total solutions for

any mix
any volume ™

AM100
SCALABLE, COST-EFFECTIVE
SOLUTION FOR HIGH-MIX & NPI

Combines the capability, flexibility, and reliability you expect from Panasonic's award-winning NPM and PanaCIM® Manufacturing Execution System (MES) into a cost-effective, high-mix solution.

Especially suited for high-mix and NPI environments, the AM100 can help improve throughput and efficicency, while keeping your quality reliably high.

Featuring
PanaCIM®
**Enterprise Edition**

ABOUT PANASONIC

Panasonic is a global manufacturing leader known for innovation. We are experts in scalable, integrated, and efficient solutions to make you more productive, profitable, and successful.

As a manufacturer ourselves, we understand the challenges to remain competitive. Manufacturers need solutions scalable to the business, integrated to incorporate a variety of vendor offerings, and efficient to deliver high quality while preserving profitability.

Low or high volume? High or low mix? Regardless of your environment, Panasonic equipment, software, and services will improve your throughput and efficiency while keeping quality consistently high.

Solutions from Panasonic are right-sized for your business, and the AM100 is just one example of how we help OEMs and EMSs alike.

Americas Support

- Service 49
- Sales 44
- Training 13
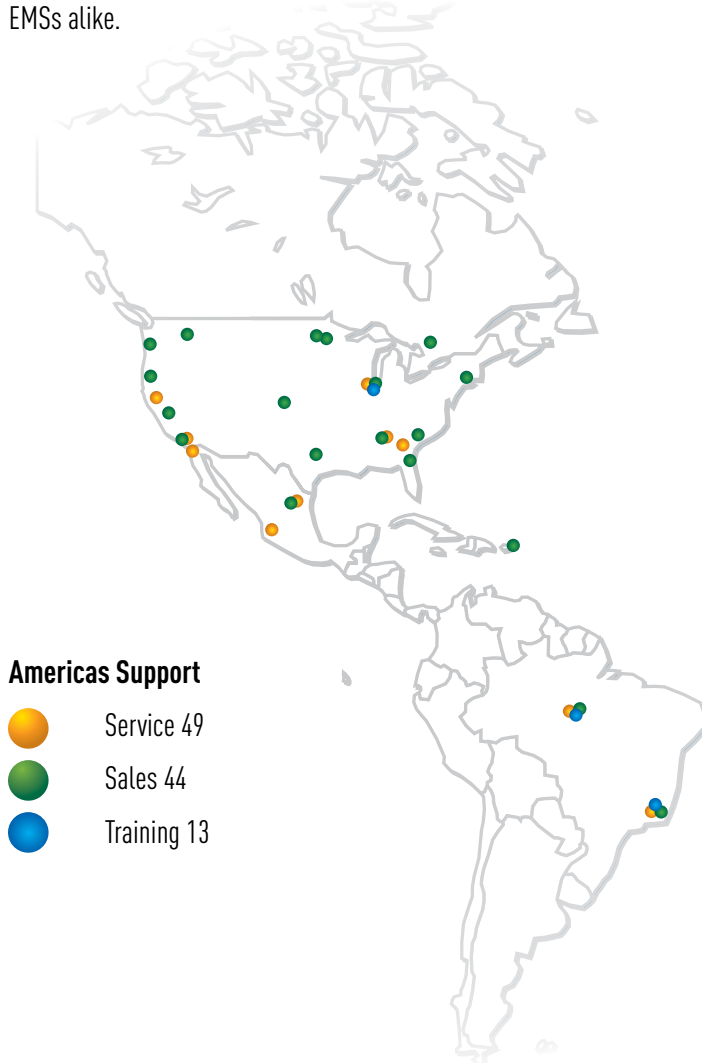
50 YEARS IN PCBA
1963—2013

1963	Panasonic Factory Solutions Founded
1968	1st Insertion Machine Developed
1973	1st Axial Machine Delivered
1980	1st Surface Mount Machine Delivered
1988	10,000th Machine Delivered
1988	PFSA Established for North American Market
1992	Microelectronics Group Expands Offerings
1993	ISO Standard Certifications
2000	30,000th machine
2000	PanaCIM Enterprise Edition Released
2012	Total Solutions for "Any Mix, Any Volume"
2013	78,000th Machine Delivered
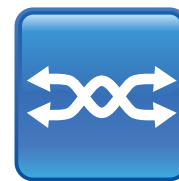
scalable   integrated   efficient

