

## Custom Display Computer for Continuous Miners

### Situation

Joy Mining Machinery is a global leader in the development, manufacture, distribution, and service of underground mining machinery for the extraction of coal and other bedded materials. With more than 90 years of experience in the mining industry, the company strives to help its customers produce at the lowest cost per ton over the lifecycle of the equipment it provides. To meet this objective, Joy upholds a high standard of quality and reliability in its machinery.



In 2006, the company began searching for a new computer for use in its continuous mining machines. A key requirement was a vendor whose products could withstand the demanding conditions the machinery is exposed to in the mines. This search led Joy to CCS-Inc.

The company elected to do a test run on a smaller project involving a change to one of Joy's other products to ensure that CCS would be able to meet its needs. Mike Schindler, Senior Electrical Engineer at Joy Mining Machinery, describes the company's initial experience with CCS: "CCS' performance during the trial period proved that the company could handle the job. We chose to continue working with CCS because we felt confident that they would be able to deliver a high-quality solution at a reasonable price."

### Solution

Mr. Schindler met with the CCS team to discuss the project parameters and determine which of CCS' products would provide the best solution for Joy's two applications. The first application involved mounting a computer directly onto Joy's underground continuous mining machinery. This would allow the computer to serve as a type of interface between the operator and the machine. The second application involved utilizing the computer in Joy's remote communication console. This would give operators the ability to monitor and control the machines from a distance.



Serving as a type of interface between the operator and the machine, the custom display computer designed for Joy Mining is constructed to operate in high ambient temperatures and withstand high vibration, shock, and moisture.

The group decided that CCS would manufacture a custom display computer, or panel PC, that would be specially designed to meet Joy's specific requirements. The computer was constructed to operate in high ambient temperatures and withstand high vibration, shock, and moisture. Encased in a stainless steel chassis with sealed connectors, the custom display computer obtains a high seal rating. The device has a 12.1" screen, and an Intel® high performance processor. By electing to use a solid-state drive and a heat sink instead of fans, the panel PC has no moving parts – a key reliability feature. Not only was Joy satisfied with the technical aspects of the product, but it was also pleased with the professional aesthetics.

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### Exceeding Expectations

Mr. Schindler explains what made CCS different from other vendors: "CCS made us, as a customer, feel important. The company was always willing to incorporate the feedback we gave, while managing to meet project deadlines as scheduled." He continued by saying that "CCS did an excellent job of communicating the project's progress to Joy. And if a problem arose, CCS was quick to offer a solution."

*"CCS made us, as a customer, feel important."  
- Mike Schindler*

As a result of the success of the custom display computer project, Joy entered into a long term supply agreement with CCS for the purchase of such custom display computers. A separate design is also in the works for a future project. "Overall, we have been thoroughly satisfied with the knowledge and capabilities of the CCS team. The teamwork displayed is extraordinary – all the departments involved work together to produce an extremely reliable product. The exceptional design of the custom display computer enables high reliability and product stability over its extended lifetime." said Mr. Schindler.



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When asked if Joy would recommend CCS to others, Mr. Schindler replied, "We are very pleased with CCS as a company, the products they provide, and our experience with them."

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### About CCS-Inc.

Founded in 1981, Comprehensive Computer Solutions is based in Christiansburg, VA. CCS-Inc. provides industrial computer systems as well as NEMA-rated computer and printer enclosures. CCS' products and services cater especially to clients operating within harsh environments and/or regulated industries including manufacturing, food and beverage, pharmaceutical, energy, defense, and telecommunications.