

ARTILUME T1 · SOFTWARE QUICK START

From unboxing to your first burn with BurnBadger

Free laser software for Windows and Mac, built and tested on the Artilume T1. No drivers to hunt down, no ports or baud rates to set, and tested settings for your material are already filled in.



Windows 10 / 11

macOS 14 or later

USB or Wi-Fi (T1-P)

3, 7 and 12 W modules

• What's in this guide

Your T1 works with any GRBL laser program. This guide uses BurnBadger, which was designed around the T1, so most of the setup you'd normally do by hand happens on its own.

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What BurnBadger handles for you

The usual way	With BurnBadger
Install a USB driver, find the COM port, set the baud rate	Plug in and click Connect laser
Choose between laser modes and edit firmware settings	Checked and set when you connect
Look up power and speed in a table	Pick your material; settings fill in for your module
Trace, offset and clean up a picture to cut it out	Add cut line around design , one click

Safety first.

Wear the laser safety glasses that came with your T1 whenever the laser is on, keep the cover on, never leave a burn running alone, and burn only materials you know are safe (no PVC or vinyl).

1 Install BurnBadger

BurnBadger is free to download. The core tools never expire; Pro (photos, cut lines and more) is a one-time purchase, with a free trial.

Windows 10 / 11

1. Go to **burnbadger.com** and click **Download**.
2. Open the installer and follow the steps.
3. If Windows shows “*Windows protected your PC*”, click **More info**, then **Run anyway**. New apps often show this until Windows recognises them.

Mac (macOS 14 or later)

1. Go to **burnbadger.com** and click **Download**.
2. Open the download and drag BurnBadger into Applications.
3. Open it from Applications. Updates arrive on their own.

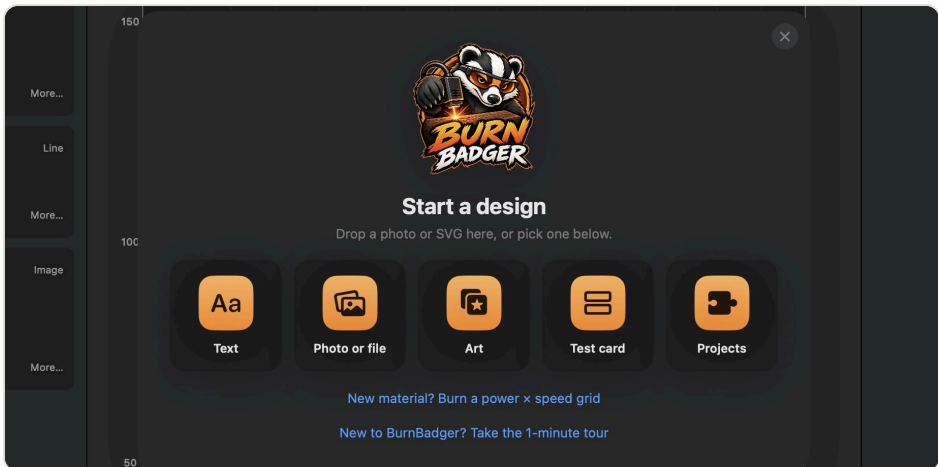


Figure 1 · BurnBadger the first time you open it

Take the tour. On first launch BurnBadger offers a one-minute tour of the screen. It's worth it, and you can replay it any time from **Help › Show Tour**.

2 Connect your T1

By USB (every T1)

- 1 Plug the T1's power adapter in and switch the laser on.
- 2 Connect the T1 to your computer with its USB cable.
- 3 Click **Connect laser** at the top of BurnBadger. It looks for your laser, recognises the T1 and checks its settings. The laser stays off.
- 4 The first time, choose your module's power (3, 7 or 12 W, printed on the laser module). This is what BurnBadger's tested settings are based on.

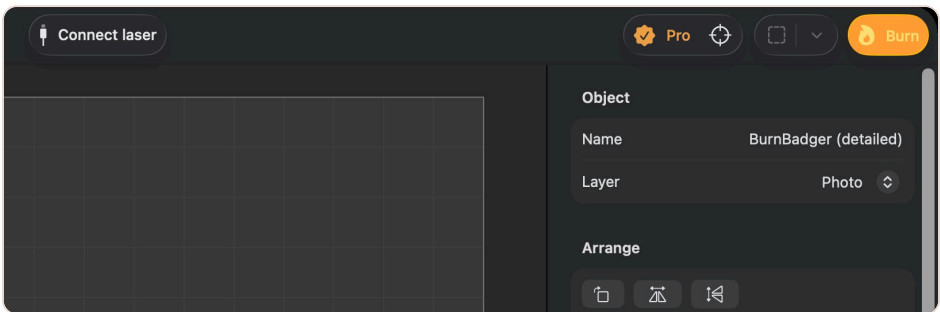


Figure 2 · Connect laser, at the top of the window

By Wi-Fi (T1-P)

