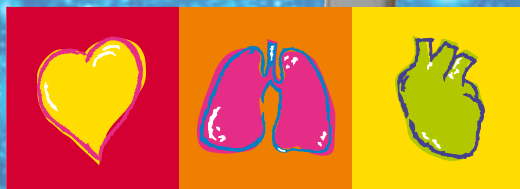
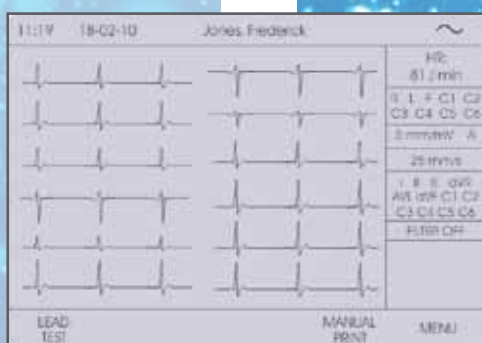




# CARDIOVIT AT-102

The high-performance, multifunctional ECG wizard that meets highest demands and offers excellent value for money!

12-lead display



## SCHILLER

The Art of Diagnostics



# CARDIOVIT AT-102

## Perfect 12-channel ECG solutions

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, we can provide you the CARDIOVIT AT-102, an ECG device which offers tailor-made solutions for professional diagnosis.

The CARDIOVIT AT-102 is an excellent, multifunctional 12-channel ECG wizard to record and automatically analyse resting ECGs, exercise ECGs and pulmonary function tests (spirometry). The familiar user interface and intuitive operation allow for higher productivity and efficiency - while offering great value for money.



The CARDIOVIT AT-102 is an expandable resting ECG system which is particularly suitable for routine use in the practice, clinic or in emergency medicine due to its intuitive and easy operation with direct function keys. By means of optional software, the system can very easily be upgraded to an ergometry or spirometry measuring station. Moreover, the CARDIOVIT AT-102 can be integrated in a hospital information system (HIS) from which work lists for planned ECG recordings can be downloaded to the CARDIOVIT AT-102. Mobile operation is ensured by the integrated accumulator anytime and anywhere.

The integrated high resolution A4 real time printer guarantees long-term storing of ECG recordings in archive quality; thanks to the automatic paper feed, printing is now even easier. Fiddling with thermal paper is a thing of the past.

On the CARDIOVIT AT-102's brilliant graphic display, all 12 ECG leads can be displayed in freely selectable sequences of 3, 6 or 12. Furthermore, an external LCD screen can be connected to the CARDIOVIT AT-102 (optional).

A photograph of the Schiller Cardiovit AT-102 device, a white and grey medical instrument with a keyboard and a small screen, mounted on a stand. The device is labeled 'SCHILLER AT-102'.

# CARDIOVIT AT-102

## A true all-rounder!

The most important cardio-pulmonary function tests combined in a single device:

- Resting ECG
- Exercise ECG
- Spirometry

### Features:

- Intuitive, easy operation with direct function keys
- 12-channel resting ECG
- Measurement
- Interpretation (optional)
- Internal memory
- A4 printouts on internal or external printer
- Basic exercise test (option)
- Connection of external monitor possible (option)
- STP (SCHILLER thrombolysis software)

SCHILLER measurement and interpretation software is the software of choice for hospitals, practices, clinics and clinical research institutes due to its excellent quality and reliability.

- **SCHILLER measurement and interpretation software for children and adults:**

12 lead ECG analysis, offering quality and reliability without having to make compromises – your most valuable tool to get a clinically reliable second opinion.

- **SCHILLER thrombolysis software (SCHILLER STP):** helps physicians make decisions in preclinical care and in the emergency ward. Taking into account medication, age, sex and ECG of a patient, the program gives indications about the probability of acute cardiac ischemia or the acute coronary syndrome (ACS). The SCHILLER STP software package is an additional option to the computer-based interpretation software.

With the CARDIOVIT AT-102, all ergometry functions can be controlled, including bike ergometers with or without blood pressure recording, and treadmills. Standard exercise protocols are incorporated and can be changed or amended individually as required.

