NIRSIT

Operator's Manual

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 [CE/FCC Mark]

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NOTICE

The contents in this manual are subject to amendment by OBELAB without prior notice.

SAFETY

Important! Before use, read this operator’s manual carefully and all accessory directions for use, precautionary information and specifications.
This section contains important safety information related to general use of NIRSIT.
Please follow the instructions.
Warnings are identified by the WARNING symbol shown below.

Warnings alert you to potential serious outcomes (death, injury, or adverse events) to the user. Failure to heed the warnings may result in potential serious outcomes.

FCC (Federal Communications Commission)

This equipment has been tested and found to comply with limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not install and use in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment dose cause harmful interference to radio or television reception , which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet in a circuit different

from that to which the receiver is connected.

- Consult the dealer or an experienced radio/ TV technical for help.

WARNING: this equipment may generate or use radio frequency energy. Changes or modifications or this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

This device complies with Par 15 of the FCC's Rules. Operation is subject to the following two Conditions:

1. This device may not cause harmful interference, and
2. This device must accept interference received, interference received, including interference that may cause undesirable operation.

1 Product features

NIRSIT is a brain imaging system utilizing the functional near-infrared spectroscopy and measures the changes in the hemoglobin level in the blood at the prefrontal cortex region.

Functional Near Infrared Spectroscopy; fNIRS

NIRSIT uses two light waves in the ~700nm and ~800nm range. The device emits light from the lasers pass through the cerebral cortex and measures the changes in the hemoglobin level in the blood. The light is less than 5mW in power, so the use of the device is harmless to the user. It is intended for use by researchers to monitor in real-time the functionality of the brain during cognitive activities.

NIRSIT composition

Opening NIRSIT product package

- Open the outer box and take out NIRSIT device and the accessories.
- Fill out the warranty card and send it to OBELAB.
- Register on OBELAB website www.obelab.com the serial number on NIRSIT device
- Read the Operator's Manual
- User would need adequate training before operating NIRSIT device

<Storage and Carry-on box for NIRSIT>

<NIRSIT device, strap holder, OTG connector, USB cable, silicon pad/sensor skin>

Figure 1. NIRSIT system components

No.	Components	Quantity
1	NIRSIT device	1
2	Strap holder	1
3	Sensor skin	1
4	USB cable	1
5	USB OTG Connector	1
6	Storage and Carry-on box for NIRSIT	1

Notes

Please note that the user will be unable to receive warranty service/repair through OBELAB or its distributor in the event of any of the following:

1 Making unauthorized changes to NIRSIT device
2 Using unauthorized accessories
3 Not following instructions in the Operator's Manual when operating NIRSIT device
4 Removal or switch of serial number on NIRSIT device
5 Storage or use of NIRSIT device, silicon pad/sensor skin, or battery in an environment outside of the recommended conditions

All repair requests during the warranty period must be made by the purchaser of NIRSIT system. Proof of purchase of NIRSIT system is required in order to receive repair service within the warranty period. NIRSIT system must be used for the intended purpose only in accordance with the instructions in the Operator's Manual. Please send all inquiries to contact@obelab.com.

2 Product Overview

2.1 External and Operational components

Figure 2 External and operational components

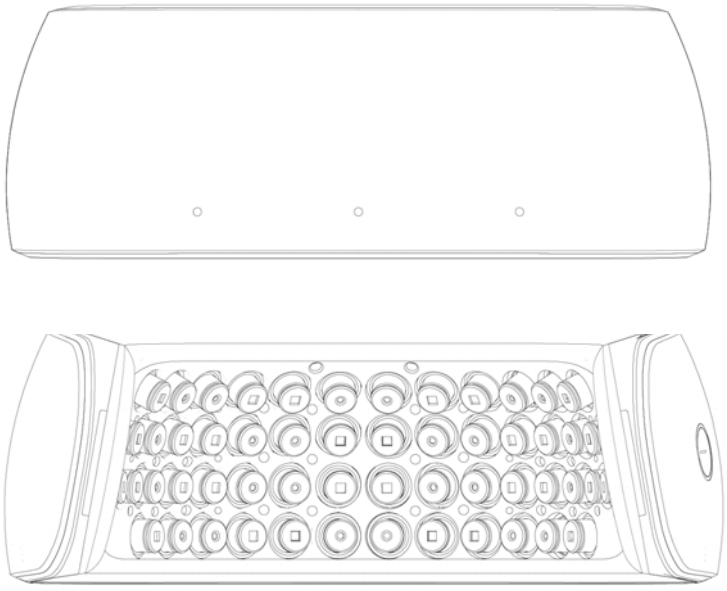


Figure 3 Front view (above) and rear view (below)

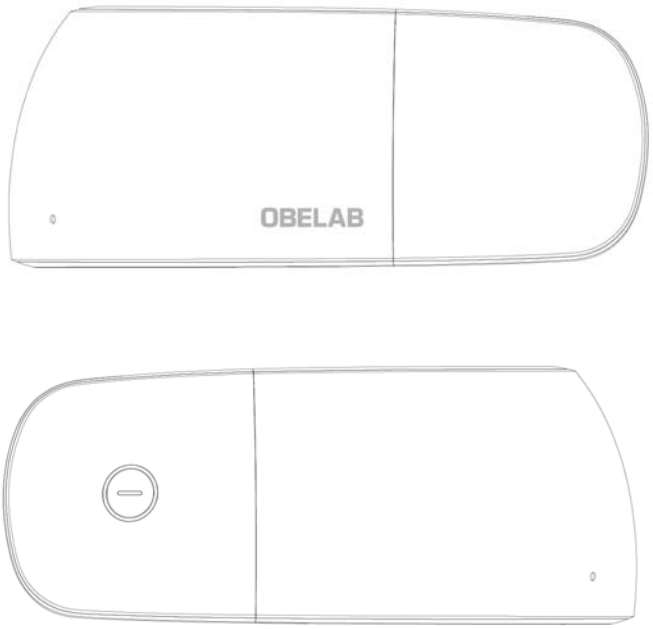


Figure 4 Left side view (above) and Right side view (below)

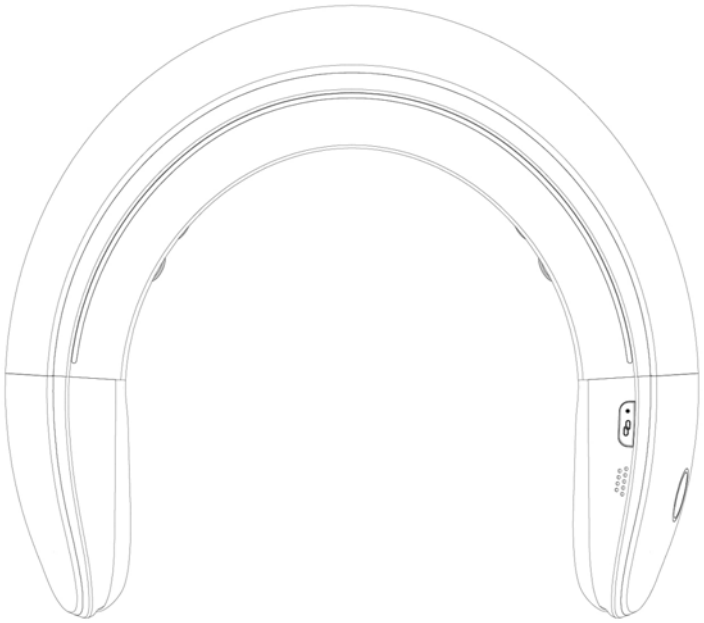


Figure 5 Top View

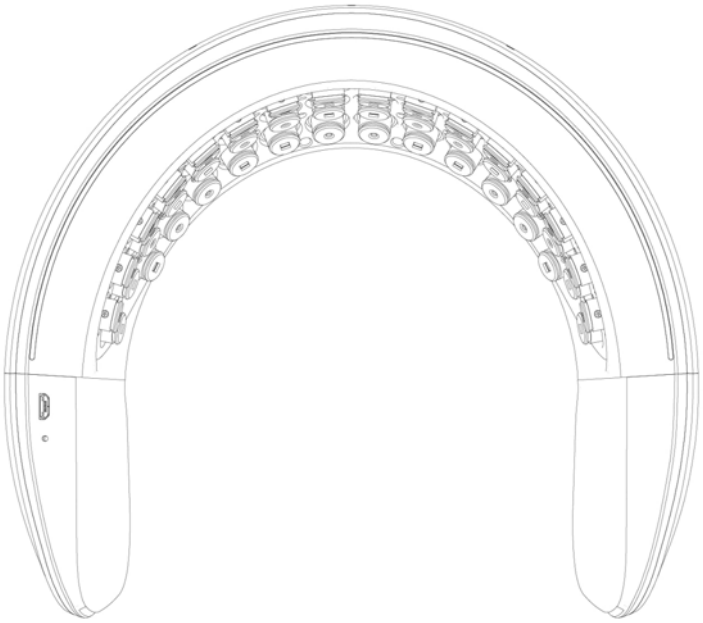


Figure 6 Bottom View

2.2 Application Software

NIRSIT Software operates under iOS/Android environment on Tablet and is wirelessly connected to NIRSIT device via WLAN communication. Depending on the use settings, the user can connect NIRSIT device on one Tablet or two Tablets utilizing both Task App and Monitoring App. Option to use two Tablets allows the monitoring personnel (either a researcher or a clinician) to monitor the status on one Tablet when the user is engaged in performing any Task within the Task Mode on another Tablet.

Figure 7 Using one Tablet for Task App and Monitoring App purposes

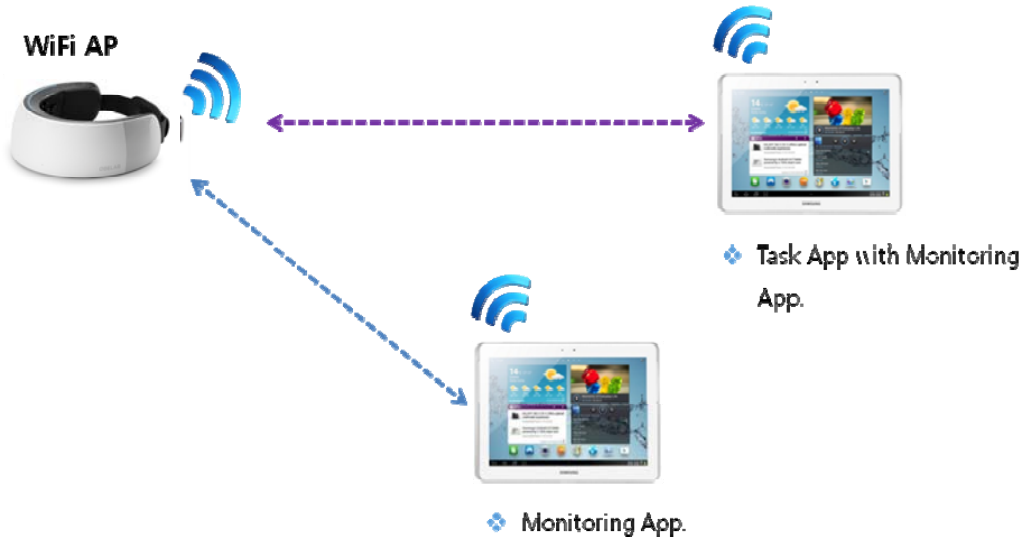
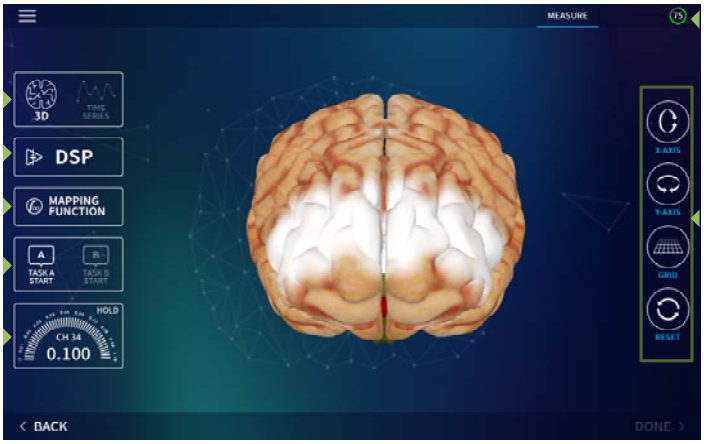


Figure 8 Using two Tablets separately for Task App and Monitoring App, respectively

There are two types of App within NIRSIT Software: Monitoring Mode App and Task Mode App, as shown below

Monitoring mode

- **3D Mode**

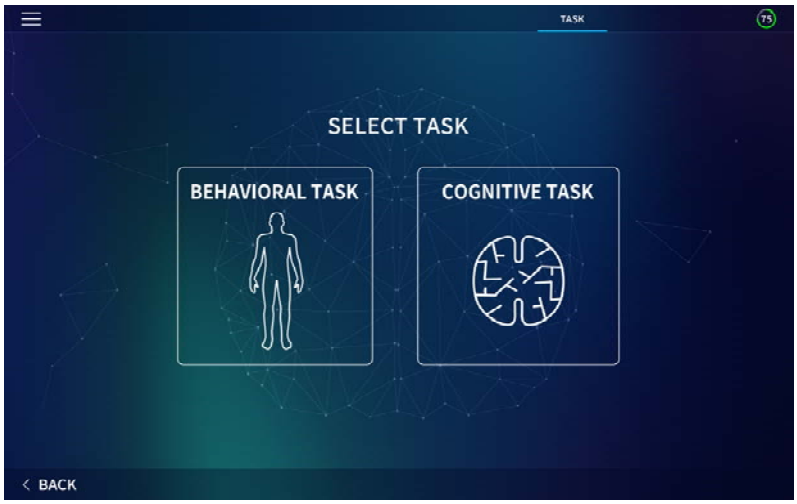


3D Mode visualizes the changes in the hemoglobin level in real-time on a 3D brain model. Depending on the intended use, the user can choose to monitor among HbO2, HbR, or HbT changes.

