

NEUROSTYLE.

Neurological & neuromuscular devices



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To assure the highest quality standards, Neurostyle operates with a quality system in compliance with the requirements of BS EN ISO 13485: 2012 standards. Neurostyle products are designed in compliance with the essential requirements of the medical device directive IEC 60601.

“ We *value* the importance of
NEURO-LIFE-STYLE ”



Neurostyle

Medical Innovation for Better Life

Neurostyle Pte Ltd is a company dedicated to design, develop, manufacture and distribute neurological and neuromuscular medical devices. Strategically located at the heart of ASEAN region, Neurostyle strives to provide excellent products and services to customers in the healthcare industry.

Collaboration with dedicated research teams from top Singaporean research institutes that have specialized knowledge and years of experience has provided Neurostyle access to harness innovative medical device technologies through a series of flagship projects, which in turn helps Neurostyle to implement advanced technologies into its EEG, EMG and Rehabilitation devices, hence providing customers with a variety of options and suit to their needs.



Our Vision

- To establish as a leading medical company in Neurological Diagnostic & Rehabilitation devices

Our Mission

- To build excellence through technological advancement and high service quality



EEG

NS-EEG-D-1 delivers high quality EEG signals through state-of-the-art hardware and software design, built-in impedance test module and anti-interference data transmission technology.

This device can be used for routine EEG, event-related potential (ERP) data acquisition and analysis, as well as professional sleep monitoring using polysomnography (PSG) for medical and research institutions.



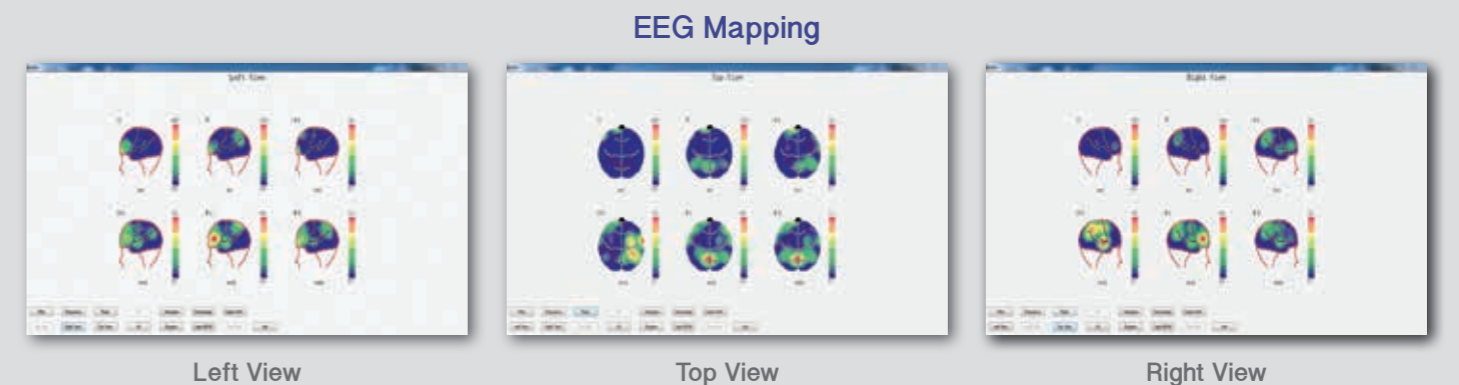
I. Routine EEG

System Key Features:

1. High quality signal couple with optical fibre isolation
2. DC battery power operation eliminates AC power line interference
3. Sampling rate up to 8 kHz
4. Built-in impedance testing function
5. Ergonomically designed single shielded cup/clip electrodes with touch-proof connectors (1.5mm)
6. Choice of different configurations:
 - a. 24/36/48/60 channels unipolar EEG
 - b. 12 channels bipolar EEG
 - c. Synchronous acquisition, editing and display of EEG and video signals

Software Key Features:

- A. Acquisition & settings
 - User-friendly interface
 - Intuitive editing
 - Multiple selections of instant events and long time events
- B. Review & analysis
 - Viewing of individual EEG waveform during review phase
 - EEG mapping, EEG tendency analysis, EEG spectral analysis
 - Automatic spike recognition and spike-wave arbitrary setting functions
 - Rapid event search and playback of abnormal wave occurrences
 - Automatic report generation



Accessories:

- A. Shielded single disc electrode cable, shielded single bracket electrode cable, etc.
- B. Split-type EEG cap (23holes/51holes), electrode cable for split-type EEG
- C. Optional parts:
 - Video System: Real-time software-video synchronisation
 - Photic stimulator: Stimulation Frequency: 1-30Hz

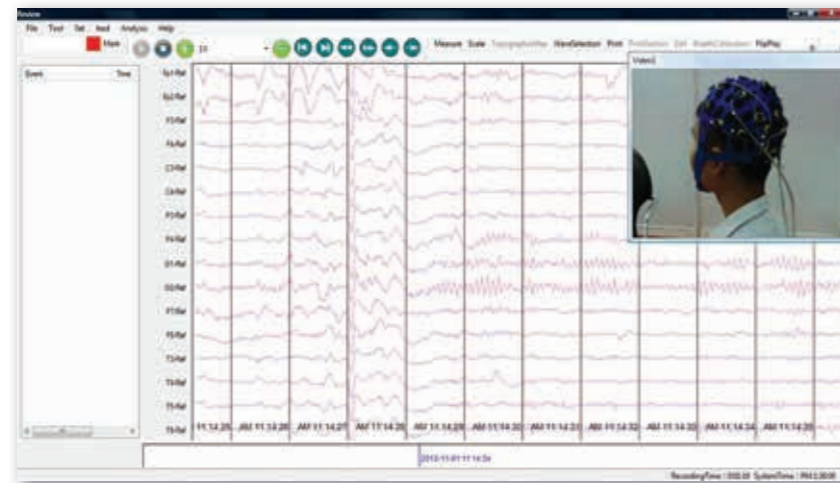


II. EEG-PSG

This subtype provides Polysomnography (PSG) recording capability on top of routine EEG examination.

PSG Key Features:

1. Synchronised EEG examination and PSG recording enable for more sophisticated clinical applications
2. Multiple channels available for PSG recording:
 - a. EOG
 - b. Air flow
 - c. Snoring
 - d. ECG
 - e. EMG
 - f. SpO₂
 - g. Thoracic and Abdominal Respiration
3. Respiration leading tone is featured to guide patient's respiration frequency during deep respiration events



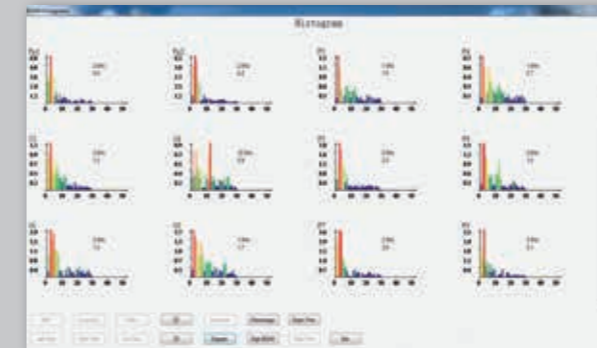
III. EEG-ERP

This subtype provides event related potential (ERP) for examination of recognition ability of patients on top of routine EEG examination.

ERP Key Features:

1. Choice of acoustic, visual and current stimulation
2. ERP recognition potentials comprising of P300
3. Stimulation synchronised with EEG waveform acquisition and configurable stimulations parameters and patterns
4. ERP data averaging function for better case assessment
5. Diversified data measurement tools for ERP latent period and amplitude measurement
6. Multiple ERP(s) available to be replayed and compared concurrently

