

cosmiic.org



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

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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



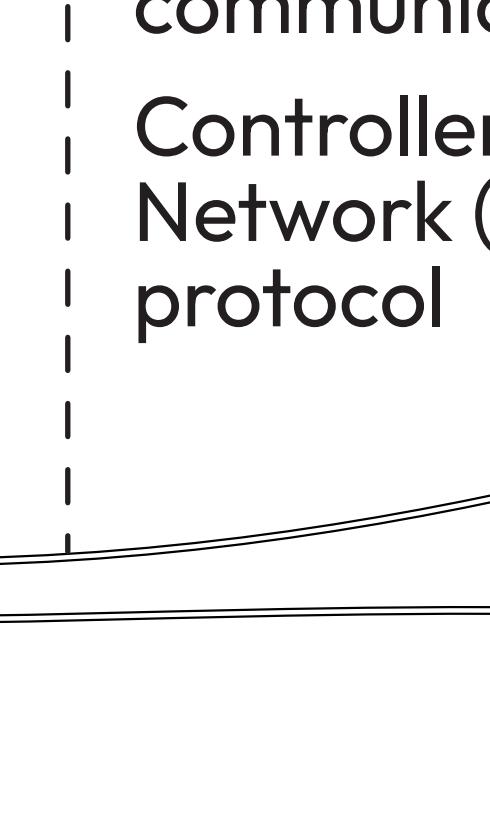
PULSE GENERATOR MODULE

