

cad cam software free download windows 10



6 Best Free CAM Software For Windows.

Here is a list of best free CAM software for Windows . CAM or Computer Aided Manufacturing software are used to give instructions to CNC or milling machines to create products. The primary purpose of CAM software is to create a faster manufacturing process with more precise product dimensions and materials. Many of these software also come with CAD functionality which allow you to do both designing and manufacturing the product. However, other standard CAM software only give instructions to machines according to the product design.

There are mainly three types of CAM software that you can find in this list. The first type of CAM software uses DFX , STL (3D file), etc. files which contain product design to create the product. The second type of software works as CAM/ CAD software and only produces products designed through them. The third type of software works like a Machine Controller which require Gcode (CNC code) file that has all instructions to create a product.

There are some significant similarities among these CAM software. The main similarity between these software is that they all give you options to configure the machine according to design and product material. Using configuration tools, you can specify the speed of machine , type of drill bits , dimensions of bits , pressure of machine on the material , etc. In some of these software, you can also simulate the milling process before actual production of product through machines.

My Favorite CAM Software For Windows:

HeeksCAD is my favorite software because it lets you create the design of the product and mill product by giving instructions to the machine. Also, it supports external project files containing product designs that you can also mill without manually making the design. Its ability to work with almost all types of milling or CNC or other manufacturing machines is also very impressive.

You can also check out lists of best free CAD Software, PRT Viewer, and DXF Viewer software for Windows.

HeeksCAD.

HeeksCAD is a free open source CAM software for Windows. This software works as both CAD and CAM software in which you can create 3D designs and also mill created designs using its dedicated Machining Tab . In it, you can find various dedicated CAD sections to design 3D models like Geometry (to draw a sketch, ellipse, infinite lines, gear, etc.), Solid (to use predefined 3D objects to create a model like a sphere, cube, cylinder, cone, etc.), etc. If you do not want to manually create designs, then you can import 3d project files of STL , STEP , SVG , DXF , etc. formats.

How to mill products using this free open source CAM software:

In order to mill the 3D design, you need to use the Machining Tab of this software. Through this tab, you can add new milling operation , 3D operations , and other operations (script operation, cutting rate reference, positioning operation, probe grid or edge operations, etc.). After addition of operations and parameter set up, you can run a simulation to view what milling process is going to produce. If everything in the simulation looks right, then press the send to machine option to start the actual milling process.

This CAM software is also capable of adjusting itself according to different machines because it uses the NC code generated through Python script which makes the code universally compatible.

Overall, it is one of the best CAM software that you can use for free.

Carbide Create.

Carbide Create is a free CAD CAM software for Windows. This software is specifically designed to work with Carbide 3D Machines . Using it, you can design 2D objects and create Gcode to mill the created object design .

This CAM software provides three main sections namely Design , Toolpath , and Settings . In the Design Section , you get various tools modules namely Create Vector (to draw a circle, rectangle, curves, polyline, and to add text), Library (it contains various predefined design elements like awards , badges , emojis , farms , toys , etc.) etc. along with individual tools like Orientation , Scale , and Edit mode .

The Settings Section is used to define the type of material (wax, aluminum, plastic, brass, etc.), stock size of the material , material thickness , measurement units (inches or mm), and machine type .

The Toolpath Section lets you define the path that will be followed by the milling machine to create the design. To specify the path, you can use tools like Offset Direction (to set direction by selecting outside/right, inside/left, pocket, etc. options), Cutting Depth (to define the maximum depth of grooves), Speeds and Feeds (per minute) , etc. options. Plus, you can also run the Simulation from this section to get an idea about the final design. After viewing the simulation, press the Save GCode button to save the GCode that need to be entered in the Carbide milling machine to create the actual product.

Overall, it is a beautifully designed and easy to use CAM software that even novice users can use.

Techne CAD/CAM.

