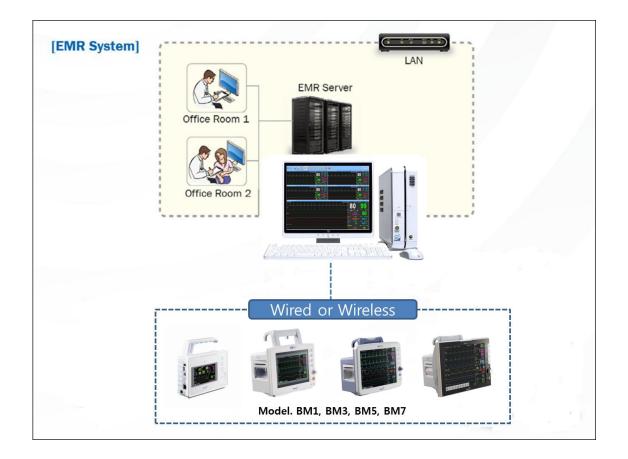
# **BM Central Manual**

Patient Monitor Central System Ver. 2.1 – 2015/07/13



## **Bionet Co.,LTD.**





This manual includes the basic use of BM Central. For proper use and maintenance, please read the guide and use it accurately. For the equipment included in the manual, please refer to the manual provided with the equipment.

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## **Table of Contents**

Table of Contents	2
General	7
1.1 Checkpoints before use	8
• Registered Trademarks	
How to reach us	9
Warranty Period	10
Warning, Caution, Note	11
General Precaution on Environment	11
1.2 Outline	12
Introduction of BM Central	12
Specification	12
1.3 Product Component	13
Main features of the product	13
Program Composition	13
Hardware Preference	13
System Requirement	14
Installation	15
1. Installation of BM Central	
1.1. Installation in Window XP & Windows 7, 8	16
2. Uninstallation of BM Central	
2.1. Uninstallation in Window XP & Windows 7, 8	22
3. Execute / Close BM Central	24
3.1. Execute BM Central	24
3.2. Close BM Central	26
How to use	27
1. Basic functions of the program	
1.1. BM Central Structure	28
Basic Design of BM Central	28
Main Menu	28

1.2. Main Menu	
	29
Previous / Next Page	29
2, 4, 8, 16,32 Channels	29
Patient Manager	29
Configuration	29
Executes BMReview	29
Exit	29
Date/Time	29
1.3. Client Window	30
Client Information	
Alarm Alert	
Recording Time	
Basic Menu	
Display Waveform	31
Display Parameter	31
Operation of Program	
2.1. Minimization/Maximization of Program Window	32
Screen Maximization	
Screen Minimization	
Screen Return	
Screen Return	
Screen Return	33 <b>34</b>
Screen Return	33 <b>34</b> 
Screen Return	33 34 
Screen Return 2.2. Channel layout and display Normal Mode (2, 4, 8, 16, 32 Channels) Enlarge Mode (4, 8, 16 Channels) Previous / Next Page	
Screen Return 2.2. Channel layout and display Normal Mode (2, 4, 8, 16, 32 Channels) Enlarge Mode (4, 8, 16 Channels) Previous / Next Page	
Screen Return 2.2. Channel layout and display Normal Mode (2, 4, 8, 16, 32 Channels) Enlarge Mode (4, 8, 16 Channels) Previous / Next Page 2.3. To manage patient information	
Screen Return	
Screen Return 2. Channel layout and display Normal Mode (2, 4, 8, 16, 32 Channels) Enlarge Mode (4, 8, 16 Channels) Previous / Next Page 3. To manage patient information To search specific patient To register new patient information	
Screen Return	
Screen Return	
<ul> <li>Screen Return</li></ul>	
Screen Return 2.2. Channel layout and display Normal Mode (2, 4, 8, 16, 32 Channels) Enlarge Mode (4, 8, 16 Channels) Previous / Next Page 2.3. To manage patient information To search specific patient To register new patient information To change the patient information To delete patient information 2.4. Preference Setting General Tab	

	Setting of Multi Monitor	45
	Setting of Screen Locking Function	46
	Setting of Code for Screen Locking Function	47
	Setting of Sound Function in Case of Alarm	49
	Setting of Automatic Printing Function in Case of Alarm	50
	To set up automatic database deletion	51
	Setting of Automatic Recording Function on Equipment On/Off	52
	Setting of Client Window Automatic Shutdown	53
	Setting of HL7 Export Function	54
	Display Language Setting	55
2	.5. Client Window Menu	56
	Admit / Discharge	56
	Record Start/Stop	57
	Alarm Sound On/Off	57
	Client Window Close Setting	58
	Display Setting	58
	NIBP Start/Stop	59
	Synchronization of Equipment Settings	60
BM I	Review	62
1. E	xecute and Close BM Review	63
1. E	xecute and Close BM Review 1. Execute BM Review	63 63
1. E	<b>Execute and Close BM Review</b>	63 63
1. E 1	<b>Execute and Close BM Review</b> <b>1. Execute BM Review</b> Use of BM Review Execute BM Review.	<b>63</b> 63 63
1. E 1,	<b>Execute and Close BM Review 1. Execute BM Review</b> Use of BM Review         Execute BM Review <b>2. Close BM Review</b>	<b>63</b> 63 63 63 63
1. E 1. 1.	Execute and Close BM Review         1. Execute BM Review         Use of BM Review         Execute BM Review         2. Close BM Review         Close BM Review	63 63 63 64 64
1. E 1. 1. 2. B	Execute and Close BM Review         1. Execute BM Review         Use of BM Review         Execute BM Review         2. Close BM Review         Close BM Review         BM Review         SM Review Program Structure	63 63 63 64 64 64
1. E 1. 1. 2. B	Execute and Close BM Review         1. Execute BM Review         Use of BM Review         Execute BM Review         Close BM Review         Close BM Review         SM Review Program Structure         1. BM Review Program Structure	63 63 63 63 64 64 64 65
1. E 1. 1. 2. B	Execute and Close BM Review 1. Execute BM Review Use of BM Review Execute BM Review 2. Close BM Review Close BM Review BM Review Program Structure BM Review S	63 63 63 64 64 64 65 65
1. E 1. 1. 2. B	Execute and Close BM Review         .1. Execute BM Review         Use of BM Review         Execute BM Review         .2. Close BM Review         Close BM Review         .3M Review Program Structure         .1. BM Review Structure         .1. BM Review Structure	63 63 63 63 64 64 65 65 65
1. E 1. 1. 2. B 2.	Execute and Close BM Review         .1. Execute BM Review         Use of BM Review         Execute BM Review         .2. Close BM Review         Close BM Review         .3. Close BM Review         .4. BM Review Program Structure         .5. BM Review Program Structure         .6. BM Review Structure         .7. BM Review Structure	63 63 63 63 64 64 65 65 65 65
1. E 1. 1. 2. B 2. 3. H	Execute and Close BM Review         1. Execute BM Review         Use of BM Review         Execute BM Review         2. Close BM Review         Close BM Review         SM Review Program Structure         I. BM Review Program Structure         BM Review Structure         Wenu         View         Iow to use BM Review Menu	63 63 63 64 64 64 65 65 65 65 65
1. E 1. 1. 2. B 2. 3. H	Execute and Close BM Review         .1. Execute BM Review         Use of BM Review         Execute BM Review         .2. Close BM Review         Close BM Review         .3. Close BM Review         .4. BM Review Program Structure         .5. BM Review Program Structure         .6. BM Review Structure         .7. BM Review Structure	63 63 63 64 64 64 65 65 65 65 65 65 65 65 65 65
1. E 1. 1. 2. B 2. 3. H	Execute and Close BM Review         .1. Execute BM Review         Use of BM Review         Execute BM Review         .2. Close BM Review         Close BM Review         .3. BM Review Program Structure         .4. BM Review Structure         .5. BM Review Structure         .6. BM Review Menu         .7. BM Review Menu         .7. BM Review Menu	63 63 63 63 64 64 65 65 65 65 65 65 66 66

URE	r System(Optional product)	04
ko	r Systom(Ontional product)	QA
	System Setting	83
	Display	82
	BM Review Preference	81
3.5.	BM Review Preference	81
	BM Review Print	80
	BM Review Preview result	80
	BM Review Preview settings	
	BM Review Print preview	
	ECG View	
	Graphic Trend View	
	Tabular Trend View	
	Wave View	
	Alarm View	
	BM Review 5 Views	
	File Delete	
	File Modify	
	File Close	
	File Open	
	BM Review File Control	
	ECG view	
	Graphic Trend	
	Tabular Trend	
	Wave View	
	Alarm View	
	Start/End Position, Previous/Next Page, Previous/Next, Move	
	Configuration	
	Print	
	Print Preview	
	Close Study	

1. Broker System	
1.1. What is a Broker system?	
1.2. Broker System Structure	85

86
86
87
87
87
89
90
91
91
92
93
94
96

#### NOTE

The specifications and functions described in this instruction manual can be modified without notice for product improvement.

# General

#### 1.1 Checkpoints before use

Registered Trademark How to reach us Warranty Period Warning, Caution, Note General Precaution for service environment General Precaution on Electrical Safety Equipment connection, Maintaining and cleaning equipment connection

### 1.2 Outline

Introduction of BM Central Main functions of BM Central

#### **1.3 Product components**

Main features of the product Program Composition Hardware Preference System Requirement

## 1.1 Checkpoints before use

## **Registered Trademarks**

- Microsoft Windows and Windows Logo are trademarks of Microsoft Corporation.

- Mac is a trademark of Apple Corporation.

- HDMI, HDMI Logo and High Definition Multimedia Interface are trademarks of HDMI Licensing LLC.

- Wi-Fi and Wi-Fi logo are trademarks of Wi-Fi association.

- Patient Monitor in the manual is a Bionet product (BM1, BM3, BM5, BM7 etc).
- BM1 is a trademark of Bionet
- BM3 is a trademark of Bionet
- BM5 is a trademark of Bionet
- BM7 is a trademark of Bionet
- BM Central and BM Review are trademarks of Bionet

- Trademarks and product names indicated in the manual are the trademarks of each company.

- Product standard or the contents of the manual may be modified without notice, due to the product improvements.
- Copying the whole or the part of the manual is prohibited unless authorized.
- Use the product in the country where you purchased.
- BM Central use the product provided by our company or the one with recommended specification.

#### How to reach us

BIONET services are always available to you.

The followings are address and phone number for contacting information, services, and product supplies.

However, the service is limited for genuine products only. Service may not be provided for other cases.

Product Supply	Bionet Co., Ltd. – Sales Department
Information	Address #1101 11F E&C Venture Dream Tower3, 38-21, Digital-Ro
	31-Gil, Guro-Gu, Seoul, REPUBLIC OF KOREA (ZIP 152-719)
	Overseas sales dept. TEL: 82-2-6300-6410 (International)
	82-70-7585-6418 (Domestic)
	FAX : 82-2-6499-7789
	E-mail : <u>sales@ebionet.com</u>
	URL : <u>http://www.ebionet.com</u>
Consumables Order	Bionet Co., Ltd. – Sales Department
	TEL : 82-2-6300-6418 (International)
	82-2-6300-6477 (Domestic)
	FAX : 82-2-6499-7789
	E-mail : <u>sales@ebionet.com</u>
	URL : <u>http://www.ebionet.com</u>
	Any Authorized Bionet Distributor
	http://www.bionetus.com/locate-a-dealer
A/S and Technical	Bionet Co., Ltd. – Customer Service Department
Support	TEL : 82-80-801-6410
	FAX : 82-2-6499-7789
	E-mail : <u>service@ebionet.com</u>
Internet	URL : <u>http://www.bio2net.com</u> http://www.ebionet.com

\* In the event of malfunction or failure, contact us along with the model name, serial number, and product name of the product.

#### **Warranty Period**

- This product is manufactured and passed through strict quality control and through inspection.
- · Warranty period is 1 year.
- · We will repair or replace any part of the product that fails due to manufacturer defects.
- This warranty does not apply to any defect caused by improper abuse, misuse or exposure to poor management.

