

HP-15C CE — Simple guide (speed, keys, battery, stopwatch)

Firmware file: `hp15c-3rom-mute120-fsm5-rel80-opt5cycle-debounce-menu-stopwatch-48fix-keys-batt-trim4-show-C8C8.bin`

Checksum (g-ENTER-ON → 2 / flasher expected): C8C8

MD5: `73da4c38bac719674d38f90a8a979dfc`

Flash at: `0x4000` · then press **RESET** on the cable

This guide is for the **HP-15C** Collector's Edition. The HP-16C Collector's Edition has its own firmware and guide (checksum **B7B7**).

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Features:

- **Three calculators in one:** HP-15C, HP-15C with double memory (**15.2**), and HP-16C (menu **4**).
- **Speed** menu: 4, 12 or 48 MHz (menu **5**).
- **Key filter** with adjustable settings (menus **6**, **7**, **8**).
- **Stopwatch** and countdown (menu **9**).
- **Battery reading** (menu key **E**, the **1/x** key).

Flasher and calculator both show **C8C8**.

Open the hidden menu

1. Turn the calculator **off**.
2. Hold **g** and **ENTER**, then press **ON**.
3. Release. You see the usual service menu (`1.L 2.C` ...).

Press **ON** again to leave anytime.

Tip: **f + ENTER + ON** is for USB backup (VoyagerSave). That is not this menu.

What each number does

Press	What it is	What you do
2	Checksum	Should show C8C8 on this build, then date 2026-09-16
4	Calculator image (ROM)	Shows all three options, 15 , 15.2 and 16 , on screen at once. Press the key closest to the one you want. Default 15
5	Speed	Cycle: 4 → 12 → 48 (MHz). Default 4
6	Same-key lockout	How long a repeat of the same key is ignored (ms): 50 → 80 → 100 → 120 . Default 120
7	Key press confirmation	How long a key must stay down before it counts (ms): 10 → 20 → 30 . Default 10
8	Key release confirmation	How long a key must stay up before it counts as released (ms): 10 → 20 → 30 → 50 . Default 30
9	Stopwatch	Opens the stopwatch (see below)
E (1/x key)	Battery reading	Shows the battery voltage once, e.g. bAtt 3.02 (see below)

Option 4 — which calculator you are running

- **15** — normal HP-15C
- **15.2** — HP-15C with double memory
- **16** — HP-16C (the 16C image built into this firmware)

After you change it, press **ON** to leave the menu. The calculator restarts as that model. Speed, key and stopwatch settings still apply. Save your work first with VoyagerSave: switching between 15, 15.2 and 16 can clear user memory.

How to change 5 / 6 / 7 / 8

1. Open the menu.
2. Press the number once to see the current value; press again to change it.
3. Press **ON** to save and exit.
4. To change another setting, open the menu again (one setting per visit is safest).

Settings are kept while the batteries are in. After a full power cut (batteries out), everything returns to the defaults: image **15**, speed **4**, lockout **120 ms**, press **10 ms**, release **30 ms**.

How the keyboard is read: the keys are checked every 10 ms. A key counts as pressed only after it has stayed closed for the press confirmation time (menu **7**), and as released only after it has stayed open for the release confirmation time (menu **8**). A short bounce or dropout while a key is held is therefore ignored. In

addition, the same key pressed again within the lockout time (menu **6**) is ignored. Longer times reject more bounce, but a key must then be held a little longer, or released a little more clearly, before it is pressed again.

Battery reading (E): in the service menu, press **E** (the **1/x** key). The calculator takes one reading and shows it, for example **bAtt 3.02** (volts). Press **E** again for a new reading. If a reading fails, the display shows **bAtt - - -**. The value is measured under load and may differ by about 0.1 V from a multimeter. Press **E** from the menu itself or from the screens of items 7 and 8; on the item 5 (speed) and item 6 (lockout) screens, press **ON** or another menu number first. In the stopwatch, **E** does not take a reading. The low-battery ***** uses fixed thresholds: it turns on after five low readings in a row (below 2.5 V, one reading per keypress) and off again after 80 good readings in a row.

Stopwatch (menu 9)

Display shows hours · minutes · seconds · hundredths.

Key	Action
A	Start / stop. In countdown: stop; press A again to restart the same length
B	Freeze the display (timer keeps running); B again shows live time
C	Countdown: type minutes, then C (example: 5 then C)
D	Clear everything
0-9	Type a number (you see it on screen). 0 works for values like 1000
← (backspace)	Delete the last digit you typed
STO	After a digit 0-9 : store the live time into that register (see below)
+ / -	Speed trim factor, four decimals (shown briefly, e.g. SCF1.0885). Empty: + / - change it by 0.0001 (0.01%). With digits (hundredths of a percent): + sets 1 + digits/10000, - sets 1 – digits/10000 (example: 885 then + → 1.0885)
ENTER	Show the speed factor for about a second (example: SCF1.0885). Changes nothing; digits you have typed are kept
ON	Exit

Store time into a register (STO)

1. Let the stopwatch run (or stop it with **A** — either way, **STO** uses the live time).

2. Type a register **0-9** (example: **5**).
3. Press **STO**. The digit entry clears; the time display stays.
4. Leave with **ON**, then **RCL** that register (example: **RCL 5**).

Same number format as Last X: e.g. **00.00.08.03** → **0.000803**.

- **STO** alone, or **0** then **STO**, stores into **R0**.
- The stopwatch stores into **R0-R9** (no dotted registers like R.2). Two or more digits before **STO** (example: **12 STO**) shows an error code and does not store.

After you leave with ON

- The time is also stored in **Last X** (format like **0.000803** for 8.03 seconds).
- Your normal stack (X Y Z T) is unchanged.
- To use the time in a calculation: press **g ENTER** (LASTx).

This is **not** a quartz watch. If it runs a bit slow or fast vs a real watch, trim it with the speed factor. The stopwatch multiplies its elapsed time by this factor: at **1.0885**, every 100 s of uncorrected time counts as 108.85 s. To find the factor, time a known interval at **1.0000**, then divide the real time by the time shown.

- To see the factor without changing it, press **ENTER**. The display shows it for about a second, for example **SCF1.0885**, then returns. Digits you have typed are kept. The factor is also shown after each **+** or **-**.
- **+** / **-** with no digits typed change the factor by **0.0001** (0.01%).
- To set a value directly, type the difference from 1 in hundredths of a percent, then **+** (above 1) or **-** (below 1): **885** **+** → 1.0885, **885** **-** → 0.9115, **1000** **+** → 1.1000. Zeros and backspace work while typing.
- Range **0.5000** to **2.0000**; default **1.0000**. The factor is kept while the batteries are in. After changing batteries, check it with **ENTER**.

Short recipes

Stopwatch: menu **9** → **A** start → **A** stop → **ON** → **g ENTER** if you want the time in X.

Save into R5: menu **9** → **A** run → **5** → **STO** → **ON** → **RCL 5**.

5-minute countdown: menu **9** → **5** → **C** → **A** to pause/restart → **ON** when done.

Set factor 1.0885: menu **9** → **885** → **+** (use **←** if you mistype).

Fine trim: menu **9** → **+** or **-** once per 0.0001 (0.01%).

Check the factor: menu **9** → **ENTER**.

Install (short)

1. Flash the `.bin` at **0x4000** with the [Machiilabs flasher](#).
2. Press **RESET** on the cable.
3. Check: **g-ENTER-ON → 2** → expect **C8C8**, then date **2026-09-16**.
Optional: **E** → `bAtt x.xx`.