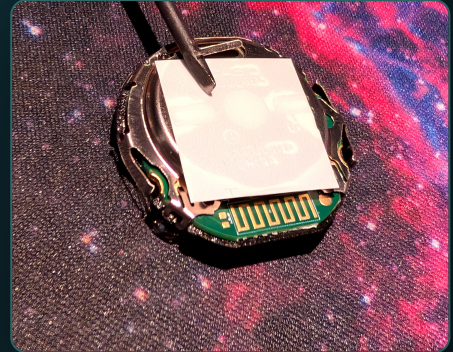




F91

ASSEMBLY GUIDE

How to fit the Kepler module into a Casio F-91W case. You supply the donor watch and a fresh coin cell; everything else is in the box. About 20–30 minutes the first time.

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1 Before you start

This guide replaces the movement of a Casio F-91W with the Kepler module. Nothing has to be soldered or drilled. **Two small metal parts** carry over from the original watch, and one adhesive strip goes into the case.

In the box

- the **Kepler module** — board and OLED display already connected, pre-flashed with the current firmware
- the **movement holder**, already fitted to the module — there is nothing to assemble
- the **adhesive strip** for the display cutout (step 3)

What you supply

- a **donor Casio F-91W** — complete, with a working original module. You need **two small metal parts** out of it (step 4).
- a **CR2016** coin cell — the one already in the donor watch is fine if it still has life in it. A fresh one only if it doesn't.
- a **2.0 mm cross-tip (Phillips) screwdriver** for the four case screws
- a small **flat-blade screwdriver** — it makes getting the battery clamp off the original module a good deal easier
- **tweezers** — fine-tipped; non-magnetic is nicer
- a clean, well-lit work surface, ideally a light-coloured mat so small parts stay findable

Time: about 20–30 minutes the first time.

Three things to know up front

1. **Static.** Touch something earthed before unpacking — a radiator, a tap. The module is bare electronics, not a finished device.
2. **The display flex needs a gentle hand.** The orange ribbon between board and display gets folded as the display goes into the module — that part is normal. What it will not survive is a sharp crease or being pulled on. See section 2.
3. **Work through the steps in order.** Two of them — the adhesive strip (step 3) and the function test (step 8) — are much harder to put right once the watch is screwed shut.

Keep coin cells away from children

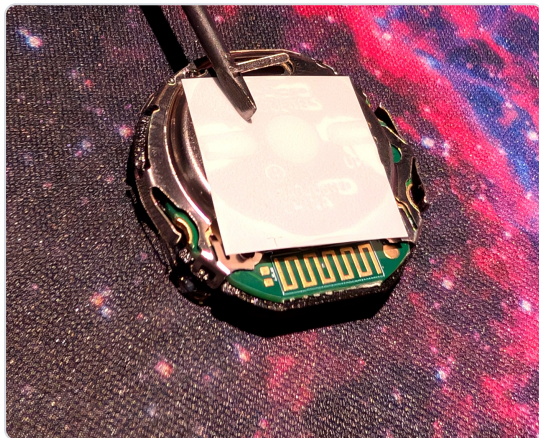
Swallowing one can cause severe internal injury within hours. Store new and used cells out of reach, and seek medical help immediately if you suspect one has been swallowed.

Water resistance

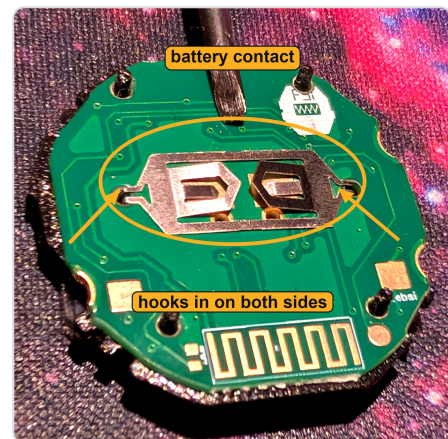
Opening the case breaks whatever seal it had, and refitting the gasket does not restore it. Treat the converted watch as **no more water resistant than the donor watch was, and realistically less**. No swimming, no showering, no washing up.