## Warning, Caution, Note

For special emphasis on agreement, terms are defined as listed below in user's manual. Users should operate the equipment according to all the warnings and cautions.

## Warning

To inform that it may cause serious injury or death to the patient, property damage, material losses against the "warning" sign

Caution

To inform that it may cause no harm in life but lead to injury against the "caution" sign

Note

To inform that it is not dangerous but important "note" sign for proper installation, operation, and maintenance of the equipment.

## **General Precaution on Environment**

Be sure to keep at room temperature

## 1.2 Outline

#### Introduction of BM Central

BM Central is a software only for patient monitors which are manufactured by BIONET Co.,Ltd. BM Central can be connected to up to 64 units of patient monitors. This system is able to monitor and save parameters and waveforms. You can retrieve and register patient information, you can have various data by using this system also.

## Specification

Functions	Description	
Monitoring units	Max. 64 units	
Supported device	BM1, BM3, BM5, BM7	
View Mode	2, 4, 8, 16, and 32 Channel View Mode (Supported Dual Monitor)	
Data Save	Max 10 days	
Alarm	Sound and Display	
Communication type	Bidirectional communication with patient monitor	
Reviewer	Alarm View, Wave View, Graphic Trend View, Tabular Trend View, ECG View	
Print and Report	Supported Preview and Print (5 kinds of Report Form)	
Supported Language	English, Italian, French, Spanish, German, Chinese, Russian, Polish, Czech, Turkish, Romanian, Portugues, Bulgarian, Korean	

## **1.3 Product Component**

#### Main features of the product

BM Central Program is software produced by Bionet, and it is used as patient monitor, providing 64 patient monitors maximum. it provides a variety of functions other than monitoring, such as saving files and images, and review functions such as measurement data.

### **Program Composition**

BM Central Program is consisted of three programs. They are, BM Central, which implements server function, BM Review, which can analyze and make a judgment on measurement data, and BM Central Client(Broker), in which the measurement data of server may be checked in each work area.

BM Central Client(Broker) is an optional product.

Туре	Central system	Description
Common	PC Central II software Bionet	BM Central Software CD
Common	L	USB Lock Key (For License)

#### **Hardware Preference**

## System Requirement

Minimum requirement for BM Central is Windows 2000. Installation is available for BM Central CD only.

The minimum requirements of installation of BM Central are as below.

	Minimum Requirement	Recommended Requirement
os	Windows XP	Windows XP (32bit) or Windows 7, 8 (32/64bit)
СРИ	Core2Duo 1.86GHz	Core2Duo 3.0 GHz or more
RAM	2GB	3GB or more
Monitor	19 inches	24 inches or more
Graphic Card	VGA RAM 256 MB 1600 x 900	VGA RAM 512MB or more 1920 x 1080
CD-ROM drive	24X	48X
HDD	500 GB	1 TB or more
LAN	10 Mbps	100 Mbps or more
USB	2 ports	3 ports or more

# Installation

## 1. Installation of BM Central

1.1 Installation in Window XP & Windows 7

### 2. Uninstallation of BM Central

2.1 Uninstallation in Window XP & Windows 7

## 3. Execute / Close BM Central

3.1 Execute BM Central Program3.2 Close BM Central Program

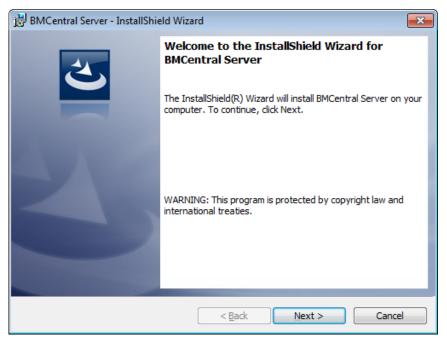
## **1. Installation of BM Central**

## 1.1. Installation in Window XP & Windows 7, 8

- If you were using BM Central, you should back up measurement data and DB data files which manage the data in order to secure the safety of data. After that, stat the installation
- The folder where DB files managing the measurement data are located is in "C:\Program Files\BIONET\BM Central". Find "BEyell.mdb" here in this folder or in the subfolder and back it up.
- 3) For patient measurement data, it is located in the folder designated in user settings. Check the relevant location and back up the folder where data is saved. This backup files and DB files can be placed back to their relevant location, after reinstallation.
- 4) Insert BM Central Installation CD to the CD Drive.
- 5) Open CD-ROM drive and run "BMCentral Setup.exe".
- You should use the management mode when you install or operate the software in Windows 7.

ک BMC	S antral		
Ser v2.0[D		Open	
23] 5	0	Run as administrator	
		Troubleshoot compatibility	
		Share with	•
		Restore previous versions	
		Send to	•
		Cut	
		Сору	
		Paste	
		Create shortcut	
		Delete	
		Rename	
	_	Properties	

7) If window-browser pops up as follows, click "Next"



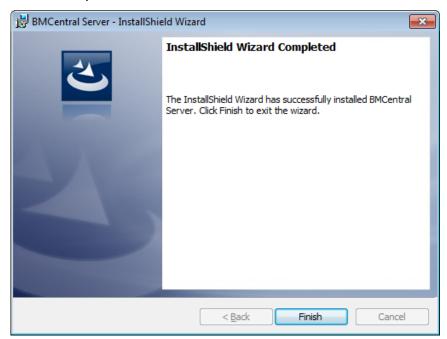
8) Select 'folder' where you want to install BM Central. If you want to install the program to another folder, click "Browse" and select folder.

🛃 BMCenti	ral Server - InstallShield Wizard
	ion Folder xt to install to this folder, or dick Change to install to a different folder.
	Install BMCentral Server to: C:\Program Files (x86)\BIONET\BMCentral\
InstallShield -	< Back Next > Cancel

9) Install the relevant program in the folder which is set above. Click "Next" button.

😸 BMCentral Server - InstallShield Wizard	×
Ready to Install the Program	
The wizard is ready to begin installation.	
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
Current Settings:	
Setup Type:	
Typical	
Destination Folder:	
C:\Program Files (x86)\BIONET\BMCentral\	
User Information:	
Name: SW	
Company:	
InstallShield	_
< <u>B</u> ack SInstall Cancel	

10) If installation is completed, click "Finish".



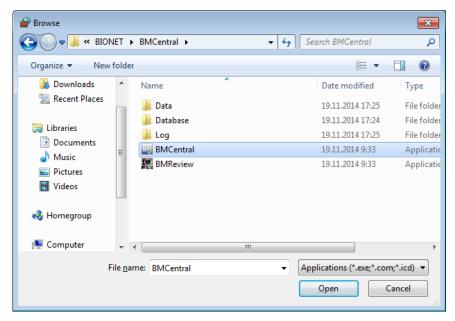
11) If installation is successful, you may see the "BM Central" and "BM Review" Icon.



- 12) After finishing the installation, access right should be given in order to make network communication work in Windows 7 and Windows 8. You can register the program to be allowed in Windows Firewall.
- 13) Enter "System and security" in Control Panel.
- 14) Select "Windows Firewall" in system and security.
- 15) Select "Allowed programs" in Windows Firewall.
- 16) Click "Allow other programs" in allowed programs.

		- • •
C C ▼ C Win ► Allowed Pro ▼ 5 Se	arch Control Panel	Q
Allow programs to communicate through Windov To add, change, or remove allowed programs and ports, click Ch What are the risks of allowing a program to communicate? Allowed programs and features:	ange settings.	nge settings
Name	Home/Work (Private)	Public ^
BMCentral		
BranchCache - Content Retrieval (Uses HTTP)     BranchCache - Hosted Cache Client (Uses HTTPS)     BranchCache - Hosted Cache Server (Uses HTTPS)     BranchCache - Peer Discovery (Uses WSD)     Connect to a Network Projector     Core Networking     Distributed Transaction Coordinator     File and Printer Sharing     HomeGroup     iSCSI Service     III		
	Detai <u>l</u> s	Re <u>m</u> ove er p <u>r</u> ogram
	ОК	Cancel

- 17) In 'Allow other programs' dialogue, select 'search'
- 18) Move to the folder "C:\Program Files\BIONET\BMCentral" where program is located, and select "BMCentral"



19) Select the program and click "add"

Add a Program					
Select the program you want to add, or click Browse to find one that is not listed, and then click OK.					
Programs:					
BM BMCentral					
b Create a System Repair Disc					
lnternet Explorer					
@Internet Explorer (64-bit)					
1 Uninstall					
🗐 Windows DVD Maker					
📰 Windows Fax and Scan					
1 Windows Media Center					
Windows Remote Assistance					
KPS Viewer					
Path: C:\Program Files (x86)\BIONET\BMCentral\BM Browse					
What are the risks of unblocking a program?					
You can choose which network location types to add this program to.					
Network location types Add Cancel					

- 20) If "BM Central Application" is on the allowed program list, it is properly registered. If it is not properly registered, wave may not be seen even if the program is executed and equipment is interlocked.
- 21) Register installed program in allowed program list. If you have backup files before installation, copy it to the same folder and use the system.

#### Caution

Please check for the remaining space, for the data generated while executing the program. While executing BM Central program, measured data and image saving process for interlocking with EMR will occur. In "preference", "system" of BM Central program, select the hard disk folder which has a sufficient amount of remaining space.

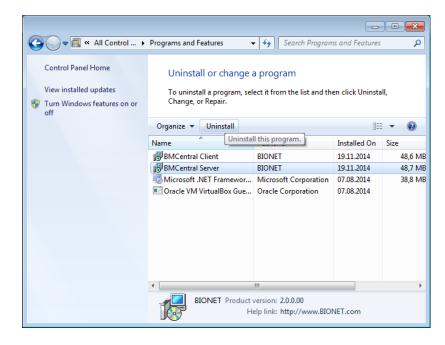
## 2. Uninstallation of BM Central

## 2.1. Uninstallation in Window XP & Windows 7, 8

1) Move to Start->Control Panel->"Program addition/deletion" or "Program and Features"



2) Then, select "BM Central Server". Click "Remove/Modify" or "Uninstall" button.



3) Click "OK" or "Yes" to delete program.

Programs and Features						
Are you sure you want to uninstall BMCentr	al Server?					
In the future, do not show me this dialog box	Yes No					

Caution					
Measured data and images saved for interlocking with EMR, which are occurred while					
executing BM Central program, are not deleted. Decide whether you are going to use the data					
and remove it manually.					

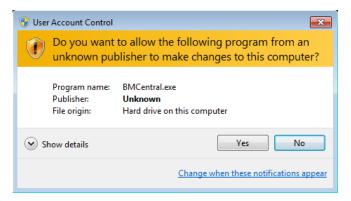
## 3. Execute / Close BM Central

## 3.1. Execute BM Central

1) Double-click "BM Central Server" Icon on Desktop.



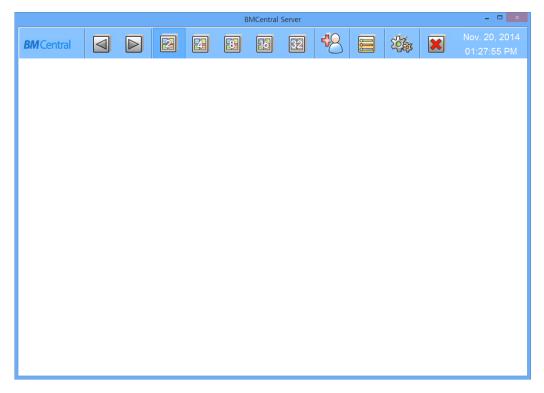
2) When starting the program for the first time, the dialogue below might appear due to the authority problem. Click "Yes", or "Confirm"



3) When starting the program for the first time, the dialogue might appear with a message that blocks some features in the firewall for security purposes. Click "Allow access" button to acquire the authority.



4) This is basic design of BM Central.



#### Note

BM Central provides two types of connecting method, Patient Monitor, and LAN & WIFI. Make a setting for BM Central and Patient Monitor by referring to the manual. If the preference is properly set, the connection will be automatically made and Client Window will be formed.