Techne CAD/CAM is another free open source CAM software for Windows. Through this software, you can design as well a create a corresponding CNC Code of a 2D model. In this software, you need to manually create a model because it does not allow you to import external

models. In order to create 2D models, you can use its tools like Line Cuts (line, arcs, smooth, and sharp), Shapes (Rectangle, Circle, Squares, Horizontal Lines, Vertical Lines, etc.) Add Tool (to combine two or more cuts), Subtract (remove the outline of cut), etc. Plus, a very handy Trace Image Option is also available through which you can import an image and trace outline of the object present in the image to quickly create a model.

After making the model, you need to configure the machine parameters by going to Toolpath Machine Tab . From this tab, you can specify the Product Material (wood, steel, and MDF), Length (in inches or millimeter), Speed of machine , Accuracy of the machine , Mill Bit Type (1/8 inch flat, 1/16 inch flat, 1/4 inch flat, etc.) etc. After setting up all configurations, export the toolpath file as Gcode or ShopBot files. You can use these toolpath files with many CNC and milling machines to create the desired model or product.

DeskProto.

DeskProto is one more free CAM software for Windows. It is a free 3D CAM software that works with 3-axis , 4-axis , and 5-axis milling machines. This software allows you to create most complex 3D geometry (using STL file), 3D drawings (DXF file), and 3D replicas based on photos (BMP file). There are many areas where this CAM software can be used, like product designing , art designing , woodworking , jewelry , etc. Plus, you can also use it with any CAD program and with any milling machine to create the final product.

To mill a design using milling machines, first, you need to give an STL file to this software that contains the geometrical data required to mill the design. However, it can also mill product using DFX and bitmap files. In this software, you cannot create a new geometry as it is not a CAD software. However, you can still rotate , zoom , and translate geometry in it. After that, you can specify the milling machine type , type of cutting tool , required accuracy , etc. According to provided milling parameters, this software will automatically calculate the milling paths. Lastly, run the toolpath program on the CNC milling machine to create the final product.

This software also provides a complete tutorial to mill products that you can check out to know more about the working of this software.

TrueMaster Pro.

TrueMaster Pro is yet another free CAM software for Windows. It is mainly designed to work with Lathe Machines . This software is slightly different from other CAM software as it acts more like a machine controller in which you need to enter a Gcode (NC code) to mill a product. In this software, you cannot create the Toolpath (Gcode file) like other CAM software. However, you still have all options to configure machines according to material and design. To configure the machine and material type, you can use its Options Menu . From this menu, you can select the Material Type , Machine Parameters (machine speed, axis control, axis limits, jog key, tool changer, etc.), Tool Start Position , and Tool Chest (to define tool names, their radius, and X/Y axis offset). Besides Options menu, you can also get a handy Control Menu to control Jog tool , to set starting position of milling , to reposition the limits , to reprogram limit sensors , etc.

In this software, you can also Preview the whole milling process on its interface. In order to run the simulation, first, you need to enter a Gcode or NC File that contains the toolpath for the machine. After that, configure all material and machine parameters from the Options and Control menus, respectively. After the setup, select the Graphics bullet option and press the Go button to run the simulation. Just like the simulation, you can mill the final product in actual by selecting the Machine bullet option instead of Graphics .

CAMotics.

CAMotics is the next free open source CAM software for Windows. This software is mainly used to simulate 3-axis CNC milling or engraving process . The working of this software is similar to other CAM software, but instead of actually controlling the machine, it shows you a simulation of the machine and its working. The simulation helps you analyze the milling done by the virtual machine so that you can know whether the final result meets your expectation or not.

In order to create the simulation, first, you need to import a Gcode or Tool Path Language File that contains the design and instruction for machines to create the design. After that, select tools and specify various parameters for tools through which you want to mill the material. You can do so by going to Tool Table . If you have your own Tools table, then you can also import it can simulate the milling through the tools of imported tools table. Apart from tools, you can also make changes on the Workpiece (material on which milling is performed to produce the product) like changing workpiece dimensions , margins , offsets , etc.

