



COSMIIC

CLEVELAND OPEN SOURCE MODULAR
IMPLANT INNOVATORS COMMUNITY

OPEN SOURCE COMMITMENT

- Available for any purpose, including commercialization
- Available for any modification
- Modifications can be protected and commercialized
- Please acknowledge COSMIIC

KL Kilgore, B Smith, CA Chestek
MJ Fu, NS Makowski, TL Vrabec

Case Western Reserve University | Cleveland, OH
MetroHealth System | Cleveland, OH
University of Michigan | Ann Arbor, MI



SPARC Open Source Human Implant
Funded by NIH SPARC
U41 - NS129436

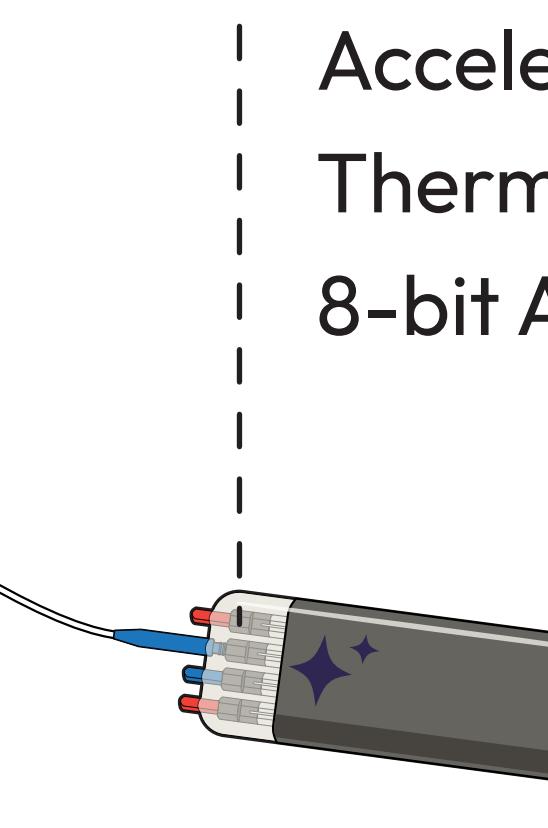
POWER MODULE

600mAh Li-ion recharge
32-bit ARM-7
MedRadio
4MB memory
Accelerometer
Thermistor



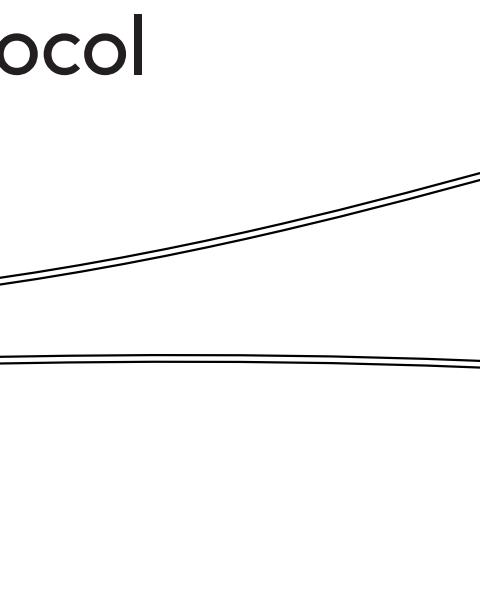
PULSE GENERATOR MODULE

4 independent channels
0-256us
0-20mA
1-50Hz
Common anode
Accelerometer
Thermistor
8-bit AVR



