

IPC-HERMES-9852

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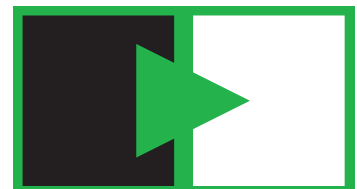
**The Global Standard for
Machine-to-Machine
Communication in
SMT Assembly**

Supersedes IPC-HERMES-9852, Version 1.4
February 2022

*Developed by The Hermes Standard Initiative and
approved by IPC*



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IPC-HERMES-9852

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Acknowledgment

Any document involving a complex technology draws material from a vast number of sources across many continents. While the principal members of The Hermes Standard Initiative are shown below, it is not possible to include all of those who assisted in the evolution of this standard. To each of them, the members of IPC extend their gratitude.

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The Global Standard for Machine-to-Machine Communication in SMT Assembly

1 SCOPE

The aim of this specification is to create a state-of-the-art communication protocol for handling board transfers and associated data at surface-mount technology (SMT) production lines. Therefore, this new communication protocol has to cope with the following:

- Replace the electrical SMEMA interface as specified in IPC-SMEMA-9851
- Extend the interface to communicate:
 - Unique identifiers for the handled printed circuit boards (PCBs)
 - Equipment identifiers of the first machine noticing a PCB
 - Barcodes
 - Conveyor speed and intended board route
 - A lightweight digital twin of the product containing, e.g.,
 - Product type identifier
 - Length
 - Width
 - Thickness
 - Board state

With respect to version numbers The Hermes Standard adheres to the rules of Semantic Versioning 2.0.0 [SemVer_2.0.0].

Hints on naming:

- Wherever a feature is described by the word “**shall**” it is mandatory.
- The word “machine” is used for any equipment which can be found in a SMT production line (e.g., printers, placement machines, ovens, AOIs, transport modules, shuttles, stackers).
- The term “PCB” may also refer to carriers transporting PCBs.
- The word “Hermes” is used as abbreviation for “The Hermes Standard”.
- “The Hermes Standard” and IPC-HERMES-9852 are synonyms for the standard specified in this document and might be used interchangeably.