

FOSSIL SYNTHS

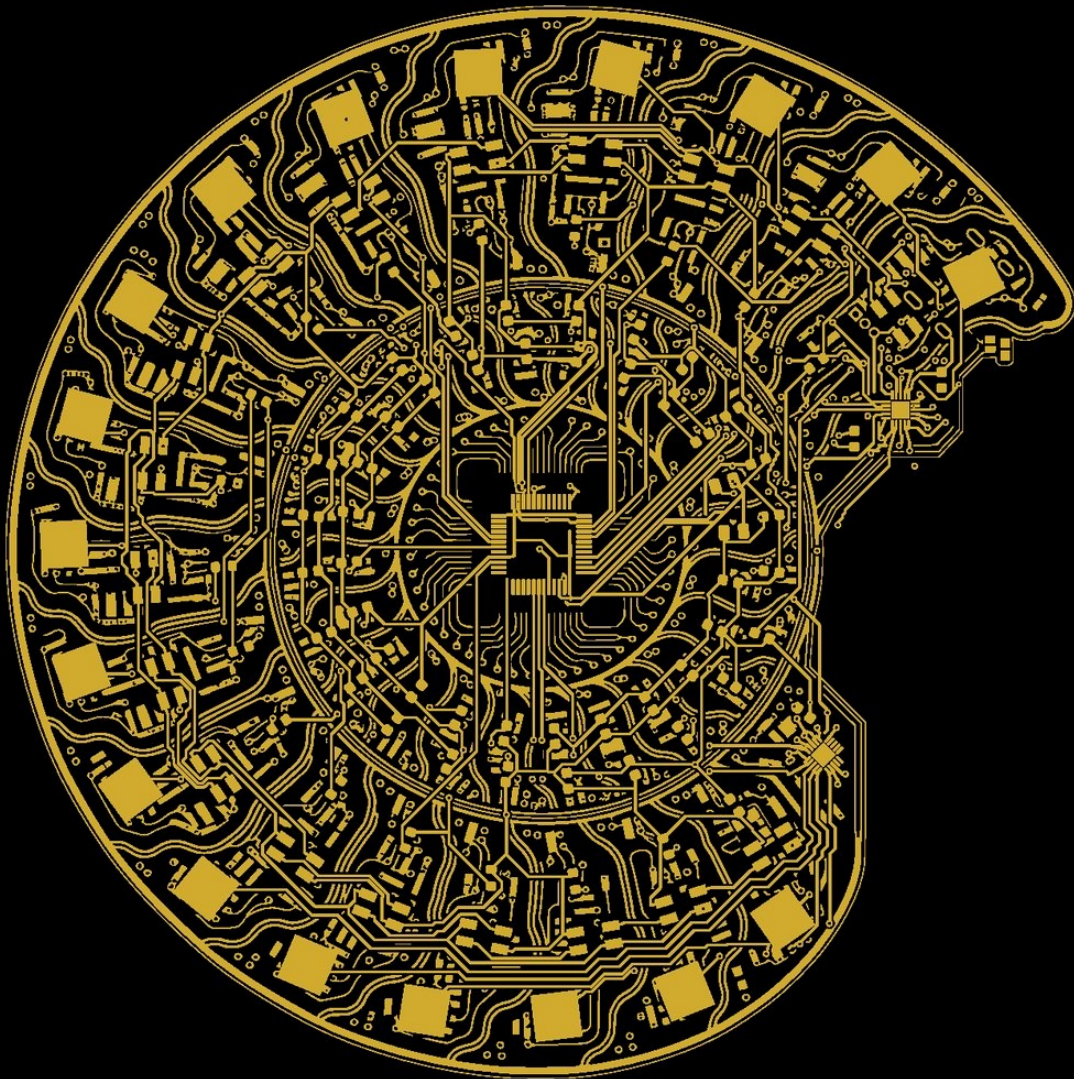
open source

resonance

tactile

expressive

cymatics



Functional PCB instruments in fossil form.

