CARDIOVIT AT-102 plus

The efficient ECG system that meets highest demands. Since the requirements for your diagnostic system have changed rapidly, we have developed the new CARDIOVIT AT-102 plus ECG system; it allows you to effortlessly master new challenges, now and in the future.

SCHILLER

The Art of Diagnostics

CARDIOVIT AT-102 plus

Developed for the future

SCHILLER ECG systems are outstanding and enjoy a world-wide reputation.

Thanks to 35 years of experience and close co-operation with the world's leading, practising cardiologists and physicians in the field of electrocardiography, SCHILLER's CARDIOVIT AT-102 plus is the most recent in a long series of innovative ECG systems.

The new CARDIOVIT AT-102 plus offers several advantages:
- **Simplified workflows:** the device can be connected to the SCHILLER Information System SEMA or the HIS.
- **Expandable:** the CARDIOVIT AT-102 plus can be expanded to become a pulmonary function test device at any time.
- **Reliable diagnoses** due to high-performance and proven technology. The CARDIOVIT AT-102 plus increases the diagnostic reliability thanks to the internationally renowned, clinically validated and proven SCHILLER Interpretation Program.

- Resting ECG
- Thrombolysis software
- Pacemaker measurement
- Pulmonary function measurements
- Rhythm recording

The CARDIOVIT AT-102 plus is the ideal ECG system for practice and clinic!

Hospital-grade full color LCD display of all 12 leads allows for easy cleaning.

Advanced lithium-polymer battery technology permits 3 hours of continuous use.

Slide-out automatic paper drawer can be easily loaded and quickly adjusted for A4 paper size.

Advanced technology
Reliable diagnoses due to high-performance and proven technology.
The CARDIOVIT AT-102 plus increases the diagnostic reliability thanks to the internationally renowned and proven SCHILLER Interpretation Program.

- **The SCHILLER Interpretation Program** (optional) offers you a comprehensive, computer-based analysis to quickly and reliably evaluate adult and children ECGs.

- **The thrombolysis software** (optional), which is integrated in the SCHILLER Interpretation Program, increases the diagnostic accuracy by assessing the risk of cardiac ischaemia; moreover, it takes into consideration gender-specific criteria to support physicians in detecting cardiac anomalies in women.

CARDIOVIT AT-102 plus

Direct keys correspond to the functions mentioned on the display.

Hospital-grade key board allows for easy cleaning.

Advanced ECG technology without limits

Feedback by users from all over the world has been incorporated in the new CARDIOVIT AT-102 plus. The system is now controlled with an intuitive, user-friendly interface.

- **The lithium-polymer rechargeable battery** provides three hours of battery operation or the processing of 250 standard patient reports. Thanks to the short battery charging time, the system is available again within a very short time.

- **The user-friendly keyboard** simplifies and accelerates the operation of the system due to the new keyboard design and direct function keys. The keyboard is specifically designed for clinical use and can easily be cleaned (disinfected).

- **Easily readable – the high-resolution 8.4" TFT colour screen** (800 x 600 dpi) offers a clear presentation of all 12 ECG traces from every angle.

- **Improved pacemaker measurement software** (optional) to enhance the sensitivity for pacemaker patients.

- **Rhythm ECG recording** – The CARDIOVIT AT-102 plus records the signals of all 12 ECG channels over the past 5 minutes. This reduces the risk that important rhythm data might be overlooked. To save paper, you can transmit the full-disclosure view of a 5-minute recording to the SCHILLER SEMA-200 data-management system on your PC for editing or printout.

CARDIOVIT AT-102 plus

Flexible adaptation

In the CARDIOVIT AT-102 plus, we have implemented your requests for more flexibility and more efficient work processes in your daily routine. By connecting a spiro sensor, the CARDIOVIT AT-102 plus becomes a pulmonary function test device which records and analyses the flow/volume and the volume/time curves as well as the corresponding parameters.

