



APT Electronics, Inc.

Advanced Packaging Technology



Cert No. A8692
ISO 9001:2000

APT Electronics, Inc is a fully automated electronics contract manufacture specializing in surface mount and through-hole assembly with integrated MRP system supporting turnkey procurement of components to customer supplied AVL and assembly of consigned material.

EQUIPMENT & CAPABILITIES

Facility:

20k sq/ft

- 3K sq/ft office space
- 17k sq/ft production area

Staff: (1) shift

- (105) Employees
- (3) Sr. Buyers with (2) Jr, Buyers
- (14) Quality Inspectors
- (7) Manufacturing Engineers
- (1) Sr. Test Engineer with (3) Test Technicians, (4) Test Operators
- (1) IPC 610 and J-STD-001 Certified Trainer
- (1) IPC 7711 & 7721 Certified Trainer

MANUFACTURING

- Three (3) SMT Pick and Place lines
- One (1) flow solder line (Wave)
- One (1) fully automated selective solder line
- Water soluble and no clean flux available {per customer requirements}
- Workmanship Standard: IPC-610C class 2 and 3 and J-STD 001 class 2 and 3

SOLDER AND FLUX

SMT:

Water Soluble Solder Paste:

- AIM-WS483- {standard}
- AIM-WS300

RMA Solder Paste:

- AIM-212

Lead Free Solder Paste:

- AIM-WS485 {standard}
- AIM-NC254 {no clean}

WAVE: {Flow Solder}

Lead Solder Bar:

- AIM-Sn63/Pb37-

Lead Free Solder Bar:

- AIM-SN100C

Water Soluble Flux:

- AIM-715 {water based} {standard}

RMA Flux:

- AIM-202-25

Lead Free Flux

- AIM-715

Liquid Solder Mask: KESTER-Techform TC-564-1 {water Soluble}

HAND SOLDER:

Solder Wire:

- KESTER-Sn63/Pb37-331/66 core- {standard}
- KESTER-Sn63/Pb37-50/245 core {no clean}
- AIM-58Bi/42Sw-55513-{low temp 147°C}

RMA Solder Wire:

- KESTER- 285

Lead Free Solder Wire:

- AIM-SN100C- flux WS482

Solder Flux:

- ALPHA-870-25 {Standard} {water Soluble}
- KESTER-979 {no clean}

RMA Solder Flux:

- AIM-202-25

Lead Free Flux

- AIM-715



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SMT EQUIPMENT

Pick & Place Machines

Sapphire (x2)

2 head gantries with 12 manual exchange nozzles on each gantry.
Nozzle Sizes: 51-55 (51=0402-0603, 52=0805-1206, 53=Tant. Case A-B, etc
Feeder Capacity: 96 8mm, 48 12-16mm, 30 24-32mm, 20 44mm, 16 56mm.
Mfg. Max Rate: 25K components per hour.
Real Time Rate: 18-20K components per hour.
Board size: Min. 2" x 2" Max. 18" x 16"
Vision Capabilities: Fiducials, 0402-25mm2 components down to 25mil pitch.
Mounting Accuracy: @ 3 sigma +/- .1mm for chips & SOIC; +/- .08mm for QFP's.

Topaz-X2 (1)

1 head gantry with 8 automatic exchange nozzles.
Nozzles: 71-74 and (76 nozzles for round parts).
(71 0201-0603, 72 0805-Tant case A, 73 Tant case B-SOIC, etc
Feeder Capacity: 90 8mm, 48 12-16mm, 32 24-32mm, 24 44mm, 18 56mm.
Mfg. Max Rate: 20K CPH
Real Time Rate: 15.4K CPH
Board Size: Min. 2" x 2" Max. 18" x 17"
Vision Capabilities: Fiducials, 0201-32mm2 components down to 16mil pitch devices.
Mounting Accuracy: @ 3 sigma +/- .05mm for all components.

Topaz-X (1)

1 head gantry with 8 automatic exchange nozzles
Nozzles: 71-74 and 76 nozzle for round parts)
(71 0201-0603, 72 0805-Tant case A, 73 Tant case B-SOIC, etc.
Feeder Capacity: 90 8mm, 43 12-16mm, 28 24mm, 22 32mm, 21 44mm.
Mfg. Max Rate: 18K CPH.
Real Time Rate: 12-14K CPH.
Board size: Min. 2" x 2" Max. 18" x 17"
Vision Capabilities: Fiducials, 0201-32mm2 components down to 16mil pitch devices.
Mounting Accuracy: @ 3 sigma +/- .075mm for chips and SOIC; +/- .06mm for QFP's, BGA's, uBGA's.

Emerald-X (1)

1 head gantry with 2 automatic exchange nozzles.
Nozzles: 61-65 and 66 for melf parts.
(61 0201-0603, 62 0805-Tant case A, 63 Tant case B-SOIC32, 64 PLCC etc.)
Feeder Capacity: 84 8mm, 41 12-16mm, 28 24mm, 20 32mm, 19 44mm.
Mfg. Max Rate: 6,300 CPH
Real Time Rate: 3-4K CPH
Board size: Min. 2" x 2" Max. 18" x 17"
Vision Capabilities: 0201-45mm2 components down to 12mil pitch devices.
Mounting Accuracy: @ 3 sigma +/- .07mm for chips and SOIC and +/- .035mm for QFP's, BGA's, uBGA's

MG1 (1)

1 head gantry with 8 automatic exchange nozzles.
Nozzles: 211-215 and 216 nozzles for round parts).
(211 01005-0402, 212 0603-Tant case A, 213 Tant case B-SOIC, etc.)
Feeder Capacity: 96 8mm, 48 12-16mm, 32 24-32mm, 24 44mm, 18 56mm.
Mfg. Max Rate: 24K CPH
Real Time Rate: 17.7K CPH
Board Size: Min. 2" x 2" Max. 18.1" x 17.3"
Vision Capabilities: Fiducials, 01005-45mm2 components down to 12mil pitch devices.
Mounting Accuracy: @ 3 sigma +/- .05mm for chips and +/- .03mm for QFP's, BGA's, uBGA's, etc.



