



# STEEL PIPE PLANT'S MOTOTRBO™ RADIOS DELIVER CLEAR AUDIO EVEN IN EXTREME NOISE CONDITIONS



**A major manufacturer helps its machine operators, line workers, mobile employees, office staff and safety and security teams work together as a cohesive unit with MOTOTRBO digital radios that deliver clear audio, even in extremely high noise environments.**

## SITUATION

**With noise levels that can reach 120 decibels, plant managers wanted a two-way radio system that could deliver clear audio without the background noise.**

Safety, efficiency, productivity and the ability to get the job done depend upon all of the steel pipe plant's work teams to communicate reliably in real-time. But with analog radios that delivered ambient noise along with the audio, communication was often impossible. Plant managers began looking for a two-way radio system that would allow clear transmissions even when standing next to the machines.

## SOLUTION

**MOTOTRBO digital radios with sophisticated background noise suppression capability delivers crystal clear audio, even next to a jackhammer.**

A local channel partner proposed MOTOTRBO digital radios. With the plant manager standing next to a jackhammer operator working on a construction site at the plant, and the channel partner positioning himself at the far side of the plant, the manager keyed his radio. Not

only was he able to clearly hear the channel partner, the partner was able to hear the manager perfectly, in spite of the extremely loud pounding of the jackhammer. In addition, the radios delivered seamless communications throughout the plant, building-to-building, and all the way out to the shipping docks over a mile away.

## RESULTS

**The new digital radios have provided plant personnel, from front office to the shipping dock, clear, reliable communications with no coverage gaps.**

The steel pipe plant is now able to keep its work teams in constant communication, increasing productivity and enhancing plant safety and security. With a combination of mobiles, portable and control stations, each employee work group has access to instant communication with the type of device that best fits their needs, whether fixed or on-the-move, and whether inside the plant, building-to-building, or plant to shipping dock. But most important of all, regardless of the noise level, MOTOTRBO radios suppress background noise to deliver crisp, clear audio real-time, every time.

## CUSTOMER PROFILE:

### Users

- Plant managers, mobile workers, machine operators, forklift operators, safety and security teams, office staff, dock personnel

### Motorola Solution

- MOTOTRBO XPR™ 6550 display portables
- MOTOTRBO XPR™ 4550 display mobiles
- MOTOTRBO XPR™ 8300 repeater
- MOTOTRBO control station accessories
- IMPRES™ Smart Audio System accessories

### Solution Features

- Clear audio even in the noisiest environments
- Increased productivity with greater range
- Improved productivity through reduced interference

# PLANT INCREASES EFFICIENCY AND SAFETY WITH CRYSTAL CLEAR AUDIO FROM MOTOTRBO DIGITAL RADIOS

When a major manufacturer built its new plant to produce large transport pipes for the energy industry, they wanted reliable two-way radios that would allow their employees to communicate even in the extremely high noise environment. MOTOTRBO digital radios not only delivered clear audio in extreme noise conditions, the reliable communications also helped maximize employee safety and productivity and provided a cost effective communications solution.

## RELIABLE COMMUNICATIONS AND CLEAR AUDIO IN HIGH NOISE ENVIRONMENT

Whether under the sea, through the desert or across a frozen plain, the large pipes that transport gas and oil from the source to the distributor must meet exacting standards with no room for error.

When a manufacturer of steel pipes began planning and building its new plant, the goal was to design a facility that would maintain the company's reputation for quality with tightly controlled processes and very close tolerances. Combining decades of experience in pipe manufacturing with cutting edge technology, the new plant runs steel through a line of machinery that stretches for nearly a quarter of a mile to make transport pipes for the energy industry.

The second step was to provide employees with tools that would boost efficiency, productivity and safety. Plant managers began looking for a new two-way radio system to provide reliable coverage throughout the nearly half-mile main facility; between the plant and the quality control and staging facility; and about a mile from the plant to the shipping docks. Equally critical, the radios would also need the capability to deliver clear audio throughout the plant where machines can generate noise levels up to 120 decibels.

The company began to evaluate different technologies and vendors and ultimately chose Motorola's MOTOTRBO two-way digital radios.

## MOTOTRBO DIGITAL RADIO SYSTEM

A local Motorola channel partner worked closely with the company to understand the challenges and design the right approach to ensure seamless, reliable communications with clear audio throughout the plant and surrounding grounds.