Two flow sensors are available for the portable all-rounder: you can choose between the proven SP-250 disposable flow sensor (for optimal hygiene) and the reusable SP-260 sensor.

Measurement: highest data quality

The following programs are available:

- Slow spirometry (VCin, VCex, VCmax, ERV, IC, TV, IRV ...)
- Forced spirometry (FVCin, FVC, FEV1, PEF, FEV1/FVC, MEF50, MEF75, PIF...)
- MVV (SVC, RR, TV)
- Flow/volume and volume/time curves
- Interpretation programs in accordance with ATS or ERS

(2) Request the "worklist"

HIS
Hospital information system

(1) ECG recording request

Results and invoicing (6)

SEMA web

iPhone/PDA or PC

WLAN

SE

(5) New ECG recordings can be validated on a PC terminal or viewed on a PDA.

CARDIOVIT AT-102 plus

③ Carry out the worklist

Patient X

Patient Y

Patient Z

WLAN

WLAN

MA 200

④ Send the new ECG recordings to SEMA 200 for storage

SCHILLER – THE ART OF CONNECTIVITY

Are you contemplating investing in an ECG management system? Then you should consider the CARDIOVIT AT-102 plus.

The Art of Connectivity is the key to an advanced ECG technology. You need a portable ECG system to examine your patients wherever you are, but you also need to be able to transfer the ECG data.

The biggest challenge for world-wide medical networks is communication. The CARDIOVIT AT-102 plus offers several options to store, transfer and evaluate ECG data so you can transfer information to any location and therefore guarantee an adequate treatment wherever your patient is.

- **The seamless connection to the SCHILLER Information System SEMA** or HIS rationalises your work process and allows you to immediately review and evaluate your patient's ECG data.

- **The integrated SCHILLER Communication Module (SCM)** connects the CARDIOVIT AT-102 plus to the SCHILLER Information System SEMA or the HIS and therefore guarantees optimised work processes and enhanced functionality.

- **The optional WLAN function** enables bi-directional communication with the SEMA Cardiology Information System via the optional SCHILLER Communication Module (SCM). You can quickly and easily view, edit and archive patient data, reducing the risk of data entry errors.

- **USB interfaces** increase your flexibility and enable the connection of barcode readers, which helps reducing the risk of data entry errors and accelerates and automatises your workflow.

- **The PDF output option** facilitates the transfer of ECG data in a common, readable format. Moreover, the output in XML format is also available to enable a flexible, open communication.

- **The internal memory** allows you to store up to 350 ECG recordings.

- **The worklist** gives you direct access via SEMA to the patient master data in the Hospital Information System. Therefore, the time-consuming entry of patient data is accelerated and delays in invoicing are minimised.

- **DICOM.** First high-end electrocardiograph to support DICOM standard.

★ **Guaranteed safety**
  The AT-102 plus offers you safe wireless connections via standard WLAN protocols such as 802.11g, WPA, WPA II or WEP. WLAN communication is also available with invisible SSID.
  SCHILLER devices support DHCP or static IP to protect your patient's privacy. Even if all safety measures should fail during data transmission, the patient data cannot be read because it is encrypted by SCHILLER.

Technical Data CARDIOVIT AT-102 plus

System:

Dimensions: 378 x 326 x 108 mm (l/w/h)

Weight: Approx. 4.4 kg including rechargeable battery and paper

Electrical data:

Power: Mains or battery operation

Voltage: 100 to 240 V

Current: max. 1.0 A (115 V) to 0.16 A (240 V)

Frequency: 50/60 Hz

Battery type: Rechargeable Lithium-polymer battery, replaceable by the user, battery capacity for 100 ECG printouts or 3 hours of continuous display (without printing)

Battery recharging time: Approx. 3 hours after full discharge (with device switched off)

Power consumption: Approx. 60 VA

Line frequency filter: Distortion-free suppression of superimposed 50 or 60 Hz sinusoidal interferences by adaptive digital filtering

