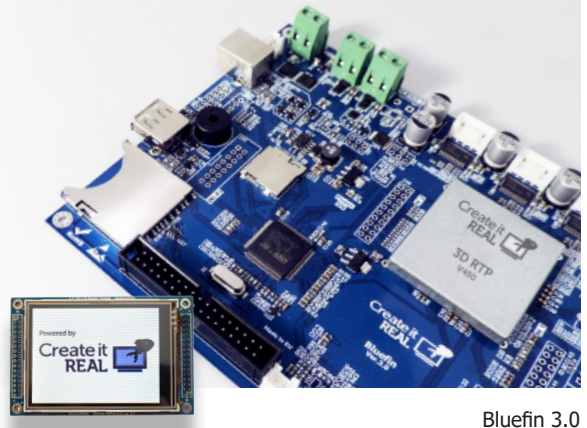Create it REAL

3D printing NOW

THE ULTIMATE 3D PRINTING PLATFORM
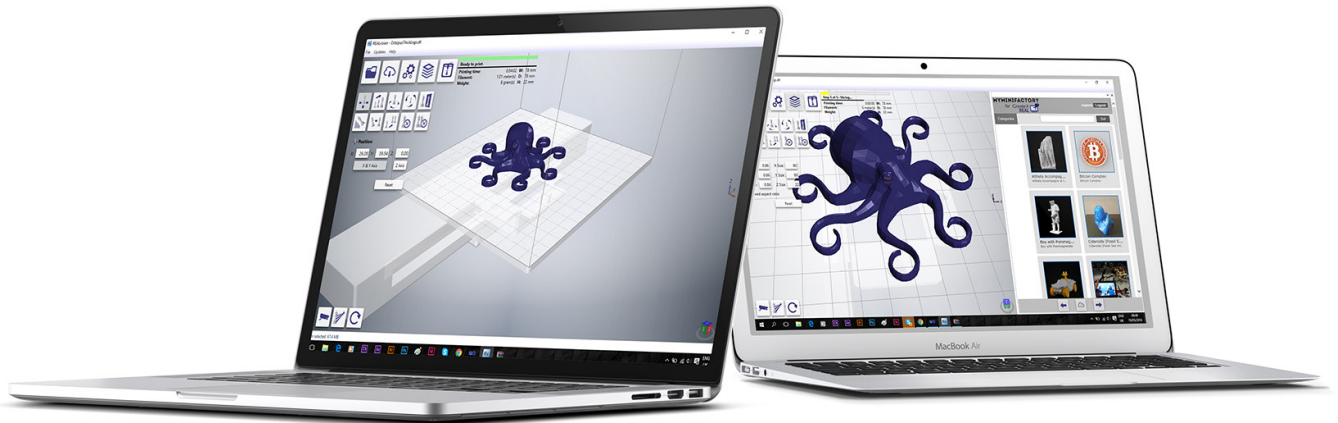
Bluefin Development Kit

Bluefin 3.0

After 3 years of research and development in our Labs, in 2013 the Create it REAL team launched the world's first dedicated 3D printing Real-Time Processor, the 3D RTP. It uses no firmware but interprets the print files it receives directly. This allows for very fast and smooth management of the 3D printer parts. The 3D RTP comes with The Bluefin, a customizable electronic platform which replaces the standard electronics in any FDM printer with no other changes required for the machine. This replacement brings up to 5 times faster print speed, while preserving the print quality.

As a 3D printer manufacturer, you may have specific needs to address your market. Do not hesitate to contact us and we will customize our platform to match your specifications.

Bluefin electronics:

- **CPU**
  - Frontend: 168 MHz, 32bit ARM Cortex M4
  - Backend: Dedicated 3D RTP
- **Power and protections**
  - 12-24 V input voltage
  - Decoupled power control – low current buttons can be used
  - Reverse polarity protection
  - Back EMF protection/suppression
  - Over voltage protection
  - Over current protection - software defined
  - Shortcut protection - fuse
  - ESD protection

- **5x Stepper motor drivers**
  - Up to 2.2A - software controlled
  - 1/32 step;
  - Up to 250 000 step/sec;
  - No cooling required up to 1.7 A
- **3x Heater outputs**
  - 1x 12 A - for heated bed
  - 2x 6 A - for hot ends
- **3x Temperature sensing inputs**
  - 1x Thermistor (100K, up to 150°C) for heated bed
  - 2x Thermistor (100K, up to 280°C) / Thermocouple (K-type, up to 600 °C) for hot ends
- **6x limit switch inputs**
  - optical, mechanical or hall effect
- **6x PWM outputs for controling fans/lights**
  - 1.5 A each (12-24V; Optional 5V)
- **RGB lights output**
  - 1.5 A each (12-24V; Optional 5V)
- **3.2" Full color LCD TFT touch display**
- **Connectivity**
  - Print from USB memory stick
  - Print from SD card
  - Print from PC (USB-B connection)
- **Memory extension – microSD card slot**
- **Extra pins and headers for future add-ons**
  - I2C
  - SPI
  - 25x GPIOs
  - Analog Inputs

REALvision

The REALvision software platform is a set of PC software (slicer) and embedded firmware applications designed to enable flexible and easy to use 3D printing. The software platform is perfect for custom software integration with most complexity of operations hidden in lower level compiled libraries. This structure makes it simple to modify and re-brand the look and feel of the applications while keeping the full power of all REALvision slicing algorithms at your disposal.

Key features:

- **High printing speed**
  Up to 5 times faster than current FDM technology (up to 450mm/s printing)
- **Intuitive user interface**
  3 different settings levels: Beginner, Advanced and Expert (up to 140 settings to control the slicing and the printer)
- **Presets to print in no time**
  Quickly change between predefined configurations with only one click

- **End-to-end encryption**
  Allows new business models where companies will be able to sell 3D objects without releasing the STL or G-Code file (no thief, no IP loss !)
- **Wide choice of infill patterns**
  Gyroid, Isomax, Honeycomb and more
- **Preview the print head path**
  Thanks to the slice preview option
- **MyMinifactory integration**
  Use REALvision to browse and download 3D models
- **REALview augmented reality**
  Use a simple webcam to preview the object in real size before launching the print
- **Import and export of preferred config files**
  Easy to share with friends
- **SLA compatible**
  Ideal for resellers who need training only on one software for both FDM and SLA platform