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nScript Introduces Factory in a Tool for the Manufacturing Floor

Orlando, Florida: Precision Micro-Dispensing and 3D printing manufacturer, nScript, has introduced its Factory in a Tool (FiT) for Direct Digital Manufacturing. This fully integrated system digitally fabricates anything from 2D and 3D printed circuit structures (PCS) to biological structures and can be used almost anywhere on the digital manufacturing floor.

nScript's Factory in a Tool is offered in 3 base models (based on size) and multiple configurations: 2 base models for solder, vias, and adhesives, and 3 for Direct Digital Manufacturing. All of the FiT systems use one of two basic hardware configurations: the 3Dn-Tabletop is based on a precision ball screw motion platform and the 3Dn-300 and 3Dn-500 systems are linear gantry systems. The 3Dn-300 has 300 millimeters of travel in the XY axis and the 3Dn-500 has 500 millimeters of travel in the XY axis. A one meter system is coming soon. Lining up two or more systems creates what nScript calls its Factory in a Line.

The Factory in a Tool 3Dn-300 and 3Dn 500 run 5 tool heads for Direct Digital Manufacturing without tool changes. All of the tools and configurations share the same vision: a user-friendly and customizable GUI (Graphical User Interface), z-tracking/High sensing, precision motion control, and common software and electronic controllers, which simplify operation, maintenance, servicing, training, and reconfiguration.

Shown below are the Factory in a Tool base systems. Options for these systems include HEPA filters for both electronic and biological applications.



Precision Micro-Dispensing, material extrusion, micro-milling, and pick-and-place tool heads can run simultaneously on the nScript Factory in a Tool



nScrypt's FiT uses multiple tool heads, including the nFD™ for material extrusion, SmartPump™ for Micro-Dispensing, nMill™ for micro-milling, and nPnP™ 360 for pick and place of electronic components and subassemblies. These tools operate in series or parallel on a fast (up to 1 mps), high-precision (up to 10nm resolution, 500nm repeatability, 1 micron accuracy) linear motion gantry, accompanied by multiple cameras for automated inspection and computer vision routines, a point laser height sensor for mapping surfaces for conformal printing, an automated PulseForge 1300 photonic curing system, and a femtosecond laser for cutting or sintering materials.

The FiT's SmartPump™ Micro-Dispensing tool head eliminates drooling with pico-liter volumetric control and boasts the widest range of materials available for any Micro-Dispensing system: more than 10,000 commercially available materials. It can also print a few centipoise (like water) to millions of centipoise (much thicker than peanut butter).

The FiT's nTip™, which is used on the SmartPump™ tool head, boasts the smallest commercially available pen tip diameter, 10 microns, 1/10 the diameter of a human hair, which beats the smallest competitive pen tip by a factor of 10 (the smallest competitive pen tips are 100 microns).

The FiT's nFD™ extruder tool boasts the widest range of thermoplastics and can also print composites and continuous carbon fiber. If a material is not available in a filament format, the FiT's nFDh™ hopper option, the only one of its kind on the market, loads thermoplastic and composite injection molding pellets.



About nScript

Headquartered in Orlando, Fla., nScript manufactures Micro-Dispensing and Direct Digital Manufacturing systems. It is a spin out from Sciperio Inc., a research and development think tank specializing in cross-disciplinary solutions. Sciperio won the R & D 100 award in 2003 for developing the world's first commercially available bioprinter, under a contract with the Defense Advanced Research Projects Agency. The nScript BAT Bioprinter will travel to the International Space Station in 2019. The company serves the electronics, electronics packaging, solar cell metallization, printed antenna, life science and chemical/pharmaceutical industries. nScript Cyberfacturing Center is its direct digital contract design and manufacturing service. www.nscript.com.