ECG amplifier:
- Sampling frequency: 4000 samples/second/channel
- Measuring range: Dynamic +/- 10 mV, DC +/- 300 mV
- Pacemaker detection: > +/- 2 mV / duration > 0.1 ms
- Frequency range: 0.05 Hz - 150 Hz (IEC/AHA)
- CMRR: > 100 dB
- Digital resolution: 5 µV / 18 bit
- Input impedance: 100 MOhm
- Patient leakage current: < 5 µA
- Patient input circuit: Fully floating and isolated, defibrillation protected
- Defibrillation protection: 5000 VDC

Special recording functions:
- Detection of loose electrodes, electrode impedance, overvoltage, AC noise, baseline fluctuations and muscle tremor
- Heart rate measurement: up to 300 beats per minute

Standard interfaces:

RS-232 (V24) serial interface: Spirometry (Spirovit sensor 250 or 260)

Communication:

SCM (SCHILLER Communication Module):
Communication with SEMA-200 via:
- Ethernet (LAN) RJ-45 connector
- optional GPRS
- optional WLAN module with integrated antenna, supports 802.11g, WPA, WPA2, WEP and SSID (invisible)

Internal memory: 350 ECG recordings

Long-term rhythm recording:

5 minutes memory: The signals of the past 5 minutes for all ECG channels (full disclosure) can be saved in the memory and transmitted to SEMA.

Filters:
- Myogram filter: Adjustable to 25 or 35 Hz
- SSF: SCHILLER Smoothing Filter
- SBS: SCHILLER Baseline Stabiliser

Display:

Display type: Splash-proof and dust-protected colour LCD screen with LED backlight, diagonal 8,4 inch (215 mm)

Display resolution: 800 x 600 pixels

Display data: Heart rate, patient name, patient number, time, curves, lead designations, speed, amplification, filter settings and warnings

Number of leads displayed on the screen: 3, 6, 2x6, 3x4+1 rhy and 12

Lead combinations: Up to 12 simultaneous leads: Standard/Cabrera/Nehb; more lead combinations freely programmable by the user

Printer:

Printing technology: High-resolution thermal printing, 8 dots/mm (amplitude axis), 40 dots/mm (time axis), @ 25 mm/s

Frequency range: 0.05Hz - 150Hz (IEC/AHA)

Chart speed: 5, 10, 25 and 50 mm/s

Sensitivity: 5, 10 and 20 mm/mV or automatic

Paper type: Thermo reactive, Z-folded, 210 mm wide (A4, 8.5 x 11 inch)

Writing width: 3-, 6- or 12-channel printout in manual mode

Keyboard:

Type: Easy-care (disinfection), user-friendly, splash-proof and dust-protected foil keyboard with alphanumeric keys.

Hardware options:
- Trolley (Kangaroo)
- Suction electrode system
- Barcode reader
- Internal WLAN on SCM
- Internal GPRS on SCM

Software options:
- Software C™ ECG analysis program for adults / children
- Thrombolysis software
- Spirometry
- Worklist

Standards:

Ambient conditions:

Temperature: Operation: 10° to 40° C ;
transport/storage: -10° to 50° C
Humidity: Operation: 15 % to 95 % non-condensing;
transport/storage: 15 % to 95 % non-condensing
Pressure: Operating: 700 to 1060 hPa;
transport/storage: 500 bis 1060 hPa

Certification:

Protecting class: II according to IEC 60601, with internal battery, IIa according to Directive 93/42EEC
Safety Standard: CF according to IEC 60601-1; IEC 60601-1, IEC 60601-1-2, IEC 60601-2-51, ANSI/AAMI EC11
Conformity: CE according to Directive 93/42/EEC

Warranty:

Standard warranty is 15 months.