When BM Central and Patient Monitor are connected, you can monitor the patient data in real time. When you want to save data, set the patient information and you should admit it.

## 3.2. Close BM Central

1) If you want to close BM Central program, click the close button indicated below.

80					BMCentra	I II Server				- 🗆 🗙
<b>BM</b> Cent	ral [	$\Box$	2	23	93	32	48	20Apr	×	ig. 26, 2014 I:32:38 PM

2) When the dialogue for closing the program appears, click "Yes(Y)" button.

BMCentral Server
Exit Program?
Yes <u>N</u> o

3) Program is then closed.

Ca	uti	on
		••••

Before closing BM Central program, it is recommended that you should close the data of realtime measurement for the patient. Data being measured might be deleted.

# How to use

### 1. Basic functions of the program

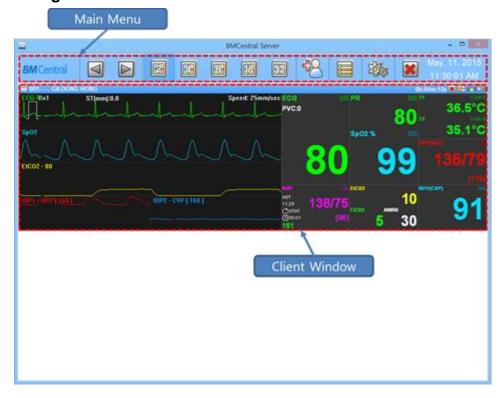
- 1.1 BM Central Structure
  - 1.2 Main Menu
  - 1.3 Client Window

## 2. Operation of Program

- 2.1 Minimization/Maximization of Program Window
  - 2.2 Channel layout and display
  - 2.3 To manage patient information
    - 2.4 Preference Setting
    - 2.5 Client Window Menu

## 1. Basic functions of the program

## 1.1. BM Central Structure Basic Design of BM Central



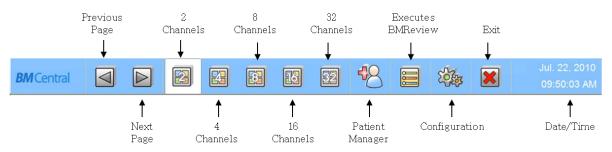
#### Main Menu

The main menu consists of Patient Manager, User Manager, Channel Display for connected clients, Client Window Setting, and Run "Review Program".

#### **Client Window**

The client window automatically opens when the patient monitor is connected to BM Central. One client window displays one patient monitor. You can check the monitor's parameter and waveform in real time, remotely control the monitor settings, and print the information in real time

## 1.2. Main Menu



## **Previous / Next Page**

To shift "channel page"

(In case you can ship page any more, this button will be deactivated.)

## 2, 4, 8, 16,32 Channels

To select number of clients(patient monitor) on screen.

## **Patient Manager**

To register "patient information".

## Configuration

To set up the environment of system.

## **Executes BMReview**

To call up and open the saved file regarding patient information.

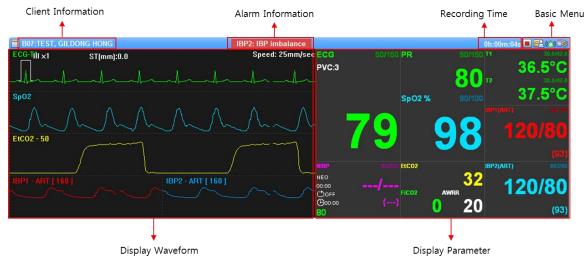
## Exit

To quit the program.

## Date/Time

To show the present date/time.

## **1.3. Client Window**



## **Client Information**

To show patient information from client(patient monitor). (Message format : "Bed number: Unit name, Patient name")

#### **Alarm Alert**

To make sound for attention and show what parameter has problem.

#### **Recording Time**

To show how long the patient information is being saved.

#### **Basic Menu**

8

To Admit/Discharge patient information from each patient monitor.

(After setting up the "Admit", Record start button will be activated.)

: Recording function is not being used.

(Click this button, Recording will start.)



: Recording function is being used. (Click this button, recording will stop.)

Ver. 2.1



(CON): Alarm sound is "ON".

(Click this button, alarm sound function will be deactivated.)



Alarm sound is "OFF".

(Click this button, alarm sound function will be activated.)



To set up the client environment.



: To close the client window

(If the connection with the patient monitor is lost, it is displayed.)

#### **Display Waveform**

To show waveforms (biosignal) from patient.

(If you want to see the other waveforms, click the parameter of which you want to monitor)

#### **Display Parameter**

To display parameters from patient.

\* Display type of waveforms & parameters will depend on the number of channels.

(Specific display will be shown by setting up the client environment.)

## 2. Operation of Program

## 2.1. Minimization/Maximization of Program Window

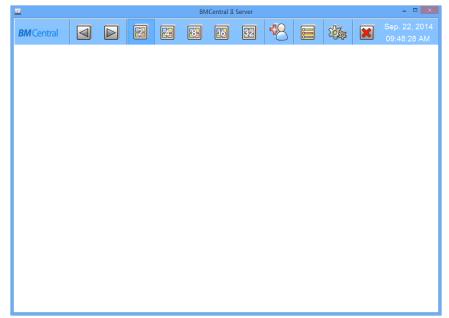
When the BM Central window mode is set as a window mode, the maximization/minimization function can be used.

### **Screen Maximization**

(1) Click on the maximization icon in the top right side of the window.

The window is then adjusted to the maximum size matching the monitor size.

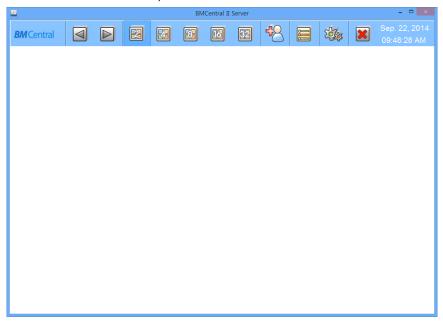
(If you click on the icon again when the window is maximized, it is changed to a general mode in which the adjustment of window size is possible.)



#### **Screen Minimization**

(1) Click on the minimization icon in the top right side of the window.

(If the window minimization function is activated, the tray icon is displayed in the bottom right side and the window disappears from the screen. To change the screen to its original state, use the "Screen Return" function.)



#### Screen Return

(1) If you move the mouse pointer to the tray icon in the bottom right side and then click the left button, the window is displayed on the screen. If you click the mouse again, the window disappears from the screen.

(If you move the mouse pointer to the tray icon and then click the right button, the menu is displayed, and using the "Hide" and "Show" functions on the menu also performs the same functions.)



## 2.2. Channel layout and display

The screen display by channels is divided into a general mode and an enlargement mode.

The general mode is composed of one client window per connected equipment, and the enlargement mode has a maximum of two client windows per connected equipment. The enlargement mode displays all parameters and waveforms. To change channels, click on the "2, 4,

8, 16, 32 Channels" button (

the left mouse button on the caption part of the client window that you want to change, conversion between the enlargement mode and general mode is available.

### Normal Mode (2, 4, 8, 16, 32 Channels)

D BiCentel Linear - C	🖵 BACestal I Sever - 🕫 🔤
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and dery mail	Mahahahahahahahahahaha 80 3664
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80 99 99 80 99 99 80 99 99 80 99 99 80 99 99 80 99 99 99 99 99 99 99 99 99 99 99 99 99	

### Enlarge Mode (4, 8, 16 Channels)



## **Previous / Next Page**

The "Previous and Next buttons( )" appear only when the number of patient monitors connected to BM Central exceeds the number of available client windows. By clicking these buttons, you can check the information of the monitors that are not displayed on the client window.



[Example : 8 monitors connected in 4-CH display]

## 2.3. To manage patient information

To manage patient information, use "Patient Manager" (

If you use Patient Manager, you can add, change, and delete the patient information.

#### To search specific patient

- (1) Click "Patient Manager" of "Main Menu".
- (2) Input the specific patient information in conditions.

\* If you want to find all patient, click "Clear" button and "Find" button as follows.

\* If you want to find all patient including discharged patient , check "Show Discharged Patient List".

- (3) Click "Find" button.
- (4) You may see patient as follows.

				Patient M	anager					
Condition							2	1		
	Patient ID:			Registration D	Date:			1	Add New	
	First Name:			3 Month	n	1 Month			Modify	
	Last Name:			1 Week		1 Day			wouny	
	Gender:	All	✓ 2015-05-14 ✓ ~ 2015-05-14 ✓					Delete		
		Include discharged patient list  Close								
	Cle	Clear			Find 3				Close	
ID	Na	me	Regis	tration Date	Gender	Birthday	Age	Height	Weight	Corr
P01	PA	RK SUNGJIN		05-14	Male					
										4
<										>
*										

## To register new patient information

- (1) Click "Patient Manager" of "Main Menu".
- (2) Click "Add New" button.

			Patient M	anager						
Condition										
	Patient ID	:	Registration (	Date:				Add New	Ľ	
	First Name		3 Month	ı	1 Month					
	Last Name		1 Week		1 Day			Modify		
			✓ 2015-05-	2015-05-14 v ~ 2015-05-14 v				Delete		
	Gender	Gender: All v 2015-05-14 v 2015-05-14 v								
	ci		Find				Close			
	CI CI	lear		inu						
ID		ame	Registration Date		Birthday	Age	Height	Weight	Com	
P01	P/	ARK SUNGJIN	2015-05-14	Male						
<									>	

- (3) Input the patient information (Input the Name in English)
- (4) If you finish registration of patient information, click "O.K".

	Add F	Patient		
Patient ID:	P10	Status:	Admit	~
First Name:	GILDONG	Birthday:	2015-05-13	
Last Name:	HONG	Height:	ст	n
Gender:	Male 🗸	Weight:	k	g
Registration Date:	2015-05-13			
Comment:				^
	<			>
				3
Ok	4	Close	e	
	4			

#### To change the patient information

- (1) Click "Patient Manager" of "Main Menu".
- (2) Find a specific patient information.
- (3) Click "patient information" on the list.
- (4) Click "Modify" button and open "Modify Patient".

				Patient M	anager						
Condition											
	Patient ID:			Registration D	Date:				Add New		
	First Name:			3 Month	۱	1 Month					
	Last Name:		_	1 Week		1 Day			Modify		4
	Gender:		~	2015-05-	14 🗸 ~	2015-05-1	4 🗸		Delete		
		Include discha									
	Cle			ind				Close			
					in a						
ID		me		stration Date		Birthday	Aae	Height	Weight	Corr	
P01	PA	RK SUNGJIN	2015	5-05-14	Male						3
											J
<										>	
											-

- (5) Change the patient information.
- (6) Click "OK" button to save.

	Add I	Patient		
Patient ID:	P10	Status:	Admit 🗸	
First Name:	GILDONG	Birthday:	2015-05-13	
Last Name:	HONG	Height:	cm	
Gender:	Male 🗸	Weight:	kg	
Registration Date:	2015-05-13			
Comment:			^	
	<		>	
Ok	:	Clos	e	C
	6			

## To delete patient information

- (1) Click "Patient Manager" of "Main Menu".
- (2) Input the specific patient information in conditions.
- (3) Click "patient information on the list.
- (4) Click "Delete" button as follows.

				Patient M	lanager					
Condition				Registration I	Date:					
	Patient ID:			3 Mont		1 Mont			Add New	
	First Name:						1		Modify	
	Last Name:			1 Week	c	1 Day				
	Gender:	All	~	2015-05	-14 v ~ [	2015-05	14 🗸		Delete	
		Include di	scharged pa	itient list					Close	
	Cle	ar		F	Find				0030	
ID	Na	me	Reai	stration Date	Gender	Birthday	Age	Height	Weight	Corr
P01	PA	rk sungjin		-05-14	Male					
										_
										_
<										>

## 2.4. Preference Setting

And if you set the environment, use "Configuration" (2000) in the Main Menu.

