3D Printing
&
Amateur Radio

Don Drennon, N4TZH

South Florida DX Association
2016 September 7

How does 3D printing work

- Invented by Chuck Hull 1986, 3D printing is a process of taking a digital 3D model and turning that digital file into a physical object.

- 3d model file is converted to Gcode

- Layer by layer using Gcode

- Fused Deposition Modeling (FDM)/Fused Filament Fabrication (FFF), Selective Laser Sintering (SLS), PolyJetting and others, all of which rely on layer-by-layer fabrication
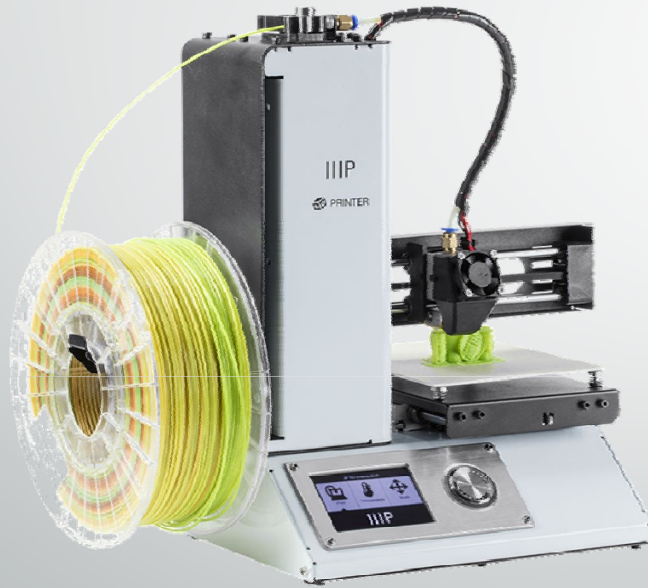
Worlds largest 3D Printer

12-metres high, BigDelta can make houses out of mud, clay, water, dirt, and natural fibres, avoiding the expense and environmental consequences of cement.

World's smallest 3D Printer

Weighs 1.5 kilograms and about the size of a milk carton. It can be used for things like custom hearing aides
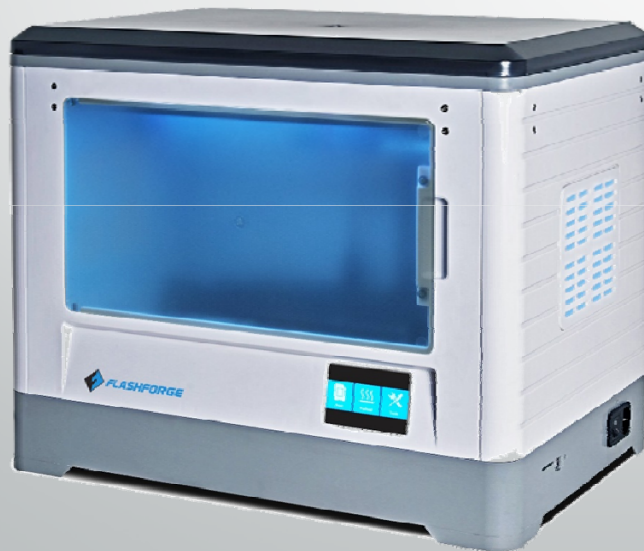
Very inexpensive $200
Monoprice Mini

- Heated aluminum build plate nozzle cooling fan for printing all filament types
- Fully assembled and factory calibrated so you can start printing right away
- Complete kit with sample PLA filament, bed scraper, and MicroSD™ card with preloaded model files
- Build volume 4.7" x 4.7" x 4.7" (120 x 120 x 120 mm)