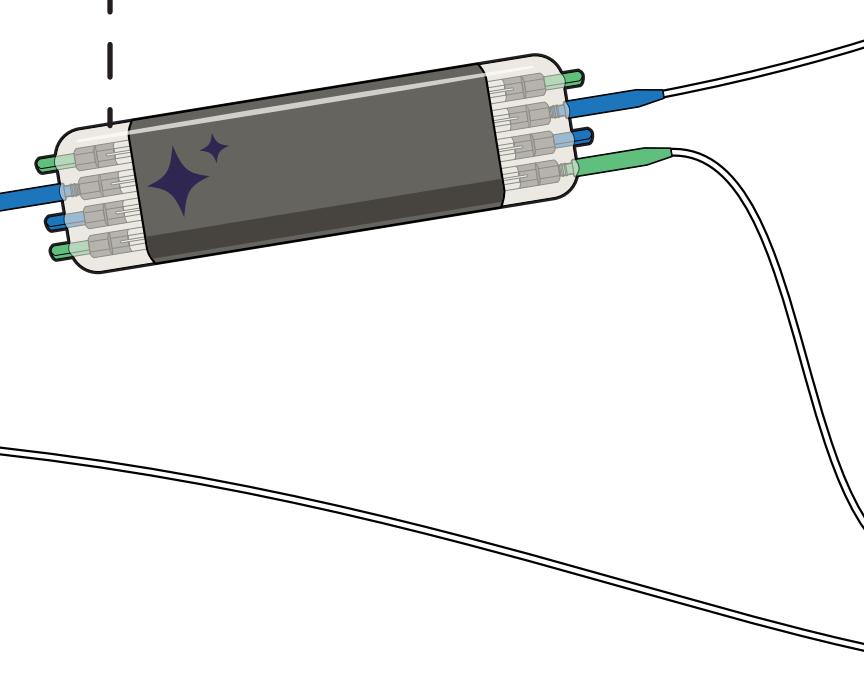
NETWORK CABLE

2 conductor
Power & communication
Controller Area Network (CAN) protocol



BIOPOENTIAL RECORDING MODULE

2 independent channels
Myoelectric signals
Gain 150 - 7500
8 bit ADC resolution
2KHz sampling
Software signal processing
8-bit AVR