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



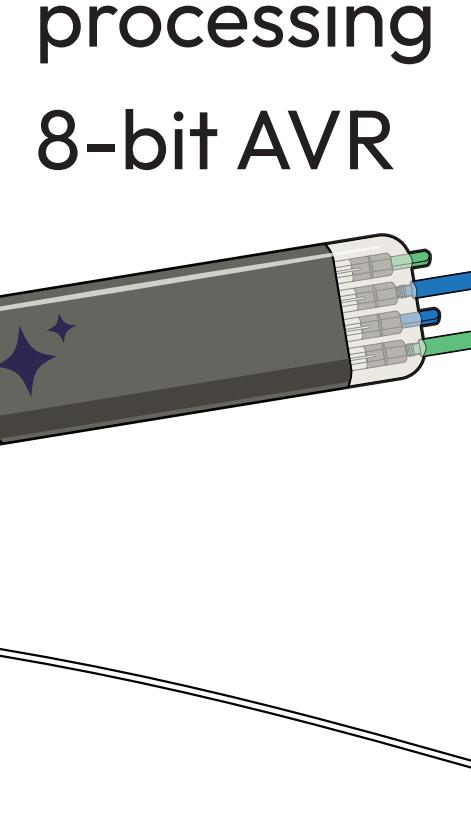
NETWORK CABLE

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



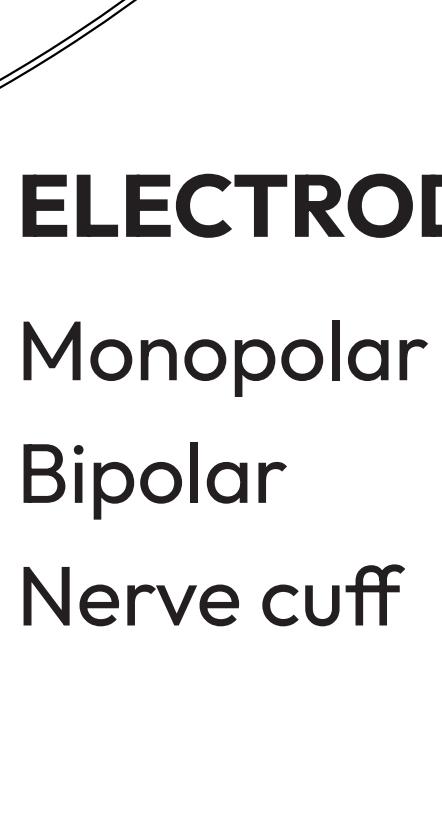
BIOPOENTIAL RECORDING MODULE

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



