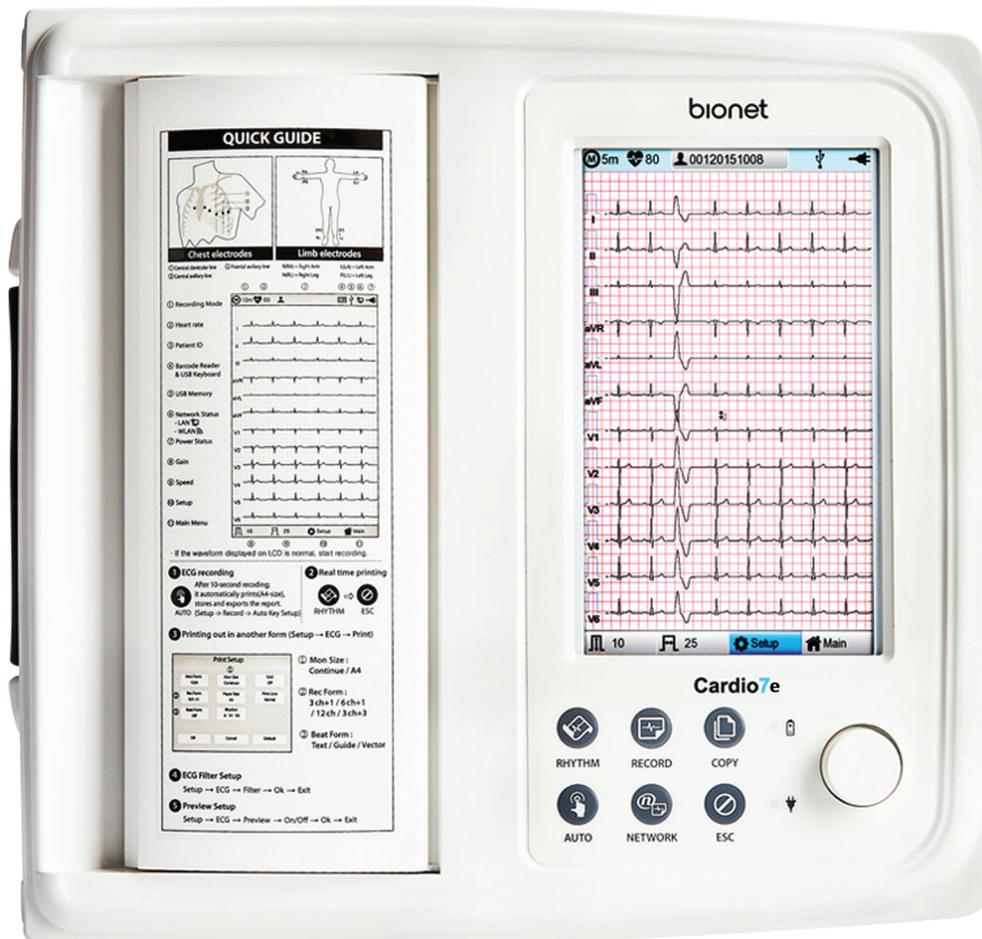# Cardio7e

Streamlining workflow with Bionet ECG

EASY & Simplifying WORKFLOW with
7" Touchscreen & AUTO button operation

Advanced analysis
& Interpretation

Effective data management
with 5min. of Full disclosure

Excellent connectivity
LAN/Wifi network bidirectional
connection to PACS/EMR/HIS

4.2.Maksimali užrašomos ramybės ritmo kardiogramos trukmė 5 min.

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Cardio7e

EASY Operation

- With 7" Bright Color LCD Touchscreen operation
- Alphanumeric keyboard on screen
- Quick patient ID entry with barcode scanner
- Convenient A4 print-out with 12CH interpretation on/off
- Lead fault detection & notice / Pace-maker detection

Simplifying workflow

- Easy patient ID entry & worklist orders retrieval
- One touch "AUTO" workflow with acquisition, save, print-out, and transfer to HIS
- Direct DICOM file transfer to PACS
- Convenient various file conversions in PDF, XML, MFER, BMP, JPEG

Efficient data management & Full disclosure

- 5min. of Full disclosure for Arrythmia tracing & review
- 200 ECGs internal data memory
- Long-term recording 1min, 3min, 5min, and 10min for HRV analysis
- 10 sec. pre-acquisition for immediate printing of any instant abnormal rhythm at sight