2 Know your module

Two minutes here saves a lot of guessing later.



Back, assembled. How it looks once the clamp is on over the cell. The gold meander at the edge is the Bluetooth antenna. This face points at the case back.



Back, empty. The same face before the cell goes in — the battery well in the middle is where steps 5 to 7 happen.

The display flex is meant to be bent — gently

The display is joined to the board by an orange **flex ribbon**. Depending on how your module arrives, the display may already be folded down onto the board, or the flex may still be lying flat — as in the photo below. If it is flat, **you fold it as you seat the display into the module**. That is normal, not damage.

Fold it, don't crease it: a soft curve is what you want, and a sharp pinched crease in the same spot twice is what kills a flex. Don't pull on it, and don't try to unplug it. The fold happens in step 9, where the display goes into the case ahead of the module.



The display up on its flex, before it is folded down into the module.

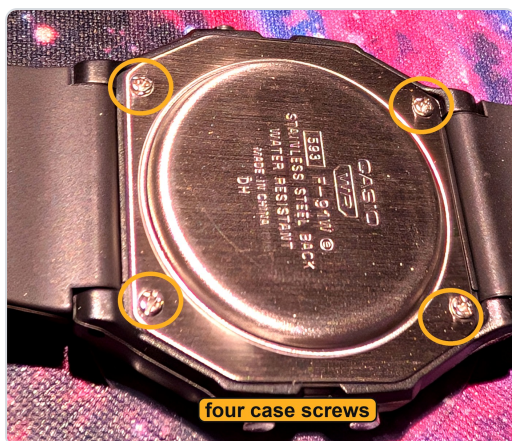
The **movement holder** — the black plastic ring around the board — is what makes the round module sit still in a case built for a different shape. It comes fitted. Leave it on.

3 Opening the watch & preparing the case

1 Open the case back

Put the watch face-down in front of you. Undo the **four screws** in the case back and set them aside — they are small and they roll.

Lift off the case back. Underneath sits the **gasket**: a thin rubber ring in the case rim. Take it out and put it somewhere clean. It goes back in the same place at the end.



four case screws

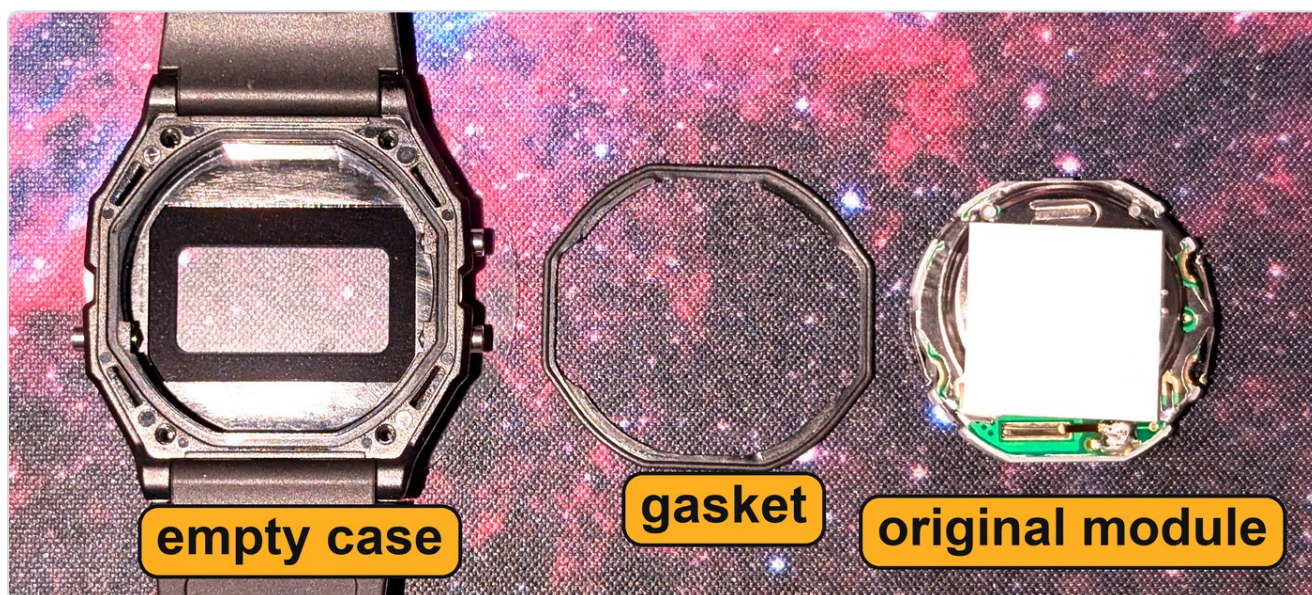
All four screws are the same. Undo them in any order.



