



medical **ECONET**  
GERMANY

# CARDIO M CARDIO M-PLUS

Compact multi-channel electrocardiograph



## Affordable and Powerful 12ch Resting ECG

CARDIO M and CARDIO M PLUS of medical ECONET offer a wide range of innovative solutions for diagnostic ECG acquisition.

A standard 12-lead electrocardiogram, also known as an ECG, is one of the standard tests used to measure the electrical activity of the heart muscle. It's non-invasive, painless, and quick and it's considered one of the best ways to assess heart disease risk.

An ECG is typically used as a baseline test for new patients or for anyone showing symptoms of heart disease. While the average person doesn't need to undergo the procedure very often, those who smoke, have high cholesterol, or have a family history of heart disease should consult with their doctor to see how often they should get tested.

A normal ECG can be a great reassurance that your heart is functioning well and working harmoniously with your body to contribute to your good health.

### Features of CARDIO M

- Exact measurement with interpretation
- Print out in A4 format
- Supports fax transmission of the recorded ECG (with optional modem)
- PC software for computer connection
- Rechargeable battery (optional)

### Features of CARDIO M-PLUS

- Touch screen operation  
(Full alphanumeric keyboard support)
- 7" color TFT LCD screen (800X480)  
with 12CH preview
- Preview function before printing paper
- Long term ECG recording & automatic arrhythmia detection
- Special reports for detailed interpretation (Beat, Guide, Vector)
- Internal memory for 200 ECGs
- Various ECG formats:  
XML, PDF, MFER, DICOM, ECG
- Diagnosis form 1st postnatal day  
(pediatrics)
- Expression on A4 size paper
- USB Wifi converter (optional)
- Free software
- High capacity rechargeable Li-Ion battery for min. 3 hours operation (optional)

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## The Main Function of CARDIO M and CARDIO M-PLUS

Having good cardiovascular health is an important factor of optimal wellness. Your heart works as a „pump“ to keep your blood moving inside of you, to deliver nutrients and oxygen to all areas of your body while carrying away waste products and carbon dioxide. When your heart muscle contracts or „beats“, it pushes blood through your heart and all over your body.

An ECG is a non-invasive test to measure the electrical activity of the heart beat and also provides information about heart muscle damage, types and kinds of arrhythmias (abnormal heart rhythms), and signs of a heart attack.



### Standard 12-lead ECG

The overall magnitude of the heart's electrical potential is then measured from twelve different angles and is recorded over a period of time.

### Wide paper printing

Convenient A4 size print-outs allow for easy chart filling. Grid function allows you to use low cost plain fax paper. User can easily read information at a glance.

### Reports for more detailed Interpretation

Detailed measurement data for professional interpretation. User can select Text, Guide, or Vector version. (only for CARDIO M-PLUS)

No	ID	Name	Date/Time	Type	ST
1	0123456789	Jun Chang	12/10/10 12:30	ECG	S
2	1111111111	Hyonok Lee	12/10/10 13:30	ECG	C
3	777	Yountae Im	12/10/10 14:30	ECG	S
4	987654321	Sunho Ryu	12/10/10 15:30	ECG	E
5	kkk	Nanha Lee	12/10/10 16:30	ECG	E
6	abcdefg	Chris Oh	12/10/11 12:30	FVC	E
7	abcdefghijklm	Jay Shim	12/10/12 12:30	FVC	E
8	l	Paul Lee	12/10/13 12:30	SVC	E
9	12	Joungeun Song	12/10/14 12:30	MVV	E
10	123	Dongju Kang	12/10/15 12:30	ECG	E
11	1234	Minsang Yoo	12/10/16 12:30	ECG	E



### Extended data management

Up to 200 ECGs can be stored in the internal storage and USB memory. User can export data in various standard file format(PDF, JPG, XML, MFER, DICOM) (only for CARDIO M-PLUS)

### User-friendly design

CARDIO M-PLUS 7 inch wide & clear color TFT LCD display with 12 channel preview ECG wave & large touch screen keyboard. (only for CARDIO M-PLUS)

