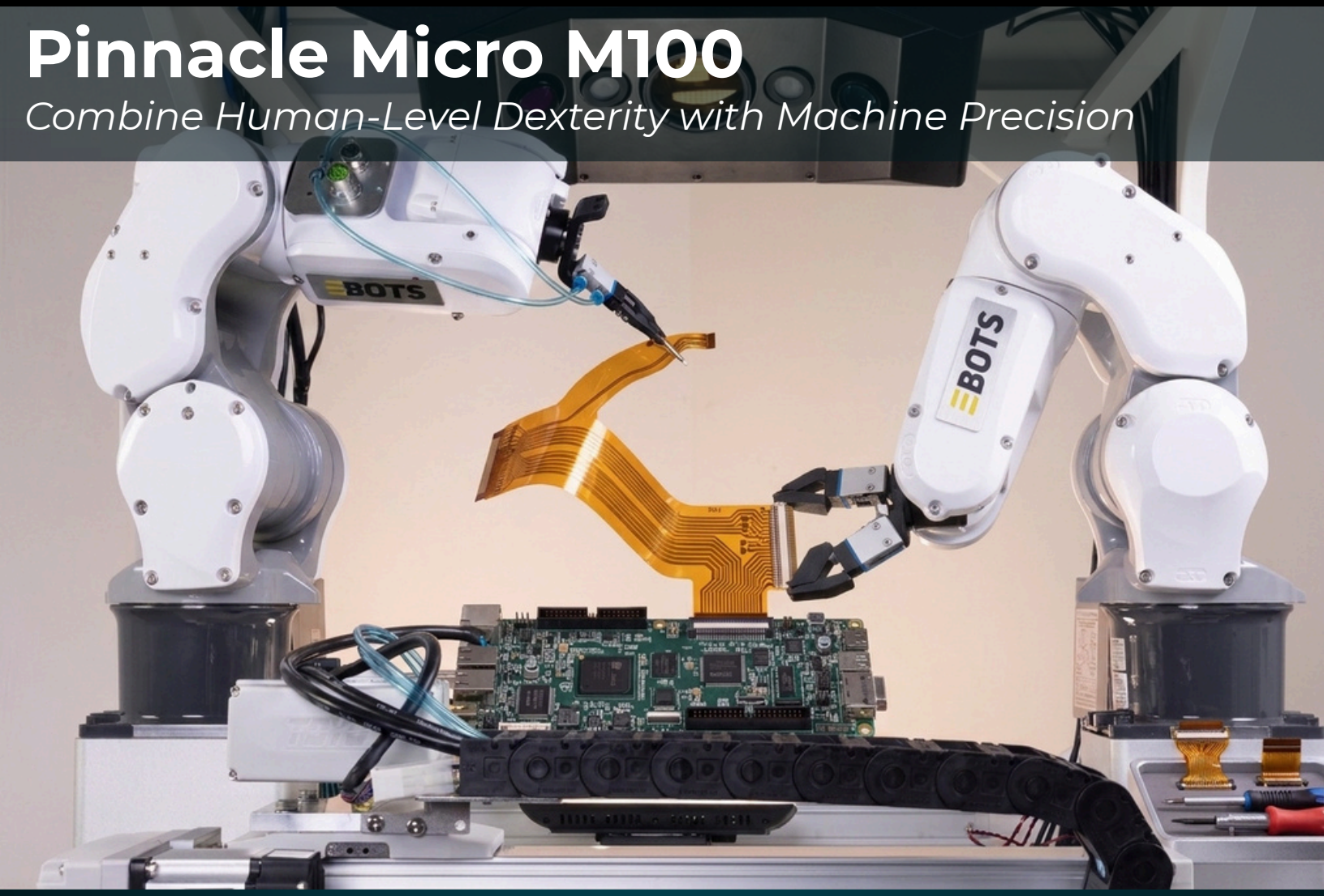
EBOTS

For FPC Assembly

Pinnacle Micro M100

Combine Human-Level Dexterity with Machine Precision



The Challenge

- Misaligned fine pitch contacts
- Creasing or tearing of cables
- Incomplete seating at ZIF connectors
- Operator fatigue & insertion errors
- Micron-level tolerances beyond human consistency
- Poor yield and high network costs
- Labor shortages in precision electronics

The eBots Solution

- Denali 3D vision — 40µm point cloud resolution
- Proprietary AI alignment algorithms
- Dual-arm adaptive force control
- 51.2 × 28.8 mm precision field of view
- 99.98% insertion accuracy
- Fast SKU changeover — no mechanical retooling
- Push-in-place solution — Production of Record at Foxconn

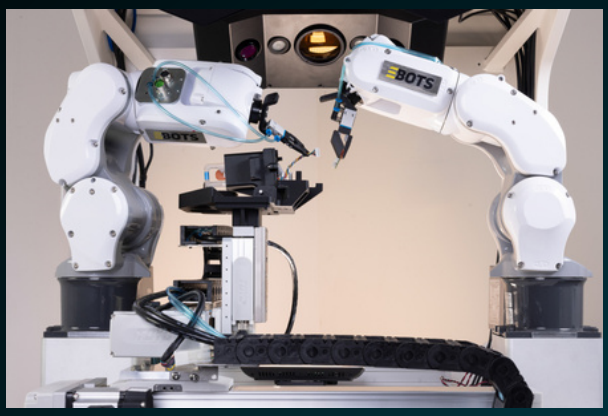
Consumer Electronics

Small Medical Devices

Data Centers

Aerospace & Defense

Pinnacle Micro M100



The Only Choice for FPC Assembly

The eBots Pinnacle Micro M100 is purpose-built for the last millimeter. When a flexible printed circuit needs to be seated at 50-micron tolerance, the M100 is the only automated solution that delivers consistent, production-grade results.

The M100 uses the Denali binocular 3D structured light sensor with a 51.2 × 28.8 mm field of view — tight by design, not by limitation. Two 6-axis coordinated arms work in sequence: one stabilizes the substrate, the other executes the insertion with controlled force feedback. The work stage adds X, Y, Z, and rotational control at ±0.005 mm XY repeatability, presenting the assembly to the robot rather than chasing the part.

Denali Vision Sensor

Sensor Type	Binocular 3D Structured Light
Field of View	51.2 × 28.8 mm
Depth of Field	8 mm
Working Distance	291 mm
Point Cloud Resolution	40 µm
Frame Rate	409.2 fps (8-bit)
Projector Resolution	1280 x 720
Camera Resolution	1936 x 1464

Work Stage System

Maximum Load	≤ 5 kg
Degrees of Freedom	X, Y, Z, R
XY Accuracy	±0.005 mm
Z Accuracy	±0.01 mm
Maximum XY Speed	1,200 mm/sec
Maximum Z Speed	100 mm/sec

Robotic Arm System

Configuration Options	Option A / B / C
Rated load	0.3 / 2.4 / 4.2 kg
Maximum Load	0.5 / 4 kg
Maximum Reach	350 / 550 / 927 mm
Degrees of Freedom	6-axis + 6-axis + 4-axis
Repeatability	±0.02 / ±0.01 / ±0.01 mm
Number of Arms	2 (coordinated)
End Effector	Custom Universal
Control Frequency	250 Hz

System Specifications

CPU	1.9 GHz, 8 cores / 20 cores
GPU	NVIDIA A5400
Operating System	Linux
Connectivity	Ethernet / EtherCAT / RS485
Protocols	Modbus / TCP-IP
MES Integration	Supported
Safety	Interlock Sensors
HMI	English & Chinese
Power	220V, 4.5 kW

Precision Solutions for high-mix assembly

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