

BEC'S INDUSTRIAL SOLUTION DELIVERS RELIABLE AND ROBUST CONNECTIVITY TO A LARGE-SCALE RTK NETWORK



Customer

Smart Agriculture Company in Rural Texas, providing precision-focused, high-tech agronomic solutions and services to farmers. When it comes to the placement of fertilizer, herbicides, and auto-steer guidance for planting, harvesting, and spraying crops, farmers need to know every square inch of land.

This is where Farm-scale RTK technology comes in, specifically Trimble RTK networks and software deployed by the Smart Agriculture company. RTK (Real-Time Kinematic) networks significantly improve the accuracy of location data provided by the GNSS (Global Navigation Satellite Systems), providing exact machine operations with pass-to-pass and repeat accuracy of +/- 1 inch (2.5 cm).

Challenges and Solutions

Traditional RTK infrastructure consists of the base station and the rover. The rover receives corrections from the base station via radio modems (UHF/VHF/Spread). This infrastructure can be expensive and complex, has distance limitations (5-10km), and may be blocked by hills, buildings, foliage, etc. RTK Networks eliminate the errors of traditional RTK infrastructure by using GSM/CDMA wireless networks.

As carriers shuttered their GSM/CDMA networks, the Smart Agriculture company was forced to find a solution based on 4G LTE technology. They selected the BEC MX-230 M1 Industrial M2M Router to provide internet connectivity as well as data collection and remote access to RTK base station equipment.

Results

The BEC MX-230 M1 delivers reliable and robust connectivity with no impact on the accuracy of the RTK networks. The device was particularly effective for dense deployments where many devices are connected in a small area. Additionally, the MX-230 M1 is a cost-effective form of connectivity with carrier data plans as low as \$2 per month per device.

The BEC MX-230 M1 Industrial M2M Router is a low-power wide-area network (LPWAN) enabled device. It supports Cat M1 (LTE-M) technology is designed to optimize range and service coverage for low-cost, low-bandwidth, and low-power IoT/M2M communication. Additional features include Dual Gigabit Ethernet interfaces, RS-232 serial interface for OOBM or serial device connectivity over IP, Active GPS, flexible DC power options of 8 to 56 VDC, industrial temperature range, and advanced software management tools.

Customer

Smart Agriculture Company in Texas

Application

Wireless Connectivity for Large Scale RTK Network

Solution

BEC MX-230 M1 Industrial M2M Router (Cat M1)

Connectivity

Cat M1 (LTE-M) Technology

Results

BEC's industrial connectivity solution delivers reliable and robust connections to a large-scale RTK network of a smart agriculture company in Rural Texas