- **SCHILLER exercise ECG:**

- 12-channel ST measurement
- Possibility to configure stage or final printouts.
- Fully automatic ergometry - intervention possible anytime



# CARDIOVIT AT-102

## Flexible adaptation

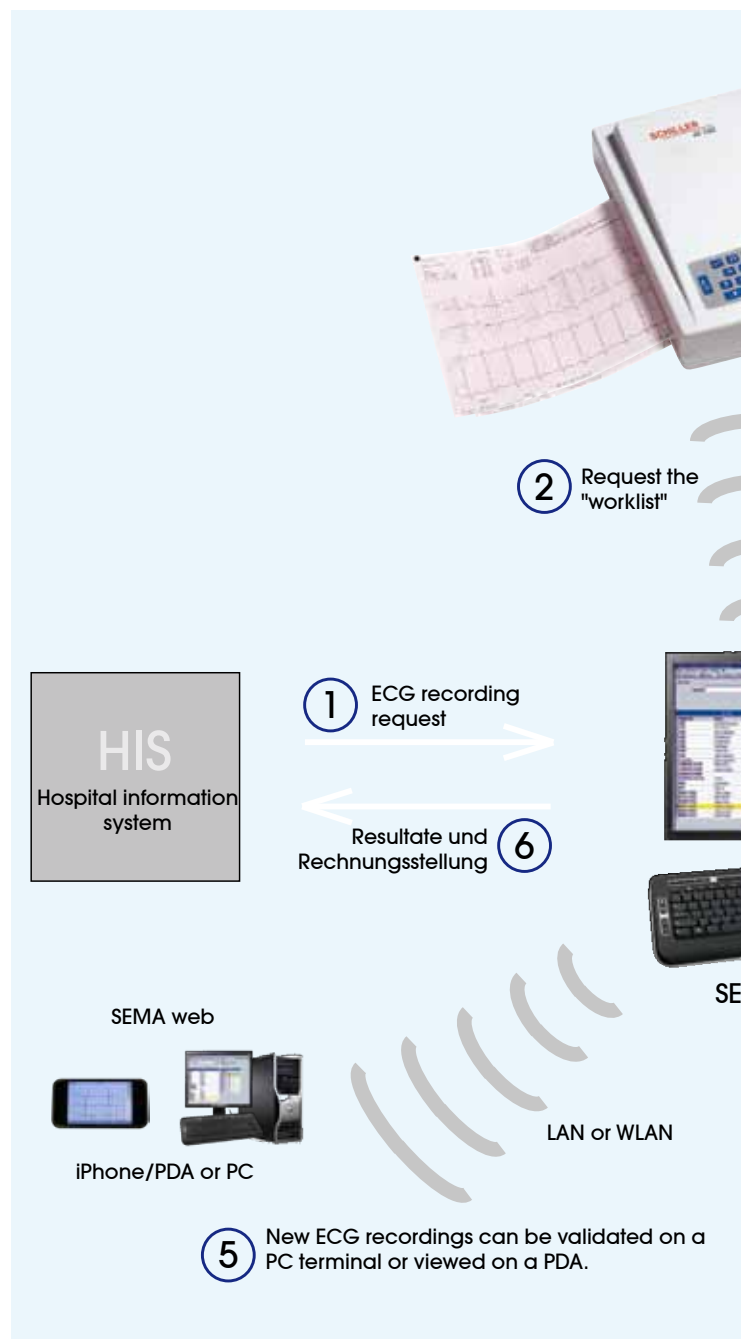
In the CARDIOVIT AT-102, we have implemented your requests for more flexibility and more efficient work processes in your daily routine. By connecting a spiro sensor, the CARDIOVIT AT-102 transforms into a pulmonary function test device which records and analyses the flow-volume and the volume-time curves 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, IRV, 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