Advanced Analysis & Report

- VECTOR, GUIDE, TEXT report
- Patented Bionet ST-MAP for enhanced interpretation
- 120 kinds of interpretation based on the Minnesota Code
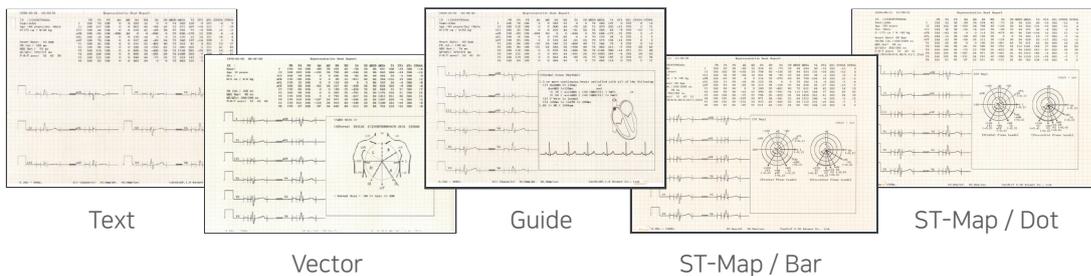
Excellent connectivity

- LAN, Wifi network connection to PACS/EMR/HIS
- USB : Barcode scanner, external memory, keyboard

11. 3. Aparatas turi būti pajėgus medicininio EKG tyrimo ataskaitą pdf formatu persiųsti į medicininių tyrimų duomenų archyvavimo sistemą MedDream PACS
4. Aparatas turi būti pajėgus bevieliu tinklu gauti pacientų sąrašą (DICOM Worklist) iš medicininių tyrimų duomenų archyvavimo sistemos MedDream PACS.

Simple AUTO workflow

Patient ID

Worklist orders

3.Kardiogramos interpretavimo programinė įranga

One touch Auto operation
- Auto Interpretation
- Auto Save & Print-out

Patient ID & worklist orders

PDF, MFER, XML, JPG, BMP, DICOM

Real time remote operation

PACS / EMR / HIS

BMS plus

Cardio7e

Advanced analysis, Report, & Data Management

Text

Vector

Guide

ST-Map / Bar

ST-Map / Dot

Long-term recording

1, 3, 5, 10 min.

pre-aquisition

10 sec' real time print-out

User-friendly UI

7" LCD Touch screen

bionet

Cardio7e

RHYTHM RECORD COPY

AUTO NETWORK ESC

9. Galimybė kardiogramą peržiūrėti aparato ekrane

One touch **AUTO** Button

AUTO

Preview screen

Data preview before print-out

Enhanced data capacity

5 min.
Full disclosure
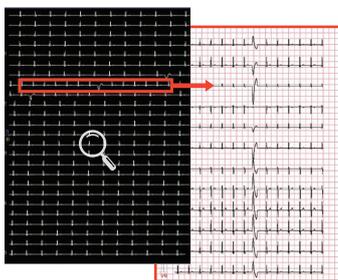
200ECGs
Internal memory

