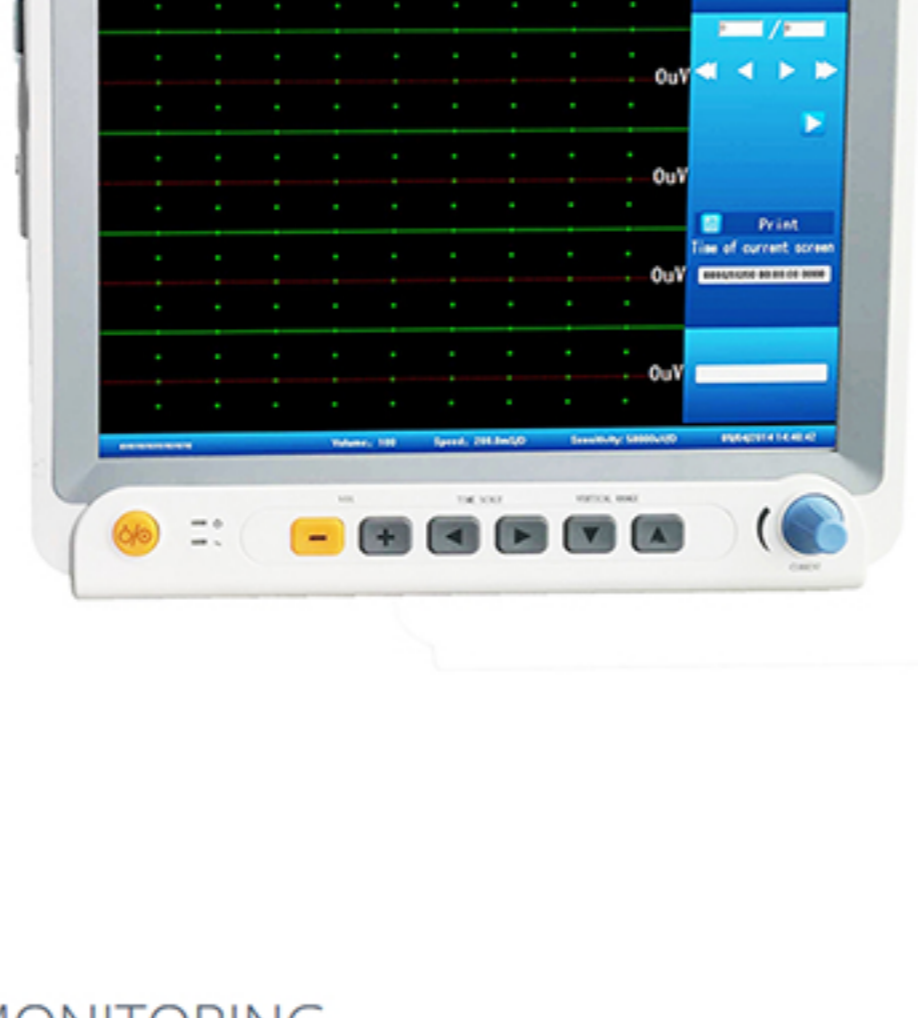


Products

SMART IONM

SMART INTRAOPERATIVE NEUROMONITORING SYSTEM



SMART IONM

INTRAOPERATIVE NEUROMONITORING SYSTEM

The **NS-SIOM-1E** is a touch-screen, user-friendly intraoperative monitoring system available in 4 or 8 channels, which has wide applications for use during different types of surgery.

This device helps reduce the risk of nerve damage during surgery and identify nerve functions before the end of surgery through monitoring of triggered EMG activities in multiple cranial and peripheral nerves. NS-SIOM-1E is applicable for Facial Nerve, Thyroid, Spinal, ENT and other general surgeries.



CLINICAL APPLICATIONS

- Facial Nerve Surgery
- Thyroid Surgery
- Spinal Surgery
- ENT Surgery
- Selective Posterior Rhizotomy

CHANNELS

- 4
- 8

DOWNLOAD PDF

Technical Specifications

Hardware						
Amplifier Channels	8 channels					
Stimulation Current	0-30mA					
Stimulation Frequency	1-30Hz					
Pulse Width	20µs	50µs	100µs	150µs	200µs	250µs
Event Prompt (Sound & Voice)	Electric Knife/Coagulation mute function during monitoring Electrode-off Periodical Alarm (Real-time)					
Feedback Display & Notification	Visual display and Audio feedback					
Other Features	Default and Customizable procedure setting Data saving and reporting Electrode status checking					