Back off, original module still in the case.

2 Take out the original module

Lift the complete original module out of the case. **Don't throw it away yet** — you need one part out of it in step 4.



empty case

gasket

original module

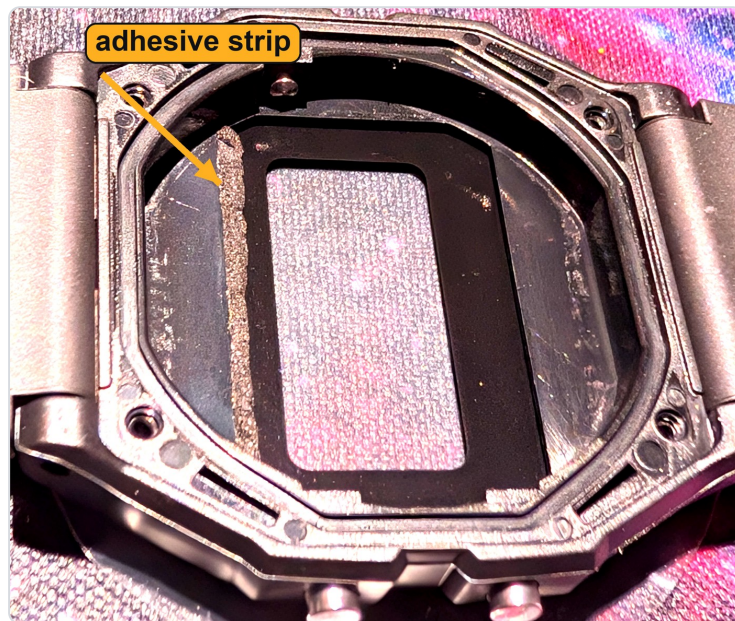
The three pieces you now have in front of you. The module comes out in one piece.

3 Adhesive strip into the display cutout

Stick the **supplied adhesive strip** along the **bottom edge of the display cutout**, inside the case.

The strip lifts the module very slightly. Without it the display sits too low and you will not see the whole screen from the front — the bottom line disappears behind the case rim. It is a thirty-second job now and a full disassembly later.

Lay it on straight. That matters more than anything else here. In step 9 you slide the display down until it comes up against this strip, so the strip is what sets the display's height and angle: a strip that runs crooked gives you a display that sits crooked. Try to keep it off the glass, but a whisker of overlap is not a problem — crooked is the problem.



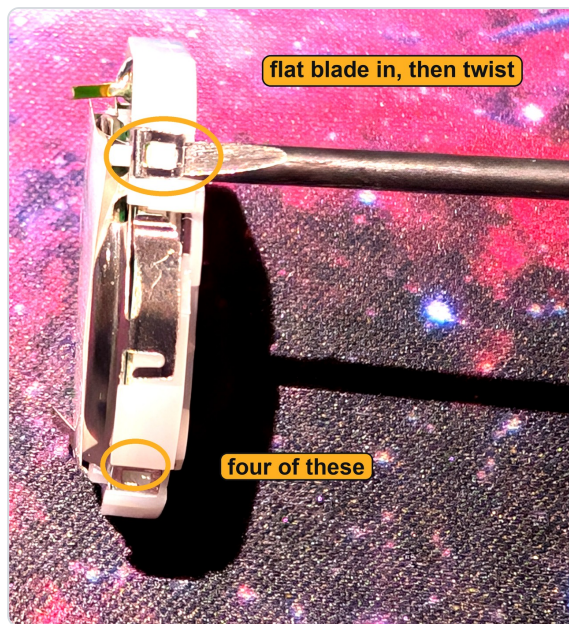
The strip runs the length of the aperture, hard against the edge and straight.

