

The Hermes Standard
for "M-to-M" in SMT Assembly

The Hermes Standard

The Hermes Standard Change Proposal

Add weight attribute to BoardAvailable
message

Voting meeting:
23th of April 2018 (NEPCON / Shanghai)

Requesting company:
SPEA S.p.A.



The Hermes Standard for vendor independent machine-to-machine communication in SMT Assembly.

Version change:

Minor

Service description tag:

-

Description:

The weight attribute will complete the physical data of the transported PCB.

Use cases:

Currently the weight is used to compute acceleration parameters for a smooth transportation.
This data can be also useful in case of lifters, to check for maximum weight and prevent damages.

Functionality / communication sequences:

-

New / changed XML messages:

Extend BoardAvailable message with the following attribute:

- a) Weight

(type: float, range: positive numbers, optional: yes, description: The weight of the PCB in grams.)



Proposed changes to standard:

3 Message definition

...

3.6 BoardAvailable

The BoardAvailable message is sent to the downstream machine to indicate the readiness of the upstream machine to handover a PCB. When an optional attribute is received from an upstream machine, then it must be passed on (possibly altered) to the next downstream machine.

BoardAvailable	Type	Range	Optional	Description
BoardId	string	GUID	no	Indicating the ID of the available board
BoardIdCreatedBy	string	non-empty string	no	Machineld of the machine which created the BoardId (the first machine in a consecutive row of machines implementing this protocol). The Machineld is part of the Hermes configuration.
FailedBoard	int	0 .. 2	no	A value of the list below
ProductTypeld	string	any string	yes	Identifies a collection of PCBs sharing common properties
FlippedBoard	int	0 .. 2	no	A value of the list below
TopBarcode	string	any string	yes	The barcode of the top side of the PCB
BottomBarcode	string	any string	yes	The barcode of the bottom side of the PCB
Length	float	positive numbers	yes	The length of the PCB in millimeter.
Width	float	positive numbers	yes	The width of the PCB in millimeter.
Thickness	float	positive numbers	yes	The thickness of the PCB in millimeter.
ConveyorSpeed	float	positive numbers	yes	The conveyor speed preferred by the upstream machine in millimeter per second
TopClearanceHeight	float	positive numbers	yes	The clearance height for the top side of the PCB in millimeter.
BottomClearanceHeight	float	positive numbers	yes	The clearance height for the bottom side of the PCB in millimeter.
Weight	float	positive numbers	yes	The weight of the PCB in grams.

GUID must match the regular expression

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[0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12}
```



FailedBoard may be one of the following values:

- 0 Board of unknown quality available
- 1 Good board available
- 2 Failed board available

FlippedBoard may be one of the following values:

- 0 Side up is unknown
- 1 Board top side is up
- 2 Board bottom side is up

If FlippedBoard is 2 (Board bottom side is up) then TopBarcode is facing downwards and BottomBarcode is facing upwards. Same applies for TopClearanceHeight and BottomClearanceHeight.

The definition of board bottom and board top side is outside of the scope of The Hermes Standard and left to the customer.

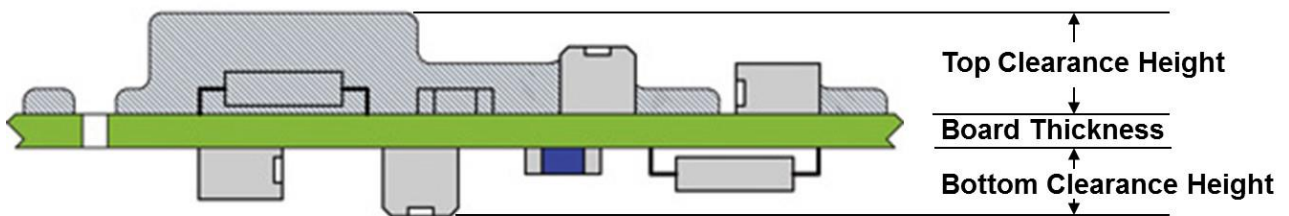


Fig. 1 Explanation for top and bottom clearance height