ELECTRODES

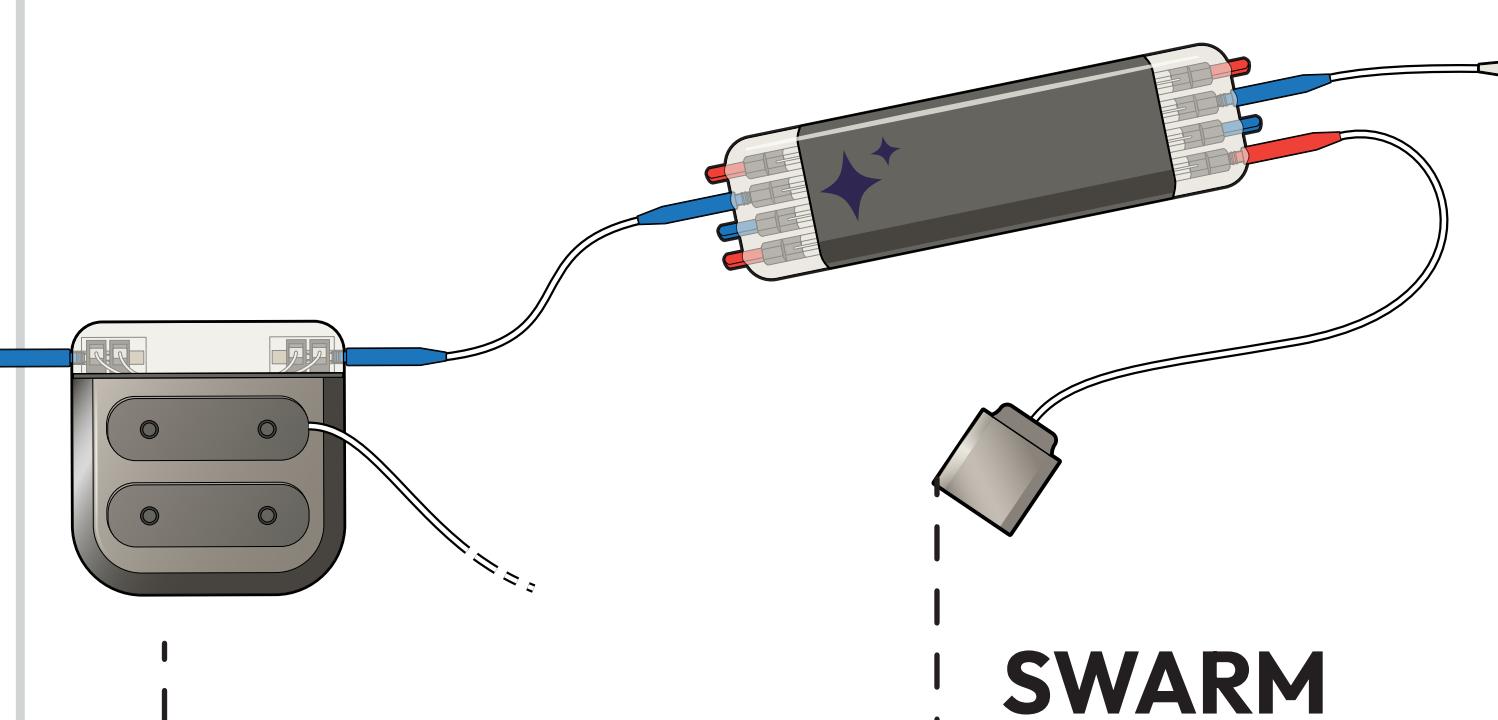
Monopolar
Bipolar
Nerve cuff



IN DEVELOPMENT

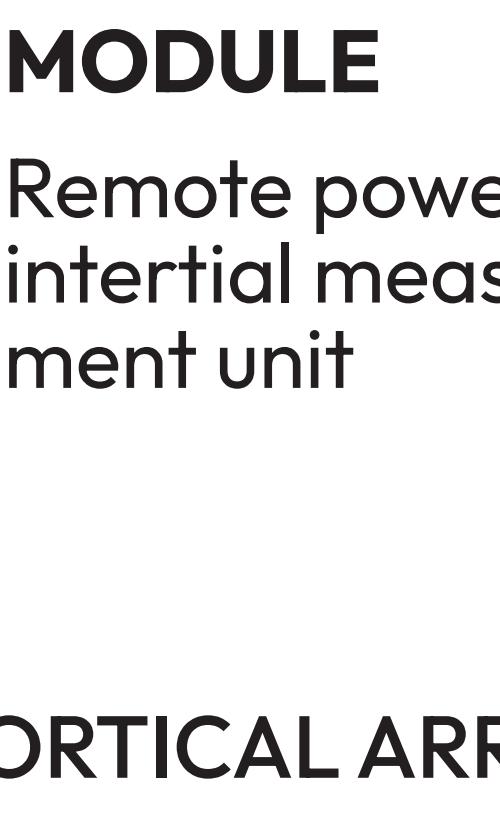
HIVE MODULE

64 channel recording
32 channel stimulation



SWARM MODULE

