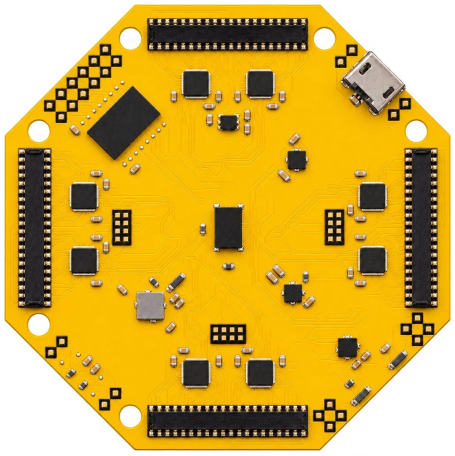
PRELIMINARY · IN DEVELOPMENT

PRELIMINARY PRODUCT DATASHEET · UPCOMING · IRONBCI FAMILY

128-Channel Brain–Computer Interface Board

IronBCI-128 is the next step for the IronBCI family: 128 channels on one compact 70 × 70 mm octagonal board, a 4-layer PCB with parts on both sides, and a USB-C connection to the host. Full specifications, pricing and availability will be announced to subscribers first.



IronBCI-128 board, top side (pre-production)

128	70 × 70	4	2-sided	USB-C
Channels	mm octagonal board	Copper layers	Parts top & bottom	Host connection

01 OVERVIEW

Design highlights

- **128 channels:** four times the channel count of IronBCI-32 on the same 70 × 70 mm footprint.
- **Compact octagon:** regular octagon, eight 29 mm edges, six Ø 3.2 mm mounting holes.
- **Double-sided 4-layer PCB:** components on top and bottom; a solid ground plane on inner layer 2.
- **Edge connectors:** four board-to-board connector positions per side (2 × 20, 1.27 mm pitch).
- **USB-C:** single cable to the host computer.

Intended for

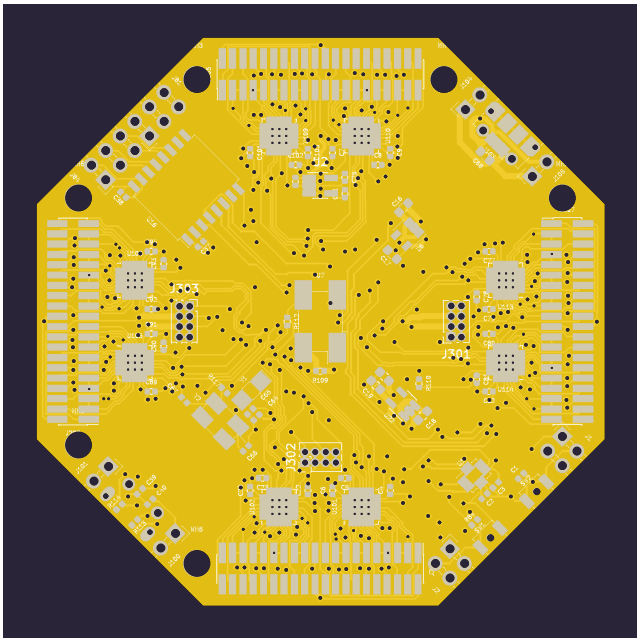
- High-density EEG research
- Brain–computer interface development
- Source localisation and topographic mapping
- Teaching and neuro-engineering labs
- Multi-modal EEG / EMG / ECG experiments

02 PRELIMINARY SPECIFICATIONS

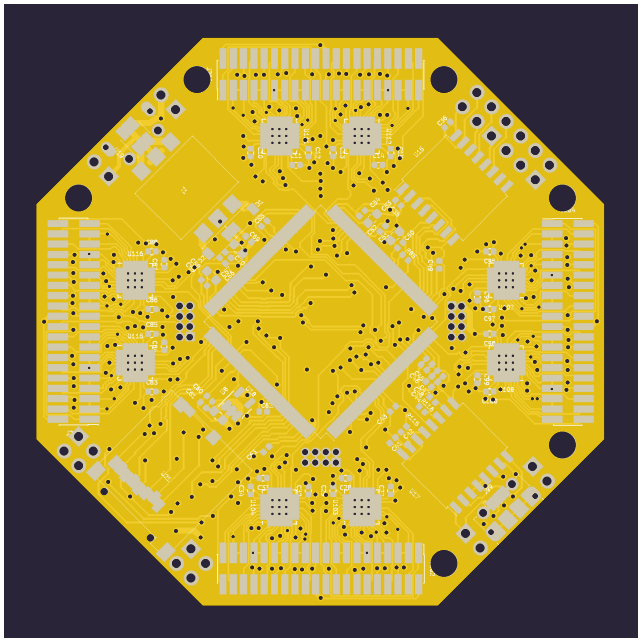
SIGNAL ACQUISITION	
Channels	128
Resolution / sample rate	To be announced
BOARD	
Form factor	70 × 70 mm regular octagon (eight 29.0 mm edges), 1.6 mm thick
PCB	4 copper layers, FR-4; components on both sides
Mounting	6 × Ø 3.2 mm non-plated holes (M3)
INTERFACES	
Host link	USB-C
Board-to-board	4 connector positions per side, 2 × 20 pins, 1.27 mm pitch (SMD)
Headers	3 × 2 × 4 pin, 1.27 mm pitch through-hole (J301–J303)

In development. Preliminary data; specifications may change. Not a medical device.

03 BOARD VIEWS



Top side (from Gerbers)



Bottom side, viewed from below (from Gerbers)

04 IRONBCI FAMILY

	IronBCI-32	IronBCI-128
Channels	32	128
Board	70 × 70 mm octagon, 4-layer	70 × 70 mm octagon, 4-layer, parts on both sides
Host link	USB	USB-C
Status	Available	In development — subscribe for launch news

05 GET NOTIFIED

Subscribe on the IronBCI-128 page (pieeg.com/store/ironbci-128). Subscribers receive the full specifications, pricing and the order date before anyone else. One email when it is ready — no spam, unsubscribe any time.

06 RELATED DOCUMENTS

Doc. No.	Document	Contents
IRB128-DS-001	Preliminary Product Datasheet	Overview, preliminary specifications, family comparison
IRB128-MD-002	Mechanical & Dimensional Drawing	Outline, mounting holes, connector positions
IRB128-PCB-003	PCB Technical Information	Stack-up, copper layers, drill table, Gerber files

PRELIMINARY DATA

IronBCI-128 is in development. Values in this document come from the current pre-production design files and may change before release. Final data will be published with the product. For research and education only; not a medical device.