Evoked EMG (Acquisition)

Scanning Speed	0.1 ms/D	0.5 ms/D	2 ms/D	5 ms/D
	10 ms/D	20 ms/D	100 ms/D	200 ms/D
Sensitivity	5 uv/D	10 uv/D	20 uv/D	50 uv/D
	100 uv/D	200 uv/D	500 uv/D	1,000 uv/D
	2,000 uv/D	5,000 uv/D	10,000 uv/D	20,000 uv/D

Free Scanning EMG (Acquisition)

Scanning Speed	0.1 ms/D	0.5 ms/D	2 ms/D	
	5 ms/D	10 ms/D	20 ms/D	
Sensitivity	5 uv/D	10 uv/D	20 uv/D	50 uv/D
	200 uv/D	500 uv/D	1,000 uv/D	2,000 uv/D
	10,000 uv/D	20,000 uv/D		50,000 uv/D
Stimulation Frequency	1-30Hz			
Pulse Width	50µs	100µs	150µs	200µs
Low-cut	0.1	0.2	0.3	0.5
	1 Hz	2 Hz	3 Hz	5 Hz
	10 Hz	20 Hz	30 Hz	50 Hz
	100 Hz	200 Hz	300 Hz	500 Hz
High-cut	10 Hz	20 Hz	30 Hz	50 Hz
	200 Hz	300 Hz	500 Hz	1 KHz
	3 KHz	5 KHz		10 KHz
Magnification	45 or 1,800 multiple			
Notch Waveform	Up to 50Hz or 60Hz can be set			