- If you use "Configuration" you can use the system information check, set the basic layout for the client window, set the alarm sound on/off, and set the unit and HL7 service.
- The environment setting is divided into a "General" setting tab which sets generally, and a "System" setting tab, which sets major system information.

#### **General Tab**

•	Setting
Seneral System	
Unit	
Pressure: mmHg	
	in in its in the interview of the interv
Display	
Save last display mode	Enable Position Fix
	Vertical alignment
Monitor Display Setting	
☑ Window Mode	
Screen Auto-Lock	
Lock	Period: 1 min v Password
Alarm	
Alarm Enable alarm sound	□ Enable alarm print
✓ Enable alarm sound	□Enable alarm print ]Cable Off
✓ Enable alarm sound	
Enable alarm sound Lead fault	
C Enable alarm sound Lead fault Default Client Setting	
Enable alarm sound     Lead fault      Default Client Setting     Alarm Sound	Cable Off
Enable alarm sound     Lead fault  Default Client Setting  Alarm Sound      Enable  4Ch/8Ch Sub Graph	2 Cable Off O Disable 16Ch Main Graph

#### √ Unit

This performs the function of setting the pressure, temperature, height, and weight, which will be displayed on the screen.

#### ✓ Display

This saves the channel value that has been selected last and sets the alignment of the client window that will be displayed on the screen.

#### ✓ Monitor Display Setting

This provides the selection of the monitor on which the user wants to display BM Central S/W. It supports dual monitors.

#### ✓ Screen Auto-Lock

This provides a screen lock function to prevent general users from changing programs arbitrarily. The lock function has a one-time lock and cycle lock. The cycle lock function locks the screen if there is no movement of the keyboard or mouse for a duration the user designates. The initial code can be changed to one that the user wants.

#### ✓ Alarm

It performs the function of powering the alarm sound on/off and sets the option for automatic print in case of alarm. When it powers off the alarm sound, there is no sound, even if the alarm sound icon of the client window is activated.

#### ✓ Default Client Setting

This designates the display basic value for the waveforms and parameters that will be displayed in the client window.

System <sup>*</sup>	Tab
---------------------	-----

	Setting	I		
General System				
Enable Database Auto Dele	ie			
		Maximum:	3 Month	~
Enable Auto Recording				
Enable Auto Recording at	Monitor On/Off			
Enable Auto Recording at	Admit			
Client Window Setting				
Close client window when	disconnected			
		Waiting for:	60 sec	~
HL7 Setting:Try Connecting				
Server IP:	127.0.0.1	Export Interval:	2 min	~
Server Port:	5000	Check ACK:	On	$\vee$
	START	STOP		
System Setting				
	ersion: Server 2.0 [D201505]	.1]		
Data Dir	ectory: D:\cardio ts			
Lan	guage: English [English]	~		
Bionet	BIONET BM Cent Copyright © 2014 http://www.ebion	BIONET Corporation. A	ll rights re	served.
C	k	Cancel		

#### ✓ Enable Auto Recording at Monitor On/Off

When the patient monitor is powered on/off, it performs the function of automatic start/end of recording. (As the Admit is automatically performed, the patient's ID is registered in the form of "Unknown\_" + "Bed Number.")

#### ✓ Enable Database Auto Delete

This performs the function of automatic deletion of the database and files out of a range the user designates.

#### ✓ Client Window Setting

When the patient monitor is abnormally disconnected, it performs the function of time designation for the confirmation of the disconnection and shutdown of the client window when disconnection occurs.

#### ✓ System Setting

This designates the path to save data or changes languages.

## **Display Unit Change**

- (1) Select unit and change.
- (2) Click "OK" button

	Setting
General System	
Unit Pressure: mmHg V Temperature: °C V	Height: cm v ST : mV v Weight: kg v
Display ☑ Save last display mode	☐ Enable Position Fix ✓ Vertical alignment
Monitor Display Setting Window Mode	
Screen Auto-Lock	Period: 1 min v Password
Alarm ✓ Enable alarm sound □ Lead fault ✓ Cable Off	Enable alarm print
Default Client Setting Alarm Sound	) Disable
4Ch/8Ch Sub Graph ECG TRACE2	16Ch Main Graph ▼ ECG TRACE2 ▼
Ok	Cancel

#### **Display Layout Change**

(1) Check the "Enable Position Fix" item to fix the location of the client window with a bed number, and check "Vertical Alignment" if you want a vertical alignment of the client window.

(When the "Enable Position Fix" function is used, the range of "Bed Number" should be fixed as 1~64.)

(2) Click "OK" button

(To release the function, remove check mark and click "OK")

	Setting
General System	
Unit Pressure: mmHg V Temperature: °C V	Height cm v ST : mV v Weight kg v
Display Save last display mode	☐ Enable Position Fix ✔ Vertical alignment
Monitor Display Setting Window Mode	
Screen Auto-Lock	Period: 1 min v Password
Alarm ✓ Enable alarm sound □ Lead fault ✓ Cable Off	Enable alarm print
Default Client Setting Alarm Sound Enable	○ Disable
4Ch/8Ch Sub Graph ECG TRACE2	16Ch Main Graph     ECG TRACE2
Ok	Cancel

#### **Setting of Multi Monitor**

This function sets one or more monitors.

- (1) Select the monitor you want to use. (The "X" symbol means "deactivated.")
- (2) Check the "Window Mode" item when you want to use window mode.
- (3) Click "OK" button

Se	etting
General System	
Enable Auto Recording at Monitor On/Off	
Enable Database Auto Delete	
	Maximum: 3 Month v
Screen Auto-Lock	
Lock	Period: 10 min v Password
HL7 Setting	
Server IP: 192.168.0.0	Export Interval: 4 min 🗸
Server Port: 4500	Check ACK: On 🗸
START	STOP
Monitor Display Setting Window Mode	
Client Window Setting	
□ Close client window when disconnected	Waiting for: 30 sec 🗸
System Setting	01400001
Version: Server 2.0 [D2] Data Directory: D:\Data2	
Language: English [Englis	h] v
Bionet BIONET BM Copyright © a http://www.e	2014 BIONET Corporation. All rights reserved.
Ok 3	Cancel

#### **Setting of Screen Locking Function**

The screen locking function locks the screen automatically if there is no input by the keyboard or mouse for a certain amount of time.

(1) Check "Screen Auto-Lock."

(If you click on the "Lock" button without checking "Screen Auto-Lock," it functions in a one-time lock mode.)

(2) Select the locking cycle at the "Period" item.

(If there is no input by the keyboard or mouse, the screen is locked for the designated period.)

(3) Click "OK" button

(To release the function, remove check mark and click "OK")

	Setting
eneral System	
Unit	
Pressure: mmHg v	Height: cm 🗸 ST : mV
Temperature: °C 🗸 🗸	Weight kg 🗸
Display	
Save last display mode	Enable Position Fix
	✓ Vertical alignment
Monitor Display Setting	
✔ Window Mode	
Screen Auto-Lock	Period: 1 min v Password
Alarm	2
Enable alarm sound	Enable alarm print
□ Lead fault	able Off
Default Client Setting	
Alarm Sound	
Enable	○ Disable
4Ch/8Ch Sub Graph	16Ch Main Graph
ECG TRACE2	♥ ECG TRACE2 ♥
Ok	Cancel

## Setting of Code for Screen Locking Function

(1) Click on the "Password" button.

	Setting
General System	
Unit Pressure: mmHg v Temperature: °C v	Height cm v ST : mV v Weight kg v
Display 🗹 Save last display mode	☐ Enable Position Fix ✓ Vertical alignment
Monitor Display Setting Vindow Mode	
Screen Auto-Lock	Period: 1 min v Password
Alarm Enable alarm sound Lead fault Cable Off	Enable alarm print
Default Client Setting Alarm Sound	O Disable 16Ch Main Graph
ECG TRACE2	Cancel

(2) Once the "Change Password" dialog box is displayed, input the existing code and then input the new code two times and click on the "OK" button. Then the code change is completed.

(The BM Central initial code has no characters.)

Change password					
Enter current password					
Enter new password					
••••					
Re-enter new password					
Ok	Cancel				

#### Setting of Sound Function in Case of Alarm

This provides an alarm sound on/off in case of alarm.

It also provides the function of powering the lead fault on/off and cable off alarm.

(1) Check the "Enable alarm Sound."

And check "Lead Fault" and "Cable Off" items as necessary.

(2) Click "OK" button

(To release the function, remove check mark and click "OK")

	Setting
General System	
Unit Pressure: mmHg V Temperature: °C V	Height: cm v ST : mV v Weight: kg v
Display	
✓ Save last display mode	Enable Position Fix
	✓ Vertical alignment
Monitor Display Setting	
✓ Window Mode	
Screen Auto-Lock	Period: 1 min v Password
Alarm	Enable alarm print
☐ Lead fault	
1	
Default Client Setting	
Enable	○ Disable
4Ch/8Ch Sub Graph	16Ch Main Graph
ECG TRACE2	▼ ECG TRACE2 ▼
Ok	Cancel

#### Setting of Automatic Printing Function in Case of Alarm

In case of alarm, it automatically prints the information on the waveforms and parameters for 10 seconds in total, with 5 seconds each before and after the alarm occurrence.

- (1) Check "Enable alarm print"
- (2) Click "OK" button

(To release the function, remove check mark and click "OK")

		Setting	
eneral System			
System			
Unit			
Pressure: mmHg	~	Height: cm 🗸 🗸	ST : mV 🗸 🗸
Temperature: °C	~	Weight: kg 🗸	
		Noight. kg	
Display			
✓ Save last display mode		Enable Position Fix	
		✓ Vertical alignment	
Monitor Display Setting			
Window Mode			
Screen Auto-Lock			
Lock		Period: 1 min 🗸 🗸	Password
Alarm			7
✓ Enable alarm sound		🗌 Enable alarm print	L
Lead fault	Cable Off	• • • • • • • • • • • • • • • • • • •	1
Default Client Setting			
Alarm Sound			
Enable		🔿 Disable	
4Ch/8Ch Sub Graph		16Ch Main Graph	
ECG TR	ACE2		TRACE2 ¥
		· ECG	INACE2
I I I I I I I I I I I I I I I I I I I			
	Ok	Can	cel

#### To set up automatic database deletion

It automatically deletes the data and database information that's past a certain period.

- (1) Check "Enable Database Auto Delete".
- (2) Select number of month of "Maximum" options.

(For example: if you select "1 Month", all data will be deleted except for 1 month before from now.)

- (3) Click "OK" button
- (To release the function, remove check mark and click "OK")

Setting	
General System	
✓Enable Database Auto Delete	Maximum: 3 Month
Enable Auto Recording	2
Enable Auto Recording at Monitor On/Off	
Enable Auto Recording at Admit	
Client Window Setting	
Close client window when disconnected	
	Waiting for: 60 sec v
Server IP:         127 . 0 . 0 . 1         Exp           Server Port:         5000         START         STC	port Interval: 2 min v Check ACK: On v
System Setting	
Version: Server 2.0 [D20150511]	
Data Directory: D:\Cardio ts	
Language: English [English] 🗸 🗸	
BIONET BM Central II Copyright © 2014 BIONET Cor http://www.ebionet.com	poration. All rights reserved.
Ok 3	Cancel

#### Setting of Automatic Recording Function on Equipment On/Off

When powering equipment on/off, this is used to start/stop the recording without the admit process. Because the admit process is omitted, the patient's ID for saved study information is stored in the form of "Unknown\_BedNumber."

A specific patient's ID can be changed by using the "File Modify" function in BM Review after saving. Note that the function is performed only when a bed number is input in the equipment.

(1) Check "Enable Auto Recording at Monitor On/Off."

(After the function is applied, the recording start/stop button becomes disabled.)

