EMS Plant List

23rd November 2018

Issue 2.1

Electronic Manufacturing Solutions

Plant List Overview

Surface Mount Assembly
- 2 x fully automated Surface Mount Lines with capacity up of 148,000 CPH and placements down to 01005"
- Line 1 = 38,000 CPH
- Line 2 = 110,000 CPH

Automated Optical Inspection (AOI)
- 1 x MEK Marantz AOI machine with top camera.
- 1 x MEK Marantz AOI machine with top and bottom camera.

PCB Cleaning
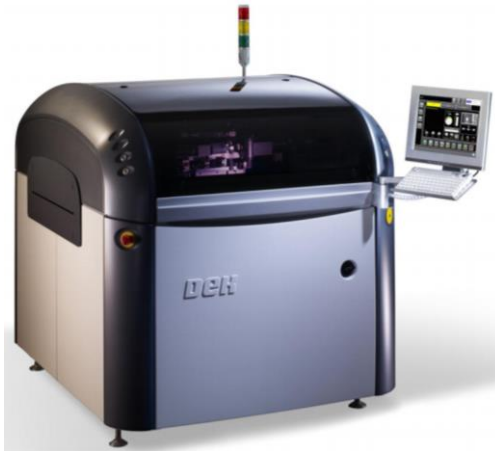- 1 x Trident ZDO Aqueous PCB Cleaner

In Circuit Test
- 1 x HP 3070 In Circuit Test (ICT) machine

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Surface Mount Line 1

| Loader / Unloader | ASM Horizon | C | CM101-D | C | C | CM101-D | C | Workstation | Heller 1809 MKIII | Unloader |

Item	Stencil Printer
Manufacturer	ASM (formally DEK)
Description	Horizon 03iX

Specification

- Stencil printer for 23" or 29" frames, with camera fiducial alignment.
- Fitted with HawkEye 1700 for up to 100% paste on pad inspection.

Item	SMT Pick & Place
Manufacturer	Panasonic
Description	CM101-D x 2

Specification

Optically aligned flexible placement;
- Down to 01005"
- Including, BGA, uBGA, QFN, CSP
- Up to 100mm x 50mm x 15mm (L x W x T)

Item	Reflow Oven
Manufacturer	Heller
Description	1809 MkIII

Specification

- Integrated software with zone and profile control for optimal PCB reflow of almost any design
- 18 heated zones, 9 top and 9 bottom.
- Excellent energy efficiency and short heat up times.
- High throughout capability.

Item	PCB Handling
Manufacturer	Nutek
Description	Loaders & conveyors

Specification

- Loader/loader, linking conveyors and unloader for full PCB assembly automation.
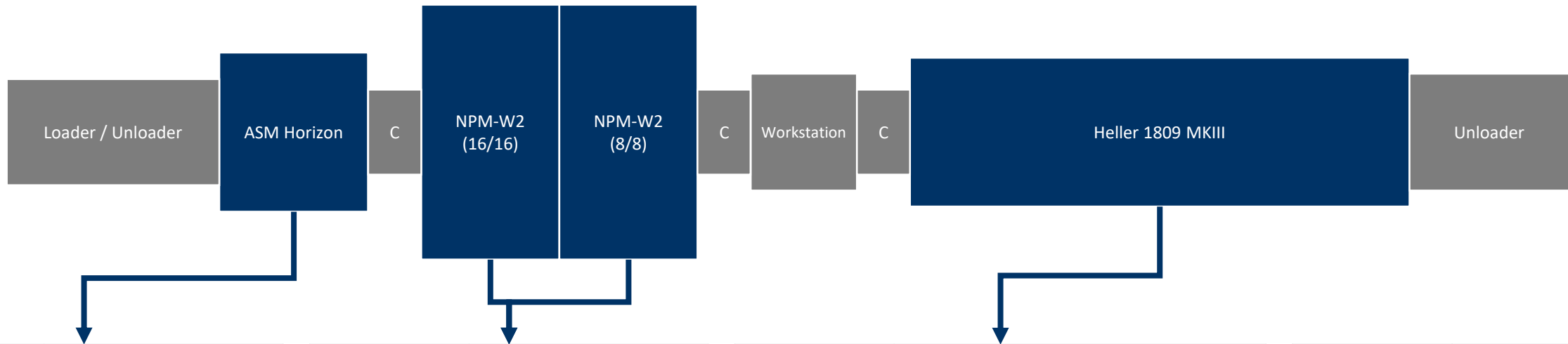
Maximum PCB Length	Part Number Capacity	Components Per Hour
500mm	160	38,000

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Surface Mount Line 2

Loader / Unloader | ASM Horizon | C | NPM-W2 (16/16) | NPM-W2 (8/8) | C | Workstation | C | Heller 1809 MKIII | Unloader

Item	Stencil Printer
Manufacturer	ASM (formally DEK)
Description	Horizon 03iX

Specification

- Stencil printer for 23" or 29" frames, with camera fiducial alignment.
- Fitted with HawkEye 1700 for up to 100% paste on pad inspection.

Item	SMT Pick & Place
Manufacturer	Panasonic
Description	NPM-W2 x 2

Specification

Optically aligned flexible placement;
- Down to 01005"
- Including, BGA, uBGA, QFN, CSP
- Up to 100mm x 50mm x 15mm (L x W x T)

Item	Reflow Oven
Manufacturer	Heller
Description	1809 MkIII

Specification

- Integrated software with zone and profile control for optimal PCB reflow of almost any design
- 18 heated zones, 9 top and 9 bottom.
- Excellent energy efficiency and short heat up times.
- High throughout capability.

