Emdoor T81X and T17X Rugged Tablets Empower Efficient Operation of Earthquake Rescue Radar Life Detection System

Overview

The client, a national high-tech enterprise, specializes in the R&D and application of emergency rescue and petrochemical equipment, striving to build an efficient and professional integrated rescue system. In its earthquake rescue detection solution, the client required higher stability, anti-interference capability, and real-time communication performance from terminal devices. Ultimately, Emdoor's T81X and T17X rugged tablets, with their superior performance, became vital data processing and control terminals within the radar life detection system, significantly enhancing rescue efficiency.

Client Story

The client focuses on emergency rescue and equipment manufacturing, supported by a complete R&D system and extensive field experience. It provides diverse solutions including earthquake rescue detection, urban fire rescue, and disaster monitoring. As rescue missions grow increasingly complex, the client needed a terminal capable of stable operation under extreme temperatures, strong vibration, and other harsh conditions, while supporting real-time data transmission and efficient command and control. Emdoor's T81X and T17X rugged tablets, with excellent environmental adaptability, system stability, and communication capabilities, effectively support data acquisition and collaborative operations, improving overall rescue efficiency and emergency response.

Challenges

In emergency rescue, complex and unpredictable field environments place high demands on device performance. The client found that the previous device could no longer meet the needs of fast and efficient rescue, and required an upgraded terminal.

First, in high-risk rescue scenarios such as earthquakes and avalanches, devices must endure prolonged exposure to extreme environments. The client's original devices lacked sufficient ruggedness to withstand high/low temperatures and strong vibration and often suffered from drops or water ingress. Second, unstable communication and limited interface configuration in old devices hindered collaboration and remote command.

Additionally, as a control terminal for radar life detectors, tablets needed to display detected life signal data and transmit it in real time to other devices for remote monitoring. This imposed high requirements on display visibility, system fluidity, image responsiveness, and data processing. Any lag, image delay, or transmission failure could seriously impact rescue progress and personnel safety.

Thus, the client needed a professional-grade terminal device with strong ruggedness, stable communication, and robust data processing to support reliable, efficient operations in disaster sites.

Why T17X and T81X?

After repeated failures with traditional tablets due to poor stability and environmental adaptability, the client sought a more reliable terminal for complex rescue environments. At an industry exhibition, the client encountered Emdoor's T17X and T81X. After a comprehensive comparison, the two models stood out with their durable design, rich I/O interfaces, excellent compatibility, and reliable performance in extreme conditions, fully meeting the client's demands for anti-interference, real-time transmission, and command efficiency.

100%
Real-Time Data Viewing
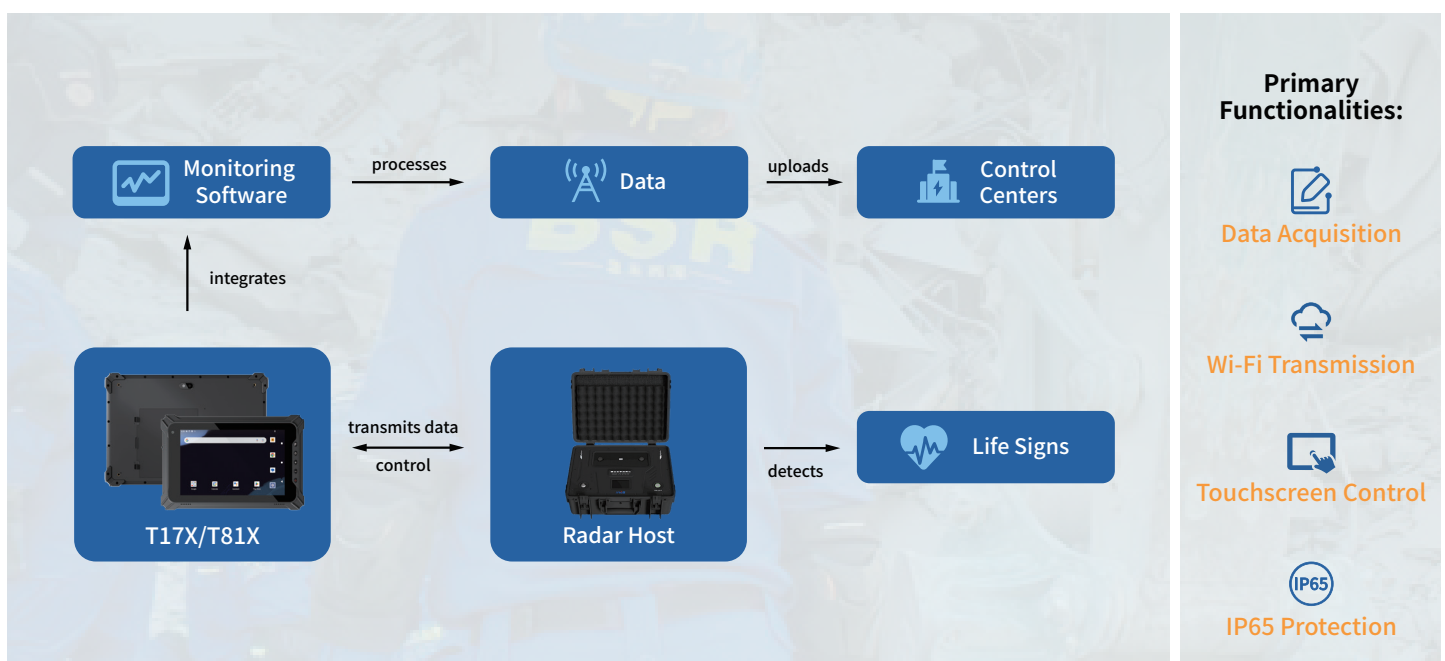
45%
Increase in Rescue Efficiency