(2) Click "OK" button

(To release the function, remove check mark and click "OK")

	Setting
General System	1
Enable Data	abase Auto Delete
	Maximum: 3 Month v
Enable Auto Re	ecording
✓ Enable Aut	to Recording at Monitor On/Off
Enable Aut	to Recording at Admit
Client Window	r Setting t window when disconnected
	Waiting for: 60 sec
-HL7 Setting:Try	/ Connecting
	Server IP:         127.0.0.1         Export Interval:         2 min         v
	Server Port: 5000 Check ACK: On v
	START STOP
Custom Catting	
-System Setting	Version: Server 2.0 [D20150511]
	Data Directory: D:#cardio ts
	Language: English [English]
-	BIONET BM Central II Copyright © 2014 BIONET Corporation. All rights reserved.
Bio	net / http://www.ebionet.com
	Ok Cancel
	2

#### Setting of Client Window Automatic Shutdown

If a certain amount of time passes after an abnormal disconnection, it shuts down the client window automatically.

- (1) Check the "Close client window when disconnected" item.
- (2) Set the disconnection-detecting time in the "Waiting for" item.
- (3) Click "OK" button

Setting
General System
Enable Database Auto Delete     Maximum: 3 Month
Enable Auto Recording  Enable Auto Recording at Monitor On/Off  Enable Auto Recording at Admit
Client Window Setting  Close client window when disconnected  Waiting for: 60 sec
HL7 Setting Server IP: 127.0.0.1 Server Port: 5000 Check ACK: On V START STOP
System Setting Version: Server 2.0 [D20150511] Data Directory: D:\#cardio ts Language: English [English] v
BIONET BM Central II Copyright © 2014 BIONET Corporation. All rights reserved. http://www.ebionet.com
Ok Cancel

#### Setting of HL7 Export Function

This sends out data in the HL7 format to an external EMR server on a cycle.

(1) Input the "Server IP" and "Port" of the EMR server and select the ACK message confirmation function for data export cycle with "Check ACK" in "Export Interval."

(2) Click on the "Start" button.

(If you click on "Stop," the function is cancelled.)

Setting	
General System	
Enable Database Auto Delete     Maximum:	3 Month
Enable Auto Recording	
Enable Auto Recording at Admit     Enable Auto Recording at Admit	
Client Window Setting Close client window when disconnected	
Waiting for:	60 sec 🗸 🗸
HL7 Setting	
Server IP: 127.0.0.1 Export Interval:	2 min 🗸
Server Port: 5000 Check ACK:	
START STOP	1
2	
System Setting	
Version: Server 2.0 [D20150511]	
Data Directory: D:\#cardio ts	
Language: English [English] 🗸	
BIONET BM Central II Copyright © 2014 BIONET Corporation. A http://www.ebionet.com	ll rights reserved.
Ok Cancel	

## **Display Language Setting**

- (1) Select "Language".
- (2) Click "OK" button
- (3) The new selected language will be applied after restarting the BMCentral.

Setting	
General System	
✓ Enable Database Auto Delete Maximum:	3 Month
Enable Auto Recording	
Enable Auto Recording at Monitor On/Off	
Enable Auto Recording at Admit	
Client Window Setting	
Close client window when disconnected Waiting for:	60 sec 🗸
HL7 Setting Server IP: 127.0.0.1 Export Interval:	2 min 🗸
Server Port: 5000 Check ACK:	On 🗸
START STOP	
System Setting Version: Server 2.0 [D20150511]	
Data Directory: D:\Data	
Language: English [English]	
BIONET BM Central II	1
Bionet Copyright © 2014 BIONET Corporation. A http://www.ebionet.com	ll rights reserved.
Ok Cancel	
2	

## 2.5. Client Window Menu Admit / Discharge

This is the function for connection/disconnection between the equipment and the information of registered patients.

(1) Click Admit/Discharge Icon(E) from "client window menu".

(2) Input "Patient Information" and click "Find" button.

(If you want to see all registered patient information, click "Clear" button, and "Find" button. Then, you may see all registered patient information as follows.)

Find patient information of which you want to admit from the list and then, select it.

(3) Click "Admit" button.

(When you want to discharge it, click on the "Discharge" button.)

				Admit Pa	atient					
Condition										
	Patient ID	): P01		Registration D	)ate:			,	Add New	
	First Name	e:		3 Month		1 Month				
	Last Name			1 Week		1 Day			Modify	
	Gender		~	2015-05-:	14 🗸 ~ [	2015-05-14	4 🗸		Delete	
	Gender	Include dischar		tient list						
	C	lear			ind				Close	
					1					
ID		ame		tration Date		Birthday	Age	Height	Weight	Corr
P01	P/	ARK SUNGJIN	2015-	-05-14	Male					2
									_	
<ul> <li>Device Inform</li> </ul>										>
Device Inform						Disabas			Admit	
	Unit Nam	ie:		Ac	lmit Status	: Discharged	<b>,</b>			- 3
	Bed Numbe	er:		Mo	odel Name	E BM7		1	Discharge	

#### **Record Start/Stop**

This is the function of storing waveforms and parameters received from the equipment in the file and database.

(1) Click Record Start Icon(**I**) from "client window menu".

(Note: Recording function is only available in "Admit condition".)

If you click on the Record Stop Icon (I) when you want to stop the recording, the recording stops.



<The screen that is not being recorded>



<The screen that is being recorded>

## Alarm Sound On/Off

This is the alarm sound function when an alarm is received from the equipment.

(1) Click Alarm Sound Disable Icon( k) from "client window menu".

(If you click on the Alarm Sound Activated State Icon ()) when you want to deactivate the alarm sound, the alarm sound does not occur.)



< Screen with deactivated alarm sound>



< Screen with activated alarm sound>

#### **Client Window Close Setting**

This function shuts down the client window when the connection with the equipment is lost. It is displayed on the screen only when the connection was lost.

(1) Click Close Icon() from "client window menu".

(In the Enlarge Mode, it operates with the function of closing the Enlarge window, not shutting down.)

#### **Display Setting**

This function sets the display method of the waveforms and parameters in the client window.

(1) Click on the Client Setting Icon (<sup>23</sup>) in the "Client Window Menu."

(2) When the "Client Window" dialog box is displayed on the screen, change the information that will be displayed on the screen in the display area.

(If you click on "Default" button, it is reset to the default values.)

(3) Click "OK" button

		(	Client Setting (1.3.0) [IP:127.0.0.1]	
l	Display			Device Setting
			Default	Admit Info
	Alarm Sound:	Enable 🗸	4Ch/8Ch Sub Graph	Alarm
	Sweep Speed:	25mm/sec ∨	ECG TRACE2 V	Monitor
	ECG TRACE1:	I v	16Ch Main Graph	User Service
	ECG TRACE2:	II v	ECG TRACE2 V	
	ECG Size:	10mm/mV v		
	ECG Mode:	1CH VIEW 🗸 🗸	IBP1 Scale: 160 V	NIBP Start/Stop
	RR Size:	x 2 🗸 🗸	IBP2 Scale: 160 v	NIBP STAT Start/Stop
	EtCO2 Scale:	80 🗸	IBP3 Scale: 160 V	
	Multigas Scale:	80 🗸	IBP4 Scale: 160 V	
				2
		Ok	Can	

#### **NIBP Start/Stop**

This is the function for starting and stopping the NIBP of the equipment remotely. (It only supports Protocol version 1.2.0 and higher.)

(1) Click Client Setting Icon(<sup>28)</sup>) from "client window menu".

(2) Click "NIBP GO/STOP" button.

(The handling method is a toggle type which stops the NIBP function by pressing the button during running state and starts the NIBP function by pressing the button during stop state.)

	(	lient Setting (1.3.0) [IP:127.0.0.1]	
Display			Device Setting
		Default	Admit Info
Alarm Sound:	Enable 🗸	4Ch/8Ch Sub Graph	Alarm
Sweep Speed:	25mm/sec ∨	ECG TRACE2 V	Monitor
ECG TRACE1:	I v	16Ch Main Graph	User Service
ECG TRACE2:	II v	ECG TRACE2 V	
ECG Size:	10mm/mV v		
ECG Mode:	1CH VIEW V	IBP1 Scale: 160 V	NIBP Start/Stop
RR Size:	x 2 🗸 🗸	IBP2 Scale: 160 V	
EtCO2 Scale:	80 🗸	IBP3 Scale: 160 🗸	
Multigas Scale:	80 🗸	IBP4 Scale: 160 🗸	
	Ok	Can	cel

#### Synchronization of Equipment Settings

This function sets or checks the setting information of the equipment remotely.

- (1) Click Client Setting Icon(<sup>1</sup>/<sup>2</sup>) from "client window menu".
- (2) Once the "Client Setting" dialog box is displayed, click on the button for the information you want to change.

(Below is an example of changing the user service.)

(3) After changing information, click on the "Send" button to complete the change.

Display		Device Setting
	Default	Admit Info
Alarm Sound: Enable 🗸	4Ch/8Ch Sub Graph	Alarm
Sweep Speed: 25mm/sec 🗸	ECG TRACE2 V	Monitor
ECG TRACE1: I 🗸 🗸	16Ch Main Graph	User Service
ECG TRACE2: II 🗸 🗸	ECG TRACE2 V	
ECG Size: 10mm/mV 🗸		
ECG Mode: 1CH VIEW 🗸	IBP1 Scale: 160 V	NIBP Start/Stop
RR Size: x 2 🗸	IBP2 Scale: 160 V	NIBP STAT Start/Stop
EtCO2 Scale: 80 V	IBP3 Scale: 160 V	
Multigas Scale: 80 🗸	IBP4 Scale: 160 V	
Ok	Cancel	

User Servi	ce ×
	D. 15
Model Name:	
Version:	0 ~ 00 ~
Unit Name:	ICU
Bed Number:	001
Ac Filter:	50 Hz 🗸
Date:	2000 ~ 1 ~ 1 ~
Time:	0 ~ 0 ~
Send 3	Close

The items that can be changed and checked for each button are as follows. (Due to the characteristics of each equipment, some functions can be deactivated.)

- A. Admit Info
- Patient ID, Name, Gender, Birthday, Age, Height, Weight
- B. Alarm
- Alarm Level, Alarm Range
- C. Monitor
- Parameter On/Off, Parameter Display Info.
- D. User Service
- Device Type, Device Version, Date/Time, Unit name, Bed number, Filter

# **BM** Review

## 1. Execute / Close BM Review

- 1.1 Execute BM Review
- 1.2 Close BM Review

#### 2. BM Review Program structure

2.1 BM Review Program structure

#### 3. How to use BM Review Menu

- 3.1 BM Review Menu
- 3.2 BM Review File Control
  - 3.3 BM Review 5 Views
- 3.4 BM Review Print & Preview
  - 3.5 BM Review Preferences

## **1. Execute and Close BM Review**

## 1.1. Execute BM Review Use of BM Review

BM Review is the program for the review and analysis of patient's data measured through BM Central. BM Review provides methods for analyzing the data stored in BM Central in various ways for a maximum of 10 days. Also, it provides the function of printing the analyzed data according to various options.

#### **Execute BM Review**

BM Review can be executed in two ways. First is to double-click the image con on Desktop.



Second is to click "BM Review" Icon in Main Menu of BM Central. You can click the icon marked on the image below.



			BMRevie	ew				_	
			$\triangleright$			M 🗐	$\checkmark$		
Search		Study Id	Unit	Patient Id	Name	Gender	Age	Date Time	
1 Day	1 Week	20150507162637		Padencia	RYU JIN	Female	Age	2015-05-07 16:26:37	
		20150507162619		P00	RYU JIN	Female		2015-05-07 16:26:19	
1 Month	3 Month	20150507102019		P00	RYU JIN	Female		2015-05-07 14:13:14	
		20150507141213		P00	RYU JIN	Female		2015-05-07 14:12:13	
Start Dat	e: 2015-05-14	20150507141142		P00	RYU JIN	Female		2015-05-07 14:11:42	
		20150507141126		P00	RYU JIN	Female		2015-05-07 14:11:26	
End Dat	e: 2015-05-14	20150507140947		P00	RYU JIN	Female		2015-05-07 14:09:47	
		20150507140926		P00	RYU JIN	Female		2015-05-07 14:09:26	
Patient I	d:	20150507140737		P00	RYU JIN	Female		2015-05-07 14:07:37	
		20150507140639		P00	RYU JIN	Female		2015-05-07 14:06:39	
Nam	le:	20150507112401		P00	RYU JIN	Female		2015-05-07 11:24:01	
Ag	e:								
Gende	er: All 🗸								
Study I	d:								
Unit Nam	e:								
✓ Include discharged pat	tient list								
Reset	Search								
Command									
	cess								
Acc									
Mo	dify	<							3
Del	lete		D [82%] -	Total: 136.7 G	, Used: 112.4	G, Avaliable:	24.3 G		1

Once the program is executed, the window below appears.

