EASILY UPGRADE YOUR SMT LINES AND MACHINES TO THE HERMES STANDARD
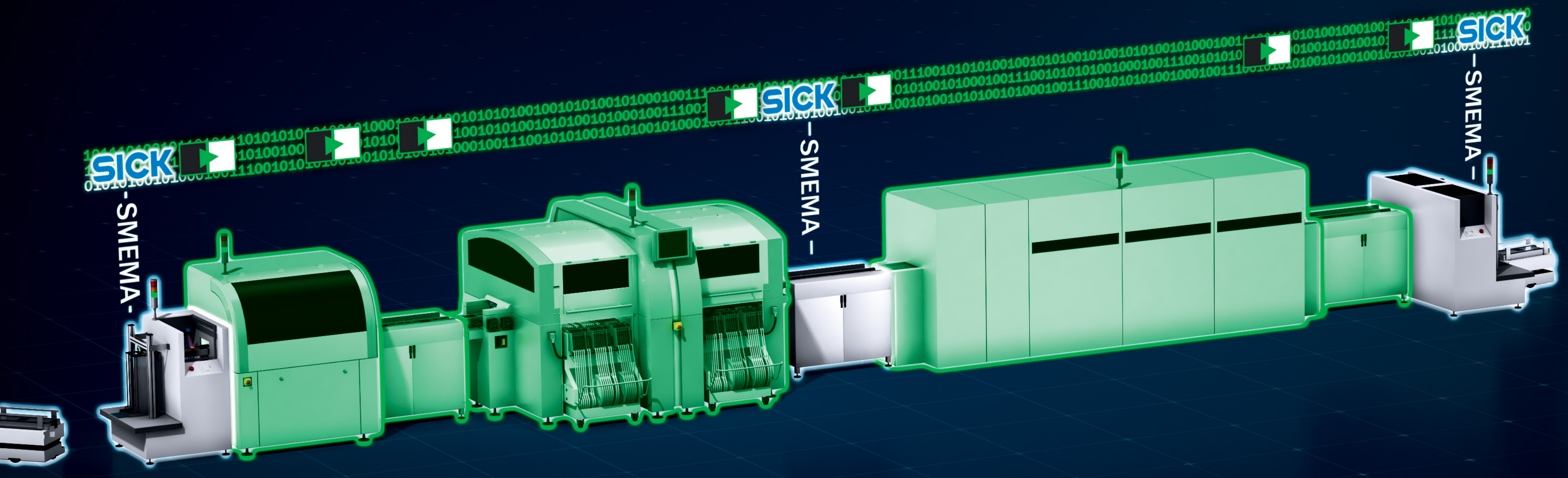

What is the Hermes Standard?

The Hermes Standard, listed under IPC-HERMES-9852, is a modern machine-to-machine (M2M) non-proprietary open communication protocol customized for printed circuit board (PCB) assembly lines. It provides a way for electronics manufacturers to implement Industry 4.0 standards into new and old machinery. This is an upgrade of the SMEMA standard (IPC-SMEMA-9851), but is not intended to be a replacement. In fact, most machines likely will support both standards. Hermes is the new generation technology for board-flow data management and handover, which has previously only been covered by SMEMA as the only established standard for these applications worldwide.

The Hermes Standard is a powerful provider of smooth communication between different vendors' equipment modules, something the previous SMEMA standard interface was not able to implement. Continuous use of The Hermes Standard enables higher automation of the line control as well as consistent traceability.

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Why Upgrade to the Hermes Standard?

When acquiring completely new SMT lines, the consistent application of The Hermes Standard is easy to implement and improves overall board flow management and traceability through all stations of a SMT line. Before the Hermes Standard, information did not pass between each machine, requiring a significant amount more equipment on the lines and did not make the process very intelligent. Essentially, each machine on an assembly line had a barcode reader used to scan each PCB every time it moved to a new machine on the line. With the Hermes Standard, information travels horizontally, eliminating the need for a code reader at each machine. This is done by using a SMEMA-Hermes Gateway.

What is the SMEMA-Hermes Gateway?

It gets more complex when existing machines with SMEMA interfaces and new machines with Hermes interfaces are supposed to operate together in an SMT line. But that's where SICK can help. With its extensive track and trace portfolio, SICK offers scalable solutions for the retrofitting of machines as a member of The Hermes Standard Initiative.