75%
Improvement in Communication Stability

60%
Decrease in Failure Interruptions

Workflow

Primary Functionalities:

Data Acquisition

Wi-Fi Transmission

Touchscreen Control

IP65 Protection

Solution

The client integrated Emdoor's rugged tablets T17X and T81X into its radar life detection system as key handheld terminals and data processing platforms, significantly improving field detection efficiency and command coordination.

Once deployed, the radar host emits ultra-wideband electromagnetic signals capable of penetrating non-metal obstacles and detecting survivors' life signs (e.g., breathing, heartbeat, body movement) under rubble. The radar then receives the echo signal, performs initial processing, and calculates the approximate location and distance of the trapped people.

The T17X/T81X rugged tablets serve as the operation terminals, receiving the data in real time. The onboard monitoring software visualizes echo data as dynamic images and life signal curves for the operator's review. Operators can use the tablet's touchscreen to adjust detection parameters, switch modes, and set scanning areas according to site conditions.

While collecting data, the tablets' powerful processors and the client's detection algorithms work together to optimize and analyze signal data, filter out noise, and improve recognition accuracy. This enables rescue personnel to quickly and accurately locate survivors and reduce the risk of false positives or missed detections.

Once analysis is complete, the tablets, using built-in 4G/Wi-Fi/Bluetooth modules, upload real-time detection results, position info, and vital signs to command vehicles and control centers. Shared real-time data allows rescue teams to coordinate better, devise rescue plans quickly, and deploy resources efficiently.

Customer Testimonial

"The T17X and T81X rugged tablets perform exceptionally well in complex rescue environments. Their stable operation and smooth integration with our radar system have greatly enhanced our rescue efficiency. They are now an indispensable part of our frontline device."

— Project Director

Benefits

1. Rugged and Reliable in Complex Environments
T17X and T81X are certified to IP65 and tested for 1.22m drops. They support a wide operating temperature range (-20°C to 60°C) and perform reliably under rubble or outdoor rescue conditions. The HD high-brightness screen ensures clear visuals in bright and dusty environments, allowing responders to observe images and life signals.

2. Excellent Compatibility for Seamless Software Integration
With high-performance processors and Android 14 OS, the tablets run the client's monitoring software stably. Abundant I/O ports and great peripheral compatibility make it easy to connect radar hosts, sensors, and more. Strong hardware supports intensive data computation and advanced signal analysis, enhancing accuracy and response time.

3. Multi-Channel Communication for Enhanced Rescue Coordination
Equipped with 4G, Wi-Fi, and Bluetooth modules, the T17X and T81X enable high-speed transmission of real-time detection data and location information to both frontline command vehicles and remote control centers. GPS, GLONASS, and Beidou satellite navigation systems provide precise positioning and route planning, which significantly improves cross-team collaboration and accelerates overall emergency response.

For more information on rugged terminals and industry solutions, feel free to contact us.
We specialize in providing high-quality rugged mobile computing devices and customized solutions for industry clients worldwide.

Rugged Handheld   Rugged Tablet PC   Rugged Notebook   Panel PC

Vehicle PC   Industrial PC   Outdoor Rugged Series