Operation Modes

IOM Operation Modes

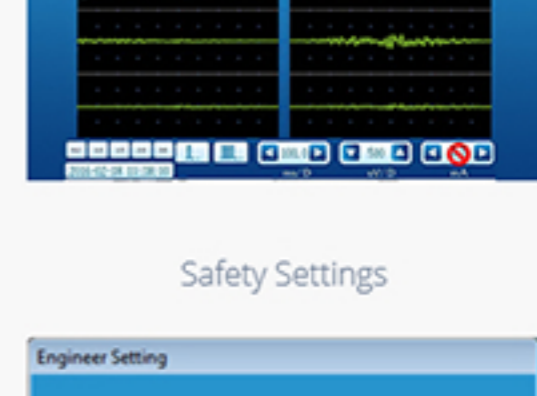
Spontaneous EMG Mode



Monitoring Mode



SPR Monitoring Mode



Data review and Report Generation



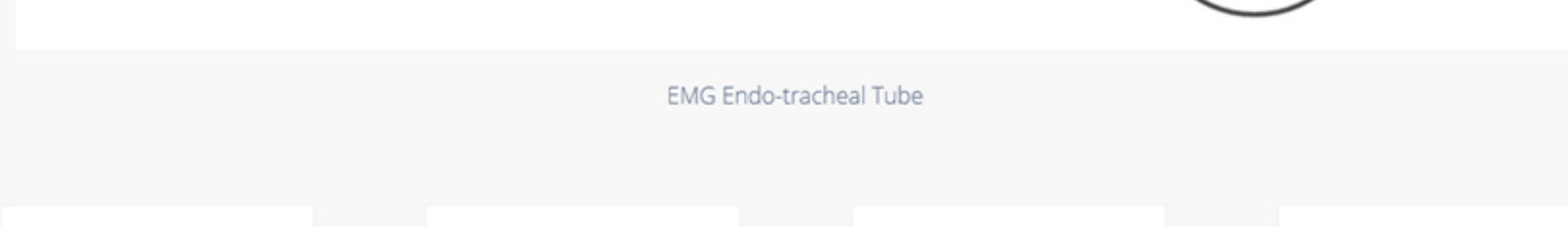
Parameter Setting



Safety Settings



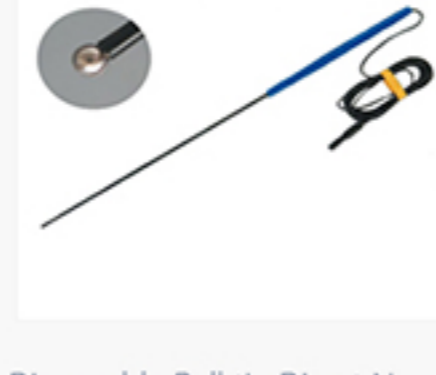
Accessories



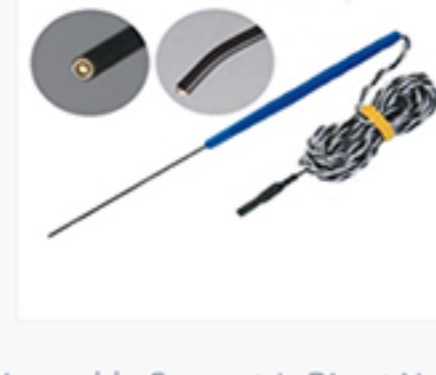
EMG Endo-tracheal Tube



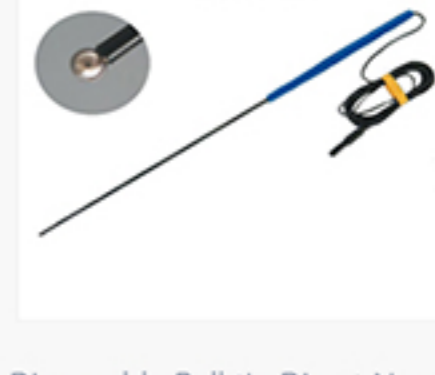
Disposable Mono-polar Direct Nerve Stimulation Probe



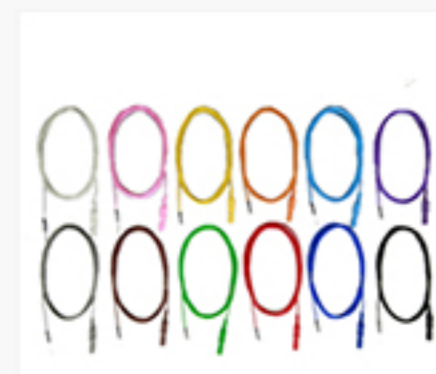
Disposable Ball-tip Direct Nerve Stimulation Probe(Thyroid/Facial Nerve Monitoring)



Disposable Concentric Direct Nerve Stimulation Probe



Disposable Ball-tip Direct Nerve Stimulation Probe(Thyroid/Facial Nerve Monitoring/Spinal Cord Surgery)



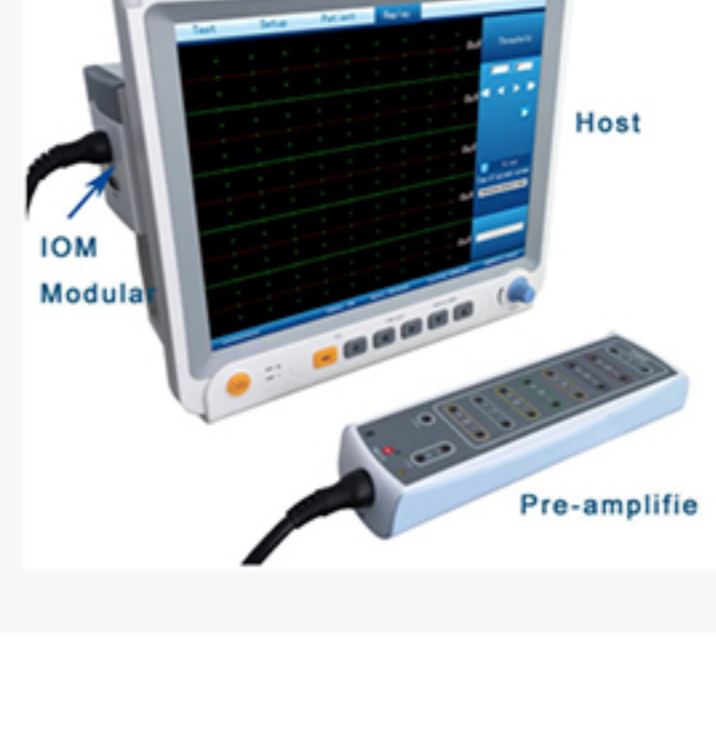
Disposable Sub-dermal Needle Electrodes



Disposable Sub-dermal Needle Electrodes(Twisted-pair, Multicolor)

Hardware Components

- IOM Host
- IOM Modular
- Pre-amplifier
- Connection cable
- Accessories



Functions

Smart IOM can support surgeons with the following functions:

- Identification of nerve and tissues
- Confirmation of injected nerves and their locations
- Monitoring of nerve integrity in real-time such as:
 - Thyroidectomy: vagal nerve, SLN, RLN detection during head and neck surgery by monitoring vocal cord muscle response from stimulus
 - Facial nerve monitoring during ENT, oral and maxillofacial surgery by observing the activities of orbicularis oris and orbicularis oculi muscles
 - In SPR surgery, the rootlets that cause spasticity can be identified by examining EMG responses of muscles in the lower extremities when each rootlet is electrically stimulated
 - Other motor nerves during various surgeries