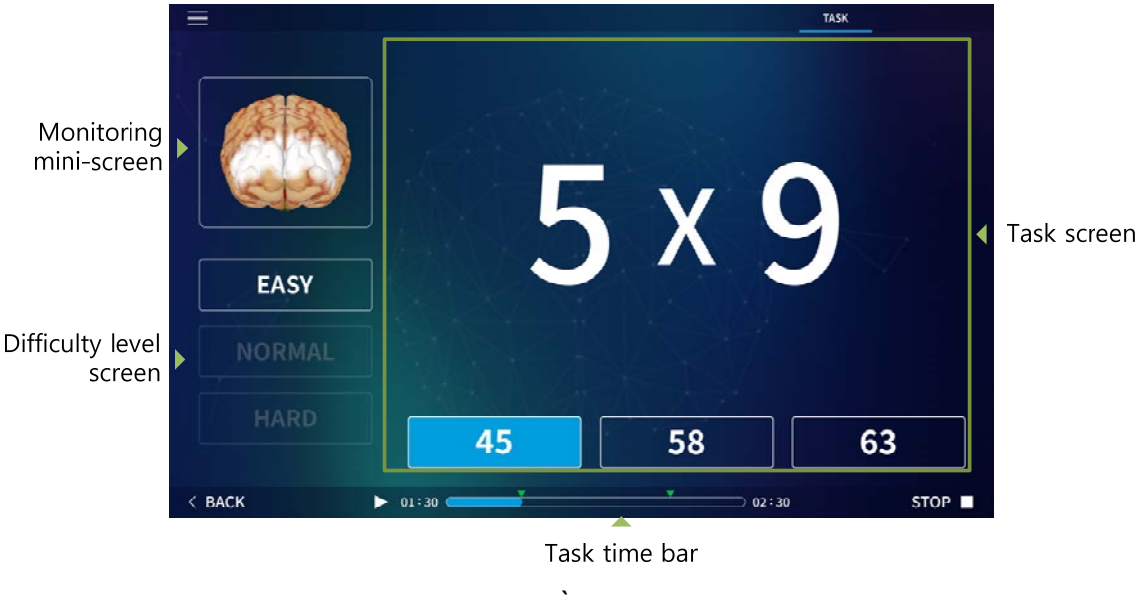
- **Time series mode**

Time Series Mode shows HbO2 and HbR changes in a graph format in real-time on a channel by channel basis.

Task mode



Task Mode can be classified into (i) Behavioral Task, showing hemodynamic changes during physical movements and (ii) Cognitive Task, showing hemodynamic changes during cognitive activities.



Once the user chooses a task from the Task Mode, the Tablet displays both the Task screen as well as the Monitoring mini-screen. Monitoring function can be de-activated depending on the choice by the user.
NIRSIT Software App can be downloaded from Google Play store or Apple store.

3 Using the system

3.1 Operating NIRSIT

Installing silicon pad/sensor skin

① Peel a package and take out the silicon pad/sensor skin.

② Align the holes on the silicon pad/sensor skin and the sensor modules on the inner part of NIRSIT device.

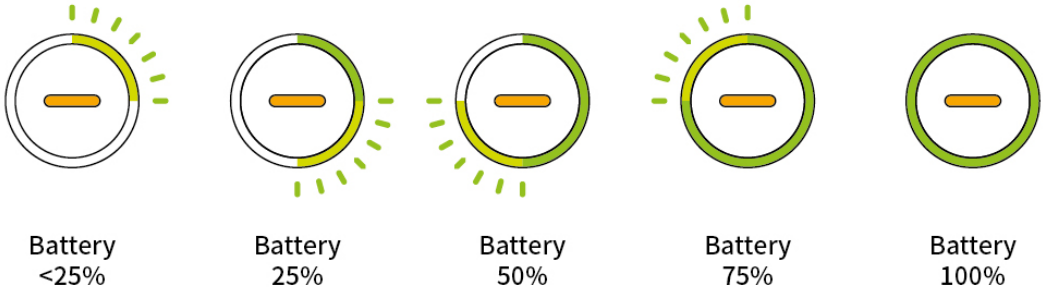
③ Lightly press the silicon pad/sensor skin holes against each sensor on NIRSIT device so that the silicon pad/sensor skin attaches to NIRSIT device.

Charging while power button is ON

① Press power button for 3 seconds.

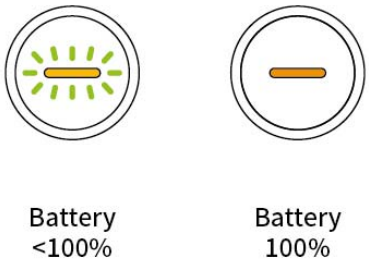
② Once the power button status light turns green and the power on sound is heard, the user can hook up micro USB charger to NIRSIT device and charge it.

③ The user can see the charging status by checking the status light as shown below:



Charging while power button is OFF

① The user can hook up USB charger to NIRSIT device, and the LED in the middle of the power button blinks while being charged and LED stays turned on once the charging is complete, as shown below:



Confirming NIRSIT device operation

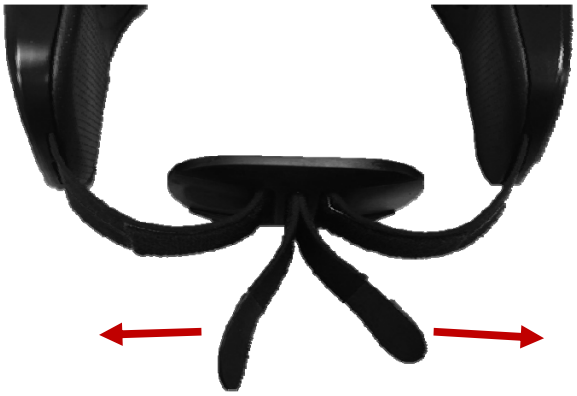
① Press power button ON for 3 seconds.

② Check to see if the status light turns green and the ON sound is heard simultaneously.

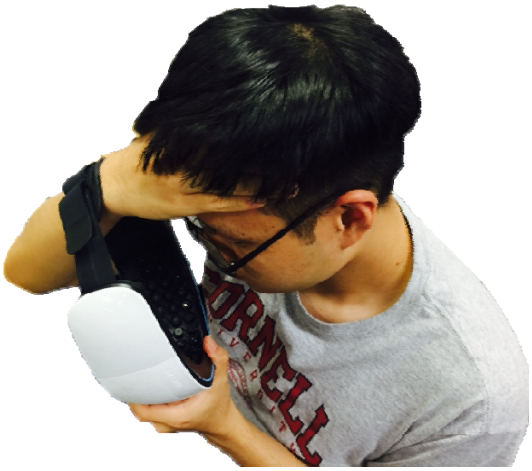
③ Check to see if the status light is turned off and the OFF sound is heard.

Putting on NIRSIT device

① Before putting on, make sure the strap tied to the strap holder is loose on one end so that there is ample room for the user's forehead to fit comfortably into NIRSIT device.



② As shown below, remove all hair from the forehead region with one hand, and use the other hand to place NIRSIT device on the forehead where there is no hair.



③ Take extra care to align the markers on NIRSIT device with the user's eyes, nose,

and the eyebrows, so that NIRSIT device is placed adequately on the forehead.

④ The user can now pull the strap and secure the strap on the Velcro to ensure NIRSIT device adequately contacts the forehead of the user.

Using NIRSIT device

① Turn on NIRSIT device by pressing the Power Button ON for 3 seconds.
② Turn on NIRSIT Software on the Tablet.