4 Moving the battery parts across

Two small metal parts move from the old module to the new one. That is the whole of the salvage operation — and you can reuse the old coin cell too.

4 Take the two metal parts off the original module

Stand the original module on its edge. The **battery clamp** is held on by **four clips**, one on each side. For each clip: put the tip of the small **flat-blade screwdriver** into the slot and **twist the driver slightly** — the clip snaps off without any force. Work round all four.



Blade into the slot, then a small twist. Four clips, one per side.

With the clamp off, the **coin cell usually stays put on the board** — it sits on a small adhesive pad. Lift it off and keep it: if it still has life in it, it goes straight back in at step 6.

Then release the **battery contact** from the board — the small flat bracket with two square windows. **Both metal parts carry over**, so put them somewhere they cannot roll away.

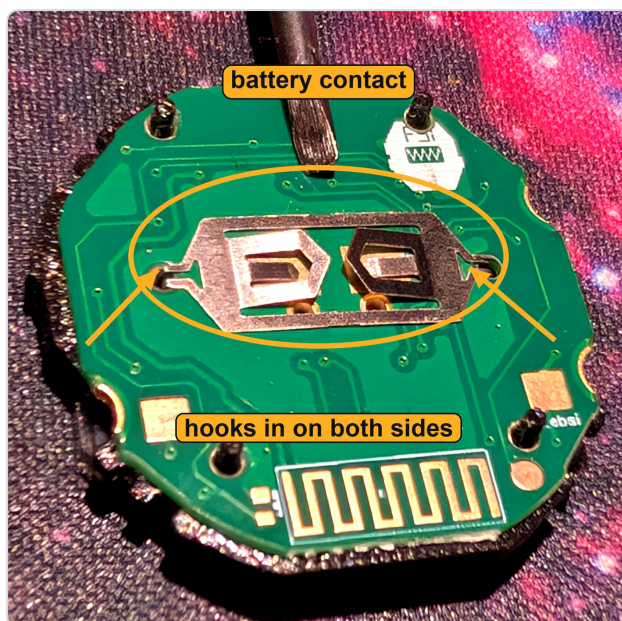
What is left of the original module is spare. Keep it if you might want to convert the watch back one day; otherwise recycle it as electronics.



The original module, fully apart. Circled is the battery contact — the second part you keep. The clamp came off in the step above and is not in this frame.

5 Fit the contact into the Kepler module

Lay the Kepler module **back-side up**. Fit the contact into the battery well so it lies flat, and let its two ends **hook into the anchor points left and right**. It should sit down without being forced. If it rocks or stands proud, it is not in both anchors.

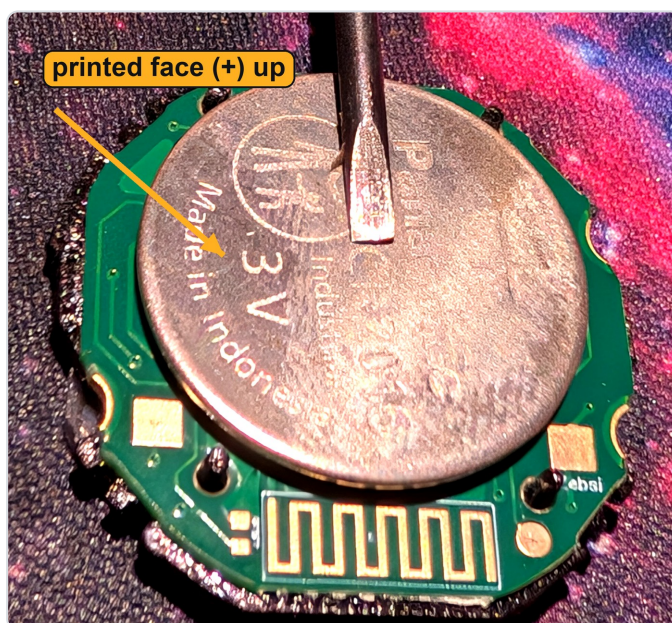


Seated correctly: flat on the board, hooked at both ends, windows clear.

