

SPECIFICATION SHEET FOR RUGGED TOUCH SCREEN TABLET FOR MINING OPERATIONS

SUMMARY:

We at Mahat are currently building a cloud-based software platform to optimize production and improve efficiency for one of our mining clients, a global player in the mining industry with presence in India, Indonesia and DRC. We are in the phase of integrating hardware devices into our software platform to build an integrated fleet management solution.

The primary objective is to build a comprehensive solution that ensures real-time tracking of trucks, enables efficient communication between the operator and control room, enhances the safety of operators, and improves mineral production by minimizing operational costs and digitizing mining operations.

GOAL:

Our goal, upon identifying the right hardware partner, is to install these hardware devices on 300+ trucks within the next 12 months. This ambitious rollout plan underscores our commitment to leveraging cutting-edge technology to drive improvements in fleet management and operational efficiency for our client, who is a leading mine operator in India.

DEVICE OVERVIEW:

A rugged, durable touch screen tablet designed for operational efficiency and reliability in the mining industry. Engineered to withstand heavy vibration, dust, and varying lighting conditions, this device ensures seamless operation in trucks and loaders, day and night.

SPECIFICATIONS:

DISPLAY:

- Type: LED-backlit Capacitive Multi-Touch Screen
- Size: 7 inches (preferable) to 10 inches
- Resolution: Minimum 1280 x 800 pixels
- Brightness: Optimized for readability in both bright daylight and low-light conditions
- Touch: Glove-compatible touch sensitivity

DURABILITY AND RESISTANCE:

- Vibration and Shock Resistance: Compliant with MIL-STD-810G for shock, vibration, and drop
- Dust and Water Resistance: Rated at IP68 for full dust ingress protection and water resistance
- Enclosure: High-impact resistant casing with reinforced edges for added protection

PERFORMANCE:

- Processor: Quad-Core 1.8 GHz or higher, optimized for efficiency and performance
- RAM: Minimum 4GB / Preferably 8 GB
- Storage: Minimum 32GB internal, expandable via microSD / Preferably 64 GB
- Operating System: Android 11 or later, compatible with native Android applications

CONNECTIVITY AND COMMUNICATION:

- Wi-Fi: IEEE 802.11 a/b/g/n/ac, dual-band
- Cellular: 4G LTE support
 - Network Compatibility: The device must support a wide range of network bands to ensure comprehensive global connectivity. It should be compatible with major network bands used in India, Indonesia, and the Democratic Republic of Congo (DRC), among other regions.
- Bluetooth: Version 5.0 for peripheral connectivity
- GPS: High-accuracy GPS for location tracking
- HDMI: Mini HDMI port for external display connectivity to MDVR systems
- Audio: 3.5mm jack for audio output, compatible with push-to-talk microphones
- USB Type C port

POWER MANAGEMENT:

- Battery: High-capacity lithium-ion battery, minimum 10,000mAh
- Charging: Rapid charge support with USB Type-C

MOUNTING AND USABILITY:

- Mounting Mechanism: Robust mounting hardware included for secure dashboard installation
- User Interface: Customizable buttons for quick access to essential functions (e.g., SOS, Home)

SOFTWARE AND SECURITY:

- OTA Updates: Support for over-the-air software updates to ensure the latest features and security patches

- Security Features: Hardware encryption support for secure data transmission and storage

OPTIONAL FEATURES:

- Cameras: Front and rear cameras (optional, can be omitted based on use case requirements)
- Customizable Buttons: SOS, Home, and additional programmable buttons for quick operation

ADDITIONAL CONSIDERATIONS:

CERTIFICATIONS: Ensure compliance with industry standards for electronic devices in mining operations, including safety and environmental regulations.

SERVICE AND SUPPORT: Warranty: Minimum 1-year manufacturer warranty

ENVIRONMENTAL CONSIDERATIONS: Energy Efficiency: Design and components selected for minimal environmental impact and energy use

AMBIENT LIGHT SENSOR: Including an ambient light sensor could automatically adjust the screen brightness based on environmental lighting conditions, improving visibility and saving battery life.

ANTI-REFLECTIVE AND SCRATCH-RESISTANT SCREEN COATING: Given the device will be used outdoors and in rough conditions, an anti-reflective coating can improve visibility in bright sunlight, while a scratch-resistant coating can protect the screen from damage. (Gorilla Glass)

PHYSICAL SECURITY: For devices mounted in vehicles that may be left unattended, physical security features such as Kensington lock slots or similar could deter theft and a nice to have feature

CUSTOM SOFTWARE CAPABILITIES:

OPERATING SYSTEM CUSTOMIZATION: The tablet should support a customizable Android OS environment that allows for the removal of unnecessary default apps and services, enabling optimized performance and security for mining operations.

APPLICATION SUPPORT: The device must support the deployment and smooth operation of native Android applications developed by our team. This includes compatibility with various software development kits (SDKs) and application programming interfaces (APIs) relevant to our custom software needs.

DEVELOPMENT SUPPORT: The manufacturer should provide access to technical documentation, development tools, and support services to facilitate custom software development, testing, and deployment. This includes detailed API documentation, sample code, and direct support channels for technical inquiries.

SCALABILITY: The software environment should be scalable, allowing for updates, enhancements, and the addition of new features or applications as operational requirements evolve. This includes support for over-the-air (OTA) updates to ensure software remains up-to-date and secure.

USER CUSTOMIZATION: The device should allow for user interface customization to enhance usability and accessibility for operators. This includes customizable home screens, button assignments, and accessibility features tailored to the mining environment and operator needs.