

Closed Loop Linear Motor High-speed Conveyor

Dr. Hyeonchang Kim
Department of Printed Electronics
T. +82 - 42 - 868 - 7378
E. hckim0128@kimm.re.kr

⇒ With a mover using linear motor without moving cable, the size and number of mover can be extended according to the track length and performance of control system. Unlike conventional conveyor system, mover can be controlled separately and individually, high-speed transfer and motion profile generation is made easy, and footprints can be reduced—transportation system suitable for line requiring high-speed in-line packaging.

Client / Market

- High-speed production in-line packaging market
- Transportation module for vacuum production system market

Necessity of this Technology

- In case of conventional conveyor system, the device has to be modified for a slight change in the packaging product and method or is even inflexible and fails cope with such changes. This increases on time and cost.
- For in-line packaging, flexibility with various products, low maintenance cost, and high productivity are very important factors.
- However, conventional chain-type transportation system lacks flexibility to handle changes and takes a long time to apply changes. It requires high maintenance fee and shows limitations in improving productivity.

Technical Differentiation

- Provide conveyor that can flexibly adapt to various packaging process by individually controlling each mover using the mover with linear motor without moving cable
- Infinite closed loop formation with moving magnet without moving cable
- Module type system with high expandability
- Individual high-speed motion and control
- Very easy application of motion changes following change in process

DESIRED PARTNERSHIP

Technology Transfer

Licensing

Joint Research

Other

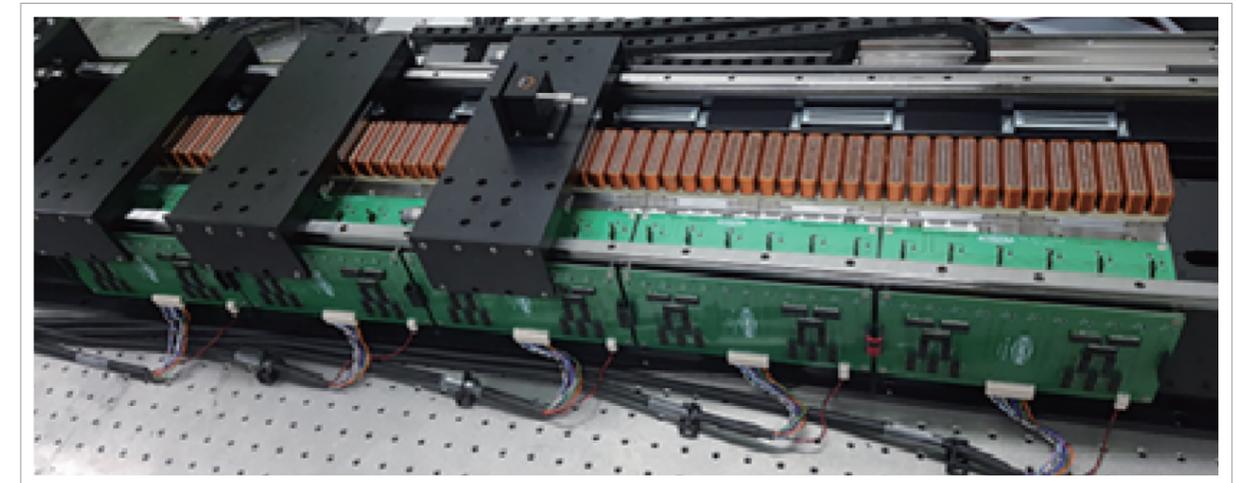


TECHNOLOGY READINESS LEVEL [TRL]

Research, basic explanation | Project concept or idea development | Technology idea verification | Prototype development | Trial product production/evaluation in similar environment | Pilot field demonstration | Development and optimization of commercial model | Commercial product demonstration | Mass production and initial market launch

Excellence of Technology

- Multiple movers are operated individually without cable.
- Each mover's absolute location can be sensed and high-speed motion can be controlled individually.
- Mover's motion profile generation and conversion is easy.



Current Intellectual Property Right Status

KNOW-HOW

- Multiple multi-phase driver hall switching technology
- Multi-mover individual location information acquisition and control technology