Scalable
- Match production levels to line capacity
- Integrate software modules when business dictates
- Single line facilities to multi-national corporations... over 78,000 installations worldwide

Integrated
- For any machine platform or business system
- Communicates with various PCBA systems
- Multi-level traceability throughout SMT process

Efficient
- Asset utilization optimized by zero changeover
- Offline set-up, teach, and changeover tools
- Highly-accurate, any-time inventory mgmt: in-product, in-process, on-floor, in-drybox

DESIGN CONCEPT

Modular single-beam placement machine with a 14-nozzle head capable of placing an impressive component array at upwards of 35,800 cph with 160 reel inputs:

- Single head design for 01005 to 6" long connectors
- Pneumatic grippers and custom nozzles for odd-shaped parts
- Inherent capability for advanced processes

Non-stop changeover featuring Feeder Anywhere and Nozzle Anywhere enables online setup during production. Quality-enhancing features like a 3D camera, side-view camera, auto-support pin set up, board warp detection, and tray verification are also available.

The AM100 combines our high standards for flexibility and reliability with a cost-effective, modular high-mix solution—providing the foundation for future growth & investment protection as technologies or demand changes.

Added Value:

- Single-head solution with a vast component range
- Common feeders & nozzles with CM- & NPM-series
- Common programming & conversion tools available

Machine Layout & Supply Options

Rear left and rear right

- Fixed Feeder Base
- Feeder Cart
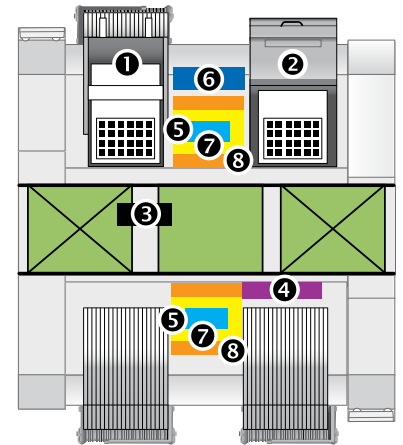- Tray Feeder ❶
- Tray Tower ❷

Front left and front right
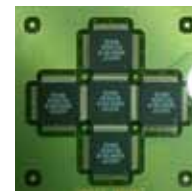
- Feeder Bank
- Feeder Cart

Standard features

- 14-nozzle Head ❸
- Nozzle Changer (Front side) ❹
- Line Camera (Front side) ❺

Options

- Nozzle Changer (Rear side) ❻
- Line Camera ❺
- 3D Sensor ❺
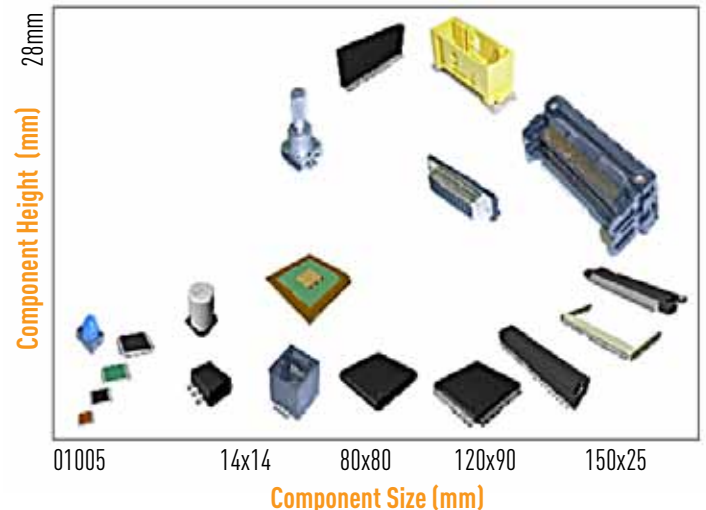- Stadium Lighting ❼
- Side View camera ❽

Highly versatile head unit


Superb placement accuracy

Intelligent Feeder Anywhere

PART RANGE

The AM100 balances productivity with versatility in a single head design using linear drives:

