Provide an objective measure of patient’s depth of consciousness and optimal anesthesia of each patient
CSI INDEX reflects anesthesia and sedation level.

BS Percent: Ratio time of brain wave under the state of depressed EEG signal in past 30 seconds.

EMG: Electromyography Index. Patient response to the stimulation.

SQI: Signal Quality Indicator.

Impedance Index: Reflects sensor position 1 white and 3 black 1-5KΩ.

CSI trend

BS trend

CSI Index is a number between 0 and 100 that continuously indicates a patient’s response to anesthetic agents. It is a result of in-depth signal process via CSI algorithm, which isolates and analyzes the EEG features that relate best clinical results.

<table>
<thead>
<tr>
<th>CSI INDEX</th>
<th>CLINICAL STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Awake</td>
</tr>
<tr>
<td>80</td>
<td>drowsy</td>
</tr>
<tr>
<td>60</td>
<td>General Anesthesia</td>
</tr>
<tr>
<td>40</td>
<td>Deep Anesthesia</td>
</tr>
<tr>
<td>20</td>
<td>coma</td>
</tr>
<tr>
<td>0</td>
<td>Flat EEG</td>
</tr>
</tbody>
</table>

Clinical Applications
- Operation Room
- Intensive Care Unit
- Emergency Room
- Intervention
- Endoscopy

Clinical effectiveness
- Reduce drug use anesthesia use by 50%
- Shorten revival and recovery time
- Indicate hypnotic effect through CSI index
- Reduce complication
Monitor Principle – HOW DOES CSI TECHNOLOGY WORK?

1. Neuro probe collects the raw EEG data that indicates brain activity in real time.
2. The system uses its clinically validated algorithm to filter, analyze, and correlate the data.
3. Results are continually calculated and displayed as the CSI index
   (a number between 0 and 100), indicating the patient’s response to anesthetic agents.

The Monitor is driven by an Adaptive Neuro-Fuzzy Inference System (ANFIS). ANFIS is a fuzzy inference system tuned with a back propagation algorithm from a neural network to accurately calculate the Cerebral State Index (CSI) for depth of anesthesia. The system is ‘data-driven’, meaning that the ANFIS parameters are defined by the causal relation between input-output data.

Measurement of non-invasive bioelectrical signals
Electroencephalogram (EEG)
Auditory Evoked Potentials (AEP)
Electromyography (EMG)
Impedance Cardiography (ICG)
Nerve & Muscle stimulation clustered in

References / AAI = CSI
2 Nishiyama T, Matsukawa T, Hanaoka K. Is the ARX index a more sensitive indicator of anesthetic depth than the bispectral index during sevoflurane/nitrous oxide anesthesia? Acta Anaesthesiol Scand. 2004 Sep;48(8):1028-32
What's better?

Why BMT LOC MONITOR?

<table>
<thead>
<tr>
<th>BA-1000A (BMT)</th>
<th>BIS VISTA (Medtronic)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(1) response time</strong></td>
<td>1/ 1-5 seconds</td>
</tr>
<tr>
<td><strong>(2) data update</strong></td>
<td>CSI value per second real-time update, EEG signal acquisition rate of 2000 /s</td>
</tr>
<tr>
<td><strong>(3) EMG value accuracy</strong></td>
<td>Equivalent with sole EMG monitor</td>
</tr>
<tr>
<td><strong>(4) the anti-interference ability of shielding electric knife</strong></td>
<td>multiple filtering software ensure the accuracy of monitoring data and stability, anti-jamming performance makes excellent, numerical instant recovery.</td>
</tr>
<tr>
<td><strong>(5) the principle of Technology</strong></td>
<td>EEG signal acquisition using AEP</td>
</tr>
</tbody>
</table>

Advantages

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>Advanced CSI Index , Frequent signal updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superior Display</td>
<td>HD LED various color</td>
</tr>
<tr>
<td>Easy Operation System</td>
<td>Android smart OS</td>
</tr>
<tr>
<td>Long Battery life</td>
<td>12000mAh Li : 10 hours operation time</td>
</tr>
<tr>
<td>Long Sensor Validity</td>
<td>2 years shelf life</td>
</tr>
<tr>
<td>Simple sensor checking</td>
<td>Simple and fast procedure</td>
</tr>
<tr>
<td>No limited expiry date</td>
<td>long time use in shelf life time</td>
</tr>
<tr>
<td>No locking in sensor</td>
<td>connect multi times</td>
</tr>
<tr>
<td>Large Memory storage</td>
<td>8G , 5600 hours Patient records</td>
</tr>
</tbody>
</table>

References - ANFIS

# BA-1000A Specifications

## PHYSICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width x Height x Thickness</td>
<td>(200 x 160 x 50) mm</td>
</tr>
<tr>
<td>Weight</td>
<td>720g</td>
</tr>
</tbody>
</table>

## FUNCTION PARAMETERS

### Display Interface
- CSI + BS%, EMG/SQI%, CSI + EEG

### Wave time interval
- 1, 2, 5, 10s, 1min, 2 min

### Data Index
- CSI / 0-100, EMG / 0-100, BS% / 0-100, SQI / 0-100

## ELECTRICAL

### Adaptor Power
- 100-240 V, 50-60Hz (± 1)

### Output
- 5V 3A

### Power Consumption
- 5W

### Resolution
- 1024 * 768 Pixel

### Operation System
- Android smart OS 4.1.1

### Battery
- 3.7V 12,000mAh Lithium

### Capacity
- 10 hours

### Charging Time
- 6 Hours

### Memory
- 8G

## ENVIROMENTAL

### Operational Temperature
- 10℃ ~ +40℃

### Humidity
- 30% ~ 95%

### Storage Temperature
- 10℃ ~ +40℃

### Altitude
- 220hPa - 1074 hPa

## Sensor Specifications

### BMT EEG Sensors (for BA-1000A)

#### BAS – 1000/Adult Trio Sensor

- Patient Weight: Adult > 30kg, Pediatric > 20kg
- Duration of Use: Change every 8 hours
- Shelf Life: 2 years
- Operational Temperature: -10℃ ~ +40℃
- Humidity: 0% ~ 85%

#### BAS – 1001/Pediatric Sensor

- Application Site: Forehead and temporal bone
- Latex Content: Does not contain natural rubber latex
- Storage Temperature: -10℃ ~ +40℃
- Atmosphere: 86kPa - 106kPa