A SICK gateway can be used to easily integrate a machine with a SMEMA interface into a SMT line within the Hermes Standard. The gateway communicates between machines to allow for smoother board-flow management throughout the manufacturing process. It can also communicate vertically into the architecture, such as the cloud or a controller. Essentially, it enables more effective data transfer between machines to enhance your manufacturing processes.

The SICK gateway can also be extended with 1D and 2D code readers and RFID read/write devices. The data collected by these devices are made available in the Hermes network as board and panel IDs. With this, you will gain greater visibility and consistent traceability to what exactly is happening on your SMT lines.

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HOW DO SOME MANUFACTURERS USE THE HERMES GATEWAY SOLUTION FROM SICK?

TRANSPORT UNITS
Implementing continuous Hermes standard

Process machines are usually connected by transport units. When investing in new process machines, existing transport units are often supposed to be reused. A SICK gateway closes the gap in Hermes communication between the process machines and translates the Hermes information for the transport units into SMEMA communication so that it can be reused with-out changes. A cost- and resource-effective alternative for continuous Hermes communica-tion in existing SMT lines.
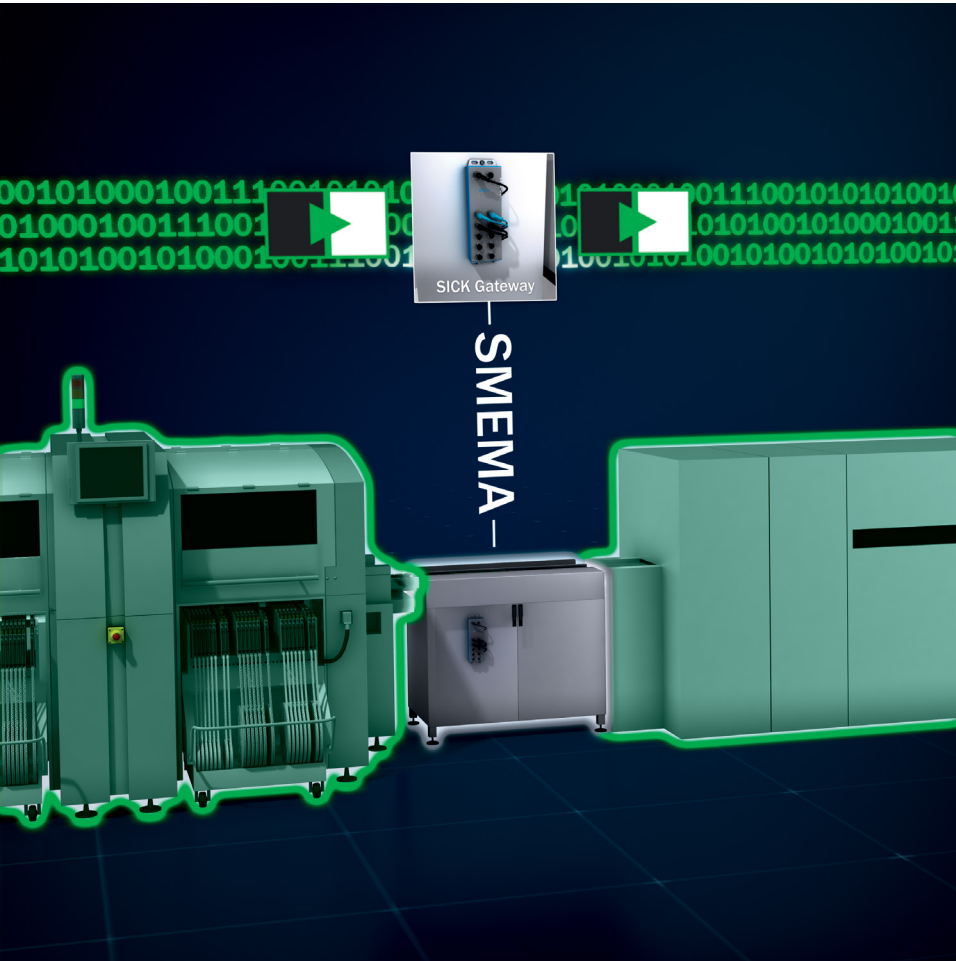
LOADING UNIT
### Board and panel ID in focus

The SICK gateway makes it possible to integrate a loading unit with SMEMA interface into the Hermes network. If you extend the gateway with a code-reading device, the board ID can be read and pass through the Hermes interface. It is also possible to record the panel ID and make it available via The Hermes Standard by integrating another code-reading device - a modular and extendable solution for individual requirements.