## 1.2. Close BM Review Close BM Review

To close BM Review program, click "Exit" icon marked on the image below, and the program will be closed.



## 2. BM Review Program Structure

## 2.1. BM Review Program Structure BM Review Structure

BM Review consists of 2 main parts, as indicated in the image below.

3		Q I			M			©Þ		Review	N	6	ph.	▦		♥	×			-	_	Meni
Searc	h						Study	tel	Unit	Datio	nt Id	Name			Gende	r Age		ate Time				
	1 Day			1 Wee	k			318133	Unit	P01	inc to	KIM S			Male	Age		-08-18 13:	3	i –		
	1 Mont	•		3 Mon	t la		20140	318133		P01		KIM S	UJIN		Male		2014	-08-18 13:	3			
	1 Monu			5 MON	ui		20140	307101		P01		KIM S	UJIN		Male		2014	-08-07 10:	1	i –		
		Start Dat	e:	2014-09-	-23	•	-															
		End Dat	e:	2014-09-	-23	•																
		Patient I	d:				-												-			
		Nam	e:				-															
		Ag					-														_	
		Gende		I		~														-	_	View
		Study I																			L	
		Unit Nam	e:																			
	Reset			Searc	h																	
Com	nand																					
		Acc	ess																			
		Mo	dify																			
		Del	ete				<		D [4	2%) - To	ital: 136.7	G, Used	58.1 G,	Avaliable	: 78.7 G				> 3/4			

#### Menu

Menu is a major menu in BM Review, and it provides various functions such as file open/close, print preview, print, navigator, select view, preference, and program closing.

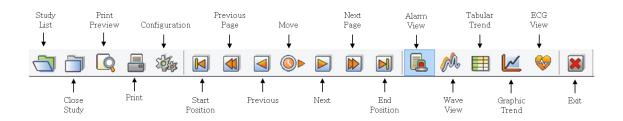
#### View

The view area is composed of 6 types (Study Search, Alarm, Wave, Tabular Trend, Graphic Trend, and ECG View).

## 3. How to use BM Review Menu

## 3.1. BM Review Menu BM Review Menu

Main Menu is a major menu in BM Review, and it provides various functions such as file open/close, print, print preview, navigator, select view, preference, and program closing.



## Study List

To call up the save list from DB.

## **Close Study**

To close the called-up-files.

## **Print Preview**

To check out the layout before printing out.

## Print

To print out the files.

## Configuration

To set up the environment of Reviewer.

#### Start/End Position, Previous/Next Page, Previous/Next, Move

To shift the present record data to back and forth.

#### **Alarm View**

To track alarm, graphs , parameters when alarm sounds happens.

#### **Wave View**

To track graphs, parameters.

#### **Tabular Trend**

To track parameters and alarms on the tabular trend.

## **Graphic Trend**

To track the trend of parameters as graphs

## **ECG** View

To track ECG waveform, HR Trend.

#### Exit

Quit reviewer.

# 3.2. BM Review File Control File Open

This is the function for reading a file after searching for stored files.

- (1) Click "Study List" button.
- (2) Search the list.

\* If you want to find a specific information, input a specific information and click and click "Search" button.

\* If you want to find all files, click "Reset" button and "Search" button as follows.

(3) Find a file among the list and select the file.

(4) Click "Access" button and open the file.

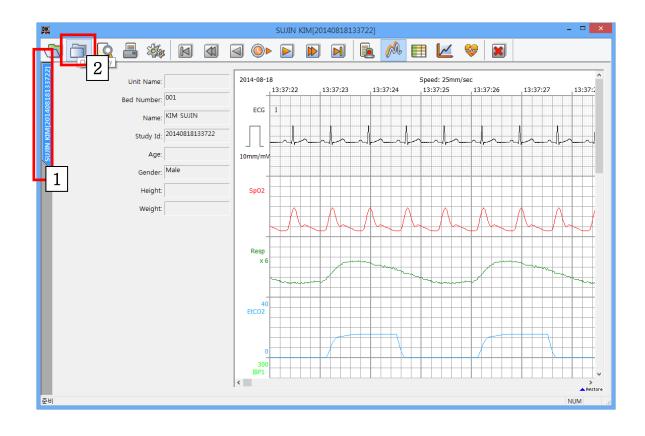
(If you also double-click the left button on Study data, the file will open.)

				BMRevi	ew				_ [	
קק 🛛 🗛			Image: A transmission of the second secon	$\square$			M ⊞	$\sim$	<b>N</b>	
Search			Study Id	Unit	Patient Id	Name	Gender	Age	Date Time	D
1 Day	1 Week		20150507162637		P00	RYU JIN	Female	2	2015-05-07 16:26:37	_
1 Month	3 Month		20150507162619 20150507141314		P00 P00	RYU JIN RYU JIN	Female Female		2015-05-07 16:26:19 2015-05-07 14:13:14	_
Start Date:	2015-05-14		20150507141213		P00	RYU JIN	Female		2015-05-07 14:12:13	0
Start Date:	2013-03-14	<u> </u>	20150507141142		P00	RYU JIN	Female		2015-05-07 14:11:42	
End Date:	2015-05-14	-	20150507141126		P00	RYU JIN	Female		2015-05-07 14:11:26	
			20150507140947		P00	RYU JIN	Female		2015-05-07 14:09:47	
Patient Id:			20150507140926		P00	RYU JIN RYU JIN	Female Female		2015-05-07 14:09:26	
		-1	20150507140737 20150507140639		P00 P00	RYU JIN	Female		2015-05-07 14:07:37 2015-05-07 14:06:39	
Name:			20150507112401		P00 P00	RYU JIN	Female		2015-05-07 11:24:01	
Age:			20130307112401		FUU	KTO JIN	remaie		2013-03-07 11.24.01	
Gender:	All	~								
Study Id:										
Unit Name:										
☑ Include discharged patier	nt list									
Reset	Search									
Command		- 2	2							
Acces	s									
Modif		- 4								
			<							>
Delete	9			D [82%]	- Total: 136.7	G, Used: 11:	2.4 G, Avaliable:	24.3 G		11
1										

#### **File Close**

This is the function for closing the open files.

- (1) Select the file of which you want to close as below.
- (2) Click "Close Study" button.

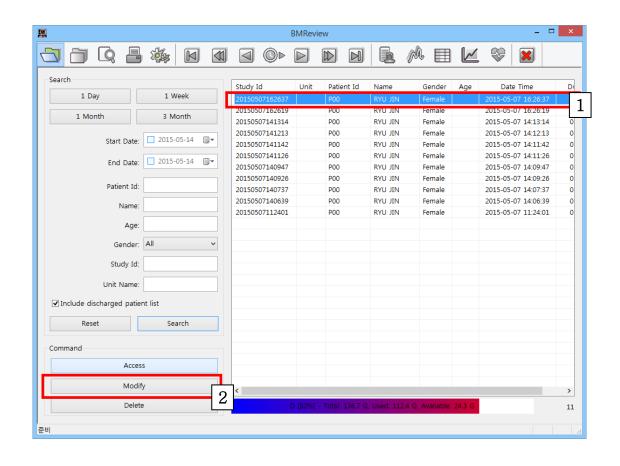


#### **File Modify**

This is the function for changing the information in a selected file (Patient's information).

(1) Select the file of which you want to modify as below.

(2) Click "Modify" button.



	Modify Study	Information	
Old			
	Patient Id:	P01	
	Study Id:	20140912140654	
	Recording Time:	2014-09-12 14:06:54	
New			
	Patient Id:		
	Last Name:		
	First Name:		
	Ok	Cancel	

(3) "When the "Modify Study Information" dialog box is displayed, click on the "..." button.

(4) When the "Select Patient" dialog box is displayed, select the patient information you want to change after searching.

(5) Complete the patient selection by clicking on the "OK" button.

	Sel	ect Patient	t		×
Search					
	Patient Id: P02 Last Name:			Search	
Patient Id	Name	Gender	Aae	Registration Date	
P02	KIM SUJIN	Male	115	2014-09-15 11:21:19	-4
<	Ok 5			Cancel	>

(6) When the "Modify Study Information" dialog box is displayed, complete the change by clicking on the "OK" button.

Modify Study	Information
Old	
Patient Id:	P01
Study Id:	20140912140654
Recording Time:	2014-09-12 14:06:54
New	
Patient Id:	P02
Last Name:	KIM
First Name:	SUJIN
Ok 6	Cancel

#### **File Delete**

This is the function for deleting the selected file's information.

- (1) Select the file of which you want to delete as below.
- (2) Click "Delete" button.

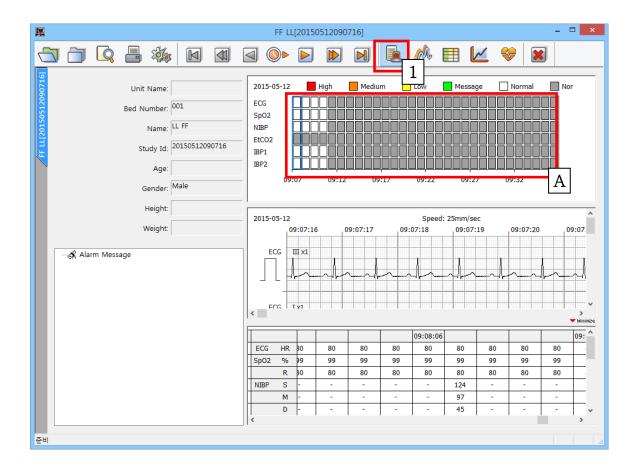
(Note: once you delete file, you can not open that file any more.)

BMReview – 🗆 🗙								
					M ⊞		₽ 🔀	
Search		Study Id	Unit Patient	Tel Norre	Candar	4	Date Time	D
1 Day	1 Week	20150507162637	Patient Patient	Id Name RYU JIN	Gender Female	Age 20	Date Time 15-05-07 16:26:37	
		20150507162619	P00	RYU JIN	Female		15-05-07 16:26:19	
1 Month	3 Month	20150507141314	POO	RYU JIN	Female		15-05-07 14:13:14	
		20150507141213	POO	RYU JIN	Female	20	15-05-07 14:12:13	0
Start Date:	2015-05-14	20150507141142	POO	RYU JIN	Female	20	15-05-07 14:11:42	0
		20150507141126	POO	RYU JIN	Female	20	15-05-07 14:11:26	0
End Date:	2015-05-14	20150507140947	POO	RYU JIN	Female	20	15-05-07 14:09:47	0
		20150507140926	P00	RYU JIN	Female	20	15-05-07 14:09:26	0
Patient Id:		20150507140737	POO	RYU JIN	Female	20	15-05-07 14:07:37	0
Name:		20150507140639	POO	RYU JIN	Female	20	15-05-07 14:06:39	0
Name.		20150507112401	POO	RYU JIN	Female	20	15-05-07 11:24:01	. 0
Age:								
Gender:	All 🗸							
Study Id:								
Unit Name:								
✓ Include discharged patie	ent list							
Reset	Search	-						
Command								
Acces	ss							
Modi	fy	<						>
Delet	to		D [82%] - Total: 13	67. C. Usodi 112	A.C. Avaliables	24.2.0		
Delet	2		0 [82%] - Total: 13	0.7 G, Osed. 112	.4 G, Available.	24.5 0		11

# 3.3. BM Review 5 Views Alarm View

This is the view that is easily used when the stored data are mainly analyzed by alarm. The screen is composed of alarm, waveform, and parameter information.

