

PJ15X

3D Printed Electronics System

The PJ15X is an economic Rapid Prototyping system for 3D Printed Electronics. This unique system combines piezo-actuated printing technology with 5-axis motion control enabling complex 3D printing. It is ideally suited for a wide range of R&D, Prototyping and Product Development operations. The system has a modular configuration and uses a standardised high performance control system offering a clear path to future High Volume Manufacturing. The base system is scalable with optional upgrades that can be added at the time of order or in the customer facility that allow the creation of novel process chains:



Print/Functionalising Tools	Pre-/Post-Processing
Piezo Jetting	CNC Machining
Ink Jetting (Single Nozzle and Classic Multi-nozzle*)	Plasma Cleaning
Aerosol Based	Light Beam Sintering
Dispensing	UV Curing
Ultrasonic Spray*	Adaptive Tool-path Vision System
FFF/FDM	
SMD Pick & Place	

*Beta test option

With the extensive range of print and post-processing tools the PJ15X supports a wide variety of functional materials. Conductive nanoparticle inks and micron scale pastes can be accurately deposited onto complex shaped non-planar substrates and combined with SMD Pick & Place for manufacturing mechatronic systems. Structural bodies can also be generated via the FFF and dispensing modules enabling “Fully Additive” 3D electronics.

Features

- Full 3D Functional Printing capability
- 3D PE Combining Structural Build, Surface Mount Devices & printed circuits
- Intuitive and easy to use Software
- Cost effective Prototyping to Low Volume Manufacturing

Applications

- 3D Printed Electronics
- “Fully Additive” Structural Electronics

Printable Materials (Base Configuration)

- Nanoparticle solutions, microparticle inks (to ca. 50 µm)
- Dielectrics
- Resistive inks
- Ink viscosity range: 50 to 200,000 mPas

Alternative print methods extend range of materials.
Contact Neotech for details.

Motion Module

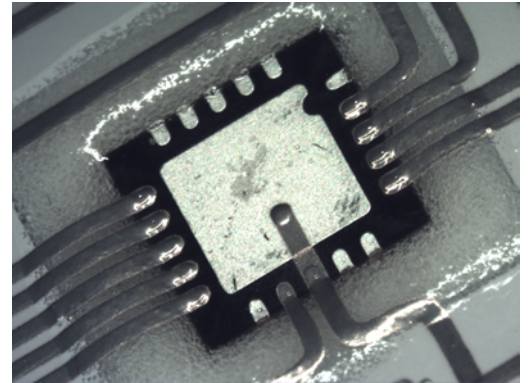
- Print Speed: 100 mm/s max.
- Motion Range: 400-300-140 mm (X-Y-Z)
- X, Y and Z – Axis repeatability: +/-10 µm
- A & B Axis position accuracy – Angle deviation 0° 1' 20“
- A & B Axis repeatability – Angle deviation 0° 0' 6“
- Stand alone system dimensions 769 mm x 834 mm x 1370 mm (X-Y-Z) – control case & monitor extra
- Stand alone system weight ca. 350 kg

CAD/CAM Software Motion 3D

- 3+2 indexed printing through 5-axis simultaneous
- Optimised cycle times via free definition of the print sequence
- Printing, Pick & Place, Pre- and Post processing, path & machine motion simulation (collision detection)
- Machine specific ISO Standard G-Code post processor
- Look ahead function giving clean end to printed feature
- CAM Check Function – check programmed tool-path vs. hardware limits

Utilities Required (Base System)

- Electrical: 240V/10A or 110V/10A
- Compressed Air (4 bar min.)
- Print Head Cleaning Facilities/Solvents
- Final utilities depend on end configuration



Embedded Electronics



“Fully Additive” 3D Printed LED Array