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Solder Paste Printers

DEK Horizon II (2) fully automatic with fiducials recognition and under stencil clean
Board Size: Min. 2" x 2" Max. 20" x 20"

DEK ELA

(1) Fully automatic with fiducials recognition
Board Size: Min. 2" x 2" Max. 20" x 20"

SMT Reflow Ovens (x3)

BTU VIP98 with 7 convectional heating top & bottom zones, nitrogen capability
Temperature: 300 degree Celsius
Board Size: Min. 2" Max. 18"

BTU VIP70 with 5 convectional heating top & bottom zones
Temperature: 300 degree Celsius
Board side: Min. 2" Max. 18"

Heller 1800EXL with 8 convectional heating top & bottom zones
Temperature: 300 degree Celsius
Board side: Min. 2" Max. 20"

Baking Oven

Blue M Electric model SPX (1)

(Used to pre-bake PCB and selected components prior to SMT process)

QUALITY

AOI Machine (2) (*Automatic Optical Inspection*)

Orbotech VT-9000 Series (x2) with statistical modeling base image processing algorithms and sub-pixel accuracy
Test Platform: X, Y, Z, table with high resolution glass scale encoders
Board Size: Min. 2" x 2" Max. 24" x 18"

VISION

Mantis scopes (22) 4X & 10X magnification
Various stereo microscopes (2) 2.5X to 25X

WAVE

Wave Machine

Electrovert Electra (1)

Fluxer: Automatic spray fluxer

Preheat: 3 convectional preheat bottom, 1 IR preheat top

Wave: SMT or chips wave section and Lambda or T/H. section

De-bridging: Accu-Knife hot air de-bridging tool

Board Size: Min. 2" x 2" Max. 20" x 18"

Standard solder: 63Sn/37Pb

Standard solder Flux: "AIM" 715

Selective Solder Machine

Vitronics Soltec (1)

Model 6745, fully automated

Nitrogen atmosphere (generator on site)

Auto flux droplet size 130mu

Auto-pre heater with 9 elements

Robotic processing with U-rotation +/- 180° and angle 0-10°

Dual pot (lead & lead-free)

Max board size: 16" X 16"



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Nitrogen Generator

On-Site Model N-50 (1)

Built in oxygen analyzer

Produces up to 226 SCFH at a purity of 99.99%

120 gallon storage capacity

Solder Pot

Hakko 485 (x2) with automatic solder flow controller

Component size: 9.9mm x 9.9mm to 89mm x 10mm

Standard solder: 63Sn/37Pb

Standard solder Flux: "AIM" 715

PCBA CLEANING

Aquastorm 100 (1) with wash heater tank, pre-wash, wash, rinse and 2 heater blowers sections

Aqueous Technologies SMT1000-LD (1), Low discharge batch cleaner used to clean assemblies manufactured with RMA flux

Saponifier: ATRON AC300 {standard}

Aqueous technologies: ZI-100A ZERO-ION (1) contamination tester, 18" X 18" test cell.

BGA

X-Ray

CR Technology CRX2000 (1)

Real time imaging

Board Size: Min. 2" x 2" Max. 24" x 18"

BGA Rework Station

Airvac DRS24 semi-automatic with thermal smart tracking system (1)

Rework Capability: BGA, Micro BGA with smallest size out there in the market to 43²mm or 1.7²"

Board Size: Min. 2" x 2" Max. 18" x 12"

BGA Re-ball

Weller WPRB 100 Re-balling Kit (1)

BGA Pitch: Min. 0.8mm or .032" Max. 1.5mm or .06"

TEST

ICT In-Circuit Test Systems

HP 3070 Series III (1)

Capability: Currently testing up to 2304 nodes.

Teradyne Z1820 (1)

Capability: Currently testing up to 1060 nodes.

DeltaScan with FrameScan

GenRad 2286e (1)

Capability: Currently testing up to 3840 nodes.

IC Programming

Chip Master 7000, 7100, and 6100/XP (2)

Program Capability: PLCC-24, 32, 44, QFP-44 and SO-16

Test Equipment

Tonehom multilayer shorts locator Model 950 (1)

Cable Scan Test Mate Model EXP (1)

Oscilloscope: Tektronix TDS 3053 500MHZ DPO (1)

Various DMM (standard test equipment)



MISCELLANEOUS

Press-Fit Connector Installation

5 Ton Manual Press (1)
3 Ton Manual Press (2)
½ Ton Manual Press (2)
Customized tooling provided to ensure proper engagement

De-paneling Equipment

VDP3-IM manual de-paneling machine (1)
Board Size: Min. 2" Max. 18"

DJZ-NIR-1 pneumatic nibbler (1)
Board Size: Min. 2" Max. 18"

Dispensing (RTV)

Kahnetics Dispensing Controller KDS834A with digital timer control of duration from .01 to 99.99 seconds.
Vacuum suck back feature to prevent dripping.

Loctite Dispensing Controllers (x2) 98021 with digital timer control of duration from .01 to 30 seconds.
Vacuum suck back feature to prevent dripping.