At last, set the orientation or View (snap to front view, snap to back view, etc.) of the simulation and start the Simulation by pressing the Play Button . At any time, you can increase or decrease the speed of simulation using speed up or speed down path animation tools .

Overall, it is a very good CAM simulation software that helps you determine the result of the Gcode without physically milling the material.

Free CAM Software.

This is a list of free and open source CAM (computer-aided manufacturing) software packages.

- FreeCAD - Path workbench.

- About FreeCAD.

The Path workbench is used to produce machine instructions for CNC machines from a FreeCAD 3D model. These produce real-world 3D objects on CNC machines such as mills, lathes, lasercutters, or similar. Typically, instructions are a G-Code dialect.

The FreeCAD Path Workbench workflow creates these machine instructions as follows:

A 3D model is the base object, typically created using one or more of the Part Design, Part or Draft Workbenches. A Job is created in Path Workbench. This contains all the information required to generate the necessary G-Code to process the Job on a CNC mill: there is Stock material, the mill has a certain set of tools and it follows certain commands controlling speed and movements (usually G-Code). Tools are selected as required by the Job Operations. Milling paths are created using e.g. Contour and Pocket Operations. These Path objects use internal FreeCAD G-Code dialect, independent of the CNC machine. Export the job with a g-code, matching to your machine. This step is called post processing; there are different post processors available.

- LinuxCNC.

LinuxCNC controls CNC machines. It can drive milling machines, lathes, 3d printers, laser cutters, plasma cutters, robot arms, hexapods, and more.

Runs under Linux (optionally with realtime extensions). Simple installation on Debian and Ubuntu, or via our Live/Install DVD/USB images. Accepts G-code input, drives CNC machines in response. Active user community. Several different GUIs available. Compatible with many popular machine control hardware interfaces. Supports rigid tapping, cutter compensation, and many other advanced control features. Full source code available under the terms of the GNU GPLv2 (General Public License version 2).

- PyCAM.

PyCAM is a toolpath generator for 3-axis CNC machining. It loads 3D models in STL format or 2D contour models from DXF or SVG files. The resulting G-Code can be used with LinuxCNC or any other machine controller.

PyCAM supports a wide range of toolpath strategies for 3D models and 2D contour models. Take a look at the Features page for a full list features.

PyCAM runs on Linux, Windows and MacOS. It is free software licensed under the GPL v3.

- OpenBuilds software.

- OpenBuilds CONTROL - Machine Interface Controller.

OpenBuilds CONTROL is an application for connecting to, and controlling, your CNC, Laser, Plasma or Dragknife machine.

This will allow you to.

Interface with, and Jog your machine Run GCODE Jobs Set Zero coordinates Integrate with cam.openbuilds.com Flatten/Surface your spoilboard / stock and even help with your Firmware configuration.

- OpenBuilds CAM - GCODE Generator.

OpenBuilds CAM is a web-based application for converting SVG, DXF and Bitmap drawings, to GCODE for use with your CNC, Laser, Plasma or Dragknife Machine.

This will allow you to.

Import DXF/SVG/PNG/BMP/JPG/Gerber/Excellon files Import from a built-in Parts Library Setup toolpaths for CNC Routing, Laser cutting, Plasma Cutting and Dragknives Generate GCODE Send GCODE to OpenBuilds CONTROL.

Grbl is a no-compromise, high performance, low cost alternative to parallel-port-based motion control for CNC milling. It will run on a vanilla Arduino (Duemillanove/Uno) as long as it sports an Atmega 328.

The controller is written in highly optimized C utilizing every clever feature of the AVR-chips to achieve precise timing and asynchronous operation. It is able to maintain up to 30kHz of stable, jitter free control pulses.

It accepts standards-compliant g-code and has been tested with the output of several CAM tools with no problems. Arcs, circles and helical motion are fully supported, as well as, all other primary g-code commands. Macro functions, variables, and most canned cycles are not supported, but we think GUIs can do a much better job at translating them into straight g-code anyhow.