- Component range spanning 01005 chips to 6" (150mm) connectors over 1" (28mm) tall
- Multi-pitch, multi-width smart feeders are interchangeable with our CM- and NPM- Series
- Material Verification ensures error-free setup with Feeder Anywhere or quick exchange carts
- 2D bar-coded nozzles and grippers simplify setup with added quick-change nozzle holder
- Auto calibration verifies accuracy during production without using fixtures

Component Height (mm) / 28mm

Component Size (mm)

01005   14x14   80x80   120x90   150x25

MACHINE CONFIGURATIONS

A common frame, gantry, vision, and head placement system form the foundation for myriad configurations depending on production needs. More importantly, this commonality provides an inherent investment protection, which allows onsite modification to integrate new features and options as technologies evolve.
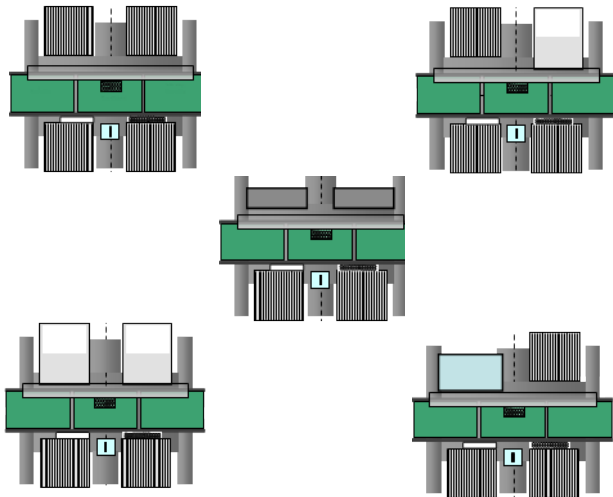
Feeder Cart
- Integrated fiducials & tape cutter
- Single button exchange of 40 feeders
- Supports tape, tube, bulk, and custom feeders

Feeder Bank
- Handles 40 feeders, integrated tape cutter
- Quick bank setup via Feeder Anywhere
- Supports tape, tube, bulk, and custom feeders

Tray Elevator
- On-the-fly reload sequence
- Magazine-fed system
- Auto teach 20 unique tray levels

Manual Tray Pallet
- 2 unique tray locations
- Easily removable for added feeder capacity
- Auto teach tray function

LINE CONFIGURATIONS

One Machine Solution
Great versatility, allowing production to start with a single machine

- Mounts entire range of components from chips to leaded and array components
- Fixed feeder banks reduce investment
- 120 feeders, 20 trays, 35,700 cph

General Purpose Line
Providing the best balance of cost and net productivity

- High productivity and balance across both machines
- Grip nozzle supported (the chuck size can change)
- 280 feeders, 20 trays, 71,400 cph

High-mix, Low-volume Manufacturing Solution
A group of modules to support increased productivity in high-mix, low-volume manufacturing
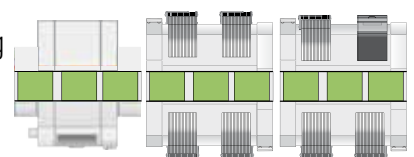
- Higher feeder count allows for family setup
- On-the-fly changeover during production
- 480 feeders, 20 trays, 107,100 cph
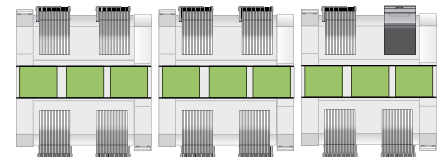
Cost-effective Total Line Solution
Panasonic SPG printer boosts productivity and quality

- Common Programming
- One contact support
- 280 feeders, 20 trays, 71,400 cph

OPTIONS

Intelligent Tape Feeders
- Common with CM & NPM Series
- 4 multi-pitch, multi-width feeders reduce investment
- Self-adjusting with auto teach & splice detection
- Safely Hot Swap during production
- 4x1mm pitch available

Nozzles
- Long-life ceramic design
- Integrated 2D barcode for Nozzle Anywhere setup
- Compatible with quick change, high-capacity nozzle holder

Component Vision Series
- Digital, color line scan system
- Front, side, & stadium lighting
- 80x80mm field of view
- Only one camera type needed for complete part range

