

Redefining Outdoor Computing with Daylight Computer DC-1

MediaTek MT8781 SoC Enabling Superior Sunlight Readability, Enhanced Speed and Battery Life

Case Study

Application

Daylight-readable tablet

Background

InnoComm Mobile Technology Corp., the ODM behind the Daylight Computer DC-1 e-paper tablet has developed a groundbreaking e-paper tablet featuring a 10.5" display known as Live Paper. This display is glare-free, sunlight-readable and comfortable for the eyes. Committed to providing their users with advanced computing capabilities, faster processing speed, and enhanced power efficiency, essential for outdoor environments, InnoComm partnered with MediaTek to integrate its advanced MT8781 SoC.

Challenge

- **Slow Refresh Rates:** E-ink displays' slow refresh rates (1-2 fps) cause flickering and slow response times. DC-1 required powerful CPUs and GPUs to achieve 60-120 fps refresh rates.
- **Battery Efficiency for Portable Use:** For balancing high performance with long battery life, DC-1 required efficient SoCs.
- **Memory Speed:** To allow smoother frame transitions with quicker data access, it needed modern SoCs with faster memory.
- **Display Interface:** To sustain high-refresh-rate, DC-1 required high-bandwidth connections between SoC and display.

Results

- Performance, efficiency, and comfort in a single device
- Significantly improved refresh rates (60-120fps) compared to traditional e-ink (1-2 fps)
- Enhanced sunlight readability and reduced eye strain
- Versatile functionality for reading, writing, and general tablet use
- Flicker-free backlight for comfortable extended use
- Advanced connectivity with Wi-Fi 6E and Bluetooth 5.2



Solution Partner

InnoComm Mobile Technology Corp. offers customized ODM services for innovative wireless and embedded products.

Solution

Through collaborative efforts involving Daylight Computer, InnoComm, and their display technology partners, the team collaborated with MediaTek and integrated MediaTek's MT8781 SoC as the optimal solution. This powerful chipset architecture successfully addresses the device's critical challenges - outdoor readability, optimized performance and power efficiency, ensuring the DC-1 tablet provides a seamless experience in any environment.

How Does MediaTek's MT8781 SoC Meet the Requirements?

- **High Processing Power:** MT8781 SoC's octa-core CPU supports 60-120fps and handles high data throughput.
- **GPU Performance:** Mali-G57 MC2 GPU renders smooth visuals with high frame rates.
- **Memory Support:** LPDDR4X RAM enables fast data transfers for maintaining higher refresh rates.
- **Display Interface:** MIPI-DSI CTP TFT supports Live Paper display's frame rates, enabling a responsive and fluid experience.
- **Power Efficiency:** 6nm process ensures MT8781 SoC to balance high performance with long battery life.
- **Wireless Connectivity:** Advanced connectivity with Wi-Fi 6E and Bluetooth 5.2.



Solution Block Diagram

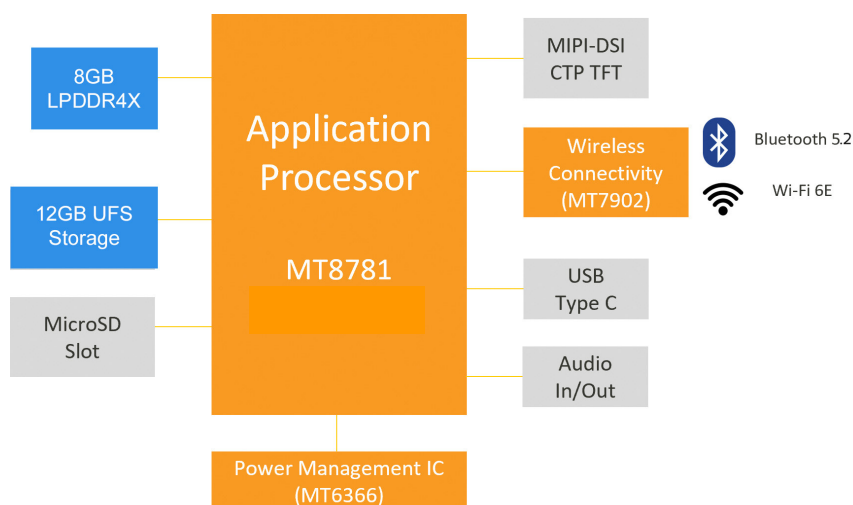


Figure: Daylight Computer DC-1

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