6 Insert the coin cell

Drop the **CR2016** into the well on top of the contact, with the **printed face** — the one carrying the **type number and the + mark** — **facing up**, away from the board.

Handle the cell by its edge. Fingerprints on the flat faces are contact resistance.



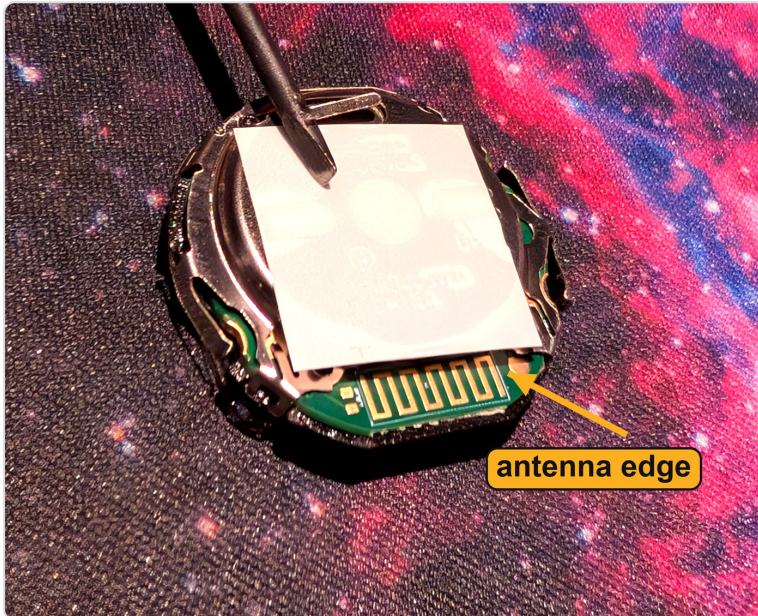
If you can read the printing, the cell is the right way up.

7 Clip the battery clamp back on

The clamp goes back over the cell, into the same four clips. Lay the module down **screen against the table, with the antenna edge nearest you**, so you are looking at the battery.

Then **clip the top two in first, and the bottom two after**. That order seats it cleanly; the other way round it fights you.

Once it is on, the cell should not shift at all when you tilt the module.



The clamp seated. Shown in the orientation the step describes: screen against the table, antenna edge nearest you.

5 First function test

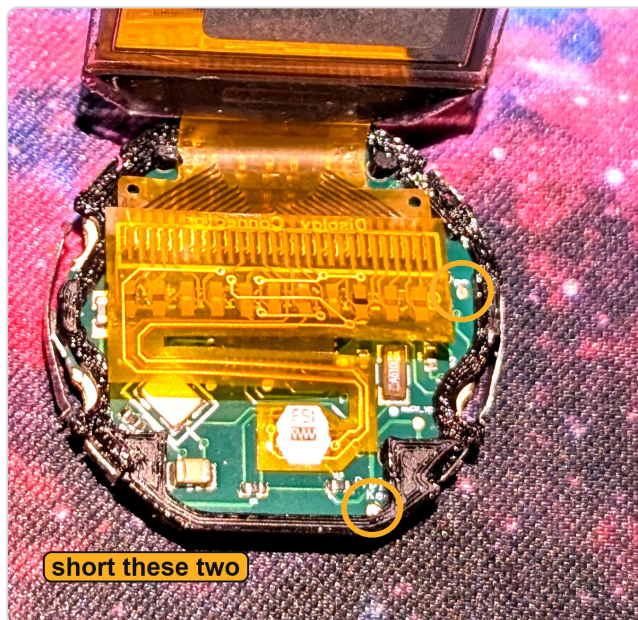
Do this *before* the module goes anywhere near the case. A module that doesn't light up on the bench will not light up inside a closed watch either — and by then you have four screws between you and the problem.