01 The project

Fossil Synths is a family of playable art objects: real, manufacturable printed circuit boards whose copper is drawn as fossil anatomy. The trace routing follows the logic of the organism — chambers, segments, ribs — so that the electrical function and the fossil form are one and the same drawing.

The choice of fossils is the concept, not a style. A fossil is time made mineral: life that endured for hundreds of millions of years and survives only as an imprint in stone. Redrawing these creatures as state-of-the-art electronics makes the prehistoric futuristic — and turns the same gaze back on us. Every device we manufacture today is a fossil in waiting: our circuit boards will one day be read in the strata as the index fossils of the digital age, ruins of a civilisation that measured itself in gigahertz. Fossil Synths plays with that double time — instruments that sound in the present, drawn as what they will inevitably become.

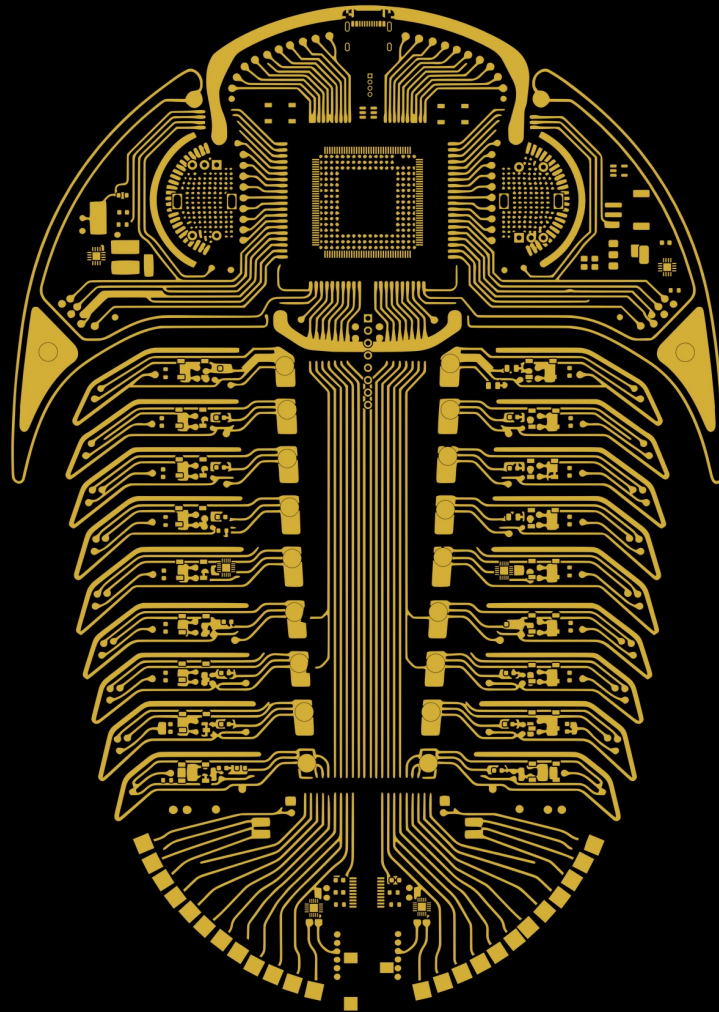
Each board is a self-contained electronic instrument. Exposed gold copper (ENIG) on matte black solder mask makes the circuit legible as engraving: the component becomes ornament, the ornament is functional, and every creature is a production-ready file, not a rendering. The series also carries an inversion: creatures that geology compressed into fossil fuel return here as instruments — and, in the closing proposal, as candidates to draw part of their life from ambient light instead of burning anything.

THE COLLECTION

BOARD	ORGANISM	INSTRUMENT
Ammonode	Ammonite — chambered spiral shell	Harmonic touch synthesizer, cymatics, Schumann coil
Trilobeat	Trilobite — segmented exoskeleton	Sequencer / groovebox with OLED and encoders

Both instruments share a design language — gold on black, anatomy as routing, touch as the primary interface — and are conceived for exhibition, live performance and limited production.