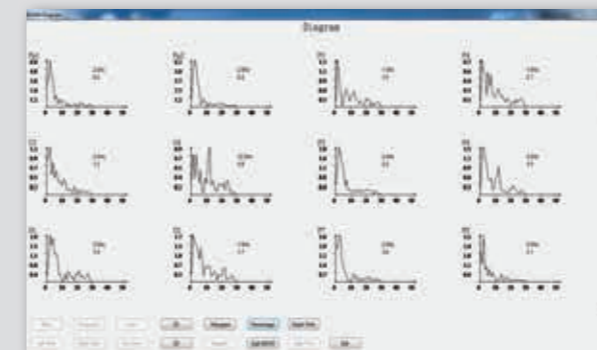
EEG BEAM Histogram



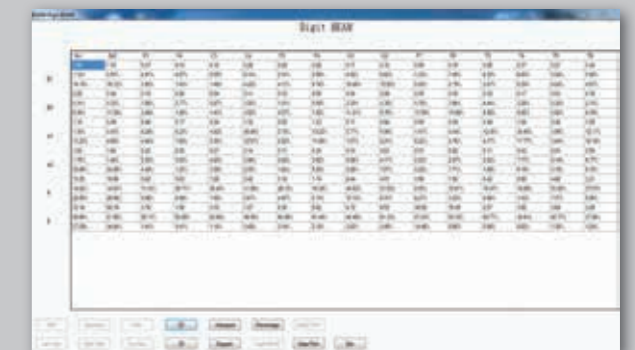
EEG BEAM Percentage Table



EEG BEAM Line Graph



EEG Digital BEAM Table





EMG

NS-EMG-C-1 delivers high quality EMG signals through advanced hardware, software design and anti-interference data transmission technology.

This device can be used for routine EMG recording, evoked potential (EP), as well as nerve conductive velocity (NCV) diagnostic examination for medical and research institutions.



System Key Features:

1. Pre-Amplifier operable with up to 4 EMG channel
2. High signal quality with fibre optic isolation, which only transmits optical signal while shielding the signal from power line interference
3. Modular design enabling different combinations for different examinations
4. Ability to convert EMG format to surface EMG format
5. Offering 3 standard EMG modules, 4 EP modules and 8 NCV modules
6. Free software update for registered devices

Software Key Features:

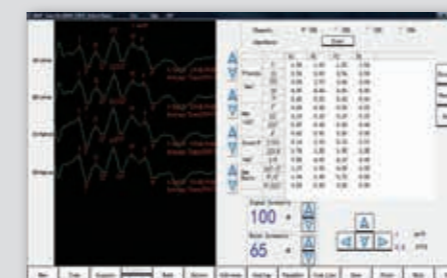
1. Easy-to-understand illustrations of electrode placements, stimulation positions and standard waveforms
2. Easy access to waveform data comparison
3. Ability to replay, review and generate reports for past cases

Examination Protocols Features:

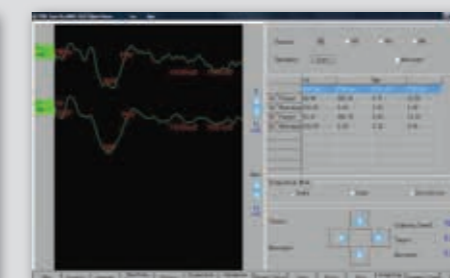
1. **Quantitative EMG**
 - a. Multiple scanned waveforms can be analyzed, replayed and stored automatically
 - b. User friendly interface for ease of data extraction and result
2. **Evoked Potential (EP)**
 - a. Auditory Evoked Potential (AEP): Monaural or binaural stimulation with a selection of signal output
 - b. Visual Evoked Potential (VEP): Monocular or binocular stimulation during interval
 - c. Somatosensory Evoked Potential (SEP): Rapid extraction algorithm, rapid data selection and overlay analysis
 - d. Cognitive Evoked Potential: P300
3. **Nerve Conduction Studies (NCV)**
 - a. Waveform caching function enables saving of multiple waveforms with the same examination point
 - b. Screen display of individual F-Wave, H-Wave and overlay
 - c. Display of latency and amplitude values with measurement lines for easy reference



BAEP



P300



SCV





System Key Features:

1. Modern design with 9-inch coloured LCD touch screen
2. Portable with compact design integrating EMG assessment, examination and therapy
3. Digitized muscle strength test and rehabilitative training system for extremities
4. Centralised data management system for clinicians' ease of access to patient's information
5. User-friendly system helps to increase user satisfaction and adoption

Software Examination Protocols Features:

Surface EMG Evaluation (SEMG)

As a non-invasive electrophysiological examination, SEMG can be used to observe muscle movement continuously.

