



## Smart Home

Let thoughts interactive with real life effectively , builds up thought to control furnishing and equipment through NeuroCube, experiences future furnishing' s intelligent control thought means action.

### Example:

Combine NeuroCube with Smart home environment for brain-based remote control, such as TV & air-conditioner.



## Neurofeedback Training

Real-time feedback from the brain enables a new way for mental status improvement.

### Example:

Combines with reaction equipment or game, NeuroCube could train children how to focus and control emotion.



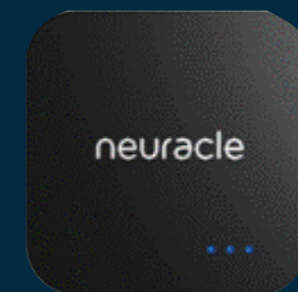
Neuracle Technology Co., Ltd.  
Changzhou Science and Education Town Jiangsu(213164),China

Operation Center ( Beijing )  
Room 1108 , 25 Landianchang S Rd Haindian District , Beijing 100097 , China

Tel : +86 10 8840 0089 Fax: +86 10 8840 0089  
Email : info@neuracle.cn Web: www.neuracle.cn



Scan QR code to get more information



# NeuroCube

NeuSen W

## Smart Cube for Brain-computer Interface Application

### Research-grade EEG Signal Quality

- 8 channels, 24-bit resolution, sampling rate 16kHz
- Common mode rejection ratio (CMRR)  $\geq 120$ dB
- Input noise  $< 0.4\mu\text{Vrms}$  from 1-100Hz
- Data and event wireless synchronization,  $< 1\text{ms}$  latency and jitter
- Support spontaneous EEG、ERP and SSVEP、Mu Rhythm
- 9 axis motion sensors for real-time motion artifact removal.

### Smart Processing System Inside the Device

- Intel Atom Dual-Core processor, 1GB memory, 4GB flash storage with external SD card support.
- Linux-based development platform, support C/C++, Matlab & Simulink, Python, Node.js, HTML5, JavaScript etc.
- Built-in algorithms for high-performance filtering and denoising, basic BCI algorithms such as CCA, CSP, SVM.
- Support Intel IoT platform, easy access and interaction with cloud data.

### Support Various of Interfaces

- Bluetooth Low Energy 4.0
- WiFi2.4/5GHz , hotspot Available
- UART/I2C/SPI/PWM, Supporting different types of external devices

### Smart and Flexible Design

- Lightweight and compact, perfectly integrate into different environments.
- Compatible with wet and dry electrodes.
- Designed with magnetic connectors for comfort and convenient



## Specifications

EEG Channels	8
Sampling Rate	16kHz
Common Mode Rejection Ratio (CMMRR)	$\geq 120$ dB
Resolution	24bit
Input Noise	$< 0.4\mu\text{Vrms}$
Dynamic Range	$\pm 375\text{mVpp}$
Bandwidth	Keep complete low-frequency signal with DC-coupled Amplifier
Event Synchronization	Wireless Sync, $< 1\text{ms}$ latency and jitter
Impedance Measurement	Support regular offline detection and real-time monitoring
Power Supply	Internal lithium battery
Operational Time	Up to 2 hours

## Brain-Computer Interface (BCI) Creation Infinite Possibility



### Example:

Build a BCI system using NeuroCube to control virtual menu generated by AR system, without any movements

### NeuroCube+ VR/AR

#### NeuroCube+VR/AR open the new world of brain control virtual interactive

Free your hands and let your thoughts seamlessly dock with the virtual world. Build a BCI system by combining NeuroCube with VR/AR system.

### NeuroCube+Robot

#### Brain Controlled Exoskeleton for Rehabilitation

Connect NeuroCube with the exoskeleton to translate the brain motor imagery signal into mechanical body movements. Then, the patients can conduct brain controlled active rehabilitation training. This system could help patients with motor dysfunction to regain the possibility of walking again.

### Example:

Combine NeuroCube with the exoskeleton, helping stroke patients with paralysis conduct active rehabilitation training.