Grbl includes full acceleration management with look ahead. That means the controller will look up to 18 motions into the future and plan its velocities ahead to deliver smooth acceleration and jerk-free cornering.

Licensing: Grbl is free software, released under the GPLv3 license.

- CAMotics.

With CAMotics, you can simulate 3-axis GCode programs for CNCs and visualize the results in 3D. CAMotics runs on Linux, OS-X or Windows. It's fast, easy to use and best of all Open-Source and free.

With the power to simulate your CNC tool paths you will avoid dangerous and expensive mistakes. By looking at the built-in examples and using the online documentation you'll be running your own simulations in no time. And, if you need more help, we'll be happy to answer your questions via the discussion group.

CAMotics aims to be a useful CNC simulation platform for the DIY and Open-Source community. CAMotics should serve the highly technical user but remain simple and user friendly enough to support less techie types as well.

Fast 3-axis cut-workpiece simulation with 3D visualization. Simulates cylindrical, conical, ballnose, spheroid and snubnose tool shapes. Tool path 3D visualization. Multi-threaded rendering can take advantage of multi-processor CPUs. GCode parsing, simulation, verification and annotation. In application GCode and TPL view and edit. Supports LinuxCNC (AKA EMC2) O-codes. Export cut workpiece to STL file. Tool table editing. Add height probing to 2D GCode files. Very useful for circuit board cutting and metal engraving. 2D GCode path optimization. (in progress #11) Operates in Windows and Linux. Released under the GPL v2+ license.

- Blender CAM.

Blender CAM is an open source solution for artistic CAM - Computer aided machining - a g-code generation tool. Blender CAM is an extension for the free open-source Blender 3d package. It has been used for many milling projects, and is actively developed. If you are a developer who would like to help, don't hesitate to contact me.

This extension is free of charge, however you can donate to support the development and appreciate the work which has already been done. There is currently no warranty for the results from blender CAM - you have to check your paths before use. Blender CAM has been tested with success in my studio. I wouldn't recommend Blender CAM for metalworking now, be carefull if you try it.

Several milling strategies for 2D and 3D Cutter types: ball, flat, v-carve with various angles work with 3d data or depth images Layers and skin for roughing. Inverse milling Various options for ambient around model protection of vertical surfaces stay low - option for movement material size setup simulation of 3d operations Background computing of the operations, so you can continue working helix entry, arc retract, ramp down for some of the strategies. Automatic bridges for cutout operation Chain export and simulation.

- DXF2GCODE.

DXF2GCODE is a tool for converting 2D (dxf, pdf, ps) drawings to CNC machine compatible GCode. Windows, Linux, and Mac support by using python scripting language.

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Interface with, and Jog your machine Run GCODE Jobs Set Zero coordinates Integrate with cam.openbuilds.com Flatten/Surface your spoilboard / stock and even help with your Firmware configuration.

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Import DXF/SVG/PNG/BMP/JPG/Gerber/Excellon files Import from a built-in Parts Library Setup toolpaths for CNC Routing, Laser cutting, Plasma Cutting and Dragknives Generate GCODE Send GCODE to OpenBuilds CONTROL.

Reviews.

"Great, thanks for all your work on this software. It gets better with every update." WJC.

"The software to run this thing is EXCELLENT. I work at a large company that produces software and this was very, very professionally done. The drivers for the USB connection, the Control software for the machine, and the web-based CAM software all worked together first shot. Very, very well done. I'm already seeing where I want to venture off into Fusion 360 soon for my CAM work, but this is a great jumping off point." RoosterTX.

"[The new] 'Fine Tune' feature for the steps/mm in the Grbl settings [.] I just used that and I really appreciate the step-by-step walkthrough for tuning those numbers - very cool! A whole lot easier and quicker than measuring the distances on the wasteboard. Big thanks to everyone working on this great software for continuing to improve things, it's now fitting seamlessly into my workflow and is one less thing that I have to worry about" Michiglenn.

