

CALIFORNIA, CA, UNITED STATES, July 16, 2026 /EINPresswire.com/ -- China, July 15, 2026—Guangzhou Kedro Electronics Technology Co., Ltd. ([GZKEDRO](#)) — a China-based manufacturer of commercial display screens founded in 2013 — has developed a line of outdoor waterproof displays whose mechanical design centers on sealed enclosures, industrial-grade LCD panels, and anti-interference driving circuits. This teardown examines the engineering choices that enable these units to operate reliably in harsh environments.



Logo for GZKEDRO

Sealing Architecture: IP55-Protected Enclosures

The core of GZKEDRO's [waterproof display](#) range is the KD-OD Series (Outdoor Waterproof Display) and the dual-screen KD-DSA Series. Both are rated IP55, meaning they are protected against limited dust ingress and low-pressure water jets from any direction. The display housing is constructed from a combination of tempered glass and iron steel sheet (KD-OD) or aluminum alloy (KD-DSA), with all joints sealed during assembly. An air-cooled heat dissipation system using industrial fans prevents internal condensation and maintains operating temperature within -20°C to 50°C even under full 500W load. Standby power is below 5W, ensuring thermal stability during idle periods.

Display Panel: High-Brightness D-LED Backlight

GZKEDRO equips its outdoor models with D-LED backlight units delivering a brightness of 2,000 cd/m², a physical contrast ratio of 3000:1, and a wide viewing angle of 178° horizontal/vertical. The display resolution is 1080×1920 (portrait orientation) with a pixel pitch of 0.630×0.630 mm. Response time is rated at 6 ms (typ.), and color depth is 8-bit / 16.7M colors. The panel is protected by tempered glass that meets explosion-proof requirements, a critical feature for public-space installations.

Core Processing & Anti-Interference Driving Circuit

The driving platform uses a Rockchip RK3288 quad-core Cortex-A17 processor clocked at 1.8 GHz paired with a Mali-T764 GPU. Memory capacity is 2 GB RAM with 16 GB internal storage (ROM). The system includes RJ45 10M/100M adaptive Ethernet, dual-band Wi-Fi (802.11b/g/n), and Bluetooth 4.0. All signal lines, including HDMI OUT, LAN, USB, TF card, and SIM card slots, are routed through filtered ports to suppress electromagnetic interference. The internal PSU is rated for 100–240 VAC, 50/60 Hz, and the entire circuit board undergoes a 100% aging test and functional inspection before shipment, per GZKEDRO's quality control protocol.

Certification Compliance & International Standards

The KD-OD Series has obtained China Compulsory Product Certification (3C) under certificate number 2018010901114733, issued by China Quality Certification Center (CQC). In addition, the Elevator advertising machine (KD-EA Series), which shares the same core technology platform, is certified to EU EMC Directive 2014/30/EU (certificate mk25100089p01-e01), LVD Directive 2014/35/EU (certificate mk25100089p01-s01), and RoHS 2.0 (certificate mk25100089p01-c01), all by TMC Testing Services (Shenzhen) Co., Ltd., for the EU market. Across its product lineup, GZKEDRO holds CE, FCC, RoHS, and ISO 9001 (certificate 25020021R0S) certifications, covering production and sales of intelligent display terminals, touch screen all-in-one machines, and touch teaching all-in-one machines for export.

Customization & OEM/ODM Capabilities

GZKEDRO runs a 50,000 m³ factory with a 100+ person R&D team and monthly output of 2,000–5,000 units. The company offers full customization including logo, color, software/UI, packaging, voltage, screen size, brightness, housing, and hardware configuration. Lead time is 15–30 days, with a minimum order quantity of 2–5 units depending on size. After-sales support includes 24/7 remote technical assistance and professional engineering guidance.

Key Product Specifications (Selected Outdoor Models)

KD-OD Series (Outdoor Waterproof Display): D-LED backlight; 1080×1920 resolution; 2000 cd/m² brightness; 3000:1 contrast; 178°/178° viewing angle; 6 ms response; 8-bit color; RK3288 quad-core 1.8GHz; 2 GB RAM / 16 GB ROM; IP55; operating temp -20°C~50°C; total power ≤500 W; standby <5 W.

KD-DSA Series (Dual-Screen Outdoor Advertising Machine): same backlight type; resolution 1080×1920 per screen; 2000 cd/m²; 3000:1 contrast; 6 ms response; RK3288; 2 GB RAM / 16 GB ROM; IP55; ≤500 W total; standby <5 W. This unit supports a SIM card slot for cellular connectivity.

Remote Cloud Control Platform

GZKEDRO provides a remote cloud control platform that supports deployment, monitoring, and maintenance of devices globally. The platform is compatible with Android-based display systems and enables centralized content management for digital signage networks.

Company Contact:

Guangzhou Kedro Electronics Technology Co., Ltd.

Contact Person: Chen Jiaofeng

Email: gzkedro@gmail.com

Tel: +86 189-2950-0788

WhatsApp: Mike (+86 18929513439) / Luna (+86 18925015694) / Lisa (+86 18929500788)

Website: www.gzkedro.com

Chen jiaofeng

Guangzhou Kedro Electronics Technology Co., Ltd.

+86 189 2950 0788

gzkedro@gmail.com

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