02 Trilobeat



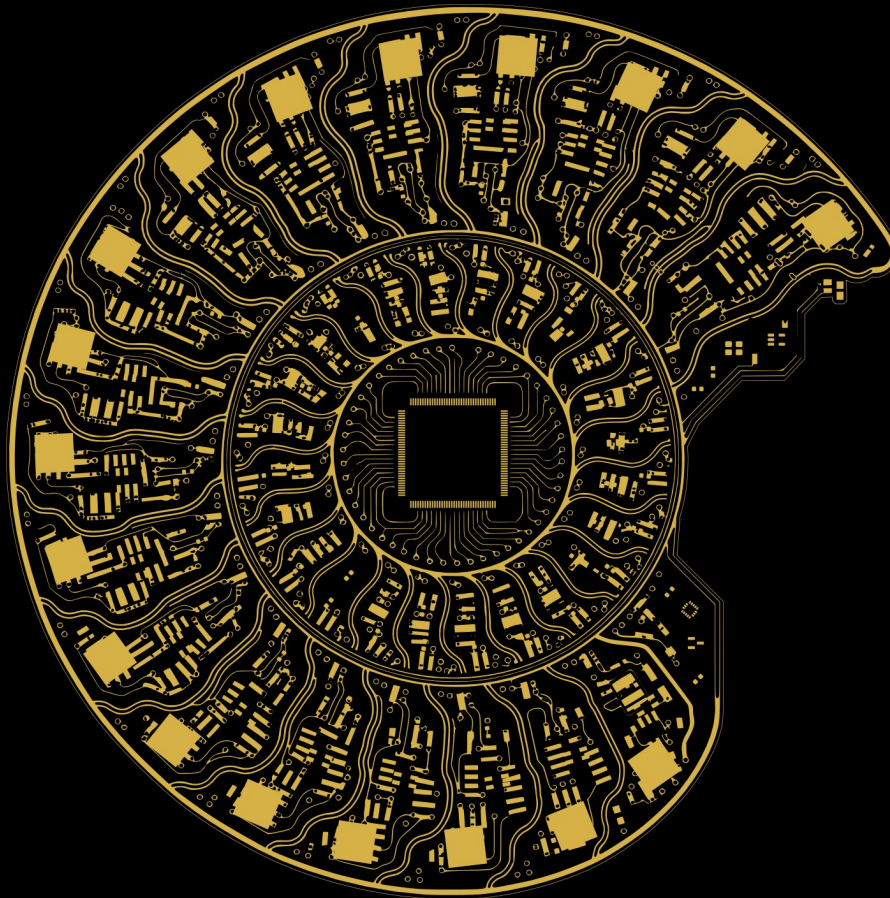
ARCHITECTURE

MCU	STM32H743ZI — 480 MHz, audio synthesis
Touch	4 × MPR121 — segment electrodes
Light	20 × WS2812B addressable LEDs
Display	OLED SSD1322, 256×64, 16-level yellow
Audio	PCM5102A DAC → 3.5 mm line out
Controls	3 × EC11 encoders + expansion header
Power	USB-C, 5 V

A step sequencer in the body of a trilobite. The twenty segments of the exoskeleton are touch-sensitive steps; patterns run down the animal's back as light.

The cephalon houses the processor and a yellow OLED; three encoders ride the thorax for tempo, pitch and pattern.

03 Ammonode



ARCHITECTURE

MCU	STM32L496 — native capacitive sensing, USB
Touch	18 chamber electrodes, read by the MCU
Light	18 × SK6812 MINI-E, one per chamber
Audio	PCM5102 DAC → 3.5 mm line out
Motion	LIS3DH — tilt changes arpeggio mode

A harmonic touch synthesizer in the shell of an ammonite. Eighteen chambers of the exoskeleton are touch electrodes — each one fires a note, and sequences climb the spiral as arpeggios of sound and light.

The processor reads the chambers directly through capacitive sensing; tilting the instrument changes the arpeggio mode.