

# VOLTERA V-ONE PCB PRINTER



Accelerate your hardware development

# V-ONE PRINTER

**\$3,499.99**

Conductive Ink Cartridge (×1)  
Solder Paste Cartridge (×1)  
Dispensers (×2)  
z-axis Probe (×1)  
Board Clamps (×2)  
Clamp Thumbscrews (×4)  
3"×4" FR4 Substrates (×6)  
2"×3" FR4 Substrates (×10)  
Power Cable (×1)  
USB Cable (×1)  
Nozzles (×4)  
Solder Wire Spool (×1)  
Flux (×1)  
Hello World Circuit (×1)  
Burnishing Pad (×1)

# DRILL ADD-ON

**\$699.99**

Drill bits (×10 - various sizes)  
Sacrificial Layer (×1)  
3"×4" FR1 Substrates (×6)  
2"×3" FR1 Substrates (×10)  
Safety Glasses (×1)  
0.4mm PCB Rivets (~×200)  
1.0mm PCB Rivets (~×200)  
PCB Rivet Tool (×2)  
Power Cable and Adapter (×1)  
Allen Key and Set Screws (×1)  
Clamp Thumbscrews (×4)  
Hello Drill Circuit (×1)  
Zipties (×3)

# THE V-ONE PRINTS TRACES, DRILLS, DISPENSES SOLDER AND REFLows



## ZERO DAY LEAD TIME

Getting a few boards shouldn't mean waiting for a factory on the other side of the world. Just load your files, click print, and have your board in less than an hour. No lead time, no stencils, no hassle.



## LESS COSTLY MISTAKES

We've all been there... waiting for weeks for boards to arrive only to find out there was a mistake in the layout. With the V-One, you can print a corrected board immediately for \$5-10 USD.



## SURPRISINGLY USABLE SOFTWARE

Sick of using software that requires Win95, FORTRAN knowledge, and a dial-up connection? The free-to-use Voltera software accepts Gerbers from any CAD tool, regularly auto-updates, and uses videos to guide you through each workflow.

## BUILT TO GROW

The V-One grew from just PCB printing to include paste and reflow, and now drilling for through-holes and vias. The platform constantly becomes more powerful as we continue to improve our algorithms and add new inks, substrates and attachments.



## WORKS WITH FACTORY BOARDS

Sometimes it makes sense to use factory fabbed boards. What doesn't make sense is paying and waiting for assembly when the V-One can quickly dispense paste and reflow those boards right on your desk.

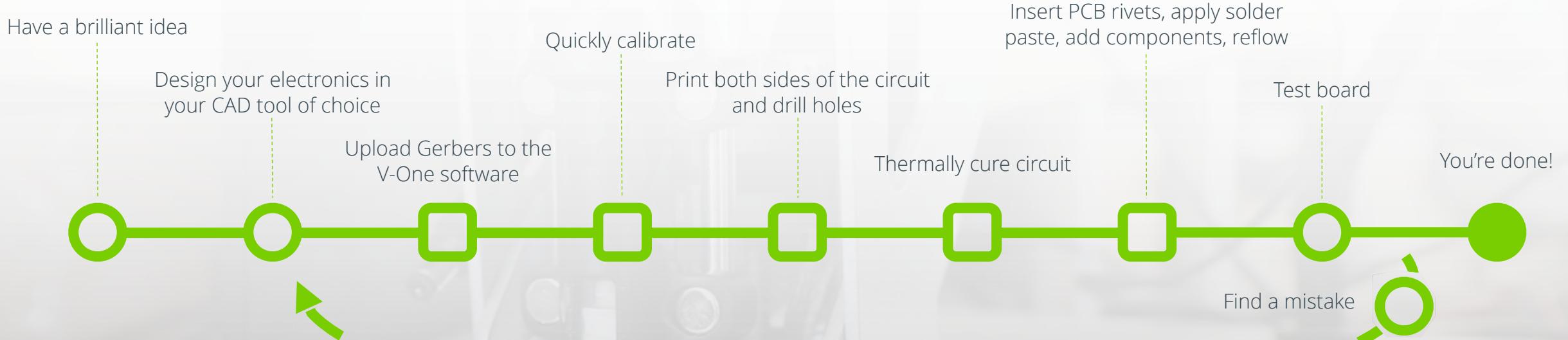


## NO NASTY CHEMICALS

Any way you slice it, PCB etching is an environmentally harmful process. However, additively printing PCBs deposits material only where you need it. No toxic chemicals required!

