

Backhoe Manufacturer Implements Wireless Technology



Industry: Industrial Automation & Manufacturing
Product: 2.4 GHz, Short Range Wireless I/O Module

• The Challenge

A globally renowned manufacturer of ‘green’ agricultural, commercial, consumer, construction and forestry equipment has Automated Guide Vehicles (AGVs) in its’ backhoe assembly line which tug backhoe units from station to station. Using a wired, serial communications process, internal intelligence guides the mobile AGVs along a magnetic path in the floor. But, there was no communication from the AGVs back to the PLC that controlled the many manufacturing processes. Consequently, an approaching AGV could run into another AGV still at a station.

Quality control was limited to station-to-station control. Elevated manufacturing times required employees to walk around, inspecting work in a “big picture” context. Quality control processes and build times were suffering.

• The Solution

With the installation of B&B Electronics Zlinx I/O products, the AGVs are now tracked by the plant PLC and the overall process is maintained by a single remote group. Discrete signals are wirelessly sent to the plant PLC through two Zlinx I/O modules configured in wire replacement mode. The bidirectional communication capability of the wireless modules not only allows the PLC to monitor backhoe position and status alarms but also allows the PLC to send critical emergency stop controls.

• Why B&B Electronics?

By adding wireless monitoring and control with Zlinx I/O products, quality control was improved and manufacturing lead times were reduced. The customer produced more backhoes with, less production backlog at a lower cost.

The Zlinx product used wire replacement of I/O signals through a matched pair of I/O modules without the need for expensive gateways. Bi-directional I/O mapping was essential for this application to exchange status and control information from the PLC to the backhoe AGV control.

• The Product

Zlinx® Model ZZ24D-NB-LR – 2.4 GHz, Short Range Wireless I/O Module

- Expandable, modular design
- Modbus compatible
- Failsafe programmable output states
- Industry leading low latency to the order of 20 ms
- Industry standard AES encryption
- Wide operating temperature range (-40 to 85°C)



ZLINX
Wireless I/O

Model ZZ24D-NB-LR