Item	PCB Handling
Manufacturer	Nutek
Description	Loaders & conveyors

Specification

- Loader/loader, linking conveyors and unloader for full PCB assembly automation.

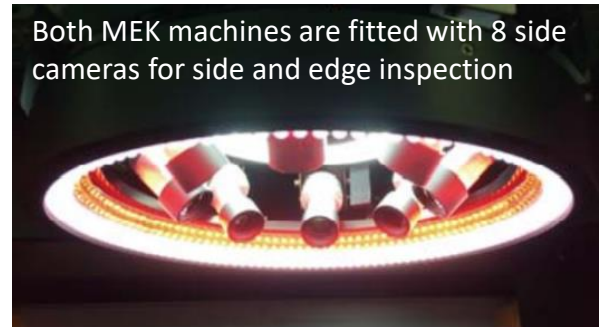| Maximum PCB Length	Part Number Capacity	Components Per Hour
500mm	213	110,000

Automated Optical Inspection (AOI)

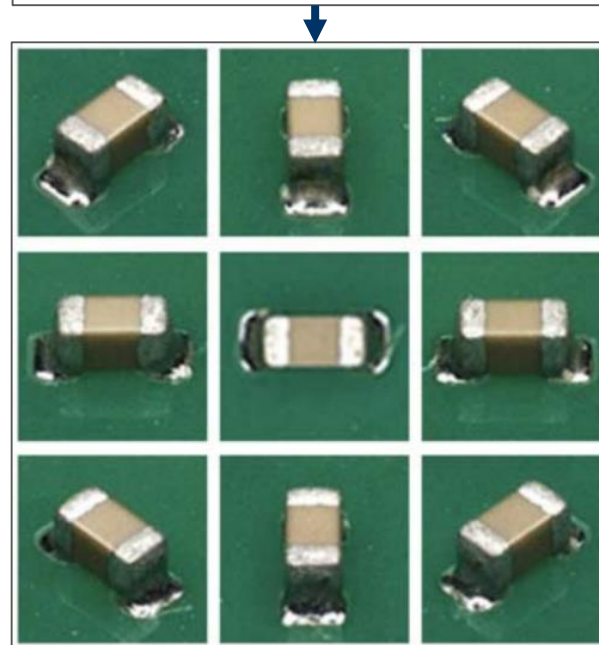| Item	Automated Optical Inspection (AOI)
Manufacturer	MEK
Description	MEK PowerSpector FDAz 650L

Specification

- AOI with 18.75u HD Camera with telecentric optics and eight off 10u side cameras for side and edge inspection of components.
- Omnidirectional multi angle, multi-colour LED lighting with the capability to test a range of criteria on all types of solder joints.
- 1 camera with top side clearance of 30mm.
- Maximum PCB size = 650mm x 550mm

Both MEK machines are fitted with 8 side cameras for side and edge inspection

Combined with the central camera this provides a top down view for standard inspection and 8 side views.

550 BTL with top & bottom cameras, for double sided inspection at the same time.

Item	Automated Optical Inspection (AOI)
Manufacturer	MEK
Description	MEK PowerSpector GTAz+GDAz 550BTL

Specification

- AOI with two 18.75u HD Camera with telecentric optics and eight off 10u side cameras for side and edge inspection of components.
- Omnidirectional multi angle, multi-colour LED lighting with the capability to test a range of criteria on all types of solder joints.
- 2 cameras;
  - Top side, clearance = 30mm
  - Bottom side, clearance = 60mm
  - For inspection of both sides of a PCB at the same time.
- Maximum PCB size = 550mm x 550mm

Aqueous PCB Cleaning

Item	PCB Cleaning Machine
Manufacturer	Trident
Description	Trident ZDO

Specification

The Trident ZDO is a batch load PCB cleaning machine, which offers;
- A closed-loop (Zero Discharge Wash Cycle) providing excellent environmental benefits.
- Automatic Wash, Rinse and Dry Cycles.
- Built-In Programmable Cleanliness Verification Testing via a resistivity meter.
- Adjustable board racks to hand PCBs up to 600mm in length.
- Spray in air cleaning system with oscillating basket.

In Circuit Test

Item	In Circuit Test Machine
Manufacturer	HP / Agilent
Description	3070 Series 3

Specification

- In Circuit Test (ICT) machine for use with custom test jigs to provide in circuit test of any Printed Circuit Board Assembly (PCBA).
- Functional testing could also be added to the process if applicable.
- Suitable high volume repeatable assemblies.

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Support Equipment

Item	Thermal Profiler
Manufacturer	Solderstar
Description	PRO Profiler R-0625P 6 Channel

Specification

- 6 channel reflow oven profiler.
- Used for optimal product profiling.

Item	Soldering Irons
Manufacturer	Metcal
Description	MFR-1100 Series

Specification

Soldering irons with cartridge tip, which utilises Metcal' SmartHeat® Technology which means;
- They are incapable of overshoot
- They do not need any calibration, ever
- They deliver high throughput at lower temperatures

Plus a range of additional equipment to aid and support the production process, including;

- Wire and cable assembly equipment.
- A range of test equipment.
- Personal operator Bofa bench extraction.
- Support software covering MRP, engineering and programming.