Special Feeders
- Common with CM & NPM Series
- Tape up to 104mm wide
- Deep Pocket & Large Reel options
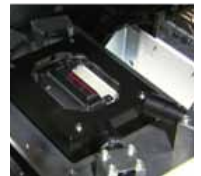- Through-hole feeders
- Bowl and Bulk Feeders

Gripper
- Pneumatic, adjustable stroke
- Integrated 2D barcode for Nozzle Anywhere setup
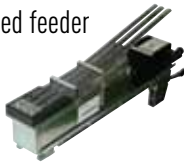- Compatible with nozzle holder for on-the-fly changes

3D Vision Inspection
- Industry's only 3D laser reflection scanning system
- Simultaneously combines X, Y, & Theta alignment with coplanarity
- Measures bump & lead height

Stick Feeder
- Common with CM & NPM Series
- Panasonic-desgined feeder supports up to three tubes
- Custom guides & options available

Custom Nozzles
- Eliminate manual placement with custom vacuum and gripper tools
- Local design expertise with quick turnaround
- Thousands of special design

Side-view Camera
- CCD camera measures part thickness to detect abnormal pickup
- Verifies nozzle tip status
- Ideal for 0201 and smaller chips

Support Station Box
- Reduces changeover time with offline cart setup
- Wireless scanner guides operator through setup
- Combine with PanaCIM Material Verification for correct setup

Material Verification
- Provides authenticated setup and fast changeover
- Manages alternate component part numbers and supply types
- Operator login tracks actions

Board Warp Mapping
- Head-mounted laser system measures board topography
- Controls part placement height
- Measurement data shared downstream
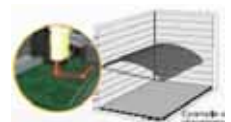
Multi-function Transfer Unit
- Linear slide with auto reload for successful PoP process
- Supports solder and flux
- Programmable squeegee gap

Offline Vision Data System
- Easily create files offline & save directly to program
- Performs data reliability test
- Uses same vision recognition system as machine platform

Automated Board Support
- Utilizes DGS data to position pins for complete support
- Eliminates manual pin placement errors
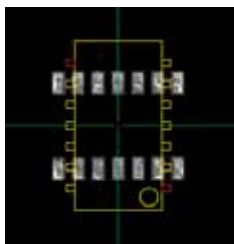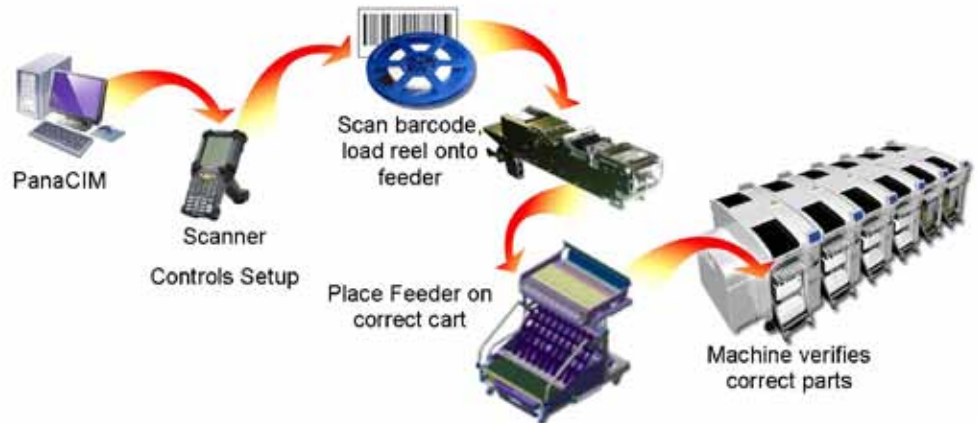- Reduces changeover time

NEW PRODUCT INTRODUCTION

Competitive pressures, cost challenges, and increased customer expectations are driving improvements in the way manufacturers develop and introduce products to the market. Whether cultivating internally-born ideas as an OEM or responding to customer require-ments as an EMS, the new product introduction process is mission-critical to speed up "time-to-market" and your company's success. Panasonic solutions provide the following capabilities that are essential for effective execution of new product introduction:

Setup Verfication

- Material Verification guides feeder setup
- Machine confirms setup, reels, trays, part numbers, and data
- DGS verifies program integrity

PanaCIM

Scanner
Controls Setup

Scan barcode, load reel onto feeder

Place Feeder on correct cart

Machine verifies correct parts

Online Component Teach

- Automatically teach basic or complex component shapes
- Retrieve recent component images and adjust with "digital calipers"
- Accepted changes sync to master database library

Offline Component Teach

- Create parts library offline on the same system as machine
- Minimize machine idle time
- Generates tested vision file

Fiducial Teach and Adjustment

- Lighting automatically adjusts for fiducial recognition
- Change shape, colors, dimensions, or location
- Accepted changes sync to master database library

Production
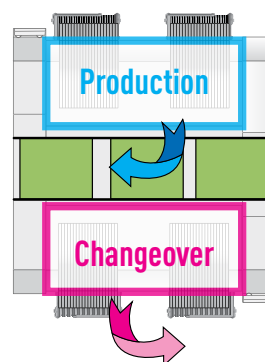
Changeover

Changeover Mode

- Continue production on one side of the machine while changing over on the opposite side
- Uses quick change carts with Nozzle & Feeder Anywhere
- Hot swapable intelligent feeders
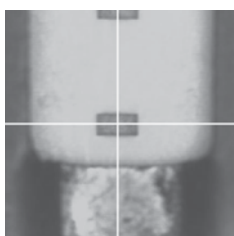
Automatic Feeder Teach

- Aligns first component pick
- Adjusts component orientation & index speed
- Auto pick correction
- Compatible with reel, stick, tray, & strip tape packaging

Virtual PCB Inspection

- Graphically overlays DGS Program Data on PCB image to ensure proper alignment and rotation
- Validate placement offline to preserve live components for production
- Easily adjust X, Y, & Theta

SOFTWARE & PROGRAMMING

DGS (Data Generation System) is our intuitive, PC-based programming software. Taking line balance into consideration, it assigns parts from CAD data, optimizes them, and then creates the placement program for the line.

DGS

PT200
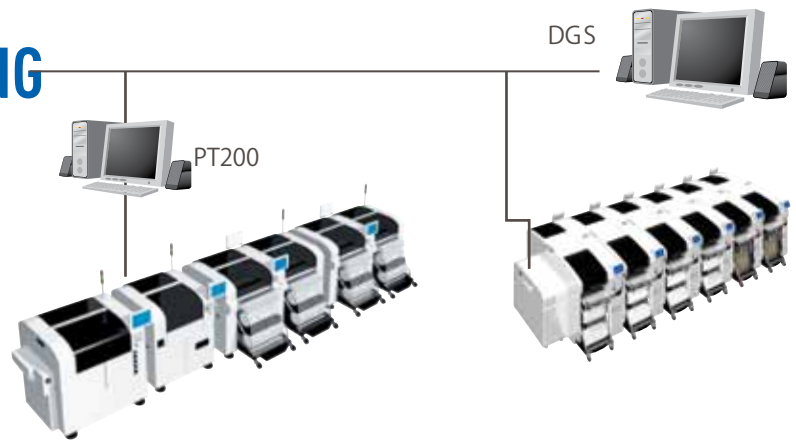
Multi-CAD Import
retrieves data and allows for properties like polarity to be checked in advance
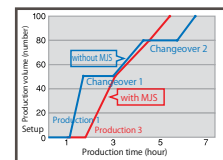
Simulator
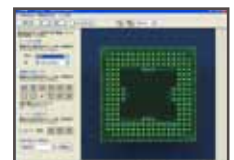provides on-screen confirmation in advance

Component Library
Registers and unifies the component data of all placement machines

Mix Job Setter (MJS)
Optmizes production data to commonly arrange component feeder units

Off-line Component Data Creator (option)
Creates component data using a store-bought scanner

PanaCIM®
Enterprise Edition

PanaCIM integrates cooperating software modules to solve key production problems by addressing the top objectives for successful electronics manufacturing.

Customizable
The nine PanCIM modules were developed based on user feedback to provide a complete portfolio of electronics assembly software while still allowing you to pick and choose the best modules for your current business situation and easily add capability when needed.