(1) Click "Alarm view" button.



**A**. It can show alarm state of each parameters. Click "red square", then you can track and shift the alarm state every minute. (Please see above figure.)

#### **Wave View**

This is the view that is easily used when the stored data are mainly analyzed by waveform. The screen is composed of only waveform information.

(1) Click "Wave view" button.



#### **Tabular Trend View**

This is the view that is easily used when the stored data are mainly analyzed by parameter. The screen is composed of parameter and alarm information in a table form.

#### (1) Click "Tabular Trend" button.

					FF LL	.[20150	)51209(	0716]			_					-	
	I 🗇 🔦	📕 🎄			⊴ ⊙⊳			M		<u> </u>	Â		<u>/</u>	<del>&amp;</del>	×		
FF LL[20150512090716]					Time		Sp	02		NIBP	_					TBP1	[ART] ^
60		Unit Name:			2015-05-12	ECG	%	R	S	M	D	AWRR	C02	FiCO2	S	M	D
512(		Bed Number:	001		09:07:16	80	99	80	-	-	-	-	-	-	128	92	41
12					09:07:17	80	99	80	-	-	-	-	-	-	142	89	47
20		Name:			09:07:18	80	99	80	-	-	-	-	-	-	146	82	43
E.		Study Id:	201505120	90716	09:07:19	80	99	80	-	-	-	-	-	-	153	80	79
		,			09:07:20	80	99	80	-	-	-	-	-	-	147	113	70
		Age:			09:07:21	80	99	80	-	-	-	-	-	-	120	92	60
		Gender:	Male		09:07:22	80	99	80	-	-	-	-	-	-	148	117	70
					09:07:23	80	99	80	-	-	-	-	-	-	138	89	51
		Height:			09:07:24	80	99	80	-	-	-	-	-	-	136	83	47
		Weight:			09:07:25	80	99	80	-	-	-	-	-	-	155	112	71
		weight.			09:07:26	80	99	80	-	-	-	-	-	-	144	108	50
					09:07:27	80	99	80	-	-	-	-	-	-	134	112	40
					09:07:28	80	99	80	-	-	-	-	-	-	141	100	48
					09:07:29	80	99	80	-	-	-	-	-	-	157	94	53
					09:07:30	80	99	80	-	-	-	-	-	-	132	92	77
					09:07:31	80 80	99 99	80 80	-	-	-	-	-	-	134 151	87 114	47
	Time Period:				09:07:32	80	99	80 80	-	-	-	-	-	-	151	95	57
					09:07:34	80	99	80	155	111	70	-	-	-	131	111	40
	1 sec	~			09:07:35	80	99	80	-			-	-	-	155	90	50
			A		09:07:36	80	99	80	-	-	-	-	-	-	121	100	55
		Ŀ	11		09:07:37	80	99	80	-	-	-	-	-	-	132	83	72
					09:07:38	80	99	80	-	-	-	-	-	-	145	85	63
					09:07:39	80	99	80	-	-	-	-	-	-	121	112	56
					09:07:40	80	99	80	-	-	-	-	-	-	142	91	79
					00.07.41	on	00	on	-	-	-	۱.	-	l .	100	115	6A ¥
					×												,
준비																	

- A. If you click "Time Period", you can change the time interval.
  - (1 Sec, 10 Sec, 30 Sec, 1 Min, 5 Min, 10 Min)

#### **Graphic Trend View**

This is the view that is easily used when the stored data are mainly analyzed by parameter. The screen is composed of parameter information in a graph form.

(1) Click "Graphic Trend" button.

<b>M</b>				FF LL[	20150512	0907	16]					-	
	- 🍇			⊲ ⊙⊳					M			×	
		1		[					-		1		
17090	Unit Name:			ECG-HR		300							
В	ed Number:	001				0							
в 11/20150512090716	Name:	L FF		SpO2%		100							
	Study Id: 2	2015051209	90716	3p02%		0							
	Age:			SpO2-R		200							
	Gender:	Male		Spoz K		0							
				NIBP		300							
	Height					0	± Ŧ	ĪŦ	Ŧ				
	Weight:			AWRR		150							
						0							
				C02		100							
						0							
Time Length:				FiCO2		100							
10 min	~					0							
	- A			IBP1		300		V-MMILIKANAR-AN	oli/otata				
	[	J		ART				pharman has					
				IBP2 CVP		160	i katawa kalend	hanaya ya ka	haya vitaliyi				
				2015-05-12		0	09:07:1	6 09	:09:16	09:11:16	09:13:16	09:1	5:16
준비													

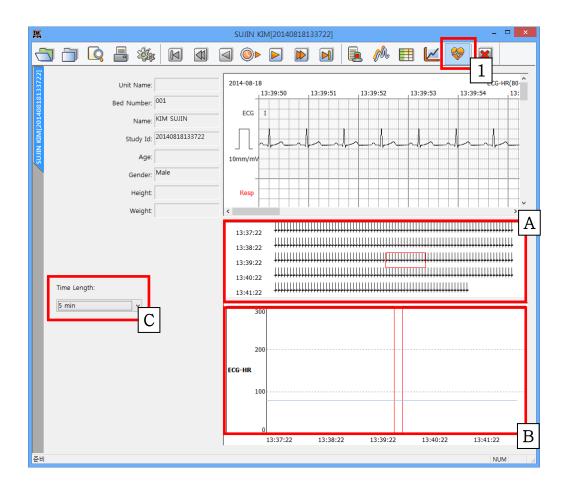
- A. If you click "Time Length", you can change time interval.
  - ( 10 Min, 30 Min, 60 Min, 90 Min, 3 hour, 6 hour )

#### **ECG** View

This is the view that is easily used when the stored data are mainly analyzed by ECG.

The screen is composed of waveform and HR Trend information.

(1) Click "ECG View" button.



A,B. You can see the waveform and HR information in the time zone you want by clicking on the ECG and HR Trend area.

If you want to print certain section, drag the area that you want to print with mouse in 'A' box then click print button.

C. If you click "Time Length", you can change time interval.

( 5 Min, 10 Min, 30 Min, 60 Min)

# 3.4. BM Review Print preview BM Review Preview settings

It provides a function for previewing measurement data of parameter and trend information on the current window, and patient information. If you click "Preview" button marked on the image below, dialogue will appear.



The image below is a dialogue for print preview. Each option can be used as followings.

(The bottom area of the selection dialog box is displayed only in "Wave View" and "Tabular Trend.")

	PRINT	×
Print Range	<ul> <li>Selection</li> </ul>	
Selection	Start End 2014-09-11 16:00:22 ~ 2014-09-11 16:03:19	
	Ok Cancel	

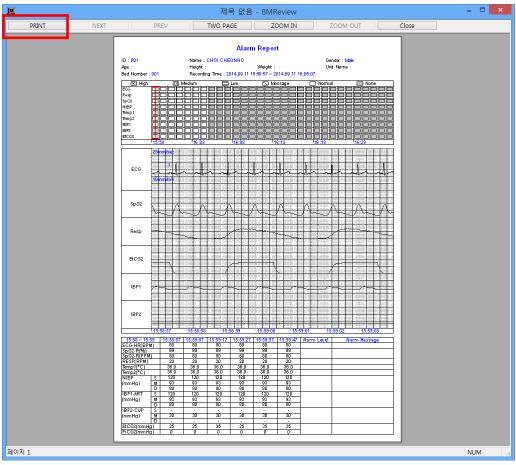
Option details of print dialog box

- Current: It shows the data area currently displayed on the screen.
- Selection: It provides the function of selecting the print range for the user. The print area can be selected by the second unit.

#### **BM Review Preview result**

The below image is the preview screen of the "Alarm View."

If you click on the "Print" button in the preview screen, you can print.



<Alarm View Preview>

#### **BM Review Print**

This provides the function of previewing the printing of the alarm, parameter, waveform, and patient's information on the current screen according to the selected option. If you click on the "Print" icon marked in the menu below, the dialog box is printed out. The setting area is the same as the preview screen.



## 3.5. BM Review Preference BM Review Preference

To load the dialogue for setting screen output, color and system of BM Review, click the icon marked in the image below.



The preference dialogue for BM Review is separated into "Display" and "System Setting"

	Graph Properties		×			
Visible Setting	Display					
✓ ECG	Show Inner Grid		Default			
SpO2	Show Label Always					
✓ NIBP	Show Time Always		Background			
TEMP	Line Tickness:	1 ~	Grid 🔻			
✓ Resp	Sweep Speed:	25mm/sec ∨	Text 🗸			
EtCO2	View Mode:	1CH VIEW V	Inner 💌			
✓ IBP1	ECG Gain:	10mm/mV v	ECG 🔽			
✓ IBP2	Ecg Trace1:	III ~	SpO2			
IBP3	Ecg Trace2:	III ~	Resp 🔽			
IBP4	Resp Zoom:	x 6 🗸				
	EtCO2 Scale:	40 ~	EtCO2 🗸			
CO Multigas	IBP1 Scale:	300 🗸	IBP1			
Multigas	IBP2 Scale:	300 🗸	IBP2 ▼			
	IBP3 Scale:	300 🗸	IBP3 🗸			
	IBP4 Scale:	300 🗸	IBP4 💌			
	Multigas Scale:	40 ~	Multigas 🗸			
System Setting						
	rsion: Server 2.0 [D20150511]					
Data Dire	ctory: D:\cardio ts					
Langu	iguage: English [English]					
	Ok Cancel					

- Display : This is the area for setting screen composition information such as size and color.
- System : This is the area for setting system composition information such as language and data path.

#### Display

This is the area for setting screen composition information such as size and color to show the data of BM Review on the screen. If you set the environment and click on the "OK" button, the setting is applied.

(If you click on the "Default" button, it is initialized as the default value.)

		Graph Properties	;	×
	Visible Setting	Display	r	
	ECG	Show Inner Grid		Default
	✓ SpO2	Show Label Always		
	✓ NIBP	✓ Show Time Always		Background
	TEMP	Line Tickness:	1 ~	Grid 🔻
	✓ Resp	Sweep Speed:	25mm/sec 🗸	Text 💌
	EtCO2	View Mode:	1CH VIEW V	Inner 💌
	✓ IBP1	ECG Gain:	10mm/mV v	ECG 🔽
	✓ IBP2	Ecg Trace1:	III ~	SpO2 🔻
	IBP3	Ecg Trace2:	III ~	Resp 🗸
	IBP4	Resp Zoom:	x 6 🗸	
	□ csm □ co	EtCO2 Scale:	40 🗸	EtCO2
	🗌 CO	IBP1 Scale:	300 🗸	IBP1
	wulligas	IBP2 Scale:	300 🗸	IBP2 🗸
		IBP3 Scale:	300 🗸	IBP3 🗸
		IBP4 Scale:	300 🗸	IBP4 🗸
		Multigas Scale:	40 ~	Multigas 🔻
4	A System Setting	_		В
		ersion: Server 2.0 [D20150511]		D
	Data Di	rectory: D:\cardio ts		
	Lar	guage: English [English]		
		Ok	Cancel	
		guage: English [English] v	Cancel	

- A. It sets whether show parameter and waveform or not.
- B. It sets the inside line, label, and presence of time display , size, color, and line thickness of waveforms.

#### **System Setting**

This is the area for setting system information such as displayed language and data path. If you change the environment information and then click on the "OK" button, the setting is applied. Language change is applied only when a restart proceeds after S/W shutdown. The language change is deactivated for language synchronization when BM Central S/W is operated.

