

The NEUROSTITCH-12 — a chenille chain-stitch platform for soft, dry biosignal electrodes and lead routing.

CHENILLE BIOSIGNAL ELECTRODES

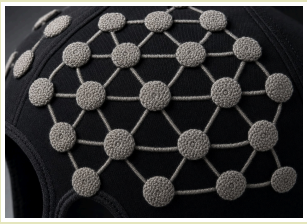
NEUROSTITCH-12

Soft, high-surface-area electrodes for EEG, EMG, and ECG.

A 12-needle flat head paired with a dedicated chenille / chain-stitch head — purpose-built for out-of-plane electrode geometry while the flat head prints insulating lead routing on the same workpiece in one setup. Chain stitch lifts conductive thread off the fabric in tight loops, turning embroidery into a dry-electrode assembly process.

WHY THIS MACHINE

Chain stitch lifts conductive thread off the fabric in tight loops, multiplying skin contact area. Dry electrodes match the performance of wet sensors with none of the gel and none of the rigid PCBs. Print electrode plus lead routing on one workpiece — no separate assembly step.



Hex chain-stitch electrode array

CAPABILITIES

- Electrode geometries from 0.5 cm × 0.5 cm to 100 cm × 100 cm and larger
- Any side, any shape — hex arrays, rings, disks, custom outlines
- Conductive chenille for skin contact plus insulating flat for leads
- Silver-plated nylon, carbon nanotube and kevlar conductive threads
- Combined fine and bulky decoration in one setup

IDEAL FOR

Neuroscience labs, BCI startups, wearable biosensor companies, and sports physiology groups.

SPECIFICATIONS

Configuration	12 needles flat head + 6-needle chenille (CT) head
Functions	Flat • Chenille • Chain stitch
Embroidery area	560 × 1200 mm
Cap embroidery area	280 × 60 mm
Maximum speed	1,000 spm flat • 700 spm cap
Stitch length	0.1 – 12.7 mm
Head distance	350 mm
Control	10" colour touchscreen LCD
Voltage	Standard 120 V
Machine size	2,470 × 1,630 × 1,600 mm
Net weight	650 kg

SAMPLING Bring your spec — we'll stitch a sample on this platform at our showroom.

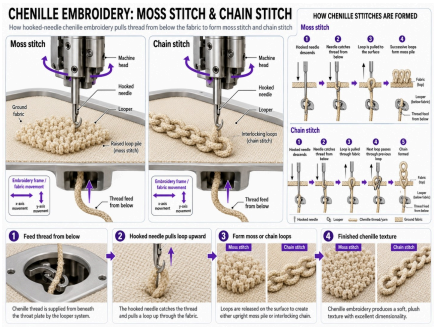
PRICING Contact for current pricing and availability.

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WHAT THE PLATFORM MAKES

Chenille Electrodes for Biosignal Sensing

Chenille and chain stitch lift conductive thread off the fabric into soft, high-surface-area loops — dry electrodes that match wet-sensor performance with no gel and no rigid PCB. The NEUROSTITCH-12 stitches the electrode and its insulating lead routing onto one workpiece in a single setup, embedding EEG, EMG and ECG sensing directly into caps, garments and bands.



THE PROCESS · CHENILLE & CHAIN STITCH

How chenille works

A hooked needle pulls conductive thread up from below the fabric, releasing loops on the surface to build either an upright moss pile or an interlocking chain. The embroidery frame moves in X and Y so the head follows any programmed outline — raising plush, high-contact electrode texture exactly where the sensor demands it.



EEG · BRAIN SENSING

Chenille EEG cap

A full array of soft chenille electrodes embroidered into a stretch cap with embroidered leads — dry, gel-free EEG contact across the scalp for neuroscience and BCI work.



EMG / ECG · WEARABLE

Biosignal sensing garment

Chenille electrodes and embroidered leads built straight into a compression shirt — EMG and ECG monitoring that moves with the athlete, no straps or adhesive pads.



SILVER-PLATED NYLON · ELECTRODE

Silver chenille electrode

A dense moss-pile patch in silver-plated nylon — high surface area for low skin-contact impedance, stitched to any outline the sensor design calls for.



CONDUCTIVE THREAD · ELECTRODE

Chenille electrode patch

A plush chenille electrode raised from conductive thread — showing how the chain-stitch head turns a flat textile into a soft, high-contact dry sensor.

One machine, electrode plus lead routing in a single setup. Raise conductive chenille for skin contact, print insulating flat stitch for the leads, and work in silver-plated nylon, carbon nanotube or kevlar thread — EEG, EMG and ECG sensors stitched to any shape from 0.5 cm to a full garment, all on one platform.