Easy Guide (English)

Why update?

Installing the latest **firmware** lets your RAM-Tester run faster, recognise more memory chips and – if you like – drive a small OLED display.
To load the update you need **either**

1. a dedicated ATMEGA AVR-programmer, **or**
2. a spare **Arduino UNO** that temporarily acts as the programmer.

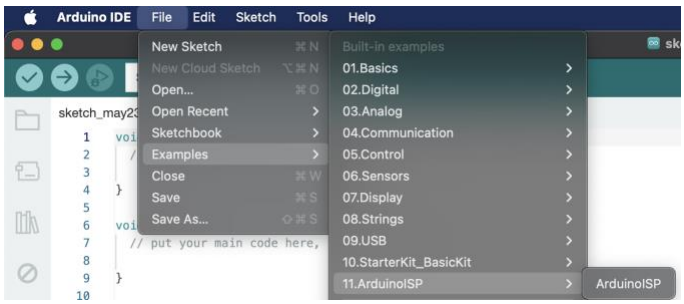
Below we show the simplest method with an Arduino UNO.

What you need beforehand

Item	Purpose
Arduino UNO	will act as the “programming tool”
USB lead	links the UNO to your PC/Mac
6-wire ICSP lead	goes between UNO and RAM-Tester
Newest Arduino IDE	free download from arduino.cc

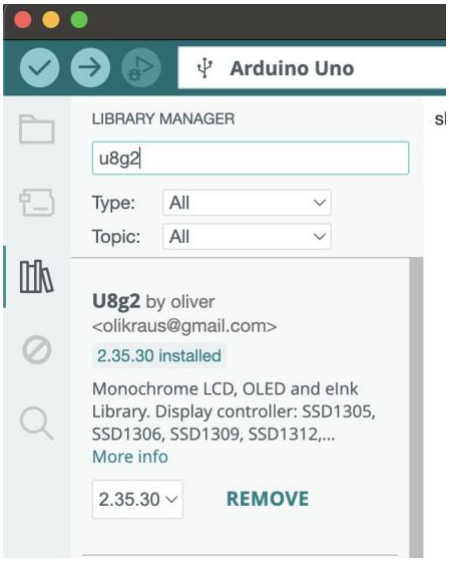
Step 1 – Turn the UNO into a programmer

1. Open the **Arduino IDE**.
2. Click **File** → **Examples** → **11.ArduinoISP** → **ArduinoISP**.
3. Open **Tools** and select
   - **Board:** “Arduino UNO”
   - **Port:** the UNO’s COM port
4. Press **Upload (▶)**.
   After a few seconds the IDE reports **“Upload complete.”**
   Your UNO is now an AVR programmer.

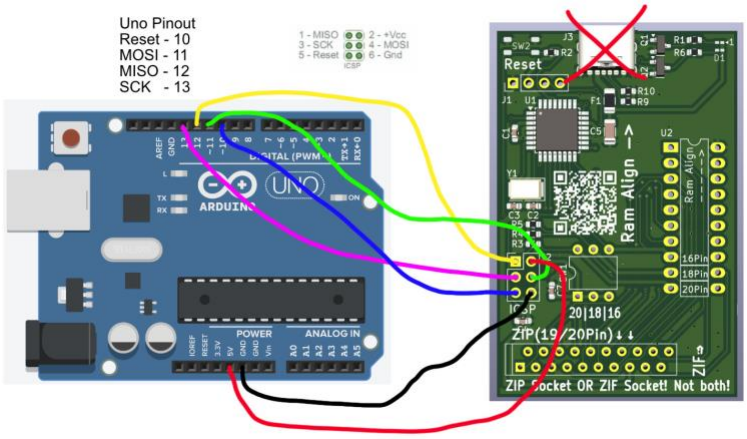


Step 2 – Prepare the firmware and OLED library

1. In the IDE choose **File** → **Open** and load **Ram_Tester.ino** from GitHub.
2. The new firmware can drive an OLED screen. If your IDE does not yet have the library, install **U8G2**:
   - Click the **library icon** in the left bar (looks like books).
   - Search for **U8G2** and press **Install**.