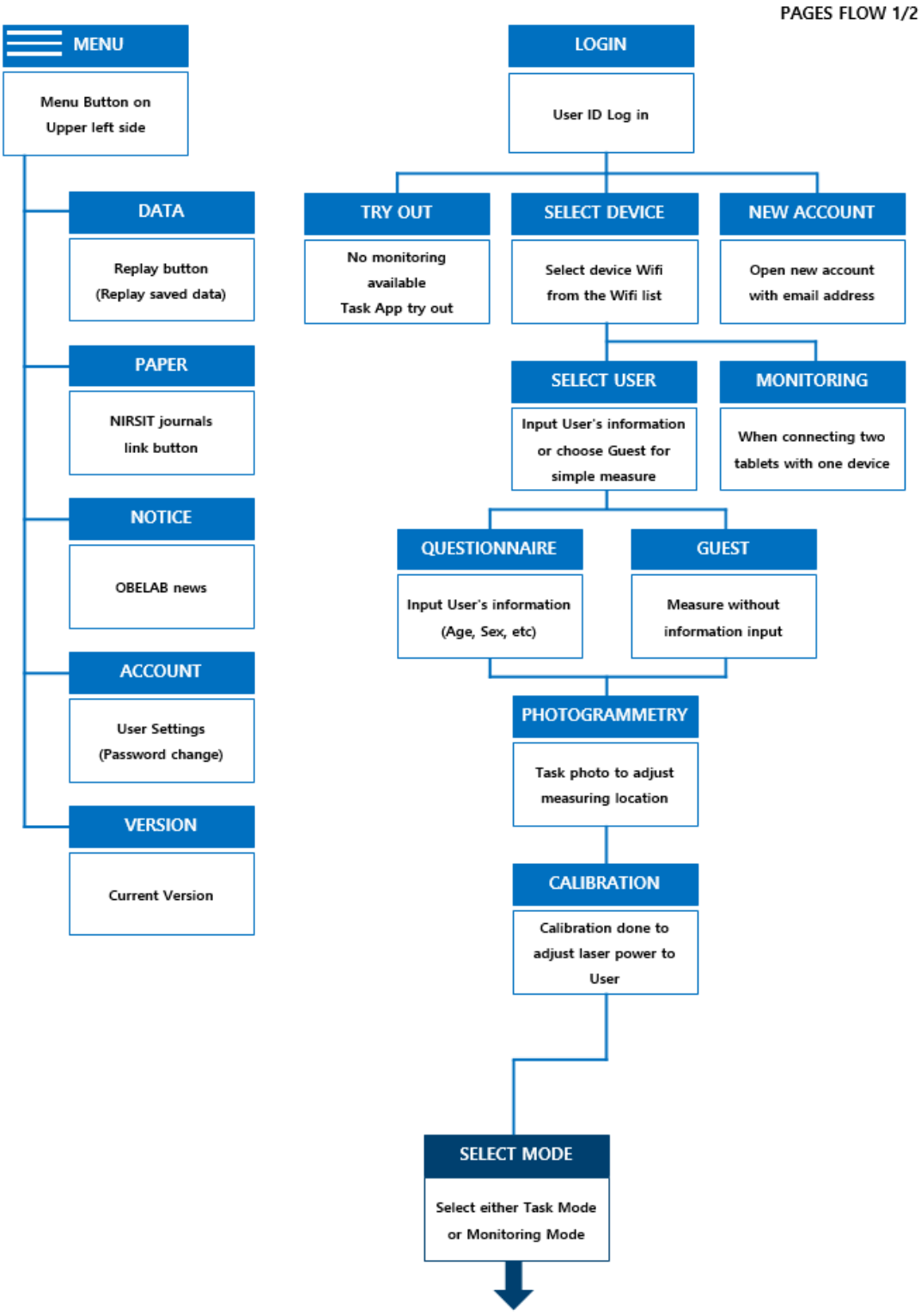
3.2 Operating Application Software

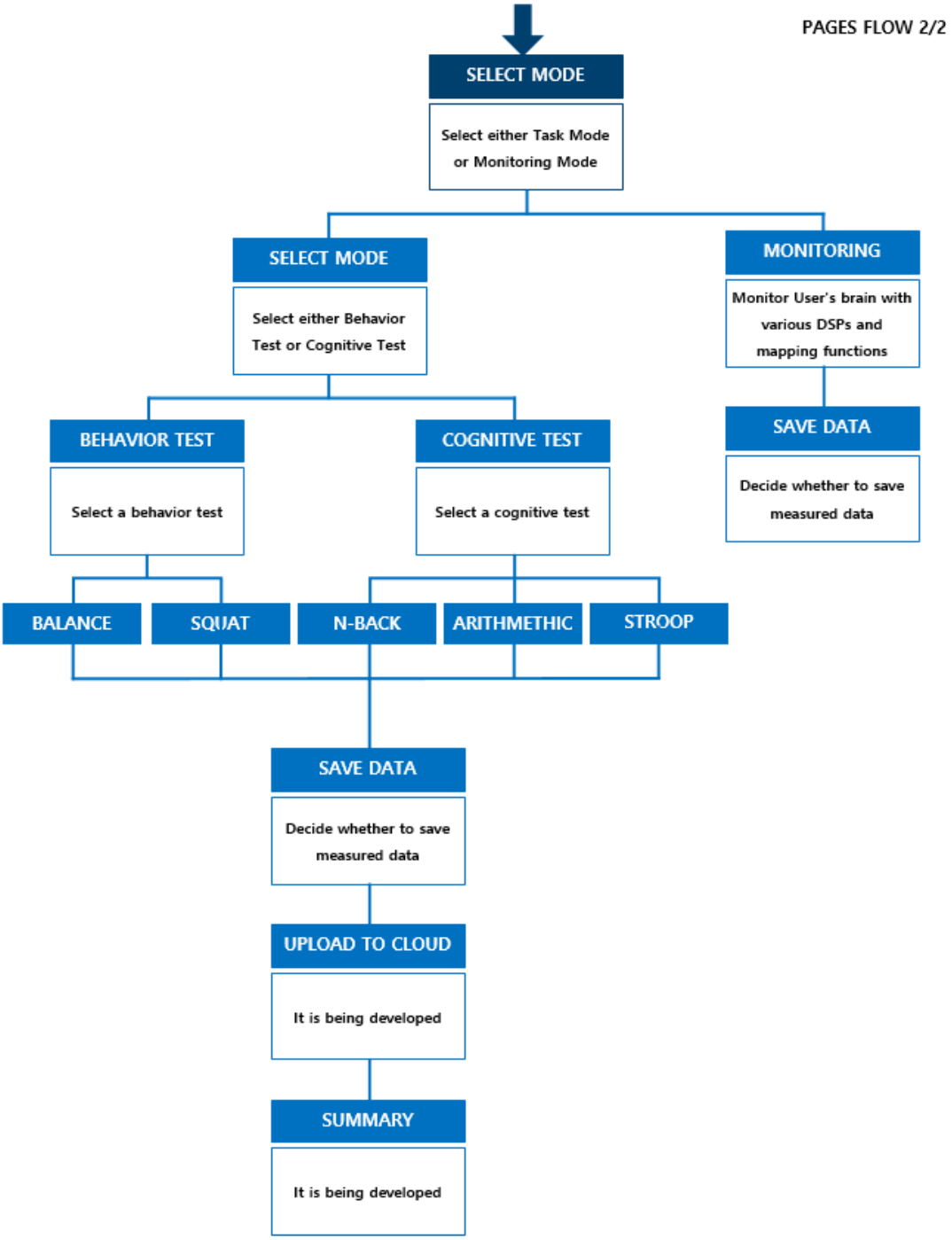
Connection with NIRSIT device

① When using IOS Tablet, NIRSIT device connects to NIRSIT Application under the WIFI setting. Password: obelab1234.
② Touch NIRSIT Application icon on Tablet screen and activate the Application.
③ If a new user, click on New Account and register with the user's existing email address. If an existing user, simply input email and password to log in.

3.3 NIRSIT Application Software Menu Usage

3.3.1 NIRSIT APP user menu tree



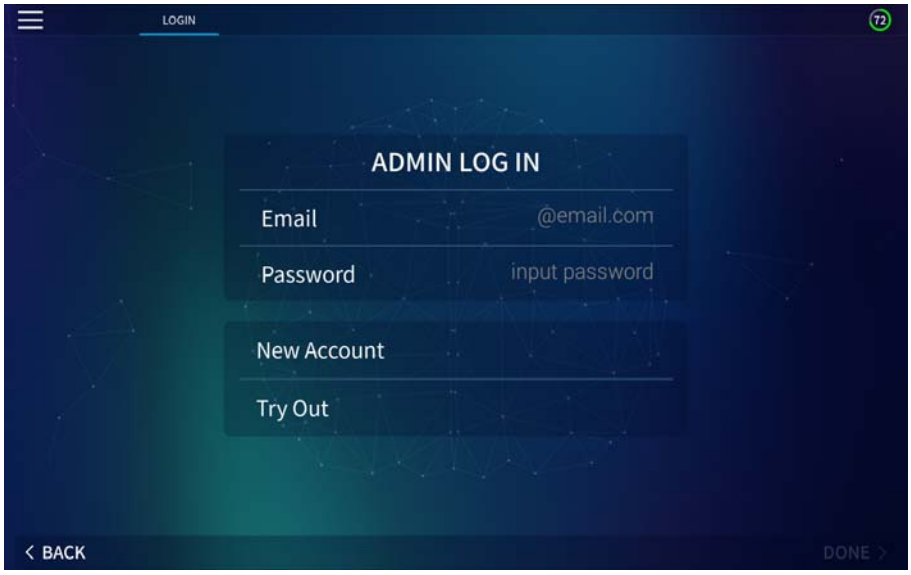

PAGES FLOW 2/2
SELECT MODE
Select either Task Mode or Monitoring Mode
SELECT MODE
Select either Behavior Test or Cognitive Test
MONITORING
Monitor User's brain with various DSPs and mapping functions
BEHAVIOR TEST
Select a behavior test
COGNITIVE TEST
Select a cognitive test
SAVE DATA
Decide whether to save measured data
BALANCE
SQUAT
N-BACK
ARITHMETHIC
STROOP
SAVE DATA
Decide whether to save measured data
UPLOAD TO CLOUD
It is being developed
SUMMARY
It is being developed

3.3.2 Application Menu details

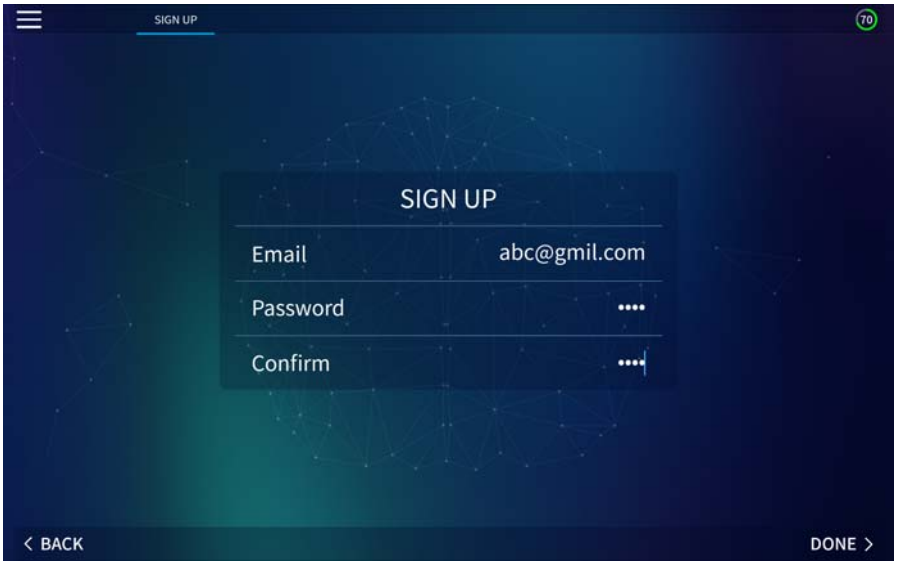
■ **Initial Steps**

① When activated, NIRSIT APP shows Log In page after the introduction page. On the Log In page, the following menu appears.

- ADMIN LOG IN: Menu for existing User with NIRSIT account
- New Account: Menu for new User to create new NIRSIT account
- Try Out: Menu for trying out Task Test without NIRSIT account

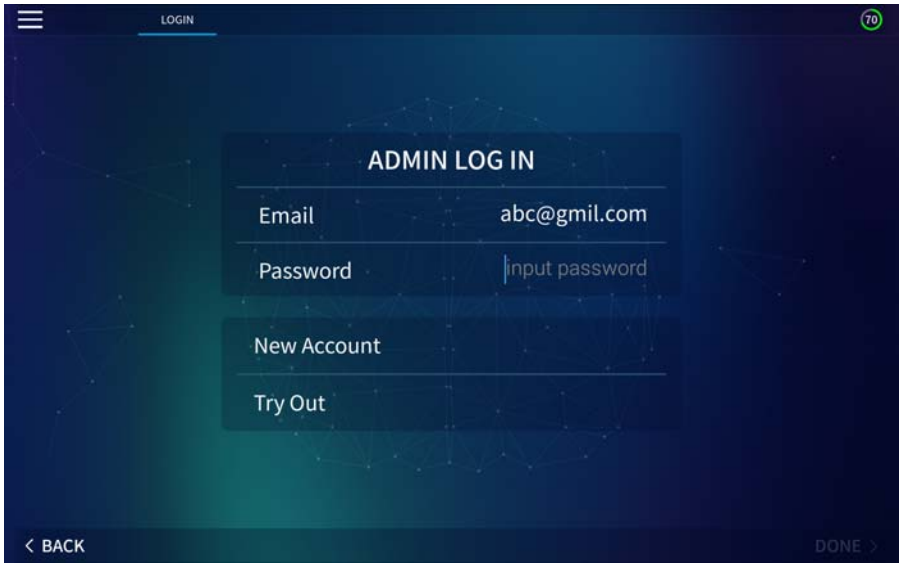


② When there is no existing account, choose New Account menu and move on to Sign Up page.



③ To register new User Account, input user's email address and password in the Sign Up page.

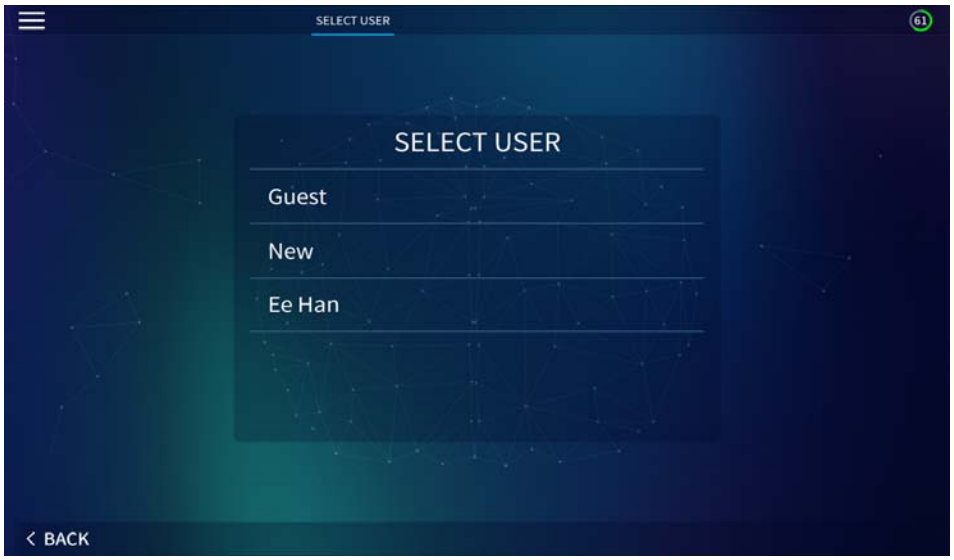
④ After confirming all information on newly created User Account, click DONE button and enter Log In page as shown below.