Muscle Training

Using multimedia games enables patients to understand muscle control training process, helps to train patients' muscle relaxation capacity, endurance, control, precision and increases patients' adherence and interest to the training.

Force Measurement

Force Evaluation – Measurement of upper limb push force can be recorded for clinicians' analysis.



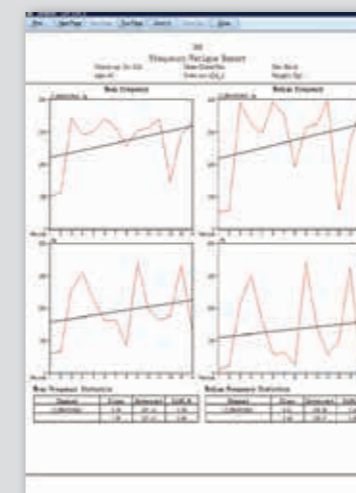
Rehabilitation

NS-RHB-A-1, a limb functional rehabilitative assessment and training system, serves as a multi-functional pack for medical professionals to conduct rehabilitative assessment and training anytime, anywhere.

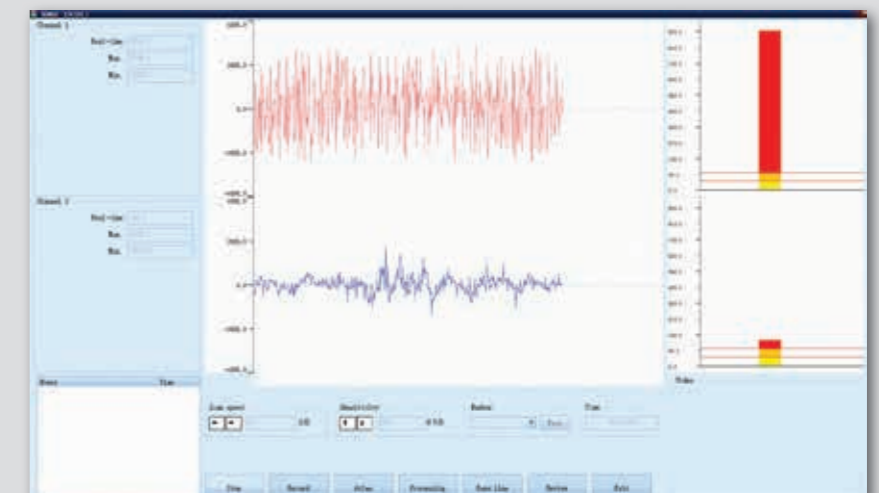
The great variety of evaluations functions, comprehensive training modules enable clinicians to perform simple yet engaging rehabilitation therapy for patients in medical institutions, families and communities.



Report



SEMG



Grab and Release

Grab and release evaluation and training helps clinicians to engage patients in their upper limb muscle recovery process.

- **Pinch Force Evaluation** – Measurement of maximum finger strength and its duration
- **Grab and Release Evaluation** – Measurement of maximum grip strength and its duration
- **Grab and Release Training** – A series of multimedia games