# THE V-ONE WORKFLOW

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# INTRODUCE NEW MATERIALS AND SUBSTRATES TO YOUR RESEARCH

## THE WORLD OF ELECTRONICS IS CHANGING

The standardized ink cartridges we use can be filled with any material you like, or you can choose from our growing library of materials. Slide the cartridge into our swappable dispenser and you're all set.

Printing parameters like feedrate and distance to the board can be tuned in the V-One software for your own materials.

If you're working with materials that have specific cure temperatures, the V-One heated bed allows for custom profiles up to 240°C.

Before printing, the V-One maps the height of the board. Materials can be layered on top of each other, or dispensed on gently curved surfaces.

A command line interface for G-code allows you to take total control of the tool.

The Voltera support team is always available to help with material testing and fine tuning rheological parameters. We're excited to help!

## READY FOR EXPERIMENTATION

Flexible inks and stretchable substrates are enabling applications in wearables and e-textiles. Conductive ink advances are allowing new sensor applications. IoT and mesh technologies are increasingly relying on printed RFID tags, all possible with the V-One.

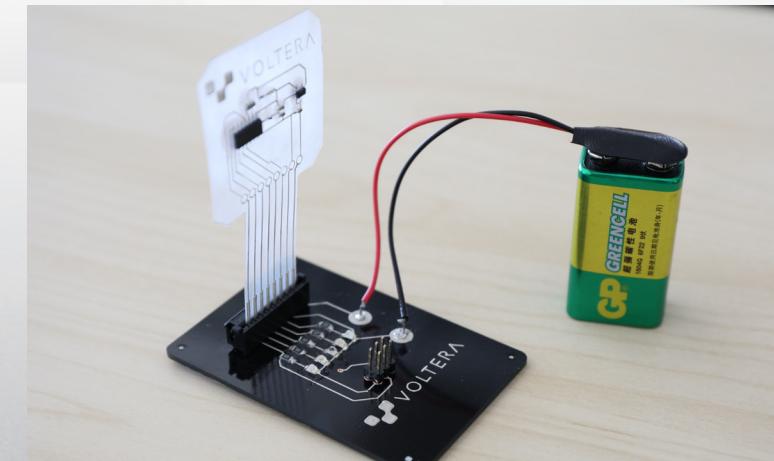
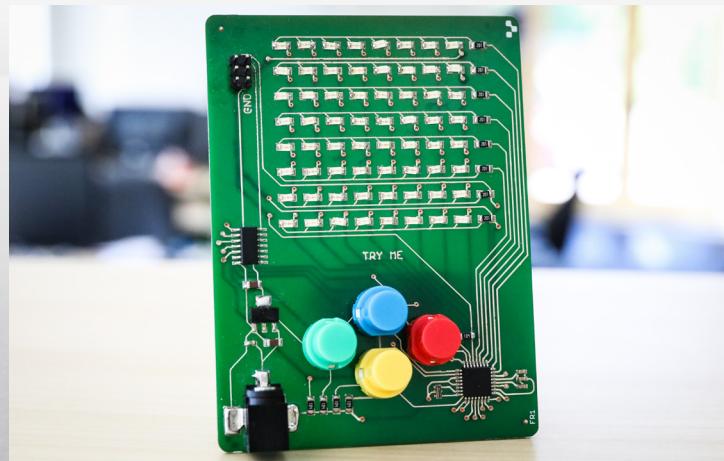
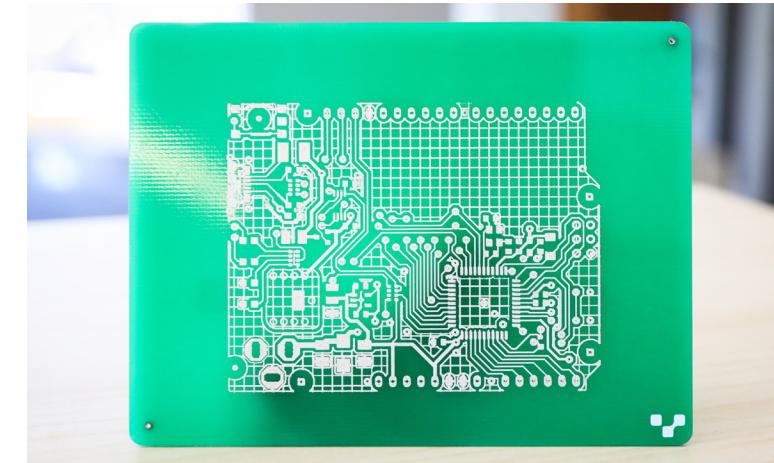
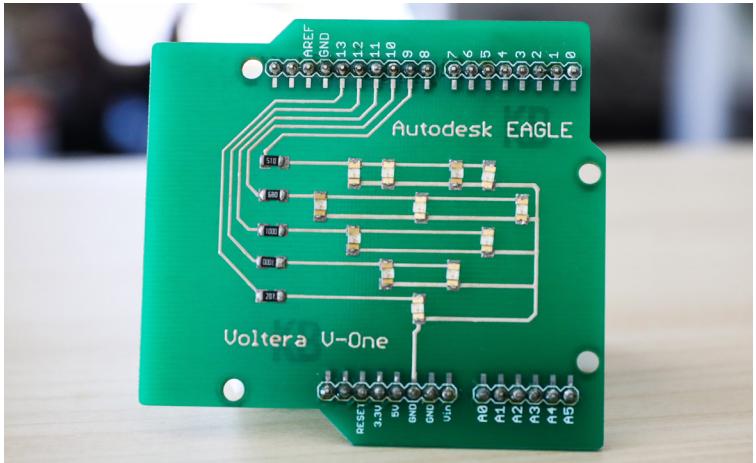
Whether you're conducting fundamental research to accelerate these breakthroughs, or working at a business that takes advantage of these exotic technologies, the V-One is an essential tool for your lab bench.