UNLOADING UNIT
Panel ID enables WIP tracking

The SICK gateway can also be configured for use on the unloading unit at the end of an SMT line. A SMEMA-compatible unloading unit is then integrated into the Hermes network. Assignment of the board ID to the panel ID is possible by extending the gateway with code reading devices. An important cornerstone for paperless work-in-process tracking.

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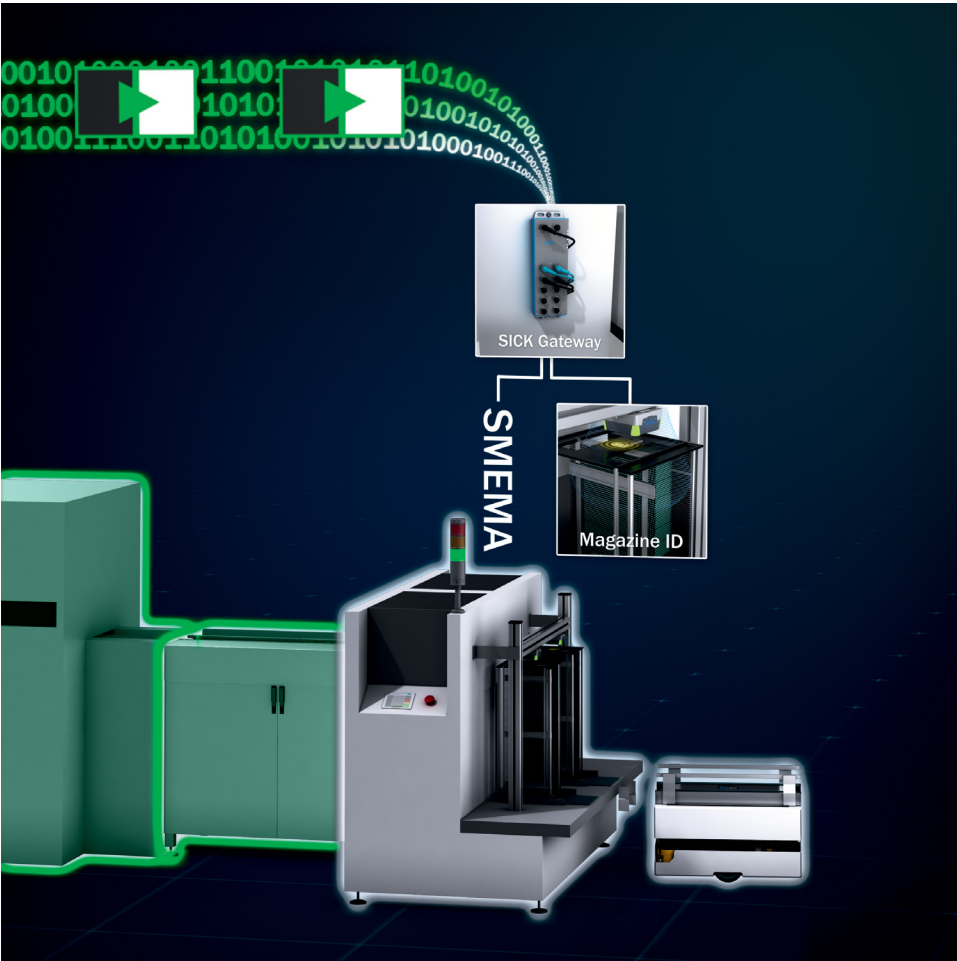
What are the Benefits of Upgrading to Hermes with SICK?

In addition to providing you better visibility and traceability on your SMT lines, the Hermes Standard also provides a numerous other benefits. These include:

- Reduction of hardware on your line, which results in a reduction in investment costs.
- Retrofit kit includes bar code scanners, photoeye, gateway, customized app and cable for easy integration
- Easy movement of data across a PCB manufacturing line.
- Integration and programming services available from SICK's team of Industry 4.0 experts.
- Facilitates communication between different machines from all different generations.

How Can SICK Help with the Upgrade to Hermes?

To integrate the gateway and Hermes into your manufacturing line, system operators can **receive a short training from a SICK expert** to complete the integration themselves.

The other option is to **have a SICK Industry 4.0 expert help** with the integration. Our team of experts provide services for data integration, connectivity to machines, and remote monitoring.

With these services, we can help you **connect all your machines to gain better visibility to data** produced from your processes. This enables you to more effectively optimize your processes to maximize production.

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