Graph Properties ×						
Visible Setting	Display	_				
✓ ECG	Show Inner Grid		Default			
✓ SpO2	Show Label Always					
✓ NIBP	Show Time Always		Background 🔻			
TEMP	Line Tickness:	1 ~	Grid 💌			
Resp	Sweep Speed: 2	25mm/sec ∨	Text ▼			
EtCO2	View Mode:	1CH VIEW 🗸	Inner 💌			
✓IBP1	ECG Gain:	10mm/mV v	ECG			
✓ IBP2	Ecg Trace1:	III v	SpO2			
IBP3	Ecg Trace2: 1	III v				
IBP4	Resp Zoom:	x 6 🗸	Resp 🗸			
	EtCO2 Scale: 4	40 🗸	EtCO2 🗸			
	IBP1 Scale:	300 🗸	IBP1 🔻			
Multigas	IBP2 Scale:	300 🗸	IBP2 🔻			
	IBP3 Scale:	300 🗸	IBP3 💌			
	IBP4 Scale:	300 🗸	IBP4 💌			
	Multigas Scale:	40 🗸	Multigas 🔻			
System Setting	ersion: Server 2.0 [D20150511]					
	ectory: D:\cardio ts					
	guage: English [English]					
			A			
	Ok	Cancel				

A. It sets the data path and displayed language.

#### Caution

In the "System" of "preference" in BM Central Program, please select the folder with a sufficient amount of remaining space. If the space is not sufficient, the data may be lost or the program may not be operated properly.

# **Broker System(Optional product)**

#### 1. Broker System

1.1 What is a Broker system?1.2 Broker System Structure

#### 2. How to use Broker System

2.1 Installation / Uninstallation of BM Central Client2.2 How to use BM Central Client2.3 Difference between BM Central Server and BM Central Client

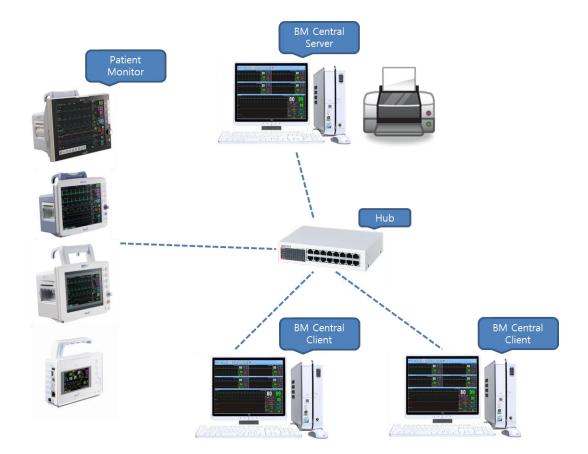
Ver. 2.1

# 1. Broker System

# 1.1. What is a Broker system?

The real time measurement data of BM Central can be seen in the server system, and Broker System provides a function that allows you to see them in other wards or office. This means that BM Central Client program is possible to be installed and the real time measurement data can be seen, without coming into the server system in which BM Central is installed. This program is an optional product.

# 1.2. Broker System Structure



#### **BM Central Server**

It is a package with server function among BM Central Programs, and it provides a real time and remote controlled monitoring function for parameter data up to 5 devices.

#### **BM Central Client**

It is a package with client function among BM Central Programs, and it provides a real time monitoring after connecting BM Central Server with IP address. But, it only gives a receiving function from the server. Wave and Parameter is received and monitored.

# 2. How to use Broker System

# 2.1. Installation / Uninstallation of BM Central Client

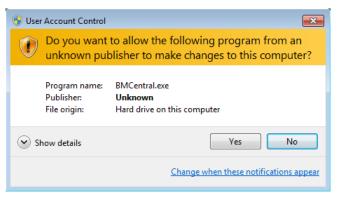
Installation and uninstallation of BM Central Client is the same as that of BM Central Program. Please refer to Installation and uninstallation of BM Central Program.

## 2.2. How to use BM Central Client

1) Double-click "BMCentral Client" icon on the desktop, which is indicated in the image below.



2) When the following message appears, click "Yes" and allow the program to execute.



3) Select IP address of the PC in which the server version is installed, and click "Connect" button. (You can add or delete Server Information using '+', '-' buttons)

Status : Disconnected
Version: Client 2.0 [D20150511]
Server IP: ICU[127.0.0.1] + -
Connect Close

4) Insert IP address of the PC in which the server version is installed, and click "Connect" button. If it is connected successfully, you can monitor the data in BM Central, as shown in the image below.



# 2.3. Difference between BM Central Server and BM Central Client

1) Functional difference in Main Menu: The image above is BM Central Client and the image below is BM Central Server. The number of icons is different.

<b>BM</b> Central			24	<b>EE</b>	16	32	<u>-</u> Q	Solar	×	Sep. 17, 2014
Diffeentia		ركى			62)			~~~~		02:30:50 PM
			< BN	/I Centi	al Serv	ver Mer	nu>			
<b>BM</b> Centra		2	23	<b>E</b>	13	32	Solar	1		Sep. 17, 2014
Divicentia			رقد				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	J		02:28:57 PM

< BM Central Client Menu>

- Window change function: It supports the windows of previous, after, 2Ch, 4Ch, 8Ch, 16Ch, 32Ch for both windows.
- B. Patient Manager: As indicated in the image above, it is only supported in BM Central Server. BM Central Client does not support this function.
- C. BM Review Execute: As indicated in the image above, it is only supported in BM Central Server. BM Central Client does not support this function.
- Configuration: As indicated in the image above, it is supported in both programs, but BM Central Client only supports on Client window.
- 2) The followings are the differences when the caption bar is magnified.



- A. Admit/Discharge setting: BM Central Client does not support this function.
- B. Alarm sound setting: supported in BM Central Client.
- C. Configuration: supported in BM Central Client without bidirectional communication.

Note
BM Central Client does not support bidirectional communication, Admit/Discharge, Data
Recording, Execute BM Review.

# Appendix

## 1. BM Central Menu Tree

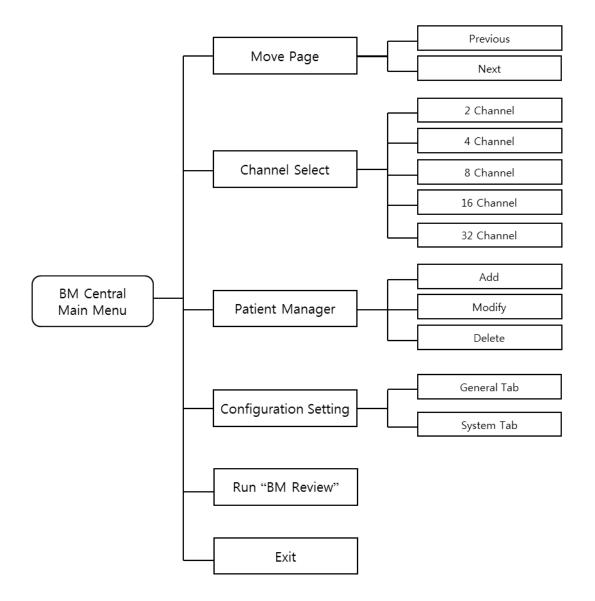
1.1 BM Central Main Menu Tree1.2 BM Central Client Window Menu Tree1.3 BM Review Menu Tree

## 2. Administrator authority settings in Windows 7 & 8

3. Q & A

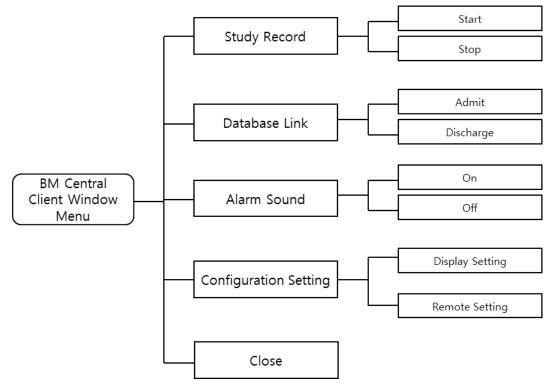
# 1. BM Central Menu Tree

# 1.1. BM Central Main Menu Tree



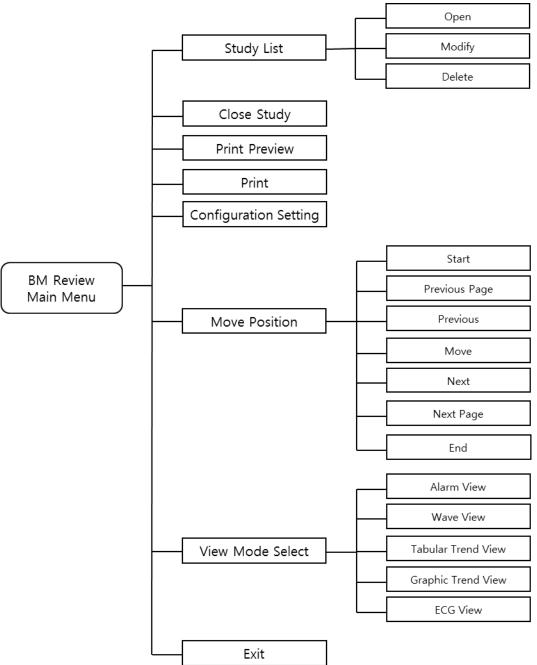
< BM Central Main Menu Tree >

# **1.2. BM Central Client Menu Tree**



< BM Central Client Window Menu Tree>

# 1.3. BM Review Menu Tree



< BM Review Menu Tree>

# 2. Administrator authority settings in Windows 7 & 8

1) In the desktop, place the mouse pointer on the icon which you want to change authority, rightclick the icon and the pop-up menu will appear. Click "Properties" and switch to setting window.

BM	
EMCentrel I	<b>Open</b> Troubleshoot compatibility Open file location
	Pin to Taskbar Pin to Start Menu
	Restore previous versions
	Send to 🔸
	Cut Copy
	Create shortcut Delete Rename
	Properties

2) If you can see the setting window as follows, click "Compatibility" tab, check "Run this program as an administrator" in "Privilege Level", and click "OK" button to apply changes. Then it will be executed with administrator authority when you click the icon.

🕎 BMCentral II Properties 📃 💌					
Security	Details	Previous Versions			
General	Shortcut	Compatibility			
If you have problems with this program and it worked correctly on an earlier version of Windows, select the compatibility mode that matches that earlier version. <u>Help me choose the settings</u>					
Compatibility mode					
Run this program in compatibility mode for:					
Windows XP (Service Pack 3)					
Settings					
Run in 256 colors					
Run in 640 x 480 screen resolution					
Disable visual themes					
Disable desktop composition					
	Disable display scaling on high DPI settings				
Privilege Level Run this program as an administrator					
Change setti	Change settings for all users				
OK Cancel Apply					

# 3. Q & A

#### 1) In case that connection of BMCentral is unstable or, failed,

- Check out the latest protocol of patient monitor is applied. (Check out software version)
- Check out IP address & central "On/Off" from patient monitor.
- Check out "Firewall or Anti-virus software"

#### 2) In case that error message about short memory space,

- Date backup or, remove some files with "Reviewer" Or, set up the automatic data deletion.

#### 3) In case that recording button disappears,

- Check out whether the present client is the state of "Admit" or not.

BMCentral	Jul. 13, 2015
CG-11     ST(mV)1.00     PVC:0     PVC:0	<sup>80</sup> 99 <sup>17</sup> 35.1°C 99
	80 158/61 136/78 1600 18 0.000 0 18 0.0000 0 18 0.0000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
CCG 1     Speed: 25mm/sec CCG     V:     St(mV):0.00     PVC:0     PVC:0	<sup>80</sup> 99 <sup>17</sup> 35.1°C 99
	800 <sup>www</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> 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<sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1)</sup> <sup>(1</sup>
ECG-11 Speed: 25mm/sec ECG 	0/0 PR Sp02 % T1 IBP2(CVP) 0/0
	800 158/61 136/78 (cm 18 0000 73 (105) (116) 138/63 133
ECG-TI ST(mV):0.00 PVC:0	80 99 <sup>17</sup> 36.5°C 899 899 80 999
MultiGas - 40	80 <sup>ACT</sup> 158/61 136/78 HCC2 18 ACT 0.00.0

**Product Name: BM Central** 

# **Bionet Co.,LTD.**