Easy data search
ID, Name, Age, etc

Cardio7e

Technical specifications

ECG Leads	Simultaneous 12 Leads Resting ECG
Recording Channel	3CH+1RHY, 3CH+3RHY, 6CH+1RHY, 12CH, 6CH+ST map 1CH Long Time(1min, 3min, 5min,10min) and Special Beat Report (Text, Guide, Vector, ST map)
Gain	2.5, 5, 10, 20, Auto (I~aVF: 10, V1~V6: 5) mm/mV
Printing speed	5, 12.5, 25, 50, 100 mm/sec
Sampling rate	Analysis Sampling Rate - 500 Digital Sampling Rate - 8,000
Filters	AC (50/60 Hz, -20dB or better), Muscle (25~35Hz, -3dB or better), Base line drift (0.05Hz, 0.1Hz, 0.2Hz, -3dB or better), Low pass filter(off, 40Hz, 100Hz, 150Hz)
Display	800 x 480 pixel resolution, 7" Color TFT wide display 12 channels preview, ID, HR, Gain, Speed, Power status
User Interface	Touch screen, Rotary push-knob
Printer Resolution (Speed 25 mm/s)	Thermal print head, Roll Paper Report paper - width : A4/Letter 215mm(8.5") - length : A4 297 mm(11.7") Letter 279mm(11") Resolution : Vertical 8dot/mm(0.125mm pitch), Horizontal 16dot/mm.
Patient data	ID, name, age, gender, height, weight, race, smoke, department, room number, study desc., accession no., referring physician
Basic Measurement	Heart rate(30~300bpm, ±3bpm), PR/RR int., QRS dur., QT/QTc int., P-R-T axis, SV1/RV5/R+S amp.
ECG Data Storage	Internal Storage for 200 ECGs : Built- in memory
Electrical	Internal noise: 20uV(p-p)max Input impedance: ≥ 50MΩ Input voltage range: ±5mV CMRR: > 105dB DC offset voltage: ≥ ±400mV Patient leakage current: < 10uA Frequency response: 0.05 ~ 200 with in −3dB Isolated , defibrillation and ESU protected
Signal Quality Control	Pacemaker pulse detection, Lead fault detection, Signal Saturation Detection
Line Power	Input: 100-240Vac, 1.5-0.75A, 50-60Hz Output: 15Vdc, 4.2A
Battery type	Replaceable and Rechargeable, Lithium ion, 10.8V, 3250mA
Battery Capacity	6 hours of normal use or print 200 ECG pages (12 channel format at 25mm/s and 10mm/mV) Battery recharge to full capacity in 3hours.
Communication	LAN, WIFI(option), USB flash driver, USB barcode scanner
Safety Conformity	Class I, Type CF defibrillation-proof applied part.
Environmental Operation	Ambient Temperature: 10~40℃ Relative Humidity: 30~85%RH Atmospheric Pressure: 70~106KPa
Environmental Storge/Ship	Ambient Temperature: -20~60℃ Relative Humidity: 10~95%RH Atmospheric Pressure: 50~106KPa
Dimensions	300(W) x 290(H) x 89.5(D) mm , Approx. 3.5 kg
Packing dim. & weight	415(W) X 400(H) X 215(D)mm & approx. ≒6kg
Standard Accessory	Patient cable(1 EA), Limbs electrodes(1 SET), Chest electrodes(1 SET), ECG chart paper(1 EA), Power cord (1 EA), Operation manual & ECG diagnosis guide (1EA), Battery (1EA)
Options	Rechargeable battery(1 EA), Cart(1 EA), Hanger(1 EA), ECG spray (1 EA)

* Specifications can be changed without prior notification.

Annotation callouts (Lithuanian):
- 8. Vartotojo pasirenkamos derivacijos
- 7. Keičiamas elektrokardiografo spausdintuvo jautrumas (priklausomai nuo aparato darbo režimo)
- 5. Keičiamas EKG spausdinimo (popieriaus traukimo) greitis
- 2. Aparato ekranas
- 6. Spausdinimo raiška, esant 25 mm/s greičiui
- 12. Aparato vidinė atmintis
- 14. Aparato naudojami maitinimo šaltiniai
- 15. Reikalavimai aparato akumuliatoriui
- 10.3. Bevielio ryšio WLAN (WIFI) sąsaja;
- 13. Apsauga nuo defibriliacijos iškrovos
- 10.2. Potencialų išlyginimo jungtis;
- 16. Komplektacija:
- 1. Aparato vežimėlis
- 10. 1. EKG kabelio jungtis;

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Medical, ECG

Cardio7e

Captures , stores, analyzes, and transmits by **simplifying workflow with user-friendly usability**

Features

Simplifying workflow with "AUTO" operation

- One button **"AUTO"** operation from acquisition to print-out & data record **in 3 sec.**

Easy ECG file data conversion

- **Easy file conversion** to PDF, XML, JPG, BMP, MFER, DICOM that transfers with easy user interface.

Enhanced sampling rate for data accuracy

- With **8,000Hz per second sampling rate**, it is designed to improve clinical decision for cardiology with accurate ECG interpretation algorithm and **full storage of 200 ECG data per 5 minutes**.

Advanced algorithm & analysis

- With **long term recordings of 3,5,10 min**, it features various analysis algorithms of ECG diagnosis.

BMS Plus Patient data management in mind

- All **patient data is transferable to BMS Plus** and PC based data management SW with real time remote operation.