Remote powered interstitial measurement unit



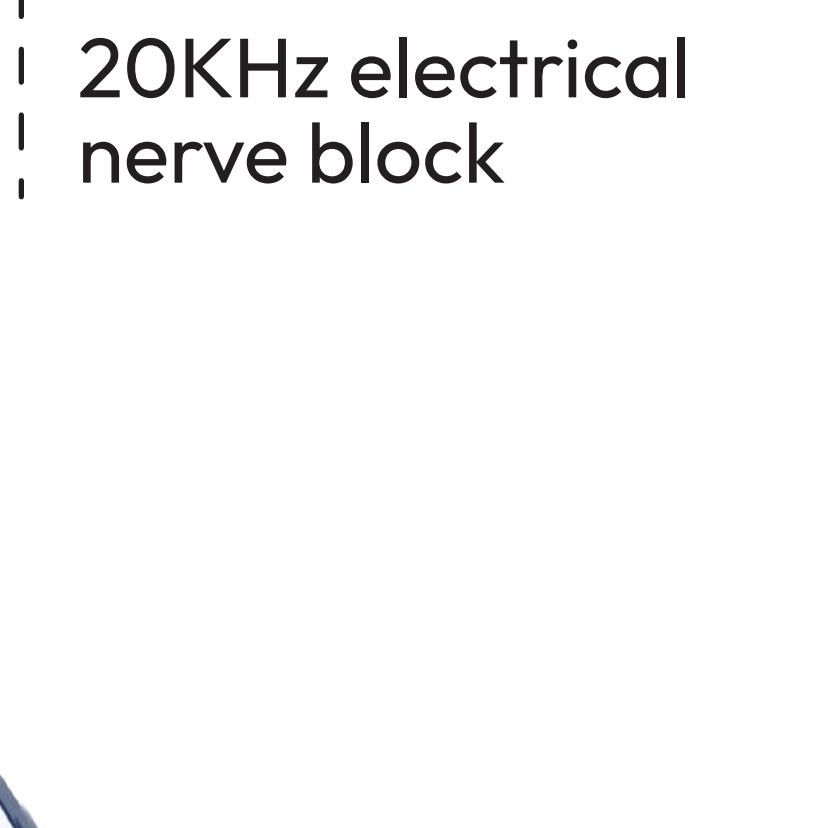
LIFELINE

Health monitor
Sensorized cable



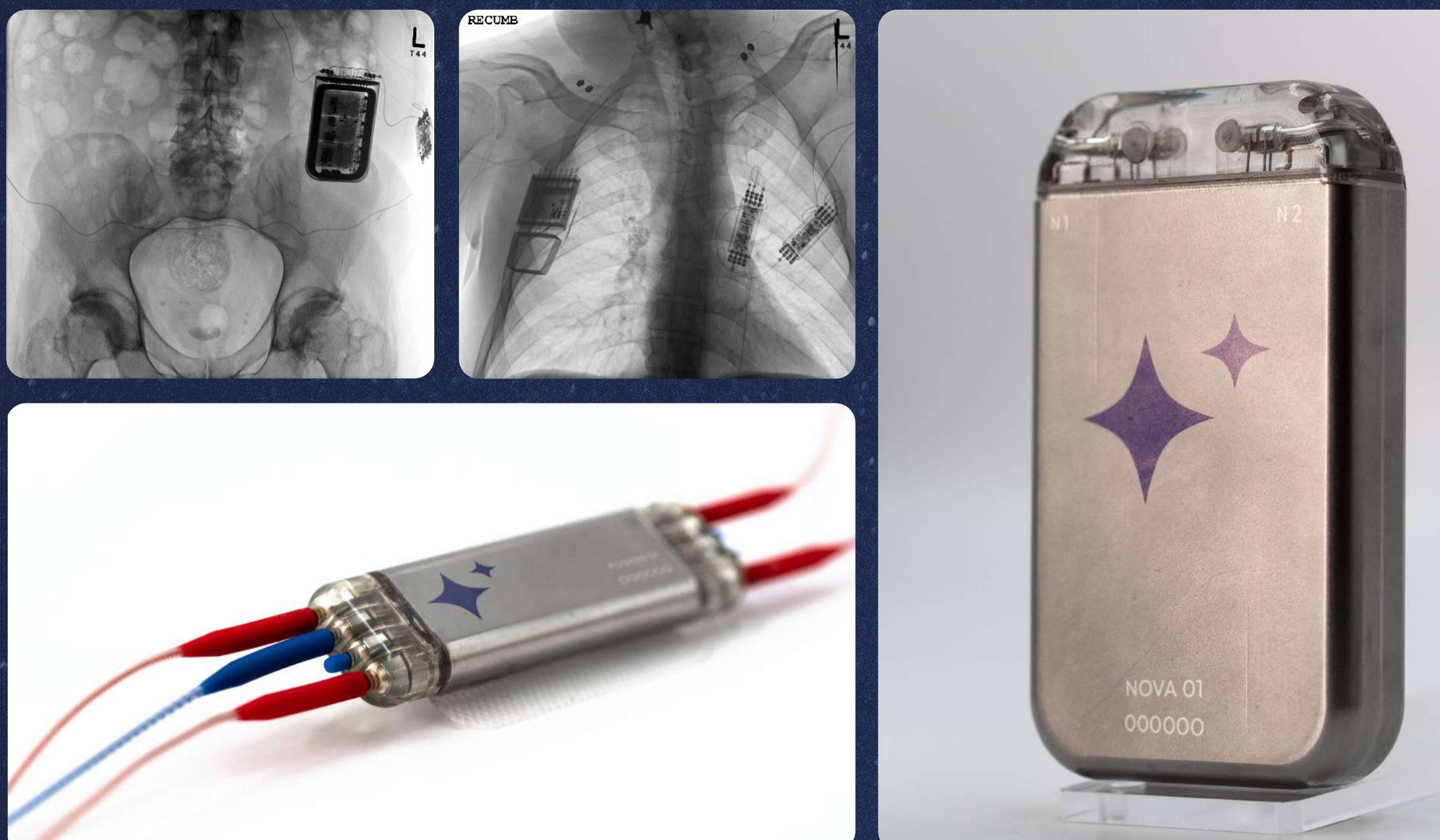
NECTAR MODULE

20KHz electrical nerve block



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