## Specifications

# CARDIO M

# CARDIO M-PLUS

### Dimension

Size:	296 (W) x 305.5 (D) x 97.5 (H) mm	300 (W) x 299 (D) x 123 (H) mm
Weight:	Approx. 3.2 kg	Approx. 4 kg
Display:	2 lines text LCD screen	7" color TFT wide display (800 x 480)

### Display

Type:	2 lines text LCD screen	7" color TFT wide display (800 x 480)
Monitor display:	Sensitivity, speed, filter status, HR, printing form, rhythm lead	HR, ID, date, AC or battery state, sensitivity, speed, number of saved data, printing form, rhythm lead

### ECG

Leads:	Standard 12 leads	12 channel simultaneous ECG and acquisition
Sensitivity:	5, 10, 20, auto (I ~ aVF : 10, V1 ~ V6 : 5) mm / mV	2.5, 5, 10, 20, auto (I~aVF: 10, V1~V6: 5) mm/mV
Basic measurement:	Heart rate, PR, QRS, QT / QTc, P - R - T axes	Heart rate, PR, QRS, QT/QTc, P-R-T axis
Recording channel:	1, 3, 6 and 12 channel	3 channels + 1 rhythm, 3 channels + 3 rhythm, 6 channels + 1 rhythm, 12 channels, 1 channel long time (1 min, 3 min, 5 min, 10 min) and special reports (text, guide, vector)

### Recorder

Type:	Thermal print head	Thermal print head, thermal roll paper
Printing speed:	12.5, 25, 50 mm / s	5, 12.5, 25, 50, 100 mm/s
Paper:	204 mm (width)	215 mm (width) x 297 mm (Length) (A4 size)
Resolution:	Vertical: 8 dots/mm Horizontal: 16 dots/mm	Vertical: 8 dot/mm Horizontal: 16 dot/mm

### Set-up

AC:	50 / 60 Hz, 20 dB or better	50/60Hz, - 20dB or better
Muscle:	25Hz to 35 Hz, 3 dB or better	25Hz to 35Hz, -3dB or better
Base line drift:	0.1 Hz, 3 dB or better	0.05, 0.1, 0.2 Hz, -3dB or better
Low pass filter:	off, 40 Hz, 100 Hz, 150 Hz	off, 40Hz, 100Hz, 150 Hz
Patient data:	ID, name, age, sex, height, weight	ID, name, age, sex, height, weight, smoke, race
CMRR:	$\geq \pm 100$ dB	$\geq \pm 105$ dB
Safety:	Class I, Typ BF	Class 1, Type CF, CE, FDA, KFDA, CFDA, NCC

### Electrical Feature

Internal noise:	20uV(p-p) max	20uV(p-p) max
Input circuit:	Floating input, isolated and defibrillation protected	Isolated, defibrillation and ESU protected
Input impedance:	$\geq 10$ M $\Omega$	$\geq 50$ M $\Omega$
input range:	$\geq \pm 5$ mV	$\geq \pm 5$ mV
DC offset voltage:	$\geq \pm 300$ mV	$\geq \pm 400$ mV
Signal quality control:	Disconnected lead detection	Pacemaker pulse detection lead fault detection, signal saturation detection.
Time constant:	3.2 sec.	
Frequency response:	0.05~150Hz	Frequency response 0.05~150Hz within -3 db
Patient isolation:	<10 $\mu$ A	
Patient leakage current:		Internal storage for 200 ECGs and external USB flash drive
ECG data storage:		

### Indicator

Communication:	PC connection by LAN	RS232, LAN, WiFi, USB flash drive, USB barcode scanner
External link:	LAN	LAN, 2 USB Port
File format:		PDF, JPG, XML, MFER, DCM

## Specifications

# CARDIO M

# CARDIO M-PLUS

### Environment Specification

Operating temperature: 10°C to 40° C  
 Operating humidity: 30% to 85%  
 Atmospheric pressure: 70KPa to 106 KPa