Beyond printed electronics, the V-One can dispense any ink, paste or viscous fluid with  $\pm 10$  micron accuracy on fiberglass resins, ceramics and plastics. The possibilities are endless.



# MADE WITH VOLTERA

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<b>PRINTING</b>	<b>METRIC</b>	<b>IMPERIAL</b>
Minimum Trace Width	0.2mm	8mil
Minimum Passive Size	1005	0402
Minimum Pin-To-Pin Pitch	0.65mm	32mil
Resistivity	12mΩ/Sq @ 70µm Height	12mΩ/Sq @ 3mil Height
Supplied Substrate Material	FR4	FR4
Maximum Board Thickness	3mm	0.125"

<b>SOLDERING</b>		
Minimum Passive Size	1005	0402
Minimum Pin-To-Pin Pitch	0.5mm	20mil
Solder Paste Alloy	Sn42/Bi57.6/Ag0.4	Sn42/Bi57.6/Ag0.4
Solder Wire Alloy	SnBiAg1	SnBiAg1
Soldering Iron Temperature	180-210°C	355-410°F

<b>MATERIAL COMPATIBILITY</b>	<b>Sn42/Bi57.6/Ag0.4 Solder</b>	<b>Sn63/Pb37 Solder</b>
Standard Ink	✓	✗
Flexible Ink	✓	✗
Copper PCBs	✓	✓
HASL PCBs	✓ (brittle)	✓

<b>DRILLING</b>	<b>METRIC</b>	<b>IMPERIAL</b>
Spindle Speed (Maximum)	13,000 RPM	13,000 RPM
Power	12V, 25W	12V, 25W
Runout (TIR)	0.076mm	0.003"
Shank Diameter	3.175mm	1/8"
Supplied Substrate Material	FR1	FR1
Bit Diameter (Maximum)	2mm	0.078"
Bit Length (Maximum)	38.1mm	1.5"
<b>FOOTPRINT AND PRINT BED</b>	<b>METRIC</b>	<b>IMPERIAL</b>
Dimensions (L × W × H)	390mm × 257mm × 207mm	15.4" × 10.1" × 8.2"
Weight	~7kg	~15.4lbs
Print Area	128mm × 105mm	5.0" × 4.1"
Max. Heated Bed Temperature	240°C	464°F
<b>SOFTWARE REQUIREMENTS</b>		
Operating Systems	Windows 7, 8, 10 (64bit), OSX 10.11+	
Compatible File Format	Gerber	
Connection Type	Wired USB 2.0	

# OUR STORY

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Build hardware faster. It's not just a tagline, it's our mission.

Voltera was born out of a frustration that is common to all hardware devs — waiting weeks for boards to arrive from a fab shop while mechanical and software developers have the tools they need to prototype within hours or instantly.