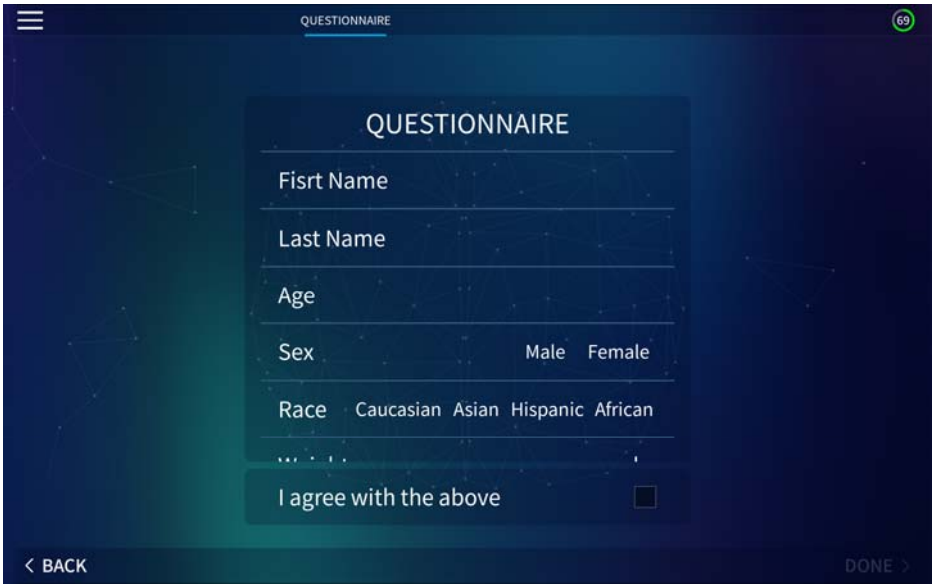
⑤ Enter password in the Log In page and click DONE button to move onto SELECT DEVICE page. On the screen, there will appear a list of NIRSIT devices available for connection. NIRSIT device will be shown as NIRSIT (ssid) + MAC_ID. Select NIRSIT device you want to connect to NIRSIT APP and click CONNECT button to move onto SELECT USER page.

⑥ On SELECT USER page, there are buttons with function defined as shown below:

- Guest: This menu allows use of NIRSIT device without User registration
- New: This menu allows User to register as new User by answering QUESTIONNAIRE. The User will then appear on the SELECT USER list.
- Registered User: This menu show the list of Users added on through NEW menu.

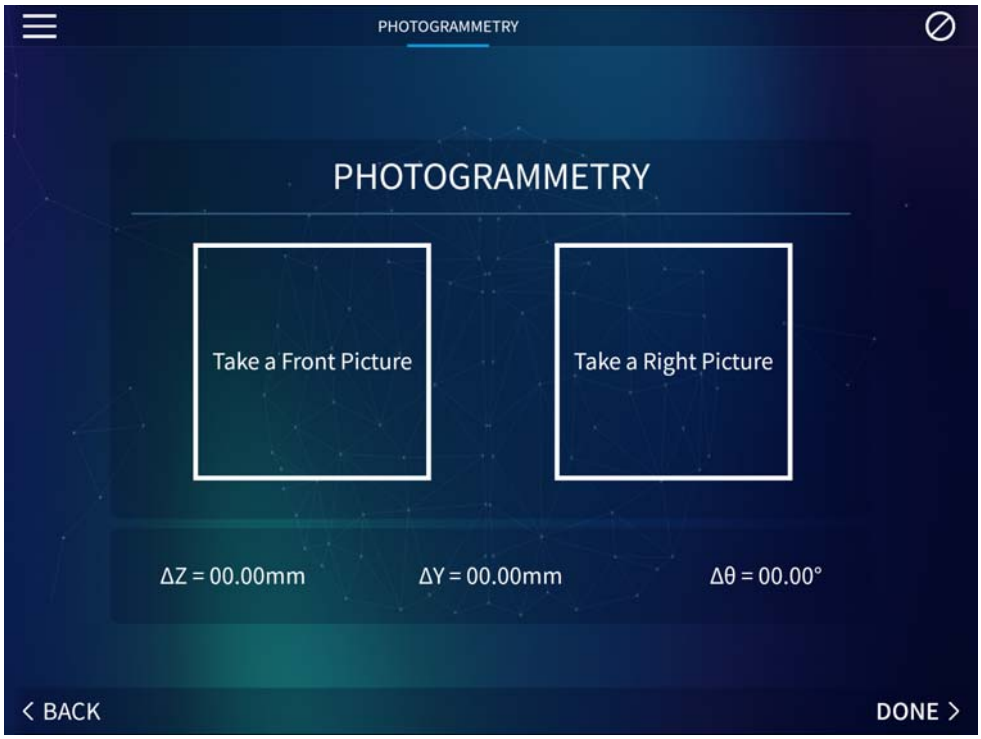


⑦ QUESTIONNAIRE page allows new User to register.

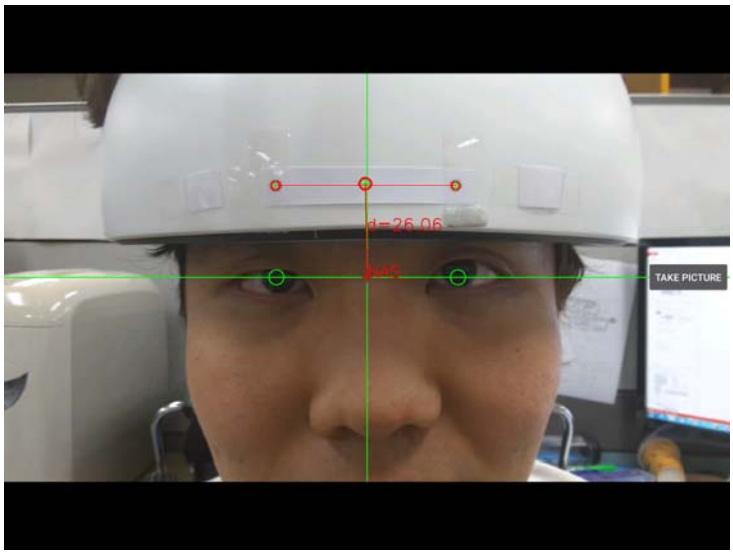


Measurement preparations

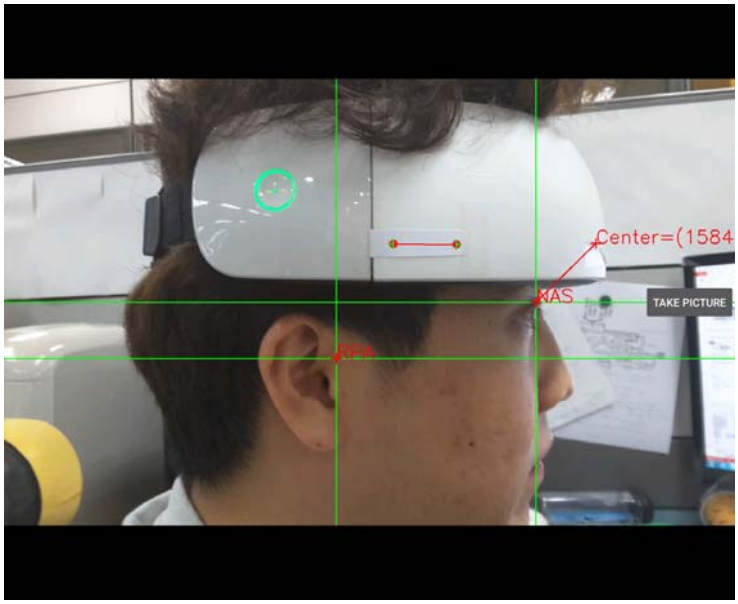
① Select either Guest or Registered User from the SELECT USER page and move onto PHOTOGRAMMETRY page. PHOTOGRAMMETRY page allows the user to adjust the measurements to match the exact location where NIRSIT device is actually placed (on the user's forehead). PHOTOGRAMMETRY page shows the phrases: Take a Front Picture, Take a Right Picture, △Z, △Y, and △Q. By clicking "Take a Front Picture" button, the User can take picture of the front view, and the value of △Z will be recorded automatically. By clicking "Take a Right Picture" button, the User can take picture of the right side view, and the value of △Y, and △Q will be recorded automatically.



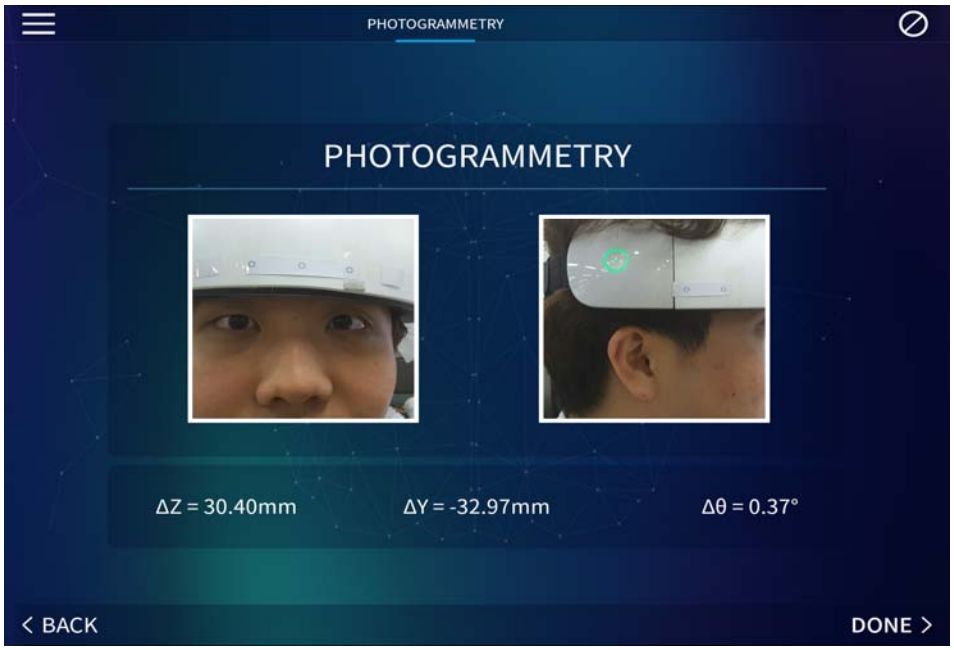
② On the "Take a Front Picture" page, three upper circles, two lower circles will appear and in the middle, a cross sign will appear to show NAS (Nasion) location. Adjust the Tablet camera to match the two lower circles with the user's eyes, the cross sign with the middle of the forehead (nasion), and three upper circles with the markers on NIRSIT device. Click on "Take picture" button and the User can check the picture taken.



③ The User can take picture of the Side view by clicking “Take a Right Picture” button. Place a cross sign (NAS) to match the Nasion location and the RPA cross to match the pre-auricular point as shown in the picture below. The two markers on the right side of NIRSIT device will be detected and a new cross sign will appear on the screen, indicating the center. Placing the new cross sign at the far right corner of the screen will ensure the measurement is taken of the User from the very center of NIRSIT device. After such adjustment, take a picture and the PHOTOGRAMMETRY measurement is complete.



④ After taking pictures of both the front picture and the right side picture, the User can check the actual picture taken from the PHOTOGRAMMETRY page and check the values of ΔZ, ΔY, and ΔQ.



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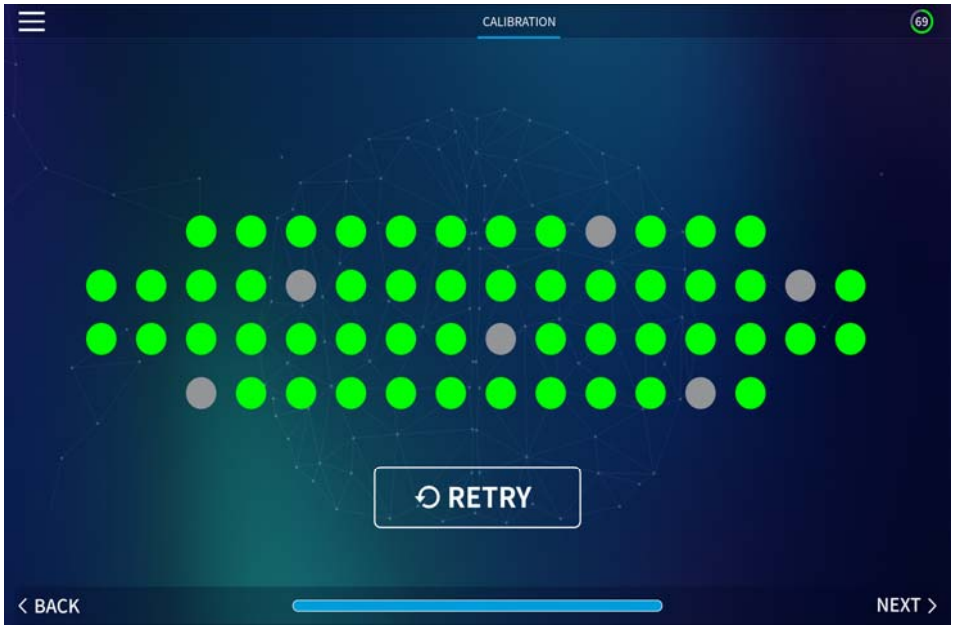
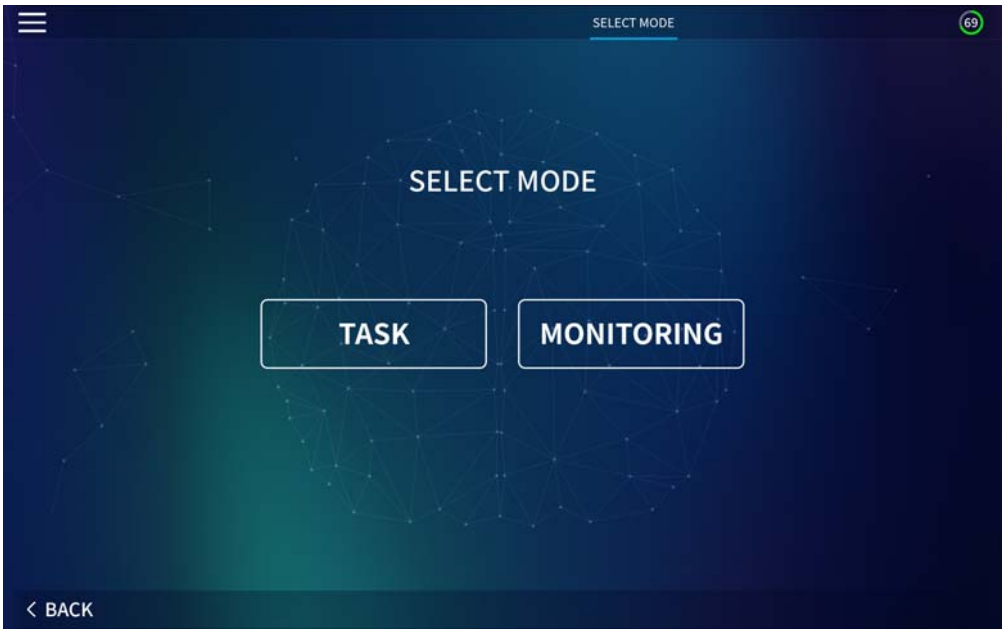
⑤ After completing location adjustment in PHOTOGRAMMETRY page, press DONE button and move onto CALIBRATION menu page. CALIBRATION menu allows adjustment of gains from sensors.