BMS plus offers caregivers the workflow flexibility for

- Data preview
- Device remote control
- File conversion to PDF, XML, JPG, BMP, MFER, **DICOM** for data transfer **through PACS**.
- Direct print-out, magnifying and comparing ECG trace, measuring ECG complex, adding comments
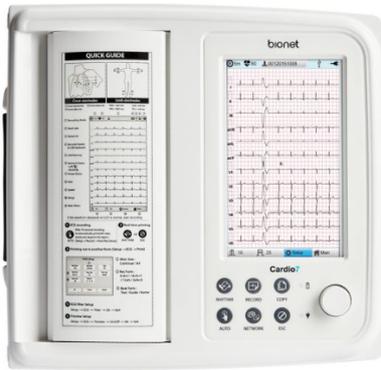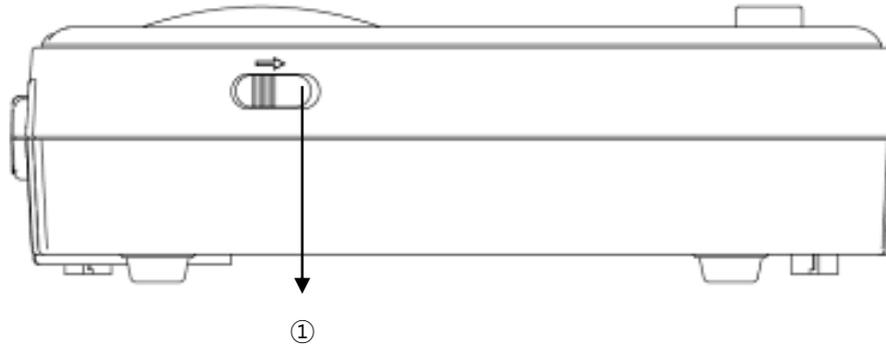
4.1. Ramybės kardiograma užrašoma pasirinktinai rankiniu arba automatiniu režimu;
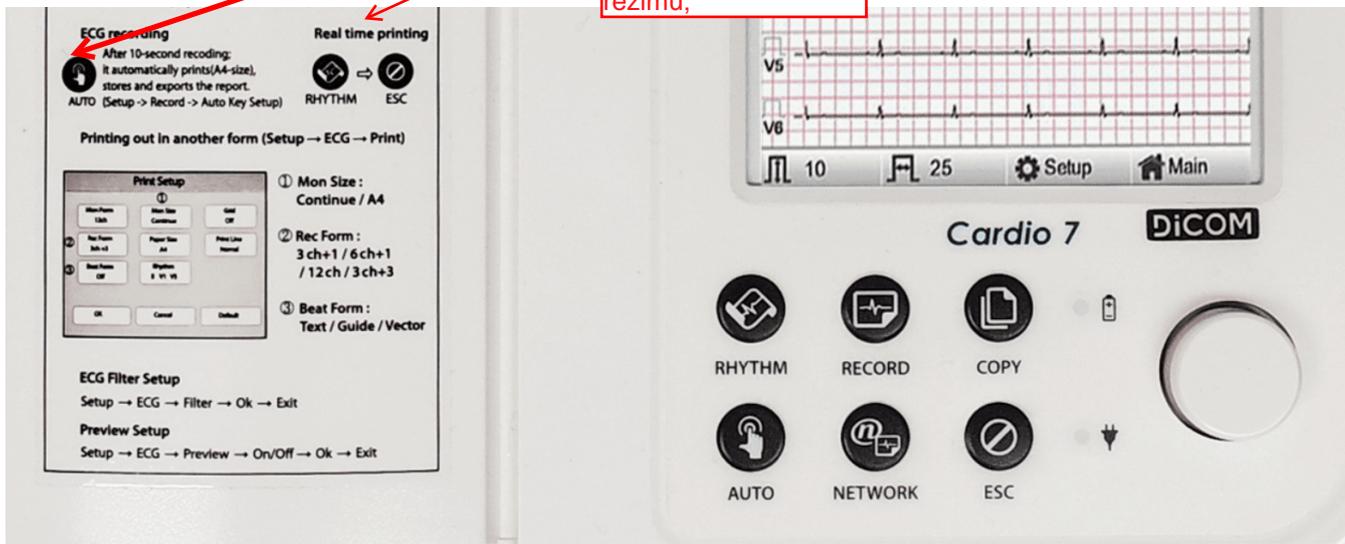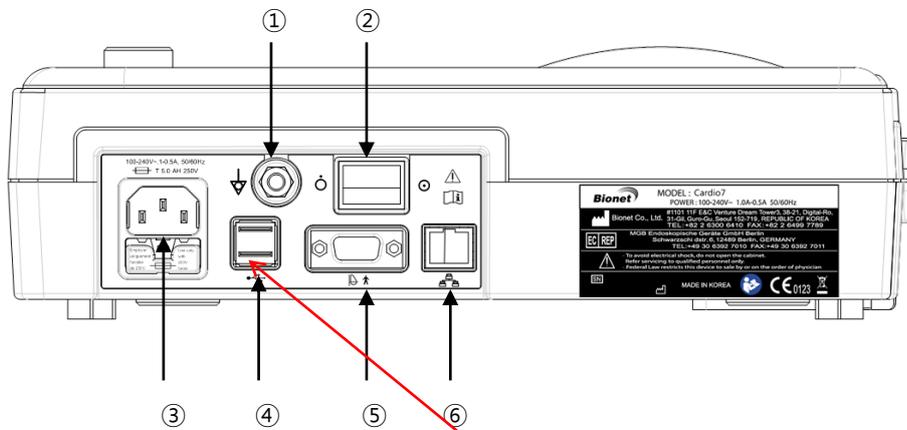
Cardio7 Operation Manual