Step 3 - Connect the UNO to the RAM-Tester



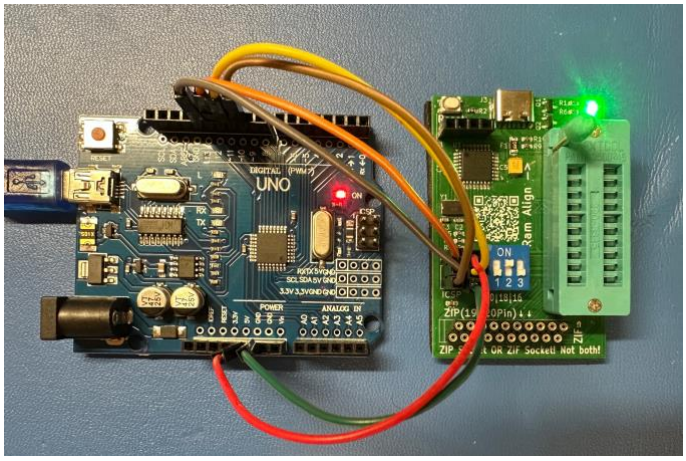
There is **no factory-fitted ICSP header** on the RAM-Tester because it would hindert o use the DIP switches. You can:

1. **Solder six short wires** to the pads and plug the ICSP lead on, **or**
2. **Hold the programmer pins at a slight angle** in the holes, keeping light pressure so they stay in contact while flashing.

Some early boards have a clear protective varnish (“Chemie-Plastik” spray).
If yours is coated, gently scrape or wipe the six ICSP pads clean first (a cotton bud and solvent help) – otherwise the pins will not make contact.

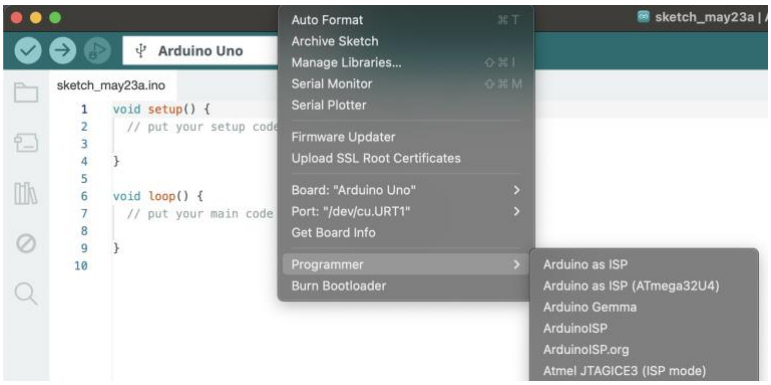
Tip: The through-hole (TH) board can be updated the same way; the ICSP pin-out is identical.

Warning: **During programming the RAM-Tester is powered from the Arduino.** Do not **plug a second USB-C lead into the tester at the same time.**



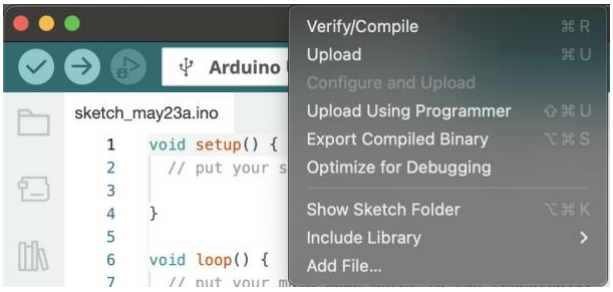
Step 4 – Upload the firmware to the RAM-Tester

1. In **Tools** → **Programmer** select **“Arduino as ISP”** (without “.org”).
2. Choose **Sketch** → **Upload Using Programmer**.
   The IDE compiles the code (this may take a moment) and then sends it through the UNO to the RAM-Tester.



Step 5 – Check the result

- If all is well the IDE shows **“Upload complete.”**
- If you see an error, almost always the wiring is wrong – check all six leads.



Step 6 – Leave Test Mode (only after an update)

Each time new firmware is loaded the RAM-Tester starts in **Test Mode**.
To return to normal operation:

1. Move **all DIP switches to 1 (ON)**.
2. Press **Reset** and wait about **10 seconds** until the LED stops flickering.
3. Press **Reset** once more.

Test Mode is now disabled and will remain off until you install another firmware update.