■ **Measurement Mode Selection**

Once gain calibration is complete, click on NEXT button and move onto SELECT MODE page. There are two types of SELECT MODE.

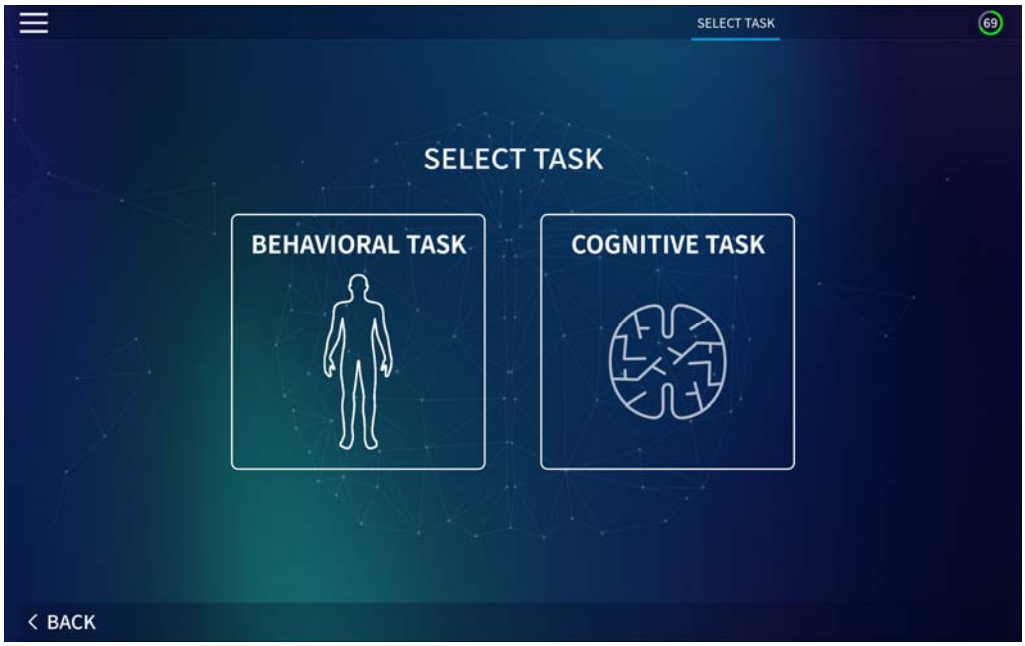
- TASK MODE: This menu allows the User to monitor functionality of the brain while the User performs tasks implemented within the NIRSIT APP.
- MONITORING MODE: This menu allows the User to monitor functionality of the brain while the User performs any tasks designed by the User.



■ **Task Mode**

① Click TASK button from the SELECT MODE page. There are two types of TASK MODE:

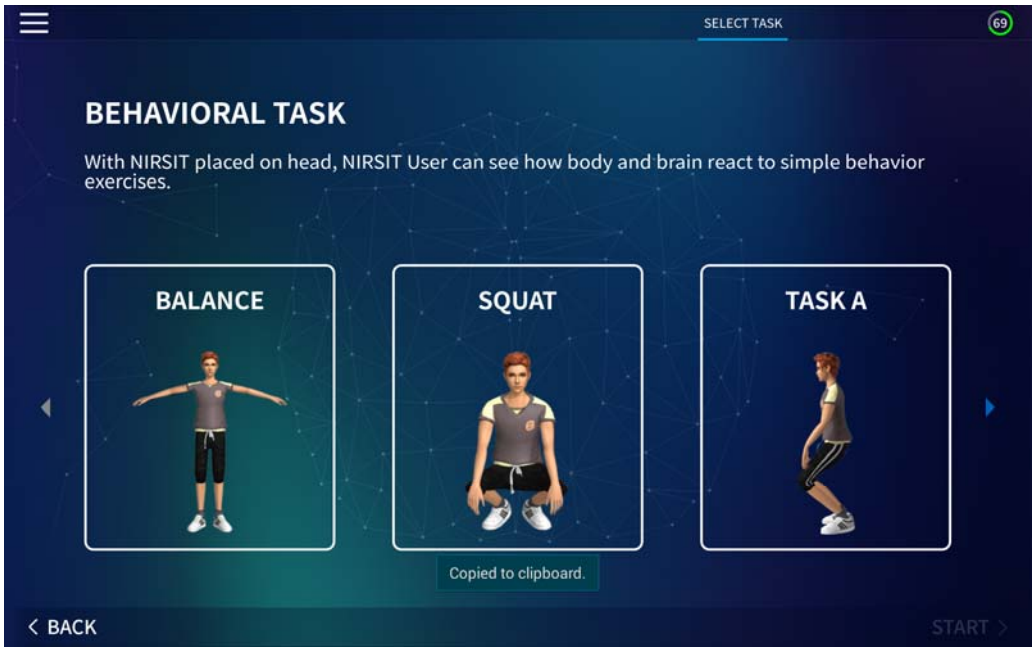
- BEHAVIORAL TASK: The User can monitor brain activation from performance of simple behavioral tasks.
- COGNITIVE TASK: The User can monitor brain activation from performance of simple cognitive tasks.



② Click BEHAVIORAL TASK button from the SELECT TASK page and move onto BEHAVIORAL TASK menu. BEHAVIORAL TASK menu is composed of the following:

- BALANCE TASK
- SQUAT TASK
- TASK A

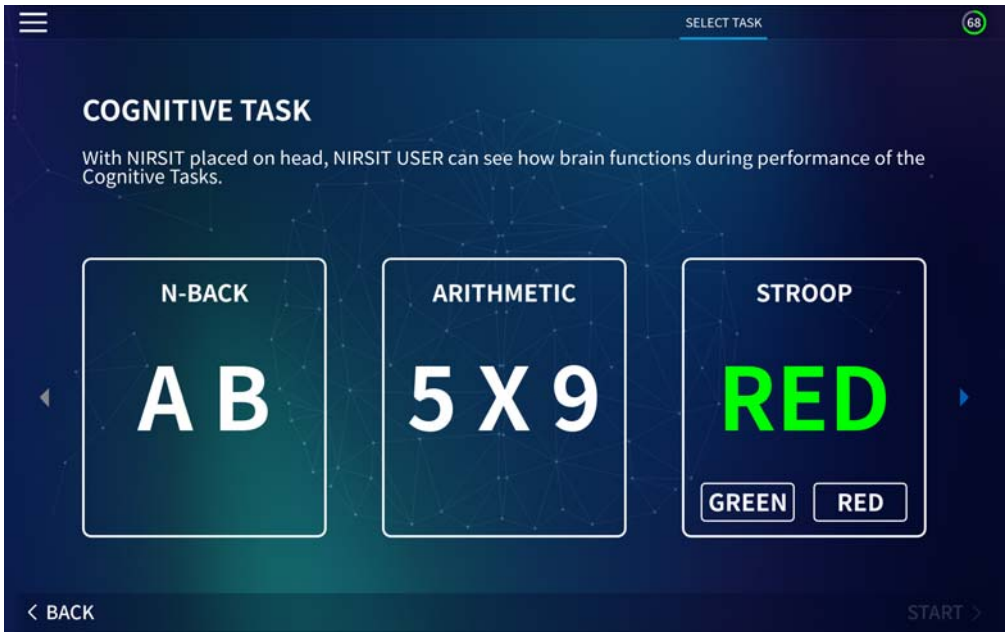
Once a task is chosen, the User can perform the chosen task by following the instructions played on the screen. During performance, the User can monitor the brain activation.



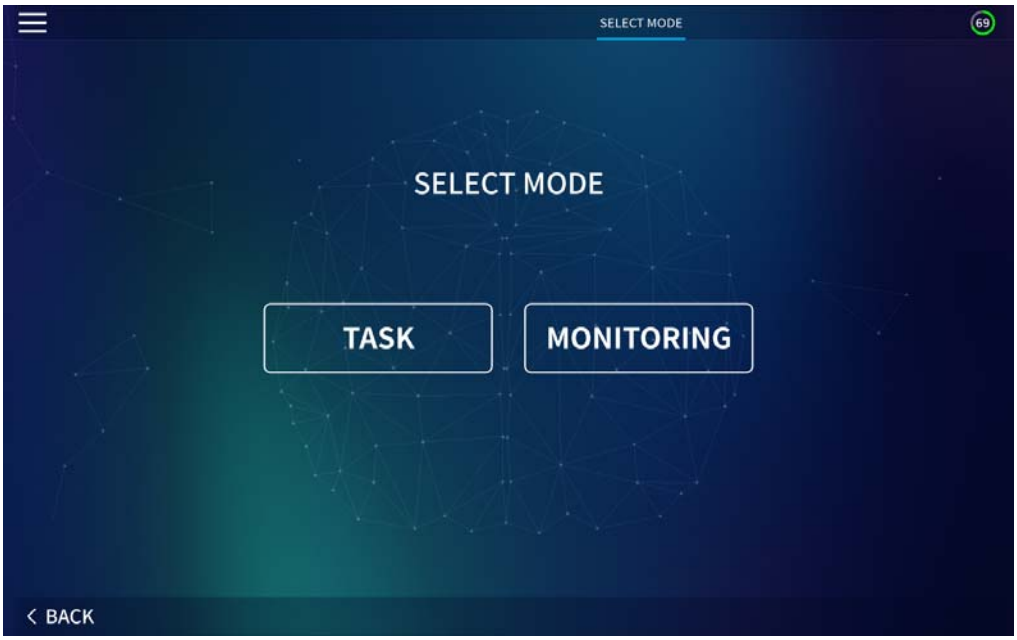
③ Click COGNITIVE TASK button from the SELECT TASK page and move onto COGNITIVE TASK menu. COGNITIVE TASK menu is composed of the following:

- N-BACK TASK
- ARITHMETIC TASK
- STROOP TASK

Once a task is chosen, the User can perform the chosen task by following the instructions played on the screen. During performance, the User can monitor the brain activation.



④ From SELECT MODE page, the User can move onto MONITORING MODE menu.



