
Farm From A Box

Farm From A Box Develops Sustainable, Self-Sufficient Farming Solution Using Sierra Wireless® AirLink® Gateways - A Sierra Wireless Remote Farming Solution



Farm From A Box Develops Sustainable, Self-Sufficient Farming Solution Using Sierra Wireless® AirLink® Gateways

A Sierra Wireless Remote Farming Solution

CUSTOMER CRITICAL CHALLENGE

- Needed a robust, energy efficient communications solution to monitor and control agricultural technologies in sustainable farming solution

SOLUTION

- AirLink® GX450 Gateway enables sustainable and self-sufficient farming practices by providing cellular connectivity for “in-box” technologies

BENEFITS

- Access to timely and accurate information

-
- Supports fast and informed decision making to improve agricultural production
 - Enables local communities to stay “connected”

Powered by renewable energy, Farm from a Box is a comprehensive system to enable sustained local food production. Each Farm from a Box unit acts as a self-sufficient growing pod, providing everything needed for a 2-acre farm, with no dependence on an existing grid.

Business Challenge

The concept of Farm From a Box originated from the idea of using modified shipping containers that were built around a soccer field to provide basic services and resources in education, health and sport for rural youth in Kenya, Africa. While education, health and sport are very important, it soon became evident to Founding Partners Scott Thompson and Brandi DeCarli that access to healthy and nutritional food, a foundational community need, was sorely lacking and needed to be prioritized.

As a result, Thompson and DeCarli began exploring how they might be able to take the same transportable, “plug and play” model of a modified container, and use it as a vehicle to provide a sustainable means of local food production to serve the community. It was then that Farm From a Box was born.

Since its inception, Thompson and DeCarli started to explore different technologies and systems to support a self-sufficient food production unit—from atmospheric water generators to NASA-tested chicken manure processors—any solution or alternative that might provide the most efficient and environmentally beneficial closed-loop food production system. It was concluded that, in order to deploy a portfolio of systems and devices, they needed a robust solution to connect, monitor and gather data from these technologies.

“We sought the advice of some of the best minds in agriculture, biodiversity, irrigation, sustainable energy, and international development. We spoke with farmers, engineers, governments, and some of the largest aid providers in the world, all in an effort to understand what was needed and what could be done better,” says Brandi DeCarli, Founding Partner, Farm From a Box.

Sierra Wireless Airlink Solution

The Farm From a Box team worked with technology integration experts, QPCS, to deploy an interoperable solution that consisted of the best-in-class technologies to enable sustainable and self-sufficient farming practices.

As a key component of this solution, Farm From a Box selected the AirLink GX450 gateway, powered by Sierra Wireless®, to provide advanced cellular connectivity for its in-box technologies, with the potential to connect more devices as functionality in the box expanded.

Using T-Mobile's 4G LTE network, the Sierra Wireless AirLink GX450 gateway connects a weather IP console and water purification unit, in addition to providing mobile charging and a Wi-Fi hot-spot in and around the box. The AirLink GX450 gathers and reports data from each of these devices, such as water consumption levels and weather station activity, in addition to enabling remote monitoring of activity via the AirLink Management Service; a secure cloud-based management application for AirLink gateways.

All devices and systems, including the AirLink GX450, are powered by 10 Trina Solar Panels (285 Watts each), enabling Farm From a Box to be completely self-sufficient, with no dependence on an external power supply for operation. Each Farm From a Box unit can support over 150 people in the community.

Results

The AirLink GX450 provides each Farm From a Box with access to timely and accurate information, enabling fast and informed decision making to improve agricultural production. Furthermore, it helps communities to stay connected with on-site internet access. By deploying the AirLink GX450 gateway, Farm From a Box was able to develop a solution that met its three core goals: independent farming, community nutrition and information sharing, using only clean energy.

With the AirLink GX450 gateway, Farm From a Box is able to offer a precision farming solution that pairs green technologies and sustainable farming techniques, to achieve a more efficient food production system.

In the future, Thompson and DeCarli have plans to integrate additional technologies and capabilities to each Farm From a Box unit, such as sensors, to monitor soil health, moisture levels, energy produced and consumed, and geospatial mapping and predictive analysis; many of which they will connect using the gateway.

Farm From a Box can act as an alternative to standard food aid, providing

the means for struggling communities to grow their own food source without dependence on outside relief, whether it's providing marginalized areas with the farming infrastructure needed, or helping jumpstart food production after a disaster," says Scott Thompson, Founding Partner, Farm From a Box.