Join the T1-P's own Wi-Fi network from your computer, then click **Connect laser**. Over Wi-Fi, BurnBadger sends each job to the T1's memory card and the laser runs it from there, so a dropped connection can't spoil a burn.

Only one program can talk to the laser at a time. If BurnBadger can't find your T1, close any other laser software first (including programs left running in the background), then unplug the USB cable, switch the T1 off and on, and click **Connect laser** again.

3 Focus and home

Set the focus

A diode laser only burns sharp at one height. On the T1 that's a **2 mm gap** between the bottom of the laser module and the top of your material.

- 1 Put your material on the bed.
- 2 Loosen the module, slide the 2 mm focus block (or a US nickel) between the module and the material, lower the module onto it and tighten.
- 3 Take the block out. Do this again whenever you change to thicker or thinner material.

BurnBadger's **Set the focus** guide walks you through it, with the laser off.

Home the laser

Click **Home**. The laser head moves to its corner so BurnBadger knows exactly where it is. Home every time you switch the T1 on, or after a stop. If you forget, BurnBadger homes for you before framing or burning.

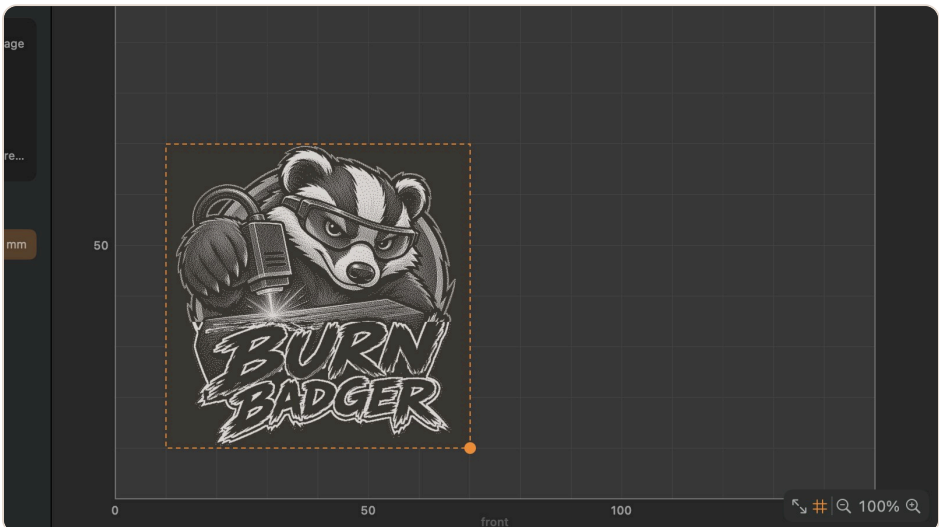


Figure 3 · The bed map: what you see is where it burns. The front-left corner is 0, 0.

4 Your first burn: the test card

The test card is a small badge with a picture, a row of squares at rising power and a shading strip. One burn shows you what your material does.

- 1 Under **Material** on the left, pick what you're burning, for example *Basswood* or *Slate*. Every layer's power and speed fills in.
- 2 Open **Projects** and choose the **BurnBadger test card**.
- 3 Click **Frame**. The laser traces the outline of the job at very low power, so you can see exactly where it will land. Move the material if needed and frame again.
- 4 Put your safety glasses on and click **Burn**. A short checklist comes up the first few times; tick it and go.