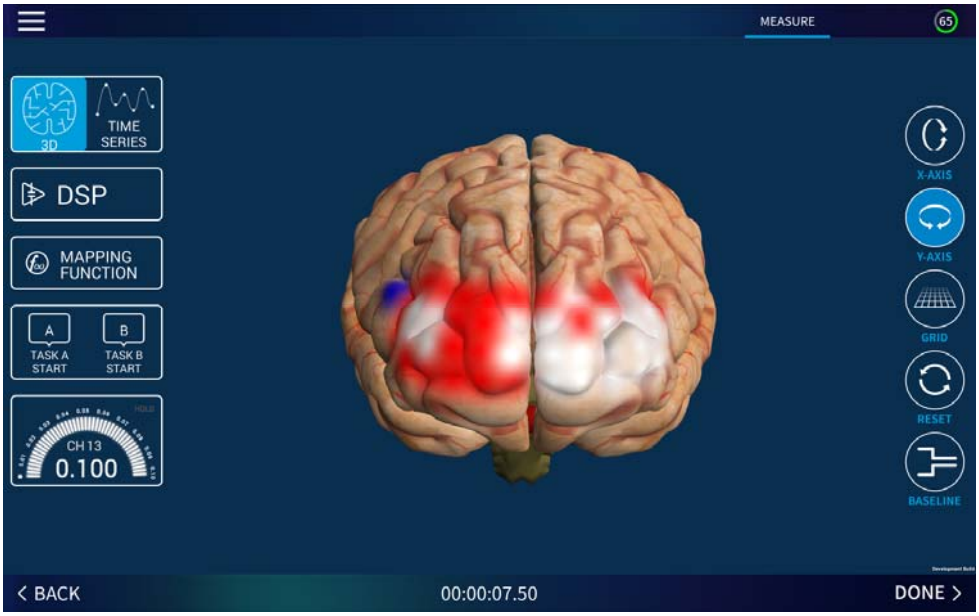
■ **Monitoring Mode**

Monitoring mode can offer various features with which test can monitor brain activity in real time. Monitoring mode menus are explained in the following sections. .

① Below are descriptions of the left side menu buttons.
- 3D: 3D Brain Image display
- TIME SERIES: HbO2 and HbR graph display on time axis
- DSP: Displayed separately
- MAPPING FUNCTION: Displayed separately
- TASK START: During measurement, the User can mark the start of a task up to two tasks (Task A, Task B) for recording purposes
- Peak Motor: Indicates which channel shows highest HbO2 and the level of HbO2

② Below are descriptions of the Right side menu buttons.
- X-AXIS: By clicking X-AXIS button, the User can spin the 3D Brain Image at the X axis
- Y-AXIS: By clicking Y-AXIS button, the User can spin the 3D Brain Image at the Y axis
- GRID: GRID button shows the 3D grid coordinates of the brain region being monitored
- RESET: Resets the 3D Brain Image
- BASELINE: Resets the baseline of hemoglobin level (Initial value of MBLL) to a current level

③ Color Indication for Brain Activity is explained below.
- White: Baseline indicating brain activity immediately after gain calibration
- White → Yellow → Red: Incremental increase of HbO2 level
- White → Sky Blue → Dark blue: Incremental decrease of HbO2 level

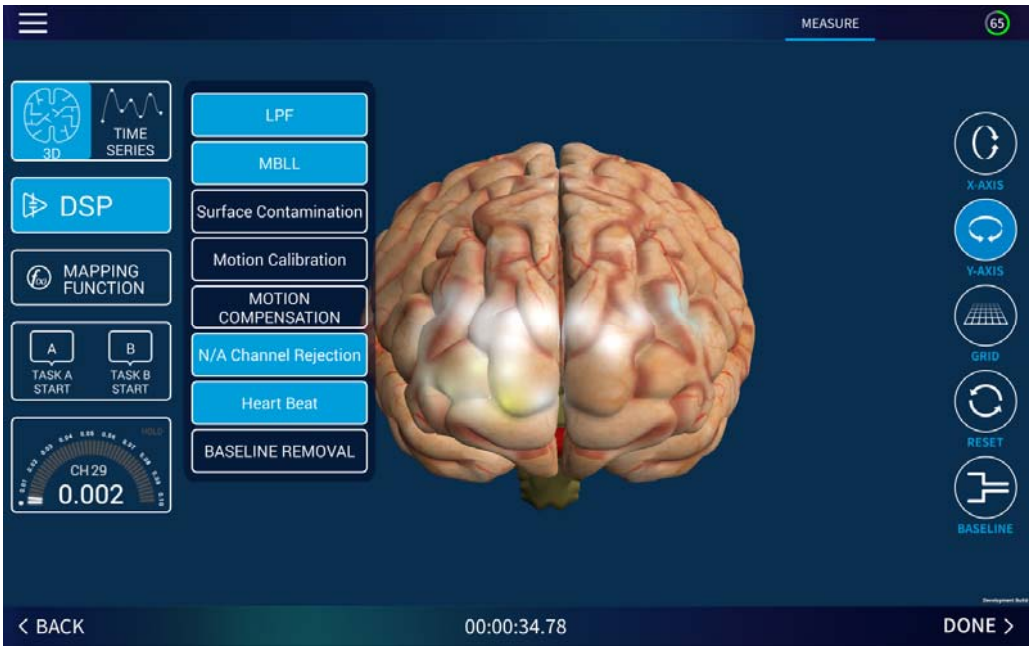


④ Clicking DSP button will show the following DSP menu:

- LPF: Initiating low frequency filter to suppress high frequency noise.
- MBLL: Showing changes in HbO2 and HbR levels by solving Modified Beer Lambert Law.
- Surface Contamination: Eliminating artifact from scalp.
- Motion Calibration: Calibration process by creating motion data for one minute.

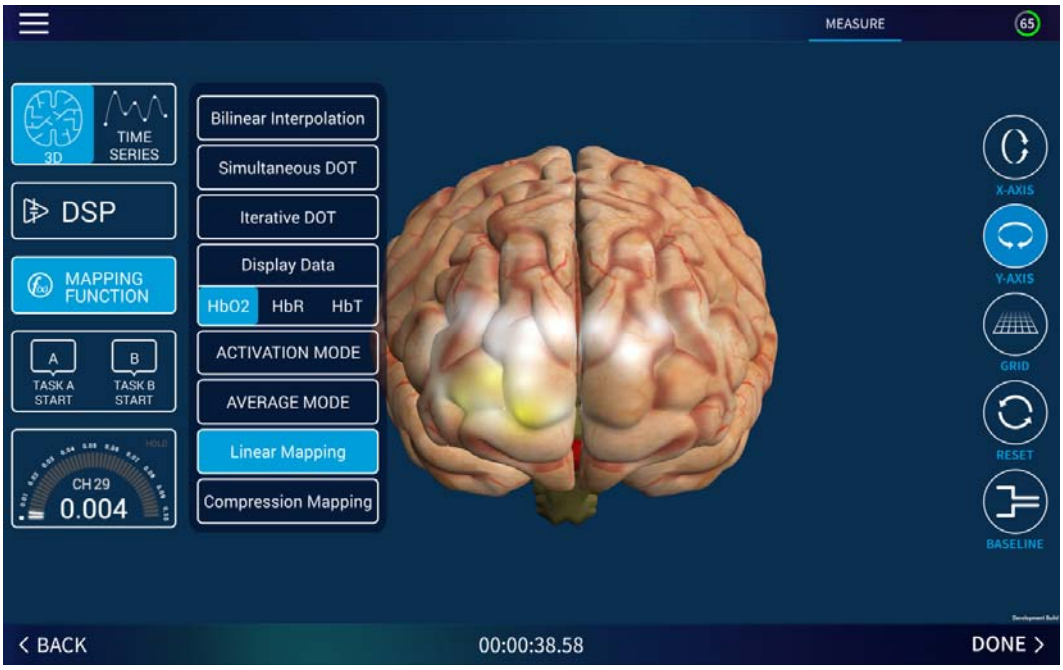
  Motion calibration process involves sitting up straight with head upright for 30 seconds, tilting head for 30 seconds, and then maintaining tilting position for 30 seconds.

- Motion Compensation: Compensating motion artifact. Before Motion Compensation, Motion Calibration must be executed before Motion Compensation
- N/A Channel Rejection: Eliminating channels that are not performing measurement properly
- Heart Beat: Eliminating noise from heart beat
- Baseline Removal: Eliminating gradual change in the Baseline.



⑤ Clicking MAPPING FUNCTION button will show the following MAPPING FUNCTION menu:

- Bilinear Interpolation: Color mapping of channels on 3D mapping display by interpolation
- Simultaneous DOT: Color mapping in pixel unit utilizing simultaneous DOT (Diffuse Optical Tomography)
- Iterative DOT: Color mapping in pixel unit utilizing iterative DOT (Diffuse Optical Tomography)
- HbO2 from DISPLAY DATA: Color mapping showing HbO2 level changes
- HbR from DISPLAY DATA: Color mapping showing HbR level changes
- HbT from DISPLAY DATA: Color mapping showing the HbO2 + HbR level changes
- Activation Mode: Color mapping only the increased level
- Average Mode: Color mapping of average value of left side vs. right side
- Linear Mapping: Color mapping of RGB value and data value in linear mapping format
- Compensation Mapping: Color mapping of RGB and data value through compression function

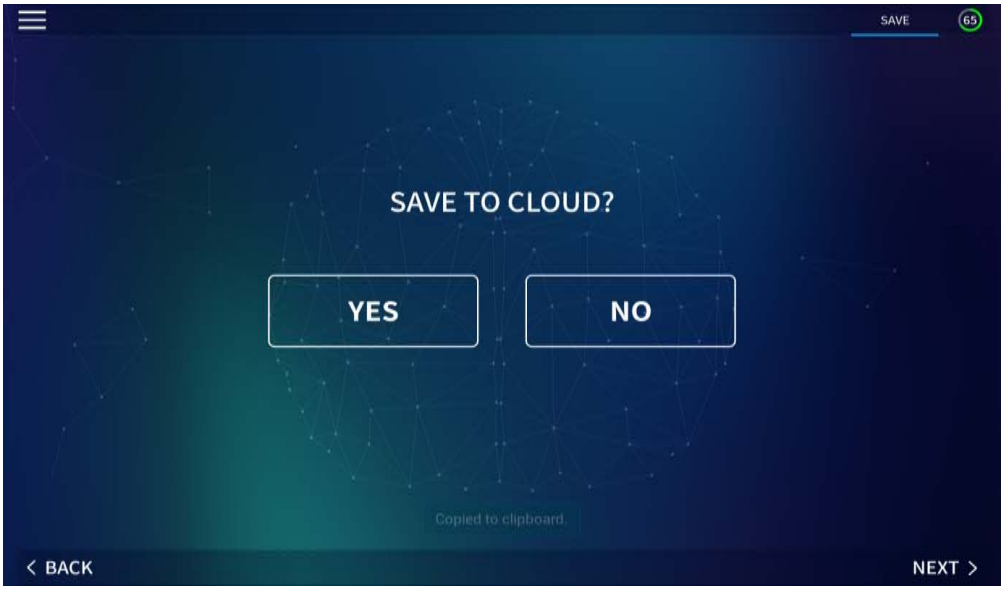


⑥ Clicking TIME SERIES button will show the following TIME SERIES graph.

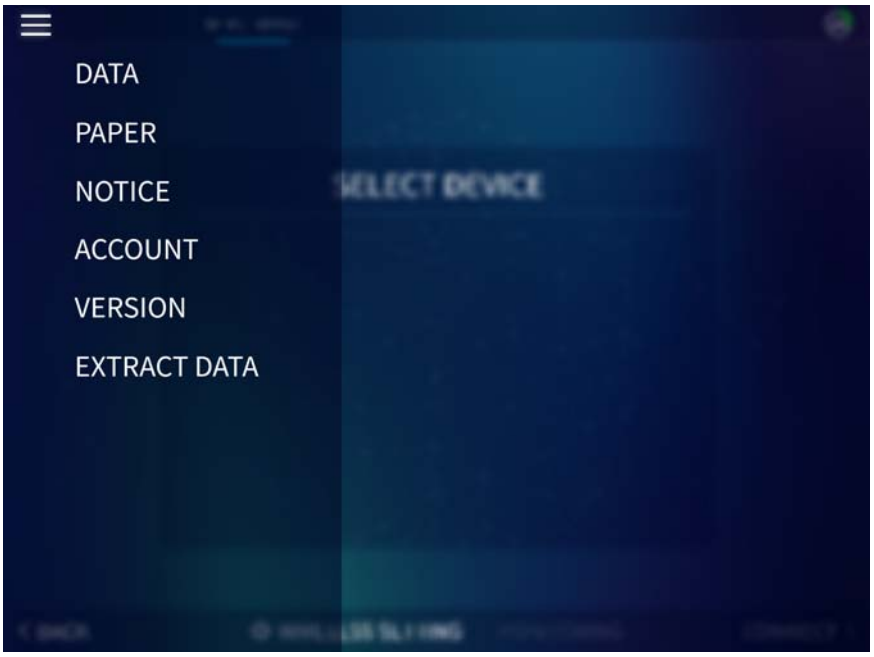
■ **Measurement Data Save and replay**

① Click DONE button once measurement is done and move onto SAVE page. User can save data by clicking YES button on SAVE TO DEVICE page, and then move onto Cloud server data save menu page. When User clicks NO button, the screen moves onto SELECT MODE page.