"I LOVE the OpenBuilds CONTROL app and the GCODE Generator. I want to have your babies now! And I'm a guy." Jet Jaguar.

"Love this software, loaded and ran without a hitch. Z probe is great, dont have to go anywhere else, and the macro's. Poor mans tool changer. [.] Thanks for the software, Im really enjoying it." Steveathome.

QCAD Downloads.

Note: if you have already purchased QCAD Professional or QCAD/CAM, you can access your purchased software and e-books as well as updates directly through the download link that was sent to you via e-mail directly after your purchase. The e-mail subject is "Order / Commande / Bestellung" + your order number. More information.

QCAD Professional Trial

These packages contain QCAD, bundled with a free trial of QCAD Professional. The trial runs 15min at a time and can then be restarted. You can order QCAD Professional from our Online Shop and download the full version immediately. Alternatively, you can choose to remove the trial and use the reduced free QCAD Community Edition instead.

Windows.

macOS.

Linux.

QCAD/CAM Trial

These packages contain a free trial version of QCAD/CAM. You can order QCAD/CAM from our Online Shop and download the full version immediately.

Windows.

macOS.

Linux.

All Downloads.

QCAD with QCAD Professional Trial

QCAD/CAM Trial

QCAD Community Edition

If you are looking for the free open source QCAD Community Edition, you can download the trial version for your platform (see above) and then remove the QCAD Professional add-on running in trial mode (click Remove in the Trial widget and follow on screen instructions).

Alternatively, you may compile your own package from sources below.

QCAD Community Edition Source Code

The source code of QCAD version 3.26.4 is released under the terms of the GNU General Public License version 3 (GPLv3). Please note that the GPLv3 applies to the source code of QCAD 3.26.4 only, not to source code of 3rd party libraries or other resources contained in the package (user manual, fonts, patterns, etc.). For a complete list of licenses, please refer to the file LICENSE.txt contained in the package.

For help and support, please browse our user forum or post your questions there.

QCAD Source: v3.26.4.0.zip License: GPLv3 Version: 3.26.4 git: <https://github.com/qcad/qcad> Requirements: Qt developer edition (4.7, 4.8, 5.4, 5.5, 5.6, 5.7, 5.10, 5.11), C++ compiler.

This is source code intended for computer savvy developers. Source code needs to be compiled using a C++ compiler. This is NOT an installer. Installers are available at the top of this page.

Qt Source Code

QCAD uses Qt 5, a cross-platform C++ framework. You can download the source code of Qt 5.10.1 for all platforms from the link below, or obtain it from the Qt Company.

The LGPL Open Source license under which Qt ships with QCAD, confers various rights to you as the user, including the right to recompile the Qt libraries for your platform. To do that follow the documentation shown on the Qt website.

Unified CAD, CAM, and PCB software.

Get access to Fusion 360 for personal use, including standard features for home-based, non-commercial projects.

Fusion 360 for personal use.

Fusion 360 for personal use is a limited free version that includes basic functionality and can be renewed on an annual basis.

Compare features and functionality between Fusion 360 for personal use and Fusion 360 below.

| For personal, hobby use.

Free CAD + CAM software for individuals who are doing hobby, non-commercial design, and manufacturing projects.

Free - for qualified hobbyist users.

Standard design and 3D modeling tools.

Limited CAM functionality:

2 & 3-axis milling Adaptive clearing Turning FFF additive manufacturing Water jet, laser cutter, plasma cutter.

Single user data management only:

10 active and editable Fusion 360 documents, unlimited inactive documents View only public share links Commenting, markups.

Limited electronics and PCB design:

2 schematics 2 layers 80cm² board area.

Limited 2D documentation and drawings:

Single sheet support and print only.

Forum support only.

Local rendering only.

File types:

*.f3d, *.f3z, *.fbx, *.iam, *.ipt, *.obj, *.skp, *.smt, *.step, *.stl, *.stp.

