

## CASE STUDY

# DISCOUNT TWO-WAY RADIO DEPLOYS COMPLEX DIGITAL RADIO COMMUNICATION SYSTEM FOR LARGE CONSTRUCTION SITE

**Designed to Provide Ease of Use and Increase Their Worker's Safety and Productivity**



## THE NEED

While constructing a new chemical refinery, our client needed a reliable, simple to use two-way radio communication system that was highly structured and covered over 14 million sq. feet. The system needed to handle heavy radio traffic, offer the ability to provide private calling and emergency features, and the radio's signals would need to penetrate lots of metal structures and pipes throughout the job site. All handheld radios would need to be Intrinsically Safe; approved for use in the client's environment which has potentially explosive materials. There would be over 200 construction workers and supervisors on-site at the same time, and these radio users needed to be segmented into more than a dozen different talk groups based on what crew they were part of.

*"Systems Design is a very general term for 'creating a two-way radio system that will meet all the communication needs of the client,' said T. Varbanov, the Sales Director at Discount Two-Way Radio. When Discount Two-Way Radio received a call from a client earlier this year, our expert system engineers jumped at the challenge to design their newest radio system. "It needed to be a complex digital radio system that provided reliable two-way communication throughout the job site of their latest construction project," says Varbanov.*

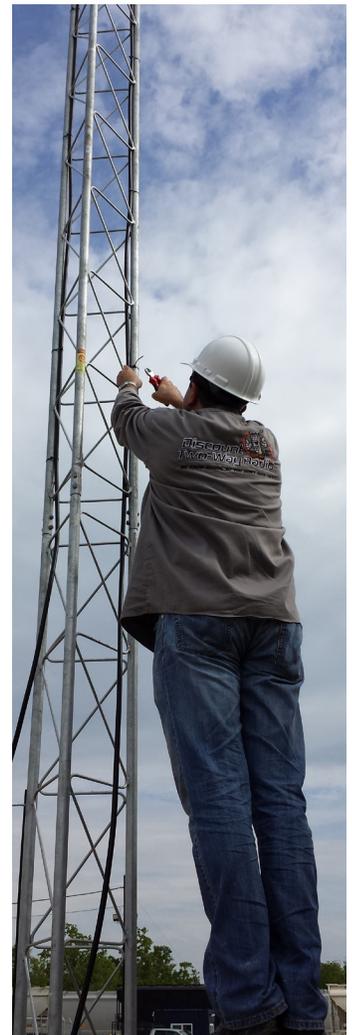
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Each of the different crews needed to have the ability to talk privately amongst themselves, without interference from the other crews, yet still be able to contact other individuals or work groups if necessary. Adding an emergency “All Call” channel was a must have. In case of emergency situations, critical announcements could be made to all radio users at any time, regardless of the talk group they are part of. This project’s design, frequency coordination, assembly, programming, testing, delivery and installation would need to be completed in less than 60 days.

## THE SOLUTION

Once the entire scope of the project was provided to our system design team, we carefully examined the construction location and the client’s requirements. Based on the information, the proposed solution incorporated a Digital Multi-Channel Trunking System with four 50 Watt Repeaters that would provide four independent call paths and a 30 foot antenna tower. The tower, along with the power of the repeaters, would help to cover the large area of the property as well as penetrate the solid metal structures on the site.

The Multi-Channel Trunking System was specifically designed to handle the constant heavy volume of calls that would be generated by the 200 plus individual radio users onsite. “It actually acts as a switching board that routes the radio traffic through the system’s available repeater channels. It’s similar to an air traffic controller that looks for open runways and redirects planes to use the open runways.” says Varbanov.



Technician working onsite to install the 30’ antenna tower.

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To provide the functionality, the emergency and safety features and the signal clarity this type of job requires, Discount Two-Way Radio chose to design a fully digital communication system. The digital handheld radios chosen would provide a loud, static-free audio transmissions that supplies the entire construction site with crisp, clear communication. These radio units would have a keypad and display which gives each user the control to contact different worker talkgroups as needed, and to see who they were receiving calls from. Additionally all handheld radios were equipped with speaker mics and holsters. This minimizes the need to remove the radios from the belt every time they have to be used, helping to prolong the radios' lifespan by protecting them from the rough environment they would be operating in.

## THE OUTCOME

Discount Two-Way Radio was able to meet the deadline for delivery and installation. The coverage was outstanding and the functionality of the radios, with all of their special programming needs, were set up just as requested. The client was very pleased with the performance and how smooth the entire process went from start to finish. Now the client has a reliable two-way radio system that is not only able to meet current communication needs and call traffic, but is able to handle future expansion and an increased amount of users without further added cost or system upgrades.



Installed Digital Multi-Channel Trunking System and four 50 Watt Repeaters.



Holsters and speaker mics help to protect the user's radio from accidental droppage.