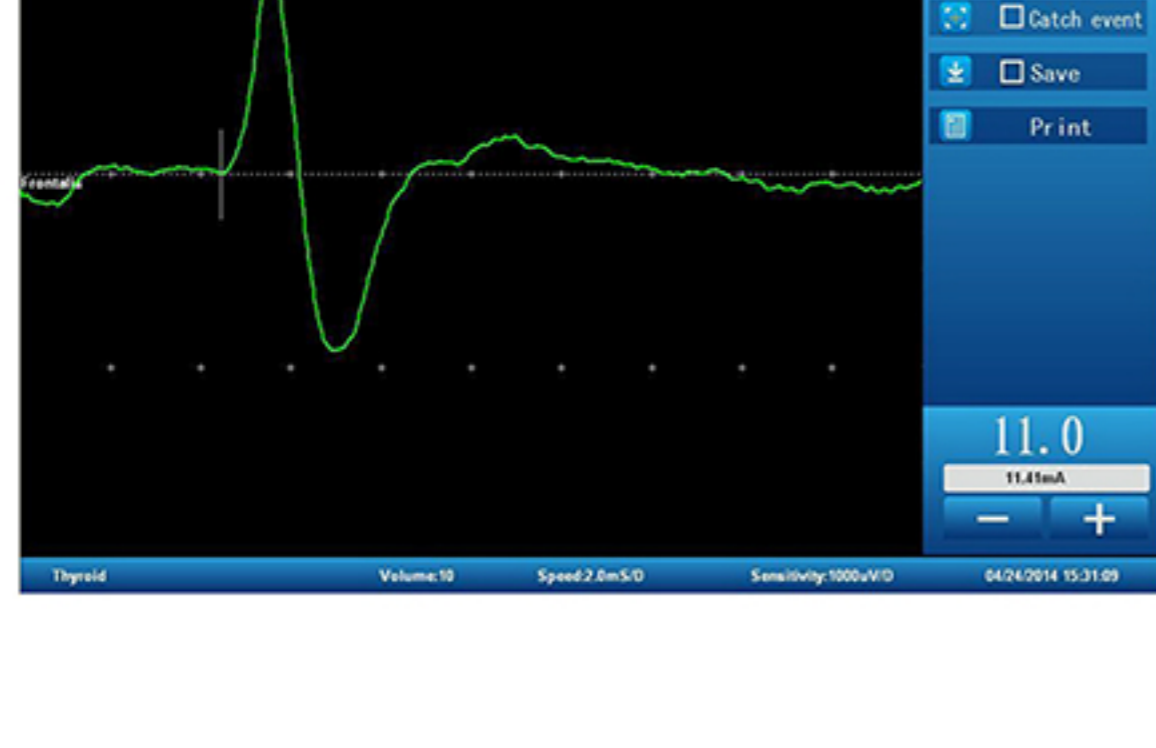
System Key Features

- Versatile application – can be used for different types of surgeries
 - Variety of stimulation probes for different surgery types
 - Various types of Recording and GND electrodes
 - Smooth EMG Endotracheal tube design
- Ergonomic design
 - User-friendly interface
 - Fast and Easy navigation through 15-inch touch-screen display
 - Enhanced interface visuals and waveform display (Full-color, wide viewing angle)
- Four simple user modules – Test / Setup / Patient / Replay
- Convenient marking function
- Customizable Parameter settings
- Create, Save and Import monitoring program templates for specific surgeries to simplify operation and avoid repeated setup
- Real-time stimulation monitoring
 - Impedance
 - Stimulation intensity
 - Connection status of electrodes and probes
- Professional SPR monitoring
- Various Prompts for different EMG trigger settings
- Clinical Alert signal
 - Upon physiologic wave reaching pre-set threshold value
 - Electrode connection is off
 - Electric knife/ coagulation is working (to open mute function)
- Technical Warning signal
 - Device is not running properly – communication or battery failure
- Recording during surgery
 - Waveform Recording – records typical waveforms during different stages of surgery and reflects EMG trend during surgery's whole duration
 - Event Recording – records various events when exceeding pre-set threshold values
- Quick change adjustment knobs (Stimulus or Volume levels)
- Easy to set-up and operate
 1. Input patient info
 2. Choose surgery setting
 3. Place and check electrodes
 4. Begin monitoring