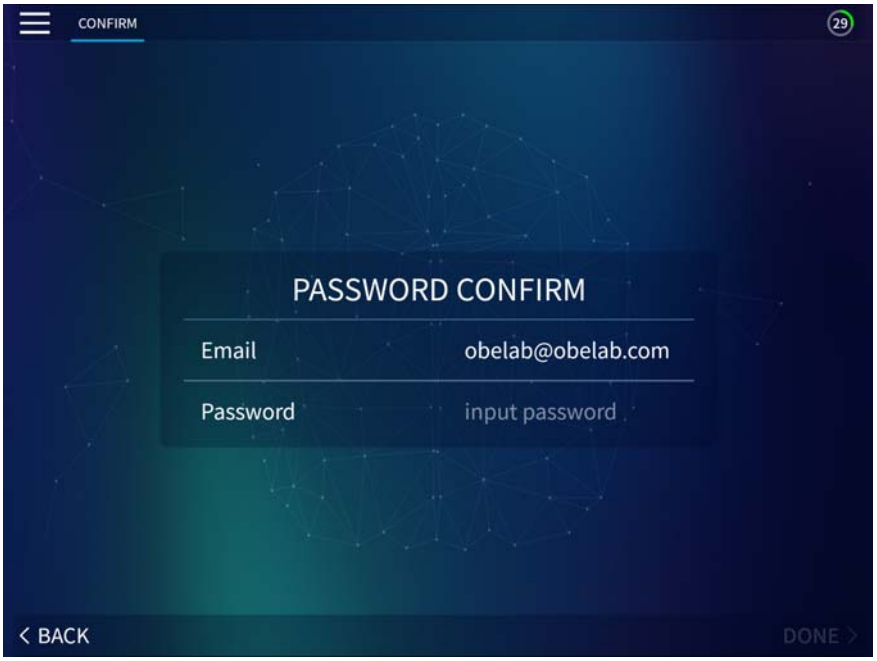
② Save data by on Cloud server by clicking YES button on SAVE TO CLOUD page. When the User clicks NO button, the User moves onto SELECT MODE page.



③ By clicking the top left corner of the menu bar on the screen and clicking DATA button in the menu bar, you can replay and check the saved measurement data.



④ To check saved data, the User needs to Log In through Admin Account. Enter Password and click DONE page to move onto DATA page.



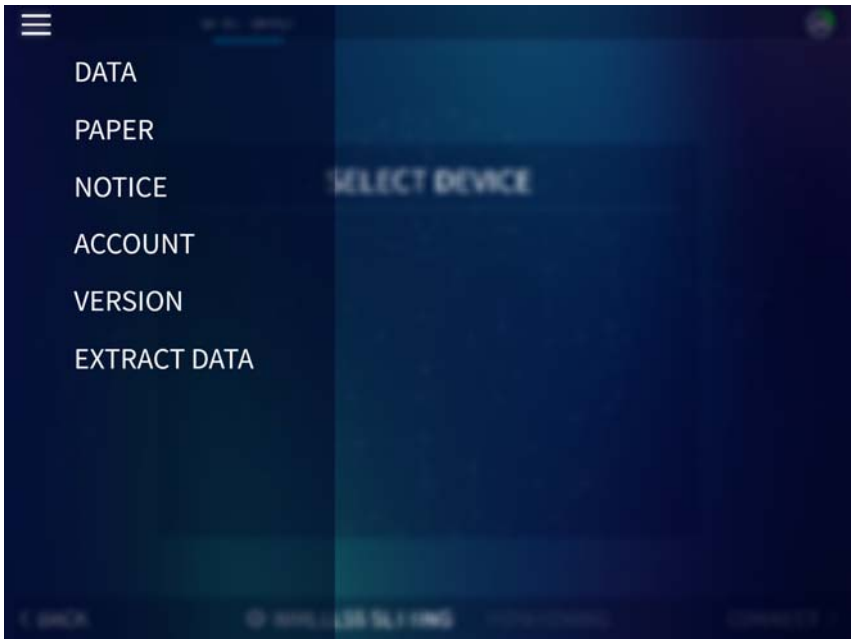
⑤ Saved data are listed under the User name and the data saving date. The User can replay the saved data by clicking the User name and data saving date.

■ **Additional Information - Paper, Notice, Account, and Version**

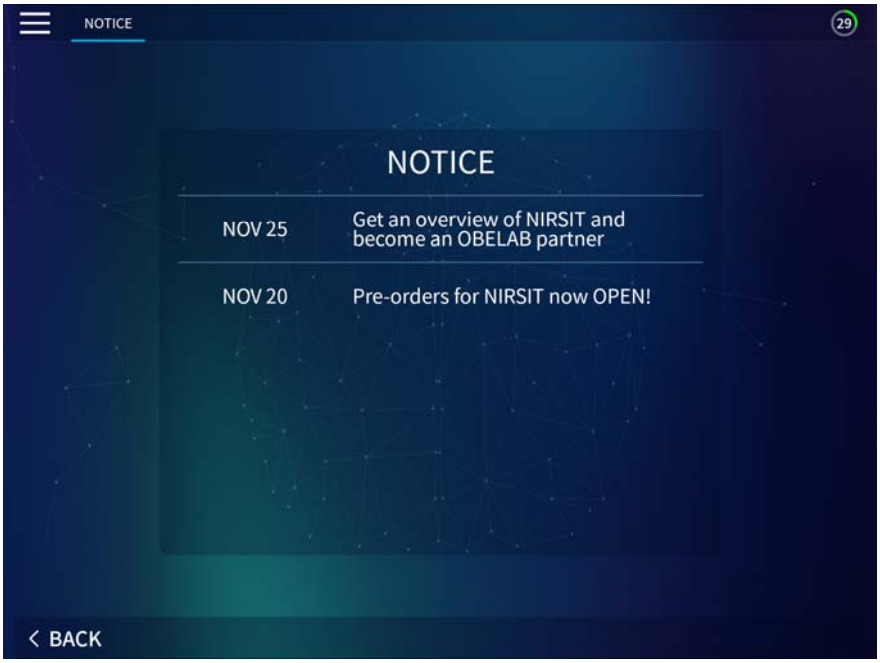
① By clicking PAPER button on the top left corner of the menu bar on the screen, the User can find a list of research papers and journals on the PAPER page.

② On the PAPER page, the research papers and journals are listed under category, published year, author, and the name of the journal. By clicking the name of the journal, the User is connected automatically to the publisher's homepage.

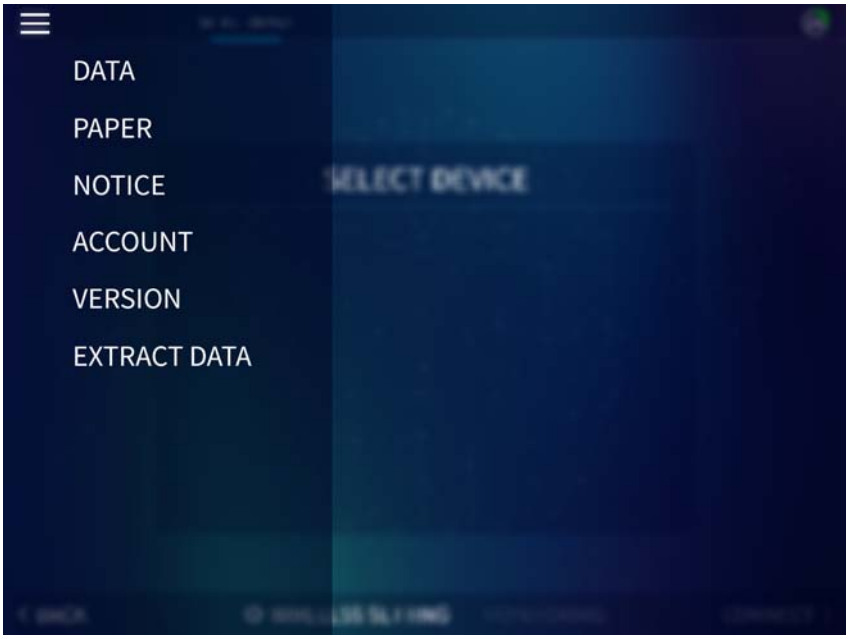
③ By clicking NOTICE button on the top left corner of the menu bar on the screen, the User can find notices relating to OBELAB on the NOTICE page



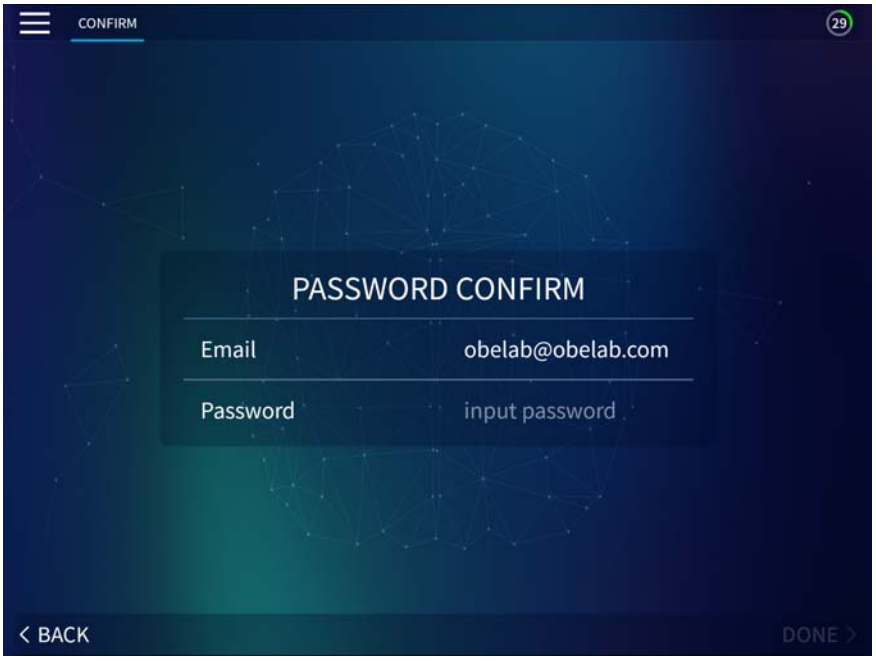
④ On the NOTICE page, the User can check all the latest news on OBELAB. By clicking the name of the news, the User can check more detailed information.



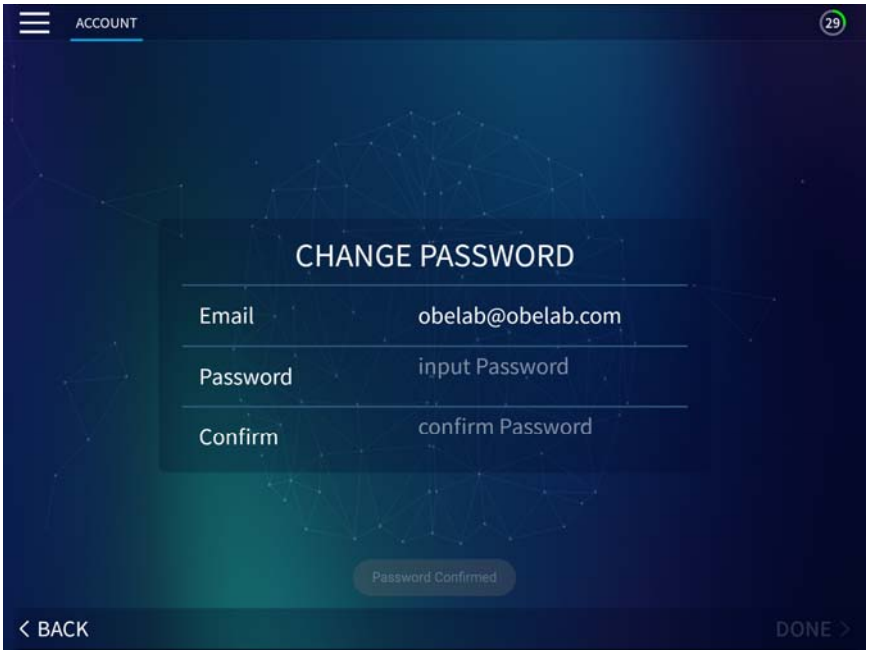
⑤ By clicking ACCOUNT button on the top left corner of the menu bar on the screen, the User can change Password from the ADMIN ACCOUNT on the ACCOUNT page.



