



# Bulk Packaging System for Ford Electronic Modules

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## EXECUTIVE SUMMARY

Ford Electronics Manufacturing Corporation is a manufacturer of automotive electronic modules and a distributor of other vehicle supplies, accessories, tools, and equipment. It is important that these items, especially the electronic modules are safely handled and not damaged during the packaging and shipping process. Ford needed these Electronic Control Units (ECU) to be bulk-packed by type for shipment to various automobile assembly plants. The ECU's are not manufactured in any particular order and go through a test/rework station before reaching the packaging area. These modules also vary widely by type and the order in which they arrive.



### Customer Challenge

Ford Electronics was seeking a solution in which the modules would be sorted by certain type as they enter the bulk packaging area and be accumulated until the pack quantity for each type was reached, which could take hours or up to many days depending on manufacturing and testing cycles. Since the Electronic modules were very sensitive, proper handling of the product was key to eliminate any Electrostatic Discharge (ESD) damage while traveling on the conveyor. Plant floor space was limited, and the system had to be designed efficiently within the given space as well as to not exceed the customer noise level standards.

## The Solution

Shuttleworth designed an ESD-protected, 15-lane conveyor system which allowed for the accumulation of 14 different module types, and one return lane for empty totes. Modules are placed on their sides in a standard sized tote which minimized the conveyor lane widths and ultimately saved on plant floor space.

As the modules travel through the system, the bar codes are read to determine the type. A horizontal transfer device deposits each tote in the proper accumulation lane. The electronic modules continue to accumulate by type until the proper pack quantity is reached. An operator can then call for pack quantity of a certain module type to be released for packing. Once a pack quantity is called, another horizontal transfer device delivers the released modules to a 3-lane, bi-directional conveyor that leads to one of three packaging stations.

Once the modules enter the packaging station an operator removes the module, packs it, and then sends the empty tote back to the test/rework stations by placing it in the return lane.

The Shuttleworth system design allowed for multiple lane accumulation in a minimal amount of floor space. The different module types were also safely conveyed in a standard sized tote and remained in the correct packaging lane until the proper quantity was reached. Mistakes made by taking modules off-line to await full pack quantities were eliminated since the system kept track, not the human operators. Overall, the customer was also very pleased by the ability to return empty totes to the beginning of the line on the same conveyor which proved to be much more efficient than an operator returning totes.



### COMPANY BACKGROUND

*Ford Electronics Manufacturing Corp. is headquartered in Canada. The company's line of business includes the wholesale distribution of motor vehicle supplies, accessories, tools, and equipment.*



ELECTRONIC MODULES



ESD-PROTECTED CONVEYOR

*From automotive and electronics, to paper conversion and pharmaceuticals, to food and consumer good markets and beyond, manufacturers across the globe rely on Shuttleworth's proven product handling solutions to increase line efficiency, maximize profitability, and minimize risk. As part of the ProMach Product Handling business line, Shuttleworth helps packaging customers protect and grow the reputation and trust of their consumers. ProMach is performance, and the proof is in every package.*

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