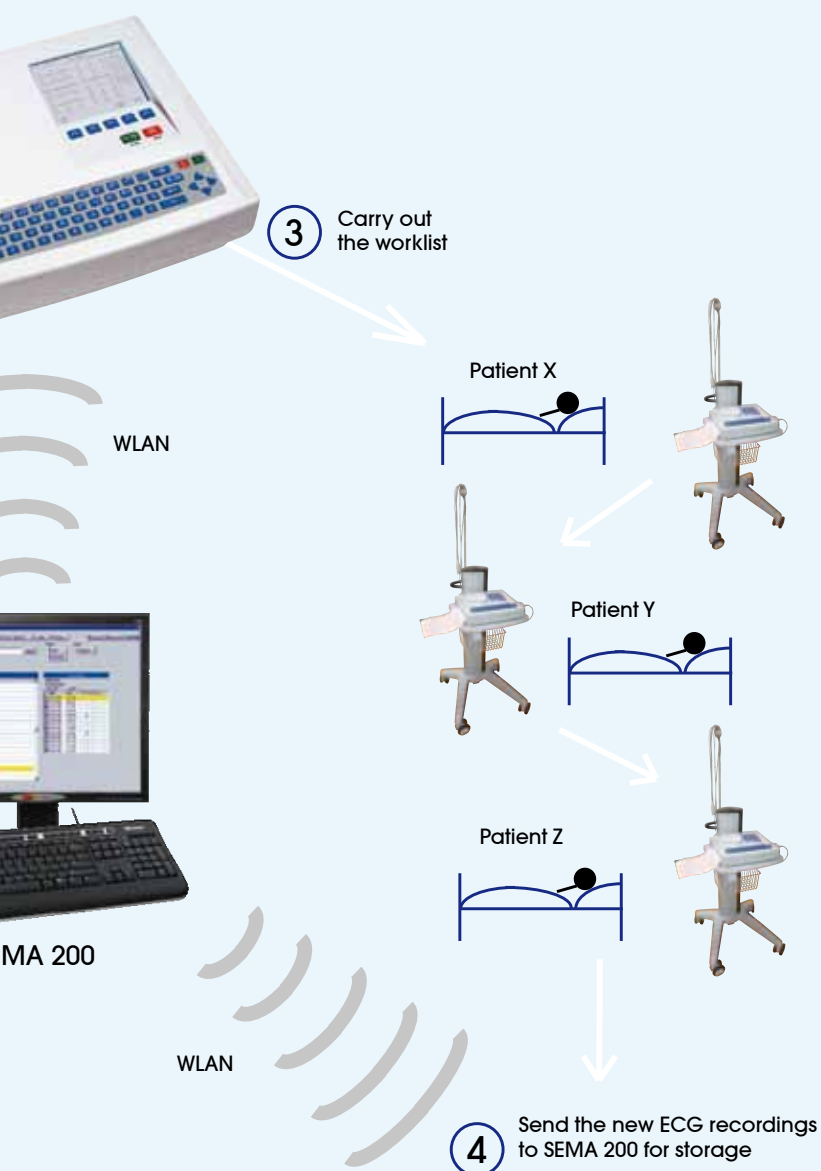


# CARDIOVIT AT-102

## SCHILLER – THE ART OF CONNECTIVITY

Are you contemplating an ECG management system?  
No problem with the CARDIOVIT AT-102.

Comprehensive network connectivity gives you access to the SCHILLER SEMA cardiology information system, optimising the workflow and enhancing the units functionality. Network access allows you to work more efficiently and receive additional support for clinical decisions.



The optional SCHILLER Communication Module (SCM) connects the AT-102 with the SEMA-200 Data Management System from SCHILLER, for an optimized workflow and more functionality. The module enables the bi-directional communication not only with SEMA-200, but also with Hospital Information Systems (HIS) and Electronic Medical Record (EMR) Systems, via LAN, WLAN, or a standard modem.

Patient demographics can be retrieved conveniently and quickly from the SEMA-200 system, thus minimizing the probability of data entry errors. The optional barcode reader further increases efficiency through the automated entry of patient identifiers.

With the workload function, a list of orders, complete with patient demographics, can be downloaded directly to the device. This automates the ECG acquisition process, and provides a traceable closed-loop workflow from order entry to billing.

The transmission of recordings to the SEMA-200 data management system enables the long term archiving of your data, with easy to use search and editing tools to efficiently manage patients and recordings. Standard interfaces via HL7, GDT, and XML furthermore enable the SEMA-200 system to become an integrated component in a larger systems solution, avoiding isolated information silos.



XML - data export

# Technical Data CARDIOVIT AT-102

## System:

**Dimensions:** 400 x 330 x 101 mm, approx. 5 kg

**Built-in monitor:** 120 x 90 mm effective display area, 320 x 240 dots resolution

**On-screen status indicators:** Battery status, date, time, power source

**Control panel and keyboard:** User-friendly, alphanumeric keyboard, LED indicator and LC display

**Power supply requirements:** 220–240 V (nominal), 50/60 Hz; 110–115 V (nominal), 50/60 Hz; stand-alone operation with built-in rechargeable battery; LED indicator for mains operation, integrated power supply unit

**Battery capacity:** 4 hours of normal use (approx. 300 automatic ECG print-outs or 100 spirometry records)

**Power consumption:** Max. 30 VA

**Line frequency filter:** Distortion-free suppression of superimposed 50 or 60 Hz sinusoidal interferences by means of adaptive digital filtering (SCHILLER Powerline Filter SPF)

**Frequency range of digital recording system:** 0 Hz – 150 Hz (IEC/AHA)

**Chart paper:** Thermo-reactive, Z-folded, 210 mm wide (A4, 8.5 x 11 inches)

**Printing process:** High-resolution thermal head printer, 8 dots/mm (amplitude axis), 40 dots/mm (time axis) @ 25 mm/s

**Communications:** RS-232 interface

– to connect spirometry sensor

– data transmission to PC (SEMA-200)

**SCHILLER Communication Module (SCM)\*:**

– internal modem\*

– Ethernet

– internal WLAN/Wi-Fi\*

– Barcode scanner\* (reduces errors by automating the input of patient data)