Eliminate IT infrastructure costs with PanaCIM Express
A self-contained, completely pre-configured, ready-to-go distribution system especially for smaller installations requiring digital data collection, yet do not have a dedicated IT staff.

Cloud-level

Enterprise-level

Facility-level

Line-level

Machine-level
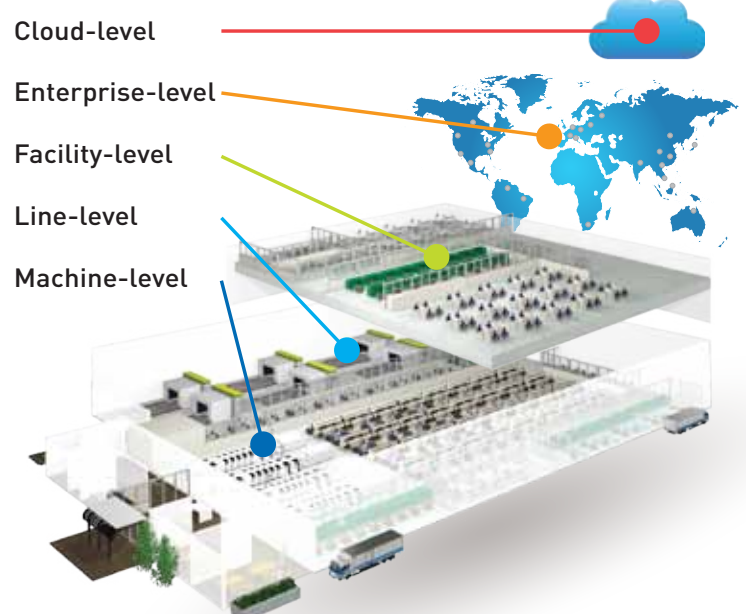
SPECIFICATIONS

Model Name (Number)		AM100 (NM-EJM4D)
Concept		Scalable Single Gantry Hyrbrid Drive Platform
Drive System		Highly Accurarate Linear Motor Hybrid Drive
Component Alignment		Digital Color Line Scan Camera, Fixed Position
Head Design		14-spindle Ultra High Flex Head
Board Dimensions		510 x 460mm (20 x 18") Standard
		1,200 x 460mm (47x18") Optional
Board Thickness		up to 8mm
Placement Accuracy		±40 micron Cpk ≥1.0 Chip
		±30 micron Cpk ≥1.0 QFP
Throughput	Ideal	35,800 cph
	IPC9850	22,000 cph
Component Range	Minimum	01005 (0402M)
	Maximum	120x90mm (4.7x3.5") & 150x25mm (6x1")
	Height	Up to 28mm (1.1")
	Bumps	0.15mm diameter, 0.3mm pitch
Feeder Capacity	Reels	up to 160 reels
	Tubes	up to 60 tubes
	Trays	up to 40 trays
Facilities	Electric	3 Phase AC 200/220V ±10V,
		AC 380/400/420/480V ±20V 2.0 kVA400V 2 KVA
	Pneumatic	Min 0.5 MPa to Max 0.8MPa, 200 L/min (A.N.R.)
	Mass	2370 Kg (Main Body with 4 Feeder Banks)
	Dimensions	W 1,970 x L 2,019 x H 1,450mm

FEATURES

14-nozzle Highly Versatily Head	●
High Resolution Line Camera	●
Nozzle Changer	●
CAD Data Import Utility	●
Pre-defined Part Libray	●
Adaptive Component Pick	●
Auto Placement Calibration	●
Multi-job Production Scheduling	●
Auto Feeder Teach	●
Fiducial Teach with Auto Adjust	●
Virtual PCB Inspection	●
PoP Process Capable	●
NPI Software Tool Set	●
Feeder Banks (Fixed Base)	O
Feeder Carts (Quick Change)	O
Tray Tower (20 positions)	O
Manual Tray Feeder	O
Rear Line Camera	O
Rear Nozzle Changer	O
Intelligent Nozzle Anywhere	●
Intelligent Feeder Anywhere	O
3D Vision Inspection	O
Side View Component Camera	O
Board Warp Mapping	O
Automatic Board Support	O
Auto Load Spliceless Feeder	■
LED Binning Software	O

Standard ●
Available O
Pending ■

Panasonic

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