

Introducing the NEW ALSTOM *i*VPI

The New Standard in Interlocking Solutions

ALSTOM is extremely excited to introduce its *i*VPI, the New Standard for Interlocking and Block Signaling. The “*i*” represents the high degree of technological integration this solution offers. *i*VPI contains all required local emergency control and communication interfaces for CTC as well as train detection for local and approach track circuits, including Automatic Train Control cab signaling.

Leveraging Proven Product and Safety Design

*i*VPI provides a highly Integrated platform based on proven VPI® and Genrakode™ technology for use with any size interlocking, from a single, remotely controlled switch machine at an end of siding to a large interlocking plant. The interlocking and track circuit functionality are now resident in the same enclosure, scaling down the overall size.



21 Slot 9U Euro Chassis

Integrated Features

- **Track Circuit Functionality can be Integrated with Interlocking in the same enclosure; ALSTOM's Genrakode III printed circuit board plugs directly into the *i*VPI Chassis.**
- **Improved Interconnectivity with the Integration of Ethernet Interface, providing a “plug and play” of two or more *i*VPI units.**
- **Integrated Primary Diagnostics, streamlining maintenance with Go/No-Go and I/O Status Indicators for each board.**
- ***i*VPI Integrates Functionality by consolidating boards giving *i*VPI scalability and ease of maintenance.**
- **ALSTOM has Integrated the original Design Core of the widely accepted VPI product line that has experienced NO unsafe failures; an unblemished record of VPI Controlled Vital System Operation in excess of 80,000,000 hours of revenue service.**

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SIGNALING

ALSTOM

iVPI Offers

Functionality

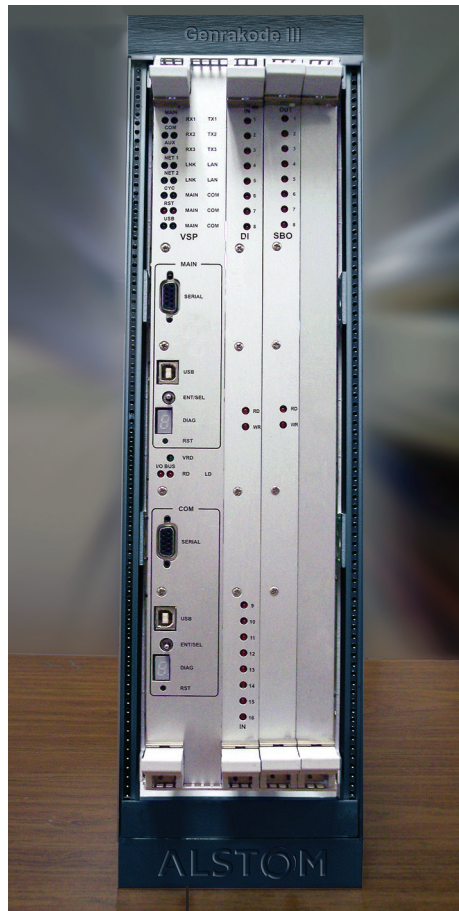
- Improved **Interconnectivity** due to an Ethernet Interfaces.
- Extended **Maintenance Tools** to facilitate test and commissioning activities.
- Ideal for signaled or non-signaled territory applications including switch position indication, increased safety levels for yards, and traditional block signaling with and without cab signaling.
- Reduced system-cycle time for improved performance of interlocking functions.

Technology Upgrade

- Integrated, Extended Ethernet Interface providing a “plug and play” of two or more *i*VPI units.
- A new enclosure based on standard **Card-File** technology eliminates wire-wrap.
- Reduced form factor eliminates the need for a full standard rack arrangement.
- **Surface Mount Technology** eliminates potential obsolescence issues.
- **Transparent Interface** to all radio offerings to provide vital and/or non-vital communications to meet the needs of the application.

Savings

- **Consolidation** of Printed Circuit Boards (4 to 1 reduction), providing a significant cost advantage in reducing necessary spares.
- **Track Circuit Functionality** can be Integrated with Interlocking in the same enclosure; ALSTOM’s **Genrakode III** printed circuit board plugs directly into the *i*VPI Chassis.
- **Elimination** of the separate signal battery to 5 VDC logic power supply



5 Slot 9u Euro Chassis for Wayside Interface Unit, Small Interlocking, etc.

Ease of Application and Maintenance

- **Primary Diagnostics** are Integrated, streamlining maintenance with Go/No-Go and I/O Status Indicators for each board.
- **Automatically Configurable I/O** improves Mean Time to Repair
- Use of **Maintenance Management System** Tool for local and remote advanced testing and troubleshooting, including transition to field test automation.

Safety

- Maintaining the foundation of the **VPI and Genrakode Safety Analysis** allowing a smooth transition path for industry acceptance.
- VPI and Genrakode designs are accepted under the latest **US FRA regulations 49-CFR-236**.
- Meantime between hazardous events (MTBHE) greater than 10^{13} hours.

Scalability

- **Flexibility** maintained to provide an application range for lowest cost, single switch point control to more complex interlockings without restriction or limitation of capacity.