◾ Front View

①

① Printer Cover Switch

◾ Rear View

10. 4. 2 USB jungtis.

① Protective Ground Terminal

② Power Switch

③ AC Power Connection Port (Fuse : 250V , 5A (High breaking type))

④ USB Port

⑤ Spirometry port / RS232 protocol

⑥ RJ45 LAN Port

C7OMBA-1.24

> 3) After pulling out the paper, remove the jammed paper by cutting.
>
> ● When printing more than 10 minutes with the RHYTHM key, the paper may get blackened.

Warning
Make sure to use only the ECG record paper provided by our company. If not, it might negatively influence on the diagnosis when confirmed by a doctor due to poor printing status. Our company is not responsible for all the issues occurring by ignoring this requirement.

WARNING
No modification of this equipment is allowed. Do not modify this equipment without authorization of the manufacturer. If this equipment is modified, appropriate inspection and testing must be conducted to ensure continued safe use of equipment.

Network Connection

-No one other than service personnel can connect this device to the network.

Consult with hospital IT staff in advance. It is recommended to follow IEC 80001-1

(Risk management of IT networks connected to medical devices)

LAN Network

LAN networks are usually configured through a star topology. Individual devices can be grouped together via a layer-n-switch. Other data traffic is separated by a separate VLAN network. Configure the device's network settings according to this user guide and network specifications.

LAN connection specifications are described in the following standard specifications.

● Wired network: IEEE 802.3

● Wireless network: IEEE 802.11 (a, b, g, n)

If the device is used as a layer-2-switch or layer-3-switch, the port settings must be configured

11. 1.Aparate turi būti įdiegta bevielio ryšio sąsaja, atitinkanti IEEE 802.11n standartą

Cardio7 Operation Manual

When clicking the 'Format' button, a line window will show up and it will disappear when selecting EKG/FVC/SVC/MVV, MFER(ECG), XML(ECG), JPEG, PDF. 'Format' menu is used to select the user's options when transferring the data.

- EKG/FVC/SVC/MVV: To save the data by type of '***.ekg' / '***.fvc' / '***.svc' / '***.mvv'
- MFER: To save the data by type of   '***.mwf'
- XML: To save the data by type of   '***.xml'
- JPEG: To save the data by type of   '***.jpg'
- PDF: To save the data by type of   '***.pdf'
- DICOM : To save the data by type of   '***.dcm'

11. 2.Aparatas turi būti pajėgus bevieliu tinklu, naudojant DICOM ECG (modality) standartą, perduoti medicininių tyrimų duomenis į medicininių tyrimų duomenų archyvavimo sistemą MedDream PACS

When clicking the 'Delete' button, a line window will show up and it will ~~~~ when selecting Yes or No. 'Delete' menu is used to select the user's optio~~~~ data has transferred.
- Yes: To delete the data after it has transferred
- No: To not delete the data after it has transferred

NOTE
- If 'Format' menu has only 'EKG/FVC/SVC/MVV' options, it is possible to select 'All' or 'All New' in 'Method' menu; for other formats, 'Selected' is the only option.

5) Switching menu

When selecting the 'Main' button at the main page of 'File management', a line window will show up. You can choose ECG, Spiro or Worklist to go to the chosen page.

The patient's information of selected data does not transmit when skipping to 'Worklist Management' screen. But it depends on the setting value of 'PAT Info.' menu when skipping to 'ECG' main screen.

- ECG   : Skip to ECG main screen
- Worklist : Skip to 'Worklist Management' screen
- Spiro   : Skip to spirometry measurement screen

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