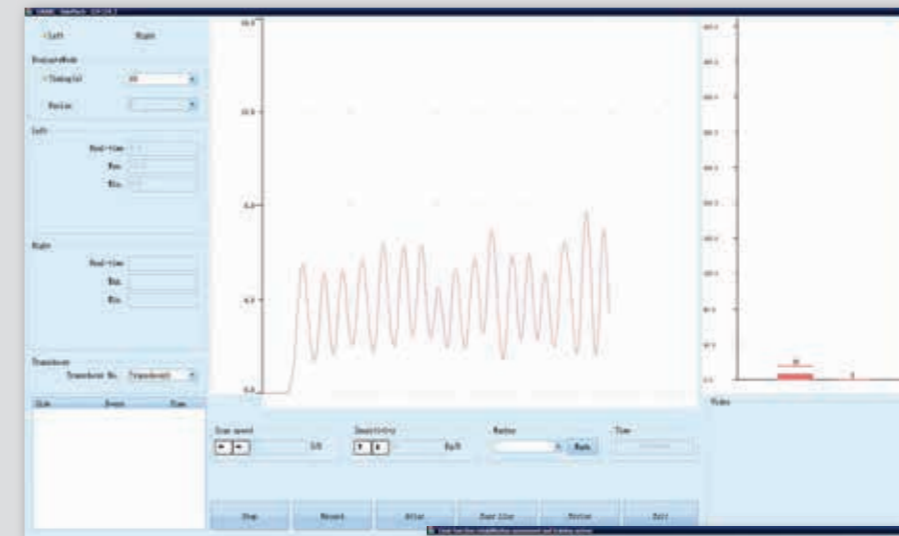
Stimulation

The stimulation module consists of programs designed for various therapeutic purposes.

- **TENS** – Transcutaneous Electrical Nerve Stimulation
- **Prescriptive Stimulation** – Pre-set stimulation schemes for various body parts
- **Freestyle Stimulation** – Stimulation with customized parameters
- **Feedback Stimulation** – Stimulation based on real-time feedback

Clinical Applications

1. The system utilises low frequency pulse current which incorporates pre set stimulation programs to stimulate stressed/relaxed muscles as to enhance the muscle functions and capability.
2. NS-RHB-A-1 is also applicable for construction/building of nerve function neural network, myogenic disease (muscle fibre), neuromuscular diseases including paraplegia after spinal cord injury, cerebral palsy, flaccid paralysis, disuse muscle atrophy, pain syndrome, peripheral nerve injury, spasmodic torticollis and postural back muscle pain.
3. VR and video game applications are novel and potentially useful technologies that can be combined with conventional rehabilitation for upper arm improvement after stroke (<http://stroke.ahajournals.org/content/42/5/1380.short>).

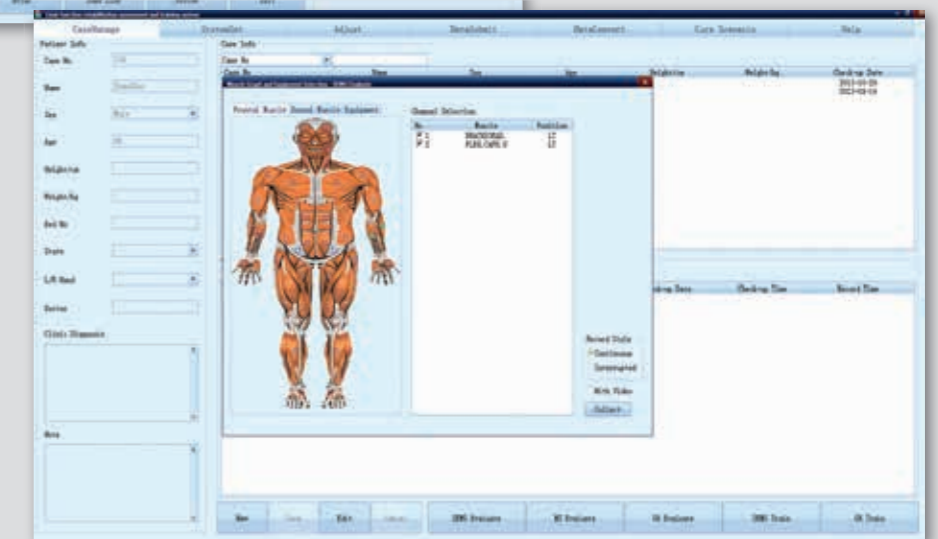


Grab and Release Evaluation



Games for Training

Muscle Selection





System Key Features:

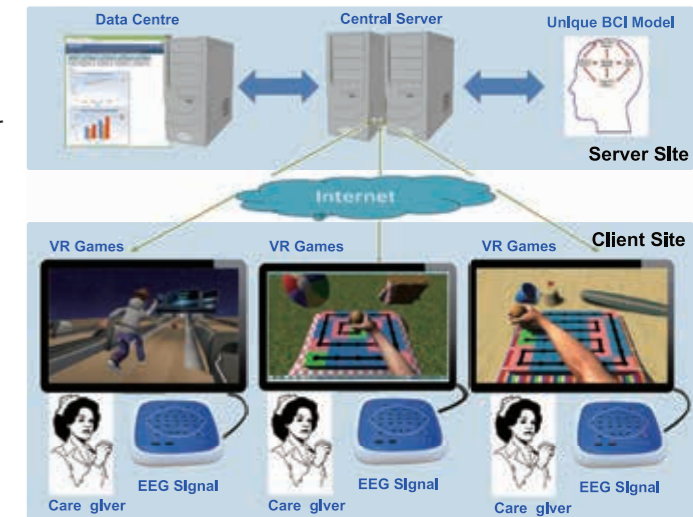
1. Brain-Computer Interface (BCI) based stroke rehabilitation system
2. Configured for rehabilitation in chronic and subacute stroke
3. Motor imagery with Virtual Reality (VR) feedback mechanism
4. Innovative algorithm that is clinically-tested to detect patients' motor intent
5. Portable and lightweight system
6. Suitable for deployment in rehabilitation clinic, bedside or home



VR Game Module

Server Site Software:

1. Innovative Patient-specific Motor Image Detection model
2. Unique proprietary server algorithm
3. Complete data record of the treatment processes
4. Remote clinician access for evaluation on patient's motor recovery efficacy



System Structure

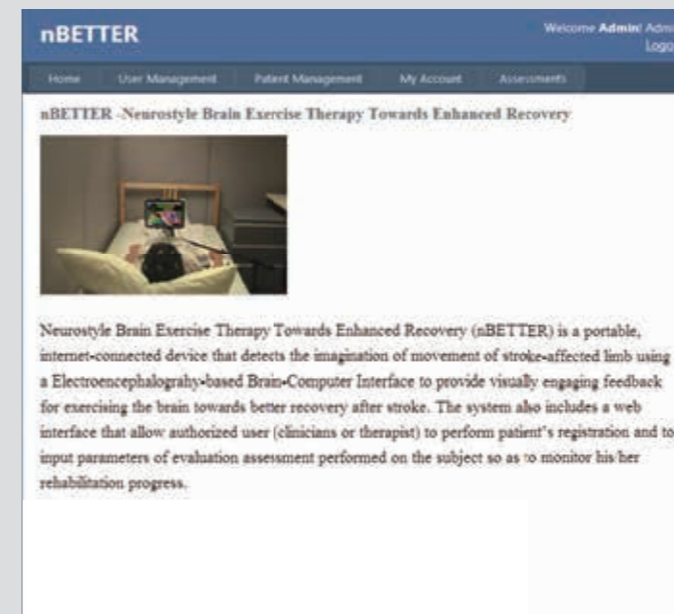
Client Site Application:

1. Coupled with EEG hardware and impedance test to acquire high quality neuro-signals
2. Calibration sessions to guide patients adapt to Virtual Reality environment
3. Supervising sessions to gauge the motor imaging capabilities of patients
4. Rehabilitation therapy game models adapted to patient's progress

nBETTER

Neurostyle Brain Exercise Therapy Towards Enhanced Recovery (**nBETTER**) is a portable, internet-connected device that detects the imagination of movement of stroke-affected limb using a EEG-based Brain-Computer Interface to provide visually engaging feedback for exercising the brain towards better recovery after stroke.

It also allows clinicians to monitor patients rehabilitation progress.



Server Interface



Progress Assessment