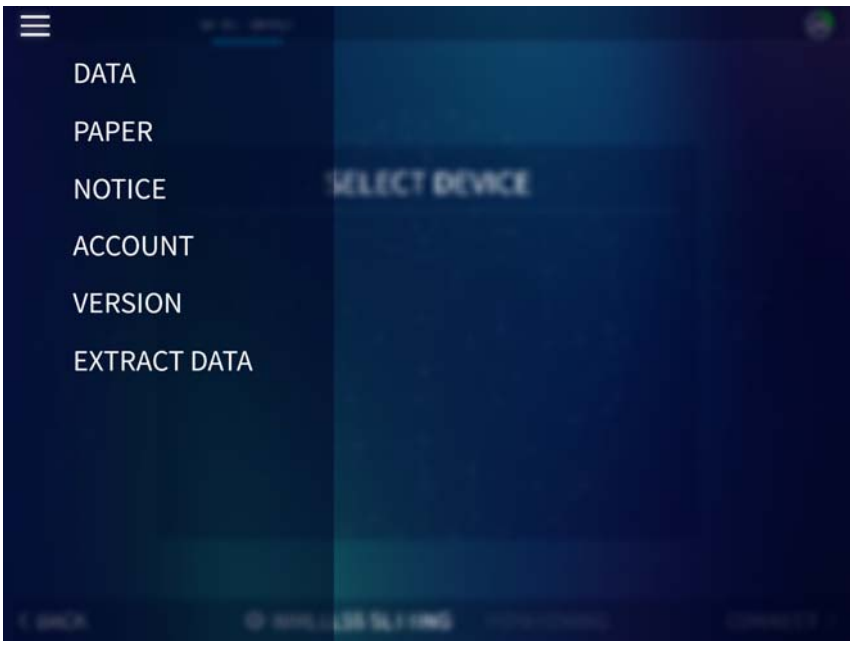
⑥ In order to move onto ACCOUNT page, the User needs to Log In to ADMIN ACCOUNT by using existing Password.



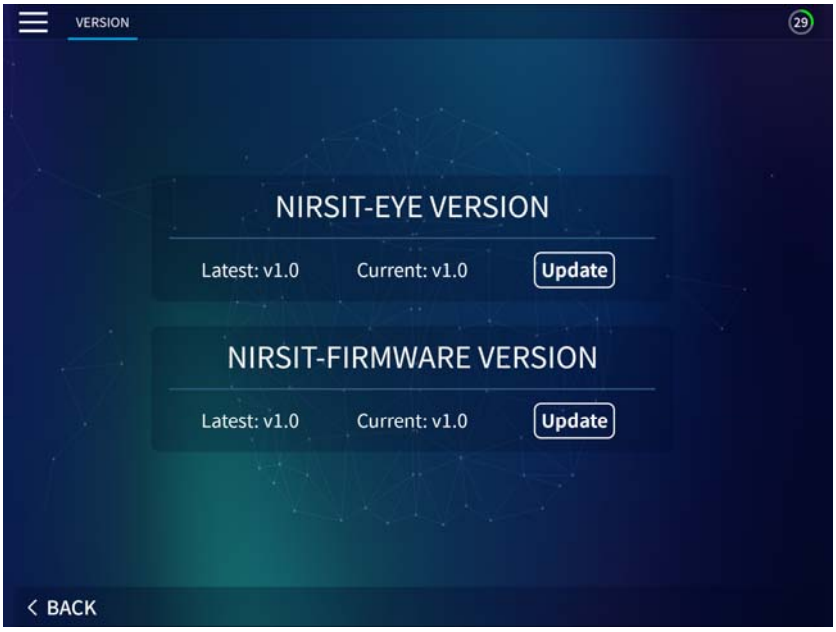
⑦ Once Log In process is complete, the User can move onto the ACCOUNT page and can change existing Password to a new Password.



⑧ By clicking VERSION button on the top left corner of the menu bar on the screen, the User can check the versions of NIRSIT APP (NIRSIT-EYE and NIRSIT-FIRMWARE) on the VERSION page



⑨ On the VERSION page, the User can check latest version and the currently installed version of NIRSIT APP (NIRSIT-EYE and NIRSIT-FIRMWARE). To update the APP to the most current version, the User can click Update button for the latest version download.



3.4 Operation Scenario

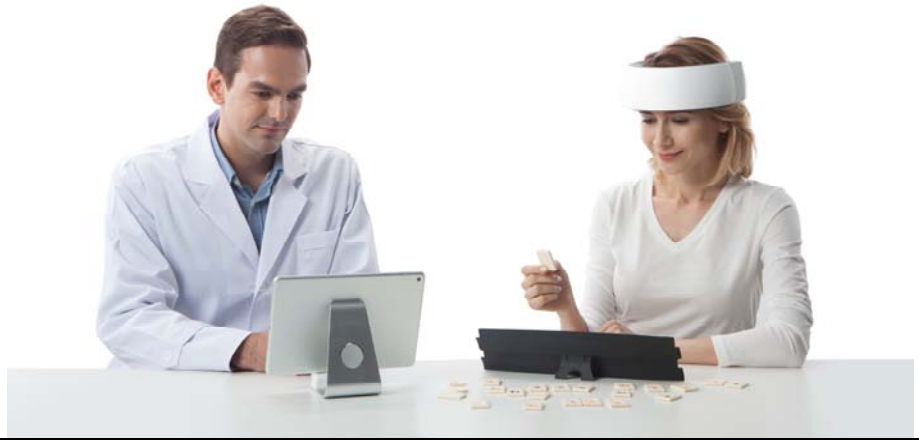
Operation Mode	Picture
Monitoring mode	
Task mode	
Monitoring +Task mode	

Table 1: Operation Scenario

Operation Scenario can be classified into three (3) types.

Monitoring Mode

This is a commonly utilized Mode that allows the User to monitor the User's brain activations in real time. One NIRSIT device can be connected to the Tablet. The User can perform any type of task he/she wishes, and the User can record the data from performance of the task by marking the start of a task by a triggering method.

Task Mode

Task Mode allows the User to utilize either Cognitive Task or Behavioral Task implemented within the NIRSIT APP. At the same time, the User can monitor the brain activation on a monitoring mini-screen during performance of the chosen Cognitive Task or Behavioral Task. One NIRSIT device can be connected to the Tablet. Each Task is composed of a single protocol and the measurement data from NIRSIT device are triggered according to the protocol of each Task and are marked on the measurement data.

Monitoring Mode + Task Mode

Monitoring Mode + Task Mode allows the User to connect one NIRSIT device to two Tablets. Task Mode Tablet can be used by the User who is performing the Task in the Task Mode, and Monitoring Mode Tablet can be used by another User who is monitoring the brain activations of the User performing the Task simultaneously.

4 Product Specifications

- Model: NIRSIT
- Input Voltage (via USB port): 5V
- Maximum Current (via USB port): 2.1A
- Battery
  - Type: Lithium ion polymer battery
  - Usage Time: Up to 8 hours (when fully charged)
  - Voltage: 3.7 V
  - Capacity: 3000mAh
- Physical Specifications
  - Size: 215 x 195 x 75 (mm)
  - Weight (including battery): 550g
- Source
  - Source Type: Dual wavelength VCSEL laser
  - Number of Sources: 24
  - Laser Output: 3mW
  - Wavelength: 780nm, 850nm
  - Operation Mode: CW
- Detector
  - Detector Type: Active detection sensor
  - Number of Detectors: 32
  - Number of channels: Up to 204 channels
- Measurement
  - Source-Detector distance: 1.5cm, 2.12cm, 3cm, 3.35cm
  - System Scan Rate: Up to 16.276Hz
  - Operation Mode: CW
- Data Storage and Communication
  - Built-in memory in Tablet or PC storage
  - Wireless communication between Tablet and NIRSIT device through WLAN, and Serial communication between USB and PC.
- This equipment should be installed and operated with minimum 1cm between the radiator and your body.

5 Maintenance

5.1 Storage Conditions

① Keep NIRSIT device where there is little dust and humidity.
② When not in use, store NIRSIT device in a case enclosed in the package box.
③ Do not apply excessive shake or impact and maintain stability.
④ Keep away from chemicals or explosive gas products.
⑤ Keep away from direct sunlight.
⑥ Make sure all the essential goods and accessories in the package box are without damage and within shelf life.
⑦ Make sure NIRSIT device is without external crack or damage. In case any damage is found, please contact OBELAB immediately.

5.2 External Conditions

■ **While Operating**

Temperature (0~35 Celsius)
Humidity (20~80%)

■ **While Stored**

Temperature (-10~40 Celsius)
Humidity (20~80%)

5.3 Caution while Operation

NIRSIT device is made flexible to fit average adult head size. However, if bent too extensively with excessive force, NIRSIT device may be damaged.

6 Warranty and Repair

6.1 Customer's Rights

The Customer has the right to receive free repair service during one year from the date of purchase of NIRSIT system, provided that in the event the damage to NIRSIT system is due to Customer's fault or other causes as specified in 6.2 below, please note that the repair service will be provided for a fee.

6.2 Warranty

If the NIRSIT system Customer purchased is a non-conforming product or is damaged during normal usage conditions, OBELAB will provide repair services free of charge for one year from the date of purchase.

Customer will receive quality assurance as referenced in the Warranty Card. Please fill out the date of purchase to ensure receipt of one year warranty period which is triggered by the date of purchase.

- Please contact local dealer of OBELAB regarding any questions on warranty period.
- Warranty will not be provided in the following cases: ⚠
  - In the event NIRSIT system is not installed, repaired, or placed by OBELAB personnel or any other authorized personnel trained by OBELAB.
  - In the event NIRSIT system is damaged due to the use of any other devices in connection with NIRSIT system
  - In the event NIRSIT system is damaged due to the User's mishandling
  - In the event NIRSIT system is damaged due to repairs and maintenance being performed utilizing equipment(s) authorized by OBELAB
  - In the event NIRSIT system is damaged due to random alteration or use of unauthorized accessories by the Customer
  - In the event NIRSIT system is damaged due to natural disaster, such as accident, earthquake, flood, etc.
  - In the event NIRSIT system is damaged after the one year warranty period, as referred to in this Manual
  - In the event NIRSIT system is damaged due to the Customer's failure to comply with the appropriate maintenance procedures as recommended
- The warranty applies to NIRSIT hardware only. It does not apply to the following:
  - Damage to the measurement results due to the accessories or movement
  - In case of problem while using NIRSIT system, please contact local dealer of OBELAB

6.3 Service for Fee

In case of requesting for service as specified below, the service will be provided for a fee even during the one year warranty period.

- In the event NIRSIT system is not installed, repaired, or placed by OBELAB personnel or any other authorized personnel trained by OBELAB.
- In the event NIRSIT system is damaged due to the use of any other devices in connection with NIRSIT system
- In the event NIRSIT system is damaged due to the Customer's mishandling
- In the event NIRSIT system is damaged due to repairs and maintenance being performed utilizing equipment(s) authorized by OBELAB
- In the event NIRSIT system is damaged due to random alteration or use of unauthorized accessories by the Customer

- In the event NIRSIT system is damaged due to natural disaster, such as accident, earthquake, flood, etc.
- In the event NIRSIT system is damaged after the one year warranty period, as referred to in this Manual
- In the event NIRSIT system is damaged due to the Customer’s failure to comply with the appropriate maintenance procedures as recommended

6.4 Quality Assurance Certificate

OBELAB provides quality assurance on the following items:

Manufacture Number				
Warranty Period	One year from the date of purchase			
Place of Purchase	Name of Office		TEL	
Customer Information	Name			
	Address			
	TEL	TEL		
		CELL		

- Upon purchase of OBELAB product, please fill out the form and send the scanned document to contact@obelab.com via email as attachment.
- In case the certificate is not received by OBELAB, OBELAB will not be responsible for any disadvantages in terms of service provisions or others.

Warranty Rules

1. Warranty period
   - Damages to the product arising from the normal use of the product will be repaired at OBELAB service center free of charge for one year from the date of purchase.
2. Exceptions to Warranty provision
   - In the event the product is not installed, repaired, or placed by OBELAB personnel or any other authorized personnel trained by OBELAB.
   - In the event the product is damaged due to the use of any other devices in connection with NIRSIT system
   - In the event the product is damaged due to the Customer's mishandling
   - In the event the product is damaged due to repairs and maintenance being performed utilizing equipment(s) authorized by OBELAB
   - In the event the product is damaged due to random alteration or use of unauthorized accessories by the Customer
   - In the event the product is damaged due to natural disaster, such as accident, earthquake, flood, etc.
   - In the event the product is damaged after the one year warranty period, as referred to in this Manual
   - In the event the product is damaged due to the Customer's failure to comply with the appropriate maintenance procedures as recommended
3. Service after Warranty Period
   - Damages to the product arising after the Warranty period will be serviced for a fee.
   - All other matters not referenced in this Warranty Rules will be handled in accordance with the consumer injury compensation rule in Consumer Protection Act.
   - Please contact OBELAB customer services in case of product failure or questions.
4. Precautions
   - Please read the product Operator's Manual carefully before actual use of the product.

This Quality Assurance Certificate is effective only within Korea.
This Quality Assurance Certificate will not be re-issued. Please be sure to fill out this Certificate and send the scanned document to contact@obelab.com.
Please contact the local dealer or OBELAB customer service if any questions.