



LAOSHAN FORESTRY DEPLOYS MOTOTRBO™

WITH TRBOSTAR SOLUTION TO PROVIDE A LEADING WIRELESS COMMUNICATION SYSTEM



Qingdao Laoshan is known as “the first famous mountain on the sea”. It is a Taoist holy place and also a vacation paradise, hosting millions of tourists every year. The terrain covers a wide area and is rich in forest and wildlife resources. On the mountain, the forest covers 346 thousand acres (as much as 59.76% of the total area) with over 230 bird species, 1000 plant species, and 400 tree species of which 250 are precious or ancient.

The Laoshan management department is tasked with the protection of the people, forest and wildlife in the area. This responsibility is critical when autumn passes and the terrain turns dry, posing a high risk for forest fires and making fire prevention a top priority. To shoulder this responsibility, the Laoshan district has set up a special task force of over 1300 people. They oversee long-term fire prevention plans and take effective measures for fire prevention and pest control in the area.

In 2009, Motorola channel partner - Qingdao Keen Ruitong Information Technology Co., Ltd. leveraged the advances in wireless communication technology to develop the TRBOSTAR Wireless Digital Communication Solution based on the MOTOTRBO™ Digital Two-Way Radio System. Their solution comprises TRBOSTAR Portable Emergency Communications System and TRBOSTAR Dispatch Software application became an ideal platform for Laoshan’s forest fire prevention, meeting their demanding and special requirements.

CUSTOMER PROFILE

Company

- Laoshan Forestry
- Qingdao Laoshan, China

Industry

- Forestry

Key Benefits

- GPS Positioning
- Wireless Dispatching
- Full Region Networking
- Automatic Roaming
- Administration of Calling Levels
 - Single, Team, Group, Selective & Private
- Digital Noise Cancellation for Superb Clarity
- Seamless Connection of Analog and Digital Radios



MOTOTRBO™ DEPLOYMENT

8
REPEATERS

120
PORTABLE
RADIOS

20
MOBILE
RADIOS

MARKET CHALLENGES

Laoshan district is covered with hundreds of square kilometers of forest and scenic area, it is critical and utmost priority of Laoshan management department to have an effective wireless communication system to help monitor fire hazard and coordinate fire-fighting efforts.

The new wireless communication system must provide radio communication coverage throughout the whole operational district of the Laoshan management department. Incorporating into the new wireless communication system is a location tracking system that will help monitor the position and ensure the safety of personnel operating in the fire hazard areas.

There are three important selection criteria in selecting the new wireless communication system: Firstly, it must exhibit high-noise cancellation capability to deliver clear and audible audio quality taking into consideration the harsh, windy and noisy out-door environment that the forestry team has to operate in. There is even greater need to deliver a clear and reliable radio communication during a fire outbreak to give concise dispatch instruction. Secondly, the two-way radios battery must support a specific life duty cycle that does not require re-charging or charging of battery in a single shift. Thirdly, a positioning locating function must be available to facilitate efficient dispatch operations in daily management and emergencies.

“Because of the complex environment of Laoshan forest area, we invested significant manpower and resources to ensure frequency reuse and cross-coverage, including the use of IP interconnected base stations that can provide the extended coverage in areas with poor radio signals. Some base stations are built on steep peaks, making the installation very difficult,” said Meng Chao, senior technical consultant, Motorola (China) Electronics Co., Ltd.

SOLUTION

With their demanding requirements, natural territorial obstacles and need to ensure compatibility with the thousands of existing analog radios in use, the forestry department opted for MOTOTRBO™ Digital Two-Way Radio System, which is the first system in the world that seamless work s with analog radio technology.

Meng Chao explained “To meet our customer’s requirements, we specially provided them with MOTOTRBO™ platform that comprises eight units of XiR R8200 digital repeaters, 120 units of XiR P8268 portable radios and 20 units of XiR M8268 mobile radios.”

One frontline personnel from the Forestry department said: “I have been working here for two years and often on overtime duty. Motorola two-way radios have been a great help for us. We use them every day for communicating and reporting to command centre. The audio quality of the two-way radio is very good, providing clear and crisp communications with strong radio signal. They are very useful. ”

Meng Chao further commented “Due to the special needs of the forestry industry, we deploy TRBOSTAR Wireless Digital Communication Solution together with MOTOTRBO™, which is developed by Qingdao Keen Ruitong Information Technology Co., Ltd. This solution consists of TRBOSTAR Wireless Dispatch Software, TRBOSTAR Digital Vehicle-mounted Station, TRBOSTAR Remote Control and Measurement Terminal, and TRBOSTAR Portable Emergency System. Besides meeting our customer’s requirements for GPS positioning and wireless dispatching, the solution also provides the capability for future expansion to interface with satellite communication, 3G network and wired/ wireless switch.”

“For the Laoshan Forestry department, we deployed the first batch of radios in key areas, by equipping every petrol car with a digital mobile radio while providing the fire brigades and large community of users with digital portable radios. TRBOSTAR Wireless Digital Communication Solution is specifically designed for demanding industries like forestry and fully capable of providing detailed information like mountain contours, fire prevention paths and channels, as well as characteristics of trees, spacing between trees, and pest situation, all within the same system. ”

The strengths of the wireless digital radio system are many. Firstly, the frequency resources are better utilized. One channel can support twice the number of users, resolving the issue of insufficient frequency. Secondly, quality of communications is greatly improved. The system utilizes powerful error correction functions to reduce noises and provide clearer audio. Finally, the integration of voice and data applications delivers more user benefits. Due to the undulating and special nature of Laoshan’s mountainous terrain it took close to four months to fully deployed the wireless communication system. The superior performance of Motorola’s DMR digital radio system has been fully demonstrated in this wireless digital two-way radio project.



OUTSTANDING EFFECTIVENESS

Wan Bin, general manager of Qingdao Keen Ruitong Information Technology Co., Ltd. described "TRBOSTAR Dispatch Software Solution incorporates TRBOSTAR Series of Forest Fire Wireless Dispatch System that has been specially tailored for Laoshan forest fire prevention. The solution fully maximizes the digital capabilities of MOTOTRBO™ Digital Two-Way Radio System to effectively manage every single device and provide seamless connection between the existing 1000 analog radios and the new batch of digital radios.

From the console, dispatcher can know whether the device is powered on or active within the network. We can manage it every minute and second. At any time, we can know which user initiates the call, what radio ID is, whom it is calling to and record the spoken contents to the TRBOSTAR server. Through location tracking system, the route of each radio user can easily be tracked and clearly displayed on the map, enabling greater efficiency and management.

Using the TRBOSTAR Dispatch Software Solution, all the key fire prevention areas in Laoshan area has near complete radio coverage. Our fixed base stations provide coverage of more than 94% while the extended network of TRBOSTAR Portable Emergency Communication system provides coverage for the communication blind spots of the remaining 6%."

TRBOSTAR Wireless Digital Communication Solution utilizes the powerful features of MOTOTRBO™ Digital Two-Way Radio System. It provides full region networking, automatic roaming, interconnectivity, and administration on different levels such as single calling, team calling, group calling, selective calling and private calling. The solution facilitates the upper and lower level command and dispatch. The strong digital network security effectively eradicates frequency interferences to deliver a private network for a dedicated purpose. Noiseless and high quality communication is achieved through wider coverage and reduction of blind spots.

For Laoshan's forest fire prevention efforts, their command and control capability is greatly improved.



For more information on how MOTOTRBO™ Digital Radio can deliver reliable and clear communications, please visit us on the web at <http://ap3.motorola.com/sea/mototrbo/index.asp>