8 Check that the display comes on

Press a button on the module. **The display must come on.**

Still black? It will probably need a reset — that is normal after shipping, not a fault. Two ways, in this order:

1. **All three buttons at once.** Press them together, let go, then press one button and check the display.
2. **Short the two reset pads** marked below. Bridge them briefly — a touch is enough — with something fine and metal: fine-tipped tweezers, a straightened paperclip, the flat-blade screwdriver. Then press a button again.



The two pads to bridge. Touch only these two — nothing else on the board needs shorting.

Only carry on once you have a picture on the screen.

If neither reset brings it up

Take the cell out, wait about ten seconds, put it back in — printed face up — and try both resets once more. If the display still stays black, **stop here and get in touch** rather than fitting the module into the case.

6 Fitting the module

9 Seat the display first, then the module

The display and the module go in as two separate movements, display first. Before you start, **check that all three buttons are all the way out** — a button sitting half pressed in will hold the module up and make everything after this misleading.

The display

Lower the display into the **lowest cutout** in the case. Start it roughly in the middle, then **slide it down towards the bottom edge until it comes up against the foam strip** you stuck in at step 3. That strip is the stop: it sets how high the display sits, which is the whole reason it has to go on straight.

The module

Now lower the module onto the back of it. The movement holder does the fitting work — it should drop in **snugly**, firm but without force.

Don't judge whether it is sitting straight yet — you do that in step 10, with the screen lit and the case back held on.

10 Check the buttons and the display before you screw anything down

Put the **gasket and case back in place but do not screw them down**. Hold the back on with a finger — the buttons only work when the module is pressed properly into place.

The quickest way to check all three buttons is the **timer**:

Button	Press	Expected
top left	repeatedly, until the timer appears	the display cycles through the modes
right	once	timer jumps +5 minutes
bottom left	once	timer jumps +1 minute

If a button doesn't respond: take the back off, check how the module is sitting, and test again. A dead button here is almost always seating, not electronics.

While you are cycling through the modes anyway, stop at the **Torch** screen. A fully lit screen is the easiest way to judge the display: **if the top line is horizontal, the display is straight**. Squinting at a clock face tells you much less.

If the top line runs at an angle, or the bottom line hides behind the case rim, take the module out and check the strip from step 3 before going any further.

7 Closing up

11 Screw it back together

Only once **all three buttons work and the display sits straight**:

Gasket into the case rim, case back on, then tighten the four screws **crosswise** — finger-tight, and no more. The thread is in plastic and strips easily; an over-tightened case back is not repairable.

Done

How to use the watch from here — the screens, pairing with your phone, notifications, setting the time — is in the **user manual**.

8 If something isn't right

Symptom	Likely cause	What to do
Display stays black	Module is asleep after shipping	Step 8 — three-button reset, then the reset pads, then cell out and back
Bottom line hidden behind the case	Adhesive strip missing, or not against the edge	Repeat step 3
Display sits crooked	Adhesive strip is on at an angle	Check on the Torch screen (step 10); if the top line is off, redo step 3
One button doesn't respond	Module not fully seated, or back not pressed on	Step 10 — check the seating, not the button
Display flickers or drops out	Battery contact	Refit the contact (step 5), the clamp (step 7), and that the cell is the right way up (step 6)
Fine on the bench, dead once closed	Cell pushed off its contact while seating	Open up, check steps 5–7, retest before closing
Nothing at all, even after a reset	—	Get in touch before going any further

9 Safety, water & disposal

Coin cells

Keep new and used cells out of reach of children. A swallowed cell can cause severe internal injury within hours — seek medical help immediately. Do not attempt to recharge a CR2016, do not heat it, and do not short its faces against each other.

Water

The converted watch is **not water resistant**, whatever the case back says. The original marking refers to a factory-sealed watch that has never been opened.

Disposal

The old coin cell and the original module are electronic waste. Take them to a collection point — not the household bin.