In order to empower our users to build hardware faster, we focus on:

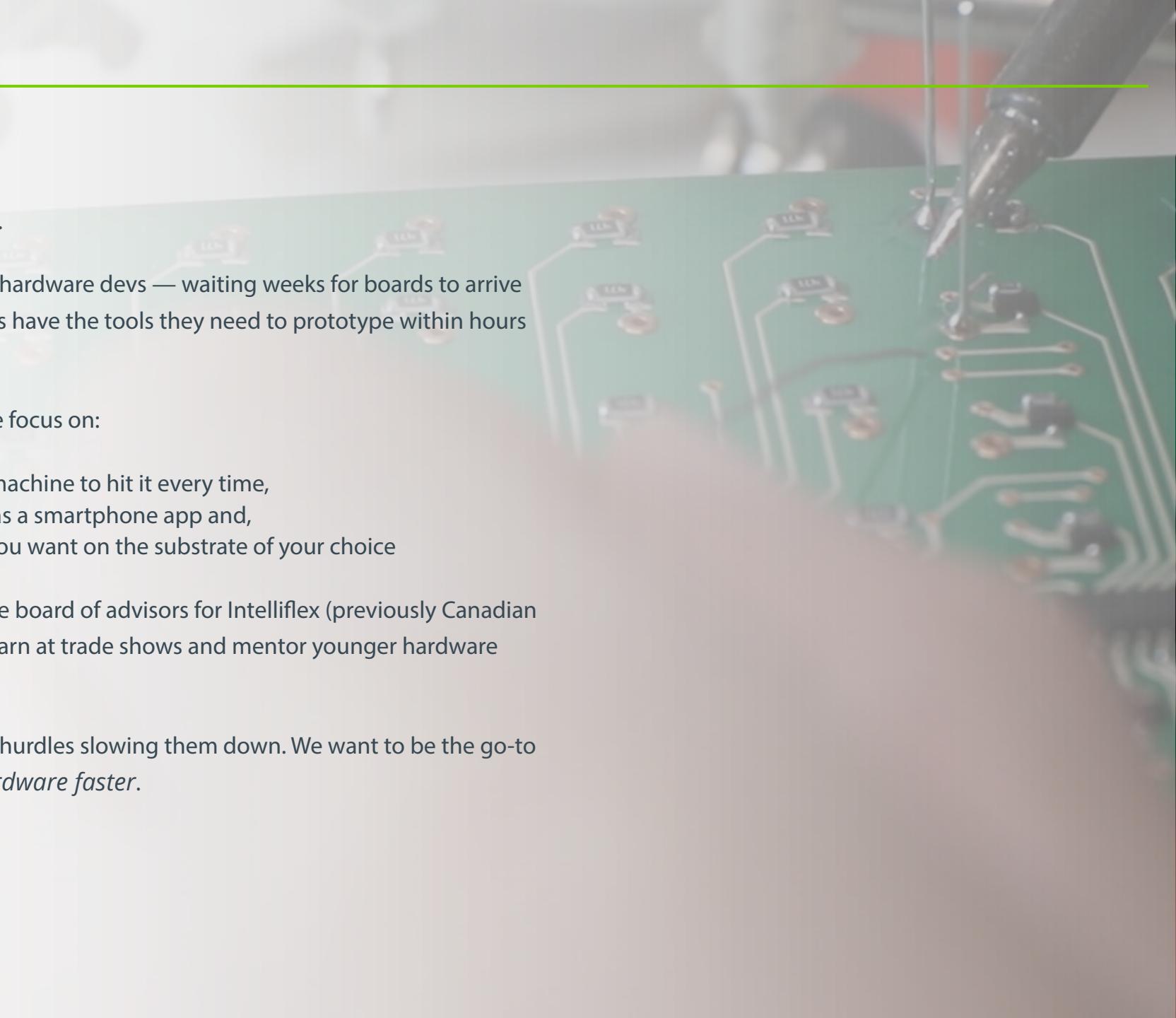
**Reliability** - you should know the spec and trust the machine to hit it every time,

**Accessibility** - the platform should be as easy to use as a smartphone app and,

**Flexibility** - you should be able to print the material you want on the substrate of your choice

Giving back to our industry is important to us. We sit on the board of advisors for Intelliflex (previously Canadian Printed Electronics Industry Association), share what we learn at trade shows and mentor younger hardware businesses.

Most importantly, we listen to our users and eliminate the hurdles slowing them down. We want to be the go-to resource for the knowledge and tools needed to *build hardware faster*.



# OUR USERS

Audio/Visual Hardware

Aerospace/Military

Education/Research

Computer/Electrical Hardware

Clean/Green/AgTech

Internet of Things

Embedded/Product Development

Lighting

Medical Devices

Power/Industrial Electronics

Semiconductor

Robotics

Sensors/Instrumentation

Transportation

Toy Development



Invention of the Year



Best Product - Printed Electronics



Innovation award winners



International winners



International Winners