File types:

*.123dx, *.dxf, *.f3d, *.f3z, *.fbx, *.iges, *.iges, *.igs, *.obj, *.ste, *.step, *.stl, *.stp.

Free - for qualified hobbyist users.

Subscribe to Autodesk Fusion 360 to get access to unified 3D CAD, CAM, CAE, PCB, collaboration, and data management software.

Standard design and 3D modeling tools, plus a fully featured CAM, CAE, and PCB development platform.

Comprehensive CAM functionality:

2 & 3-axis milling Adaptive clearing Turning FFF additive manufacturing Water jet, laser cutter, plasma cutter 3+2 milling 4 & 5-axis milling Mill-turning Setup probing Automatic tool change Rapid feed.

Extensive collaboration and data management:

Unlimited active and editable Fusion 360 documents Public share links Commenting, markups Multi-user management.

Unified electronics and PCB design:

999 schematics 16 layers Unlimited board area.

Full 2D documentation and drawings:

Multi-sheet support 3 file exports Company templates.

Phone, email, and forum support.

Local and cloud rendering*

*Requires cloud credits.

File types:

*.dwg, *.dxf, *.f3d, *.f3z, *.fbx, *.iam, *.igs, *.iges, *.ipt, *.obj, *.sat, *.skp, *.smt, *.step, *.stl, *.stp.

File types:

*.3dm, *.asm, *.CATPart, *.CATProduct, *.dwg, *.g, *.iam, *.ipt, *.neu, *.par, *.prt, *.psm, *.sab, *.sat, *.skp, *.sldasm, *.sldprt, *.smb,

*.smt, *.wire, *.x_b, *.x-t.

All local and cloud simulation strategies:*

Linear and non-linear static stress Thermal and thermal stress analysis Event simulation Modal frequencies Commenting, markups Shape optimization.

*Requires cloud credits.

Generative design technology*

*Requires cloud credits or a subscription.

Exclusive access to EAGLE Premium and HSMWorks.

Access advanced functionality via extensions*

Earn money by referring a friend to Fusion 360.

Earn \$100 for every friend you refer to Fusion 360 who subscribes to an annual subscription.

Fusion 360 for personal use FAQs.

Fusion 360 for personal use, formerly known as Fusion 360 for hobbyist use, is free for qualifying non-commercial users as a 1-year subscription. Download Fusion 360 for personal use here.

Fusion 360 for personal use is free for 1-year for qualifying non-commercial users. A hobbyist user must generate less than \$1,000 USD in annual revenue, using Fusion 360 for home-based, non-commercial design, manufacturing, and fabrication projects.

Hobbyists can download Fusion 360 for personal use here by signing-in or creating an Autodesk account.

ALERT:

Thank you. An email is on its way.

Select your trial.

Which product would you like to try?

Here are a few things to know before you start the download:

AVAILABLE PLATFORMS.

TRIAL FILE SIZE (estimated maximum)

RECOMMENDED.

10 Mbps Internet connection. Turn off all active applications, including virus checking software.

Let's get started.

Start a trial.

Get full access to all capabilities and features free for 30 days.

Operating system:

Choose your operating system:

Choose your language:

Good news.

Autodesk provides software for students and educators worldwide. Free educational access is only for educational purposes. For-profit use requires a paid subscription plan.

Get verified for educational access to Autodesk products.

Confirm your eligibility with SheerID today.

Download Fusion 360 for personal, hobby use.

Free, limited version of Fusion 360 for qualified hobby, non-commercial users. Basic features include:

- Standard 2D/3D CAD tools
- Limited electronics – 2 schematics, 2 layers, 80cm² board area
- Basic manufacturing – 2.5 axis milling & 3 axis milling, turning, FFF additive, fabrication
- Local rendering only
- Limited to 10 active and editable Fusion 360 documents, unlimited inactive documents
- Single user data management only
- Forum support only
- Limited file type import and export.

Need full features and functionality? Get started with a free 30-day trial of Fusion 360.