http://www.monoprice.com/product?p_id=15365

Affordable with advanced features
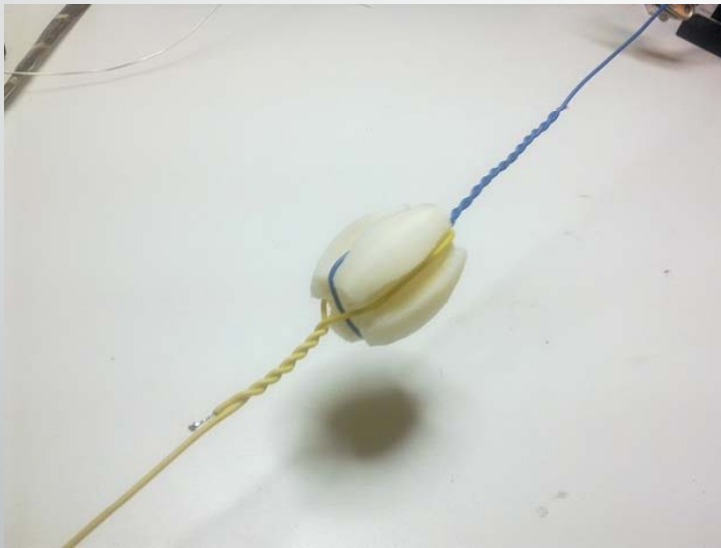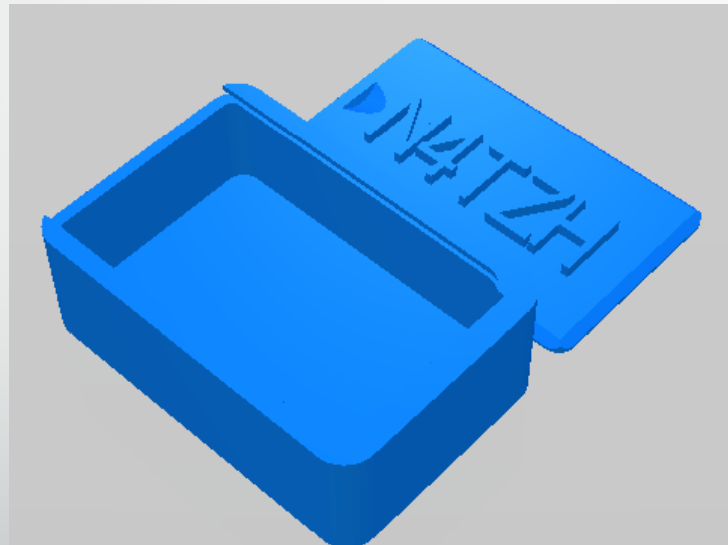## FLASHFORGE Dreamer

- Dual extruders=2 colors simultaneously
- Heated bed-complete enclosure
- USB/SD-card/WiFi
- Build Volume: 9.1" x 5.9" x 5.5"

http://www.flashforge-usa.com/shop/3d-printers/flashforge-dreamer-dual-extrusion-3d-printer.html

6

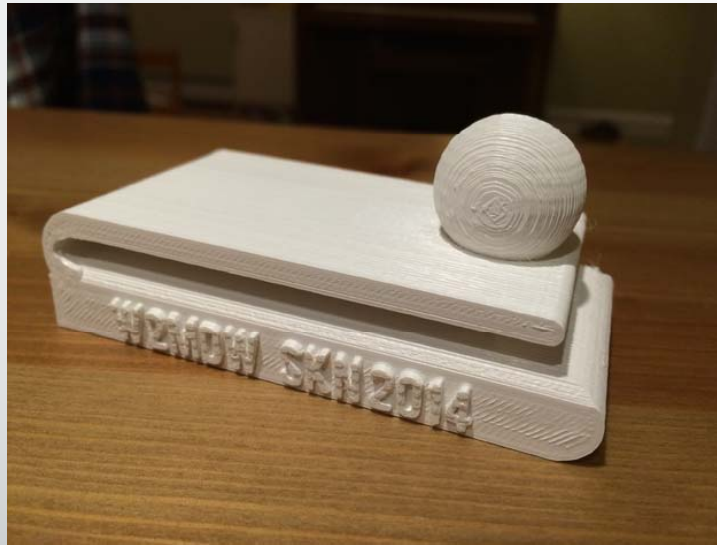# Wire dipole antennas

Custom Project Box

Remote head mounts

W2MDW SKN2014

QST January 2016

Microwave Horn Antenna