Accessories:

All our accessories are available at www.schiller.ch

Technical data and features differ due to localization for certain markets

Asia
SCHILLER Asia-Pacific / Malaysia
52200 Kuala Lumpur, Malaysia
Phone +603 6272 3033
Fax +603 6272 2030
sales@schiller.com.my
www.schiller-asia.com

Austria
SCHILLER Handelsgesellschaft m.b.H.
A-4040 Linz
Phone +43 732 709 90
Fax +43 732 757 000
sales@schiller.at
www.schiller.at

China
Alfred Schiller Medical Equipment Co. Ltd.
100015 Beijing, China
Phone +86-010-52007020
diamond@schillermedical.com
www.schillermedical.cn

France
SCHILLER Médical S.A.S.
F-67162 Wissembourg/Cedex
Phone +33 3 88 63 36 00
Fax +33 3 88 94 12 82
info@schiller.fr
www.schiller-medical.com

France (distribution France)
SCHILLER France S.A.S.
F-77600 Bussy St Georges
Phone +33 1 64 66 50 00
Fax +33 1 64 66 50 10
infoschiller@schiller-france.fr
www.schiller-france.com

Germany
SCHILLER Medizintechnik GmbH
D-85622 Feldkirchen b. München
Phone +49 89 62 99 81-0
Fax +49 89 62 99 81-54
info@schillermed.de
www.schillermed.de

Hungary
SCHILLER Diamed Ltd.
H-1141 Budapest
Phone +36 (1) 383-4780 / 460-9491
Fax +36 (1) 383-4778
sales@schiller.at
www.schiller-hungary.hu

India
SCHILLER Healthcare India Pvt. Ltd.
Mumbai - 400 001, India
Phone +91 22 6152 3333/ 2920 9141
Fax +91 22 2920 9142
sales@schillerindia.com
www.schillerindia.com

Croatia
Schiller medicinski instrumenti d.o.o.
10000 Zagreb
Phone +385 1 309 66 59
Fax +385 1 309 66 60
info@schillerzg.hr
www.schiller.ch

Latin America
SCHILLER Latin America, Inc.
Doral, Florida 33172
Phone +1 954 673 0358
Fax +1 786 845 06 02
info@schillerla.ch
www.schillerla.ch

Poland
SCHILLER Poland Sp. z o.o.
PL-02-729 Warszawa
Phone +48 22 8432089
Fax +48 22 8432089
schiller@schiller.pl
www.schiller.pl

Russia & C.I.S.
SCHILLER AG Rep. office
125124 Moscow, Russia
Phone +7 (495) 970 11 33
Fax +7 (495) 970 11 33
mail@schiller-ag.com
www.schiller-cis.com

Serbia
SCHILLER d.o.o.
11010 Beograd
Phone +381 11 39 79 508
Fax +381 11 39 79 518
info@schiller.rs
www.schiller.rs

Slovenia
SCHILLER d.o.o.
2310 Slovenska Bistrica
Phone +386 2 843 00 56
Fax +386 2 843 00 57
info@schiller.si
www.schiller.si

Spain
SCHILLER ESPAÑA, S.A.
E-28230-Las Rozas/Madrid
Phone +34 91 713 01 76
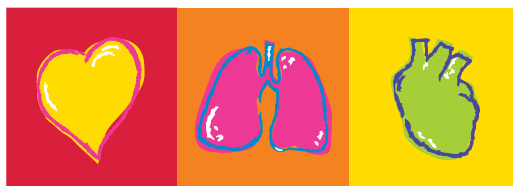Fax +34 91 355 79 33
schiller@schiller.es
www.schiller.es

Switzerland
SCHILLER-Reomed AG
CH-8953 Dietikon
Phone +41 44 744 30 00
Fax +41 44 740 37 10
sales@schiller-reomed.ch
www.schiller-reomed.ch

Turkey
SCHILLER TÜRKIYE
Okmeydani-Sisli – Istanbul
Phone +90 212 210 8681 (pbx)
Fax +90 212 210 8684
sales@schiller-turkiye.com
www.schiller-turkiye.com

USA
SCHILLER America Inc.
Doral, Florida 33172
Phone +1 786 845 0620
Fax +1 786 845 06 02
sales@schilleramerica.com
www.schilleramerica.com

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