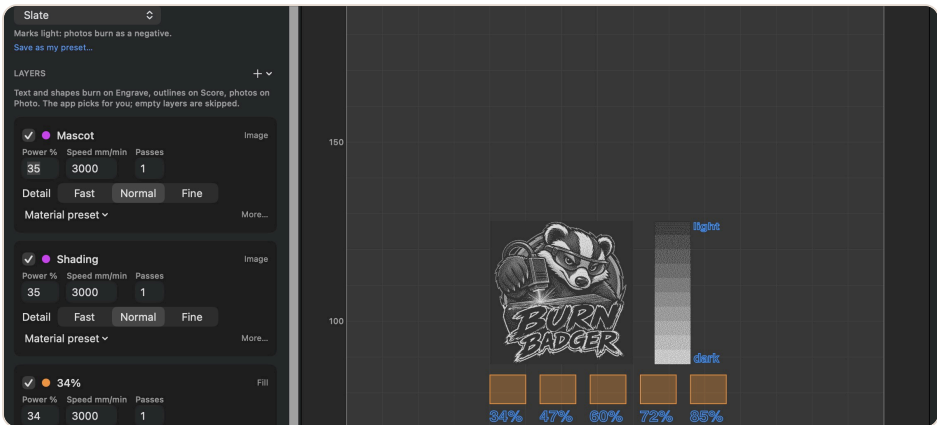


Figure 4 · The test card on slate, ready to frame and burn

Reading the card: if the picture is too pale, pick the next stronger square's power for your Engrave layer; if it's scorched, go lighter. Then choose **Save as my preset...** under Material, and it's one click next time.

5 Your own design: add, fit, frame

Add something

Click **Add** for text, a shape, BurnBadger's art, or **Photo or design file...** for your own picture or SVG. You can also drag a file straight onto the bed.

Fit it to your blank

Click **Fit to material**, choose your coaster, patch or board size (or type it in), and the design is sized and centred for it, with a margin.

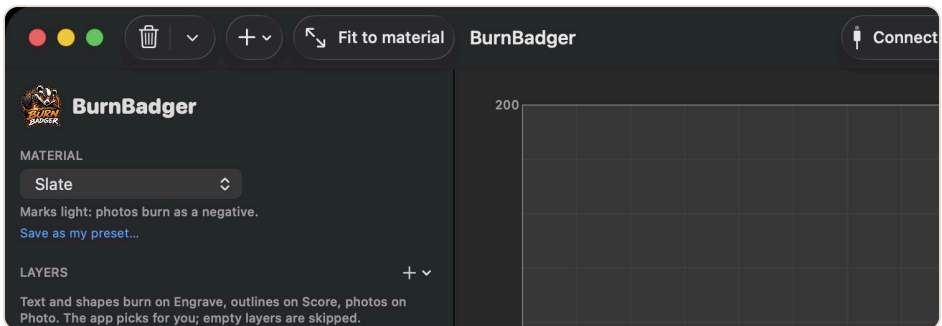


Figure 5 · Fit to material, in the toolbar next to Add

Put it exactly where you want it

- **Frame** traces the outline with the laser so you can line up the material. The faint-line setting is easiest to see.
- Jog the head to the middle of your blank and click **Center design here**.
- Or type an exact position and size in the panel on the right (millimetres from the front-left corner).

Not sure it's right? Click the small arrow beside **Frame** and choose **Test run, whole job, laser off** to watch the whole path first.

6 Layers and materials

Every design is split into layers by how it burns. BurnBadger puts each part on the right layer for you; each layer has its own power, speed and number of passes.

Layer	What it does	Use it for
• Engrave	Fills shapes in, line by line	Text, logos, solid areas
• Cut / score	Follows the outline	Thin lines, or cutting right through with more passes
• Photo	Burns pictures dot by dot	Photos and shaded art

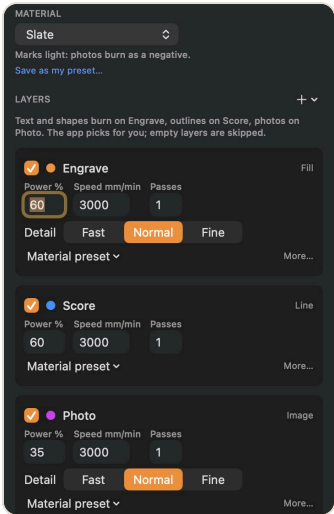


Figure 6 · Pick a material; every layer is set

A new material? Burn a test grid

Material test grid... burns a small grid of squares, each at a different power and speed. Pick the square you like: for engraving, the darkest clean one; for cutting, the fastest one that drops out. Then save it as your preset.

Speed and passes: slower or more passes burns deeper and darker. For cutting, several faster passes usually leave cleaner edges than one slow one.

7 Photos

Photos go on the Photo layer and burn as fine dots, like a newspaper picture. A few one-click tools make almost any photo burn well.

- **Remove background** keeps just the person, pet or object.
- **Make it laser-ready** evens out the contrast for burning.
- **Show burn preview** shows how it will look in wood before you burn.