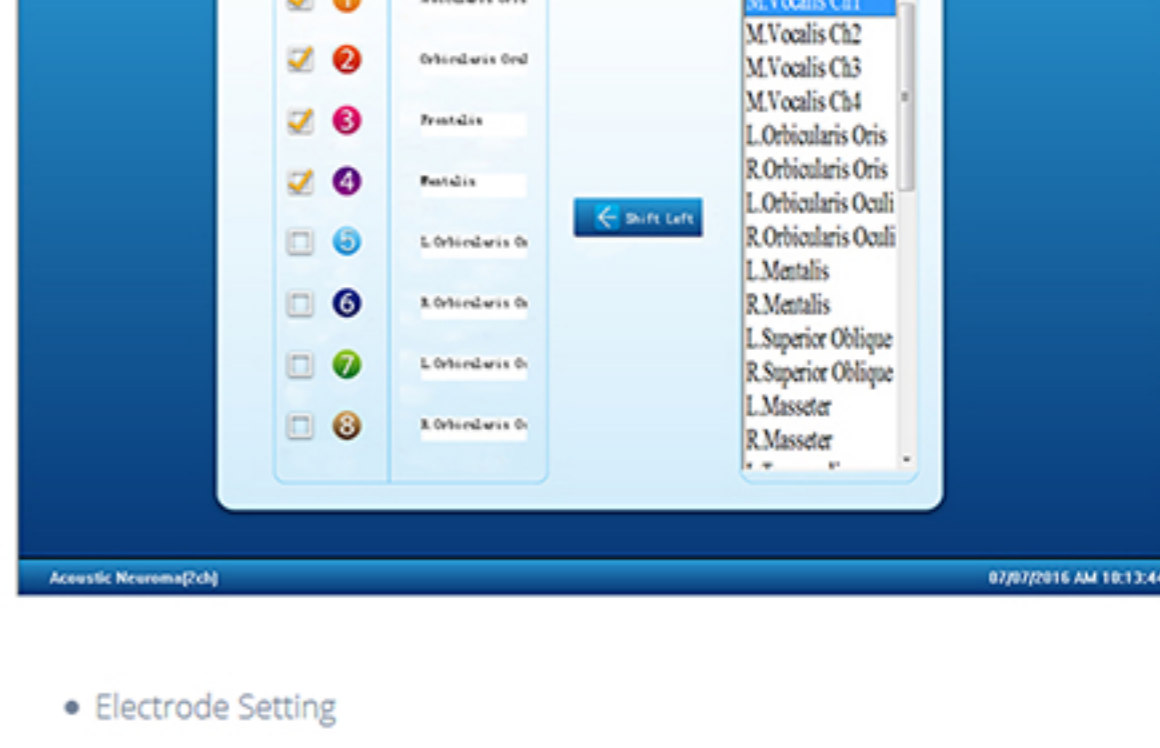


Software Modules

1. Test (Monitoring)

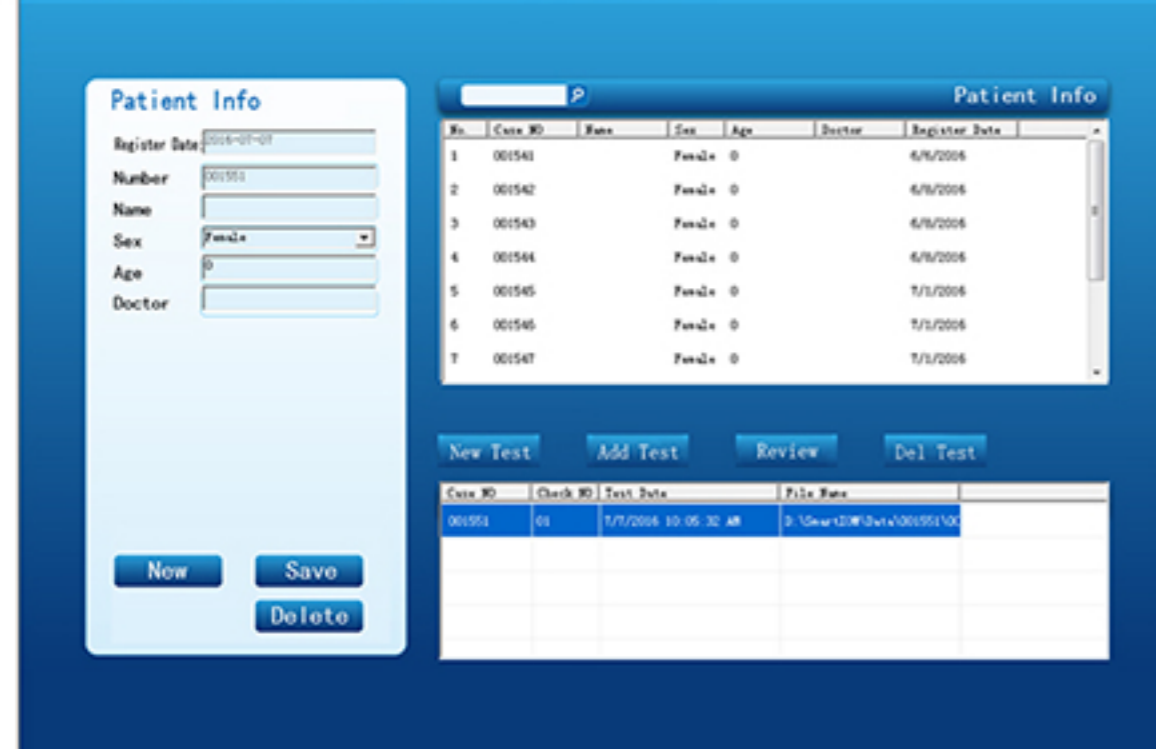


2. Setup (Parameter Settings)



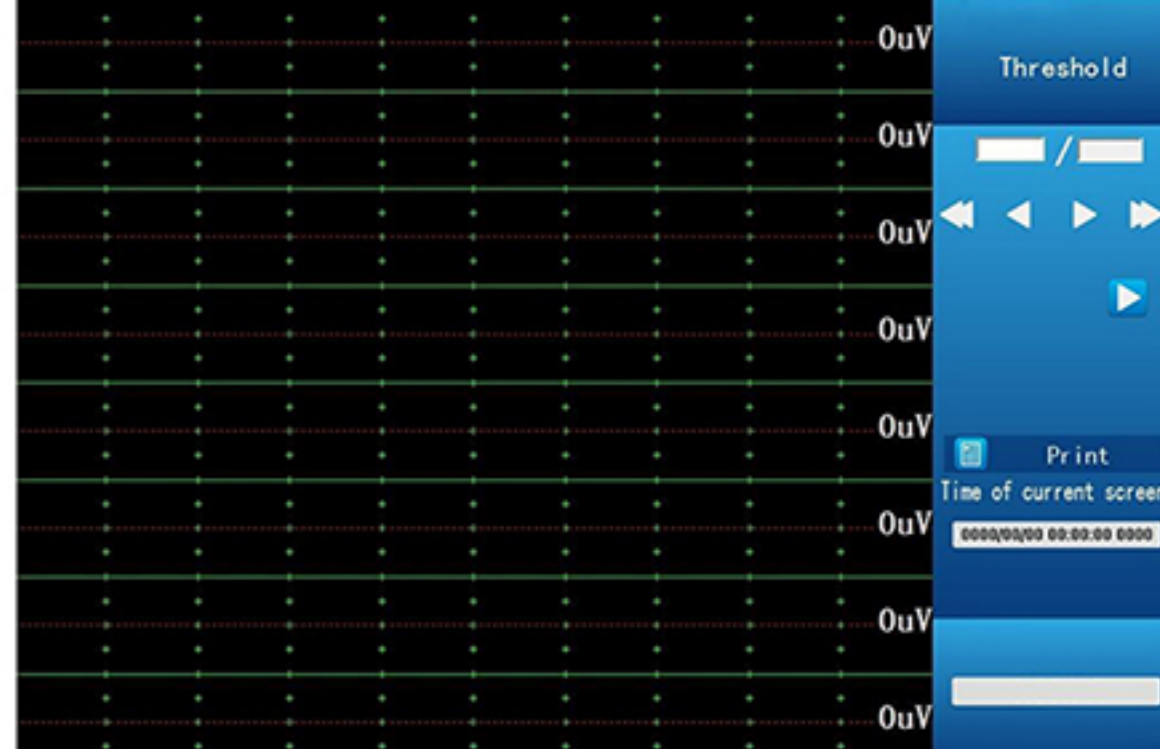
- Electrode Setting
- Acquisition Setting
- Voice Setup
- Display Setting
- System Setup

3. Patient (Case Management)



- Patient Info
- Case Information
- Testing Information

4. Replay



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NEUROSTYLE PTE LTD
63 Hill View Ave, #05-08,
Singapore 669569

(65) 6563-2678
info@neurostyle.biz

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