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

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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 enablesustained local food production. Each Farm from a Box unit acts as a self-sufficientgrowing pod, providing everything needed for a 2-acre farm, with no dependence onan existing grid.

Business Challenge

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

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

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

“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 tounderstand 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, todeploy an interoperable solution that consisted of “best-in-class” technologies toenable sustainable and self-sufficient farming practices.

As a key component of this solution, Farm From a Box selected the AirLink GX450gateway, powered by Sierra Wireless®, to provide advanced cellular connectivity for its“in-box” technologies, with the potential to connect more devices as functionality inthe box expanded.

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

All devices and systems, including the AirLink GX450, are powered by 10 Trina SolarPanels (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 Boxunit can support over 150 people in the community.

Results

The AirLink GX450 provides each Farm From a Box with access to timely and accurateinformation, enabling fast and informed decision making to improve agriculturalproduction. Furthermore, it helps communities to stay “connected” with on-siteinternet access. By deploying the AirLink GX450 gateway, Farm From a Box was ableto develop a solution that met its three core goals: independent farming, communitynutrition 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 achievea more efficient food production system.

In the future, Thompson and DeCarli have plans to integrate additional technologiesand capabilities to each Farm From a Box unit, such as sensors, to monitor soilhealth, moisture levels, energy produced and consumed, and geospatial mapping andpredictive 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 meansfor struggling communities to grow their own food source without dependence onoutside relief, whether it’s providing marginalized areas with the farming infrastructureneeded, or helping jumpstart food production after a disaster,” says Scott Thompson,Founding Partner, Farm From a Box.