IPC-HERMES-9852
The global standard for “M2M” in SMT Assembly

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Agenda

Why a new interface
Why IPC-HERMES-9852
How IPC-HERMES-9852 works
Ready for the future
IPC-HERMES-9852 & ASM SMT Solutions
How to start a IPC-HERMES-9852 project
IPC-HERMES-9852 & CFX
Innovation in communication
“Every day life”
All the way from manual switch boards...
Innovation in communication
“Every day life”
All the way from manual switch boards…
…to instant global connections.

IPC-HERMES-9852 for vendor independent machine-to-machine communication in SMT Assembly.
Innovation in communication
“Telecommunications infrastructure”
From “one line – two wires each”…
Innovation in communication
“Telecommunications infrastructure”
From “one line – two wires each”…
… to multi channel glass fibre.

IPC-HERMES-9852 for vendor independent machine-to-machine communication in SMT Assembly.
IPC-HERMES-9852 for vendor-independent machine-to-machine communication in SMT Assembly.
Innovation in communication
“Along the SMT line”
From IPC SMEMA 9851…

… to IPC-HERMES-9852

for vendor independent Machine-to-Machine communication
Why a new interface?
Old technology meet the challenge of today

Challenges
- Highly digitized industry with more need of data
- Full integration between the equipment's
- Need of point 2 point (M2M) communication
- Need of simple integration into high level systems (MES, IoT…)

Old M2M standard
- Based on “signals”, no data at all
- Needs specific hardware
- Is expensive
- Restricts quick changes in line-layout
- Can be hardly adapted to future needs
Why a new interface?

“The old world”: Complex and faulty
Why a new interface?
New job download = long preparation time
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New job download = long preparation time

**Manuel conveyor adjustment**
- Manuel intervention to different equipment
- Manuel input of new parameters (faulty)
Why a new interface…?
New job download = long preparation time

Manuel conveyor adjustment
Barcode reader adjustment
Why a new interface…?

SMEMA cannot meet the challenges of Smart Factories

- Signal based
- Special needs
- No data exchange between machines
Why a new interface?

- Signal-based
- Special needs
- No data exchange between machines
- Protocol-based
- One standard interface
- Machines talk to machines
Why a new interface?

“IPC-HERMES-9852” represents a next generation standard to the existing technology documented in IPC-SMEMA-9851
Why the IPC-HERMES-9852?
Automated data transfer

- Manual conveyor adjustment
- Barcode reader adjustment
- High number of barcode reader

Different boards weights in one line, at the same time and without operator intervention
Why the IPC-HERMES-9852?
Full data availability

- Automated conveyor adjustment
- Barcode reader adjustment
- High number of barcode reader (Barcode/RFID…) only once per line need
The HERMES Standard
Full data availability, maximum line throughput & traceability

No hardware specification, one interface, one standard
Why the IPC-HERMES-9852?
Protocol based

- Board ID
- Board Id created by
- Failed board
- Product type Id
- Flipped board
- Top barcode
- Bottom barcode
- Width
- Length
- Thickness
- Conveyor speed
- Top clearance height
- Bottom clearance height
- Board weight
- …etc

Machine ready

Upstream machine

Downstream machine

Board available

Protocol with board information
Why the IPC-HERMES-9852?
Advanced M2M communication for board flow
Why the IPC-HERMES-9852?
Advanced M2M communication for board flow

HERMES transfers keys (unique ID, barcode) not large amount of data
Why the IPC-HERMES-9852?
Advanced M2M communication for board flow

Board ID can also be used for external systems.
Why the IPC-HERMES-9852?
Connectivity needs cooperation

- The HERMES Standard Initiative is a joint project of leading vendors of electronics assembly equipment.
- Active participation is open to all vendors of electronics assembly equipment.
- All members are equally important in a fair and open decision making process.
Why the IPC-HERMES-9852?
Connectivity needs cooperation
Why the IPC-HERMES-9852?
IPC-HERMES-9852 & IPC CFX

IPC-HERMES-9852:
- A 21st century SMEMA replacement using TCP/IP for point to point M-to-M connection.
- Provides advanced, yet “light”, in-line messaging to support exchange of PCBs and data between machines.
- Global replacement for SMEMA (applicable to every machine process)
- Specification v1.1 consists of all required horizontal messaging.
- The feature-set is focused on board flow management and board ID tracking today.
- THS will drastically simplify the line management / supervision from a higher level systems perspective.

IPC CFX or any other vertical channel:
- Provides “vertical” machine messaging
- Provides horizontal machine to machine messages:
  - For Industry 4.0
  - Not for SMEMA or board handling & board ID tracking
Why the IPC-HERMES-9852?
Factory Integration

- **Multi Factory Level**
  - IIoT applications & services, IIoT portal
  - Data Analytics, Business Intelligence, Cloud based

- **Factory Level**
  - Material & Process Flow, MES
  - Planning, Logistics, Maintenance, Visualization

- **Line Level**
  - Programming, Validation
  - Traceability, Setup, Changeover

- **Connectivity**
  - Easy Integration

- **Shop floor / Equipment Level**
  - Smart Equipment, Automation

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Thank you

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