"The high noise environment was their number one concern," says the channel partner. "In digital mode, MOTOTRBO provides clearer voice communications

throughout the coverage area, as compared to analog radios. Digital error correction technology and the background noise suppression capability of the radios help to reject static and noise, even at long range and in challenging environments, making it easier to hear and understand conversations."

The other primary issue was ensuring reliable communications coverage that would keep employees in constant contact no matter where they were in the plant or the surrounding area, which was over a mile from end-to-end. Compared to analog two-way radio technology, MOTOTRBO offers enhanced voice quality even at the farthest margins of the RF range and more reliable coverage, while at the same time, delivering greater spectral efficiency for higher calling capacity.

## CRISP, CLEAR AUDIO DELIVERED OVER THE POUND OF JACKHAMMERS

With construction on the new plant underway, plant managers agreed to try out the MOTOTRBO radios to verify that they work in the factory's very noisy environment. The channel partner arranged a demonstration, promising that the MOTOTRBO radios would meet their exacting demands.

"I told them about the noise cancellation capability of the MOTOTRBO radios," says the channel partner. "They asked me to prove it and walked me out to the construction site where there were some guys using a jackhammer to break up concrete. The plant manager took one of the radios and stood next to the jackhammer operator while we went to the far side of the facility. We could hear each other perfectly and they were very impressed with that."



MOTOTRBO XPR 6550 display

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Motorola Channel Partner

**CASE STUDY**  
**MANUFACTURING**



**DESIGNED WITH THE CUSTOMER'S  
UNIQUE NEEDS IN MIND**

The Motorola channel partner designed the digital MOTOTRBO two-way radio system to keep work teams in constant communication and productivity high with:

- Mobile radios for the vehicles, including those running on tracks that take the finished pipe from the factory to the coating facility and those that travel off-site within a several mile radius of the plant.
- Mobiles radios installed on poles next to each process machine, keeping machine operators in communication and production moving forward.
- Portable radios for the Safety team, made up of employees from the different functional areas throughout the plant; the Security team for rapid, seamless communications in the event of an emergency; and for work groups who needed to move throughout the facility.
- Desk top control stations that allow office personnel to maintain communications with each of the manufacturing lines.
- Repeater that provides the plant with additional capacity and range.

**INCREASED PRODUCTIVITY**

With the plant on one end of the site and another building that holds its quality control and staging area where the pipes are wrapped about a mile away, the company also wanted to ensure that coverage was available between the facilities. The MOTOTRBO radios let workers talk throughout each of the buildings as well as building-to-building, contributing to increased employee productivity. In addition, MOTOTRBO radios can operate up to 40% longer between recharges compared to typical analog radios, resulting in longer battery life that lasts through longer work shifts, minimizing the need to stop during a shift and change batteries.

“Overcoming the high noise environment was critical,” says the channel partner. “But also important was ensuring that when a worker needed to communicate, they didn’t have to wait for an open channel and no one had to listen to constant chatter. We programmed five separate talk groups in talk-around mode and that channel availability, as well as the extended range they were able to achieve in talk-around, was also very impressive to them.”

**Accessories tailored to  
your needs**

From IMPRES™ Smart Energy System batteries and chargers to Motorola Original® mobile and portable speaker microphones and carry accessories, Motorola offers the entire package that lets you take full advantage of your MOTOTRBO communications solution.



### **IMPROVED SAFETY AND SECURITY**

Forklift operators use the radios to work together when loading the huge pipes onto the rail car, which then runs the pipes down to the loading dock about a mile away. "They have to line up the forklift to the pipe and need someone on the ground to make sure everything is lining up from underneath," says the channel partner. "This could be a dangerous situation if a pipe slipped off. The clear audio of MOTOTRBO cuts through the noise and makes sure those messages are heard and understood so the forklift drivers know right away if something isn't going right." MOTOTRBO radios also provide smart control features, like transmit interrupt, which allows the plant's safety and security teams to override lower priority communications in the event of an emergency.

### **COST EFFECTIVE INVESTMENT**

TDMA technology allows the MOTOTRBO radios to provide two time slots on the plant's licensed channels, doubling capacity with no increased risk of interference. Because there is no need for additional repeaters, the company saves \$10,000 in initial equipment purchase. In addition, choosing digital two-way radios over other technologies, such as cellular push-to-talk, meant that they avoided up to \$2,500 per month in service fees.

**To learn how MOTOTRBO can help your business**  
**[www.motorola.com/mototrbo](http://www.motorola.com/mototrbo)**  
**1-800-367-2346**

**Motorola, Inc.** 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. **[www.motorola.com](http://www.motorola.com)**

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