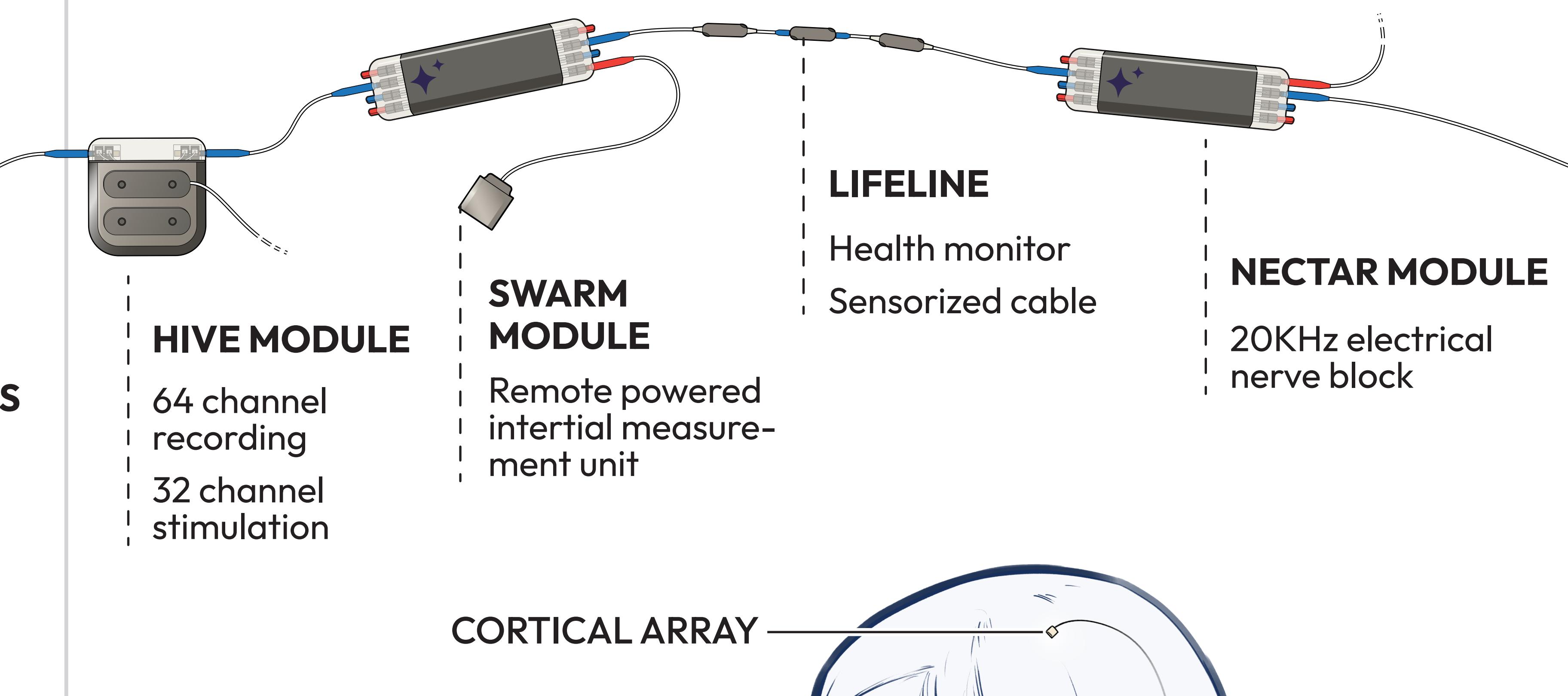


ELECTRODES

Monopolar
Bipolar
Nerve cuff

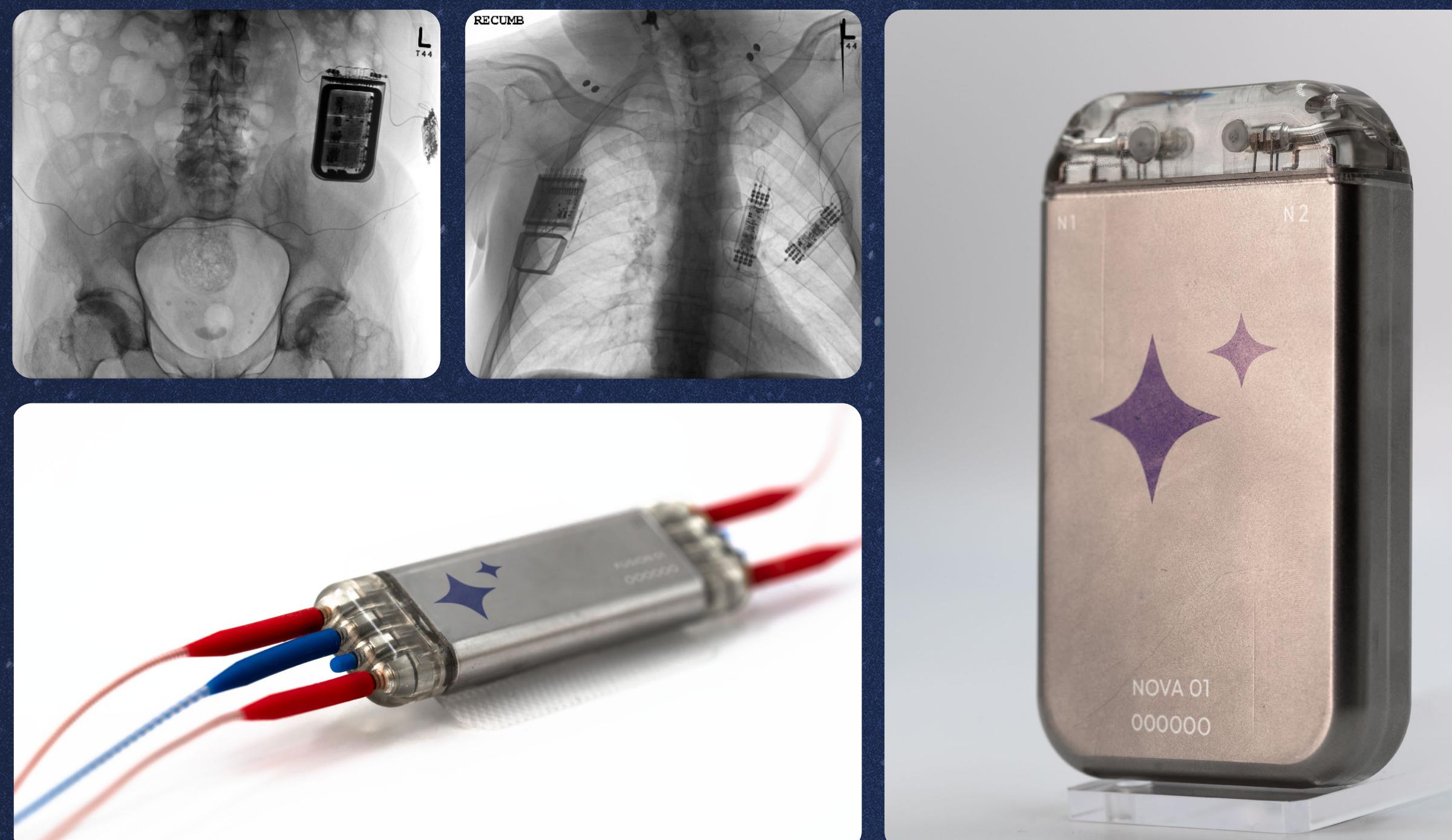


IN DEVELOPMENT



COSMIIC PLATFORM IN USE

5+ years human experience (ongoing)
Based on the “Networked Neuroprosthesis” (NNP) modular implant system developed in Cleveland
Active Early Feasibility IDE



TIMELINE

- cosmiic.org open to the public
- Initial Early Feasibility Investigational Device Exemption documents released
- Complete suite of COSMIIC open source licenses published
- COSMIIC grant writing assistance
- COSMIIC Platform System - full document set (with minimal customer support)
- [8.31.2025] COSMIIC Evaluation Kit
- COSMIIC Pre-clinical System available for purchase
- COSMIIC Advanced System full document set released