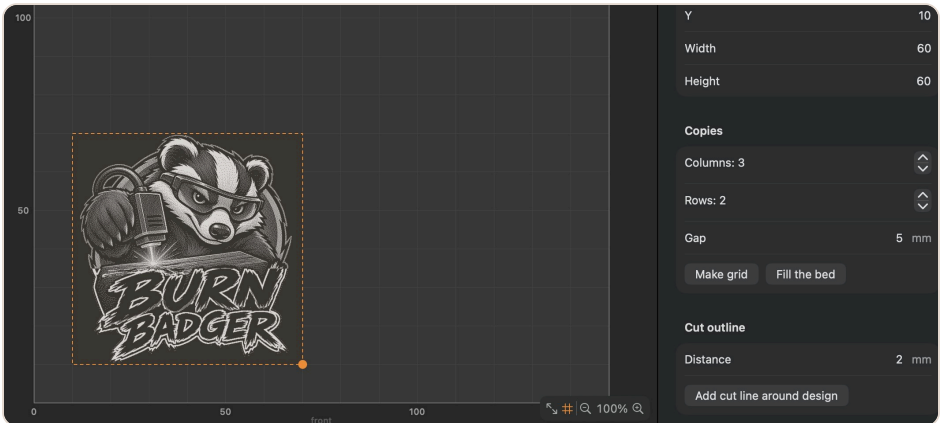


Figure 7 · A photo on slate with the burn preview on. Cut outline is in the panel on the right.

Slate, anodized aluminium and dark denim mark light, not dark. Pick one of them under Material and BurnBadger burns photos as a negative automatically, so they come out the right way round.

Photo engraving, background removal and cut lines are part of BurnBadger Pro. You can try everything free before you buy.

8 Cutting wood, and ready-made projects

Cut out any design

Select the design and click **Add cut line around design**. BurnBadger traces around the shape, keychain or sticker style, and puts the line on its own Cut layer. Pick your wood and burn: it engraves first, then cuts it free.

Cutting tips for the T1

- **Keep the board flat.** Weigh or pin the corners down. A board that bows even 1 mm is out of focus and won't cut through there.
- **Don't move the board until you've checked.** Press lightly on a piece: if it doesn't shift, run one more pass where it sits.
- **Keep the lens clean.** Cutting wood leaves smoke on it, and a hazy lens cuts weaker every job.



Photo: finished pieces (pyramid, castle, dice) cut on a 7 W T1

Figure 8 · Projects cut from 1/8 in basswood on a 7 W T1

Projects

Projects has ready-made pieces sized for the T1: a test card, coasters, dice, a slot-together pyramid and a castle that presses together without glue. Each opens with its settings and building steps.

9 Tested settings for the T1

These are BurnBadger's own results on a 7 W T1. You don't need to type them: pick the material and they fill in, scaled for 3 W and 12 W modules too.

Material	Job	Power	Speed (mm/min)	Passes
Basswood, 1/8 in (3 mm)	Cut through	100%	700	4
Basswood, 2 mm	Cut through	100%	700	2
Balsa, 2 mm	Cut through	80%	1500	2
Slate	Engrave	60%	3000	1
Slate	Photo	35%	3000	1
Black anodized aluminium	Engrave	30%	3000	1
Leatherette patch	Engrave	25%	3000	1
Kraft paper bag	Engrave	20%	5500	1
Black denim	Engrave	10%	3000	1
Cork coaster	Engrave	10%	6000	1

Every board and batch is a little different. Treat these as a starting point and burn a test grid on anything new. Cork engraves beautifully but doesn't cut cleanly on a 7 W module.

10 If something isn't right

What happens	Try this
BurnBadger can't find the laser	Close other laser programs. Unplug the USB cable, switch the T1 off and on, plug in, Connect laser . Try another USB port or a shorter cable.
The burn lands in the wrong place	Home the laser, then Frame before burning.
Engraving is pale or patchy	Check the 2 mm focus gap. Clean the lens. Pick a stronger square from a test grid.
Cuts don't go all the way through	Flatten the board, add a pass, check focus, clean the lens.
Edges are dark and charred	More passes at a faster speed instead of one slow pass.
Photo comes out muddy	Make it laser-ready , then try a slightly lower Photo power.
The laser stopped	Read the message at the bottom of the window; it says why. Home before starting again.

Get help

Email support@burnbadger.com, or use **Help › BurnBadger Support** in the app. Video how-tos are at burnbadger.com/guide.



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