10°C to 40° C  
 30% to 85%  
 70KPa to 106 KPa

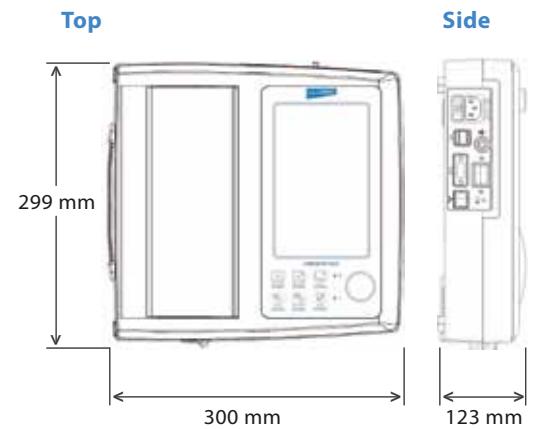
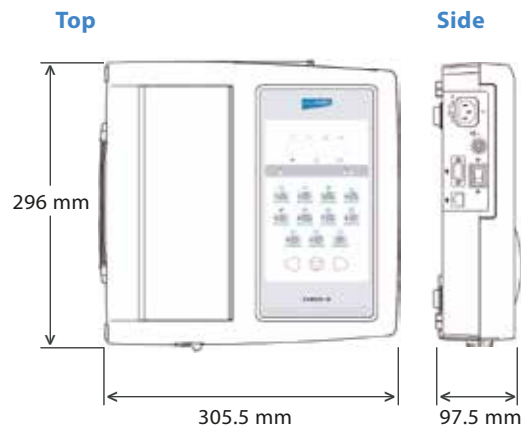
### Power

Power supply: AC or built-in battery (option)  
 Power requirement: 100 - 240 VAC, 50 / 60 Hz, 1.0 - 0.5 A  
 Battery type: Replaceable and rechargeable Lithium Ion  
 Battery capacity: 6 hours of continuous operation without printing or approx. 100 automatic ECG printouts

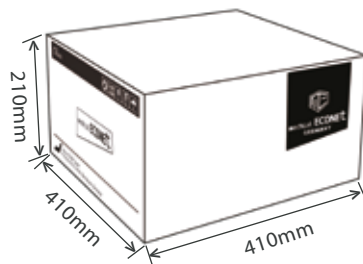
AC or built-in battery (option)  
 100 - 240 VAC, 50/60 Hz, 1.0 - 2.0 A,  
 Replaceable and rechargeable Lithium Ion  
 6 hours of continuous operation without printing or Approx. 3 hours of 200 ECG printouts

### Accessory

Standard:	CARDIO M	Quantity	CARDIO M-PLUS	Quantity
10-lead ECG patient cable		1 ea	10-lead ECG patient cable	1 ea
Limb electrodes (4pcs / pack)		1 ea	Limb electrodes (4pcs / pack)	1 ea
Chest electrodes (6pcs / pack)		1 ea	Chest electrodes (6pcs / pack)	1 ea
Paper		1 ea	Paper	1 ea
Gel		1 ea	Gel	1 ea

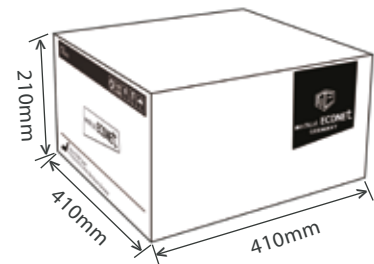


### Packaging



Approx. 6.2 kg

### Packaging



Approx. 6.3 kg

## Accessory Information



### ECG Cable Banana Type

31.10-2036



### ECG Cable Clamp Type

for disp. electrodes

31.10-2035



### Chest Electrodes

for adult, 6pcs / pack

31.10-2055



### Chest Electrodes

for pediatric, 6 pcs / pack

31.10-2056



### Limb Electrodes

4 pcs / pack

31.10-2054



### Adapter for Disposable Electrodes

10 pcs / pack

31.10-2039



### Disposable Electrodes

30 pcs / pack

70.10-3700



### Roll Paper

A4 size, Length: 23 m Width: 21,5 cm

70.10-2021



### Mouthpieces

100 pcs / box

70.10-3030



### Calibration Pump

3 L

41.20-3112



### Rechargeable Battery

for CARDIO M-PLUS

36.11-4101



### WIFI USB-dongle

for CARDIO M-PLUS

36.11-4105



### Mobile Cart

with basket

31.10-3018



### ECG Cable Arm

cable hanger

31.10-2041

ver. 001

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medical **ECONET**



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