– Patient Data Query (PDQ)

– Worklist\* (allows auto-download of patient demographic data from the SEMA-200 system)

**Memory:** Possibility to save up to 40 Resting ECG or Spirometry measurements

**Environmental conditions:**

– Temperature, operating: 10° to 40°C

– Temperature, storage: -10° to 50°C

– Relative humidity: 25 to 95% (no condensation)

– Pressure during operation: 700 to 1060 hPa

## Safety Standards:

**Safety Standards:** IEC/EN 60601-1; UL 60601-1;

C22.2 No. 601.1-M90; IEC/EN 60601-2-25;

IEC/EN 60601-1-2 (EMC)

**Protection Class:** I according to IEC/EN 60601-1 (with internal power supply)

**Applied Part:** CF according IEC/EN 60601-1

**Conformity:** according Directive 93/42/EEC (Medical Devices)

**Classification:** IIa according Directive 93/92/EEC

## Technical Data for ECG:

**Patient input circuit:** Fully floating and isolated, defibrillation-protected (only with original SCHILLER patient cable)

**Monitor display:**

– 3- 6 or 12-channel display of the selected leads

– 25, 50 mm/s

– 5, 10, 20 mm/mV

– Filter status (on/off)

– Insufficient electrode contact

– Heart Frequency, HF

– mm/mV, mm/s

**Leads:** 12 simultaneous leads: Standard / Cabrera

**Chart printout speed:** 5/10/25/50 mm/s (manual print)

**Sensitivities:** 5/10/20 mm/mV, either automatically adjusted or manually selected

## Automatic lead programs:

– 6/12-channel presentations of 12 simultaneously recorded standard leads on one or more A4 (8.5 x 11 inches) pages

– Numerous printout formats can be selected

**Data record:**

– Patient data (name, age, height, weight, BP), user ID

– Listing of all ECG recording conditions (date, time, filter)

– Measurement program (M): ECG measurements results (intervals, amplitudes, electrical axes), average complexes with measurement reference markings

– Interpretation (C) with adult and pediatric guidance

**Recording track:** 6/12-channel presentation, optimal positioning on a width of 200 mm, automatic baseline adjustment

**Filter:** Myogram filter (muscle tremor filter): 25 Hz or 35 Hz, can be switched on/off (SCHILLER Baseline Stabilizer SBS, SCHILLER Smoothing Filter SSF)

**ECG amplifier:**

– Simultaneous recording of all 9 active electrode signals (= 12 leads)

– Pacemaker detection: 2 mV/ 0,1 ms

## Technical Data for Spirometry (Option):

**Measured values:**

**FVC:** FVC, FEV0.5, FEV1.0, FEV3.0, FEV0.5/FVC, FEV1.0/FVC, FEV3.0/FVC, FEV0.2-1.2, FEF25-75%, FEF75-85%, PEF, FEF25%, FEF50%, FEF75%, FIVC, FIV1.0, FIV1.0/FVC, FIV1.0/FVC, PIF, FIF50%, FMFT

**SVC:** SVC, ERV, IRV, TV

**MVV:** MVV, RR, TV

**Presentation possibilities (printout and screen):**

– Flow/volume graph

– Volume/time graph

– Table of measured values

– Realtime flow curve

**Data record:**

– Patient data (name, age, height, weight), user ID

– Registration conditions (date, time, date of last calibration)

– Flow/volume graph and/or volume/time graph

– Table of measured values with PREDICTED/ACTUAL/DIFFERENTIAL values

– Diagnosis guidance

**Prediction equation:**

**Adults:** ECCS, Austria, Crapo, Morris, Knudson, Knudson76, Polgar, Berglund, Finland, India, Composite

**Children:** Quanjer & Tammeling, Austria, India, Knudson, Knudson76, Polgar

**Extrapolated predicted values**

**Comparison of PRE/POST medication** is possible

**Standards Compliance:** ATS, OSHA, NIOSH

**SPIROVIT SP-250 Pneumotach Flowsensor for pulmonary function testing with disposable mouthpiece:**

**Dimensions of SP-250:** 118 x 36 x 28 mm, approx. 120 g; 4.6 x 1.4 x 1.1 in., approx. 0.26 lbs

**Measuring method:** Pneumotachometer

**Measuring accuracy:** According ATS

**Flow impedance:** < 0.2 mbar\*s/l at 12 l/s

**SPIROVIT SP-260 Pneumotach Flowsensor for pulmonary function testing with reusable mouthpiece:**

**Dimensions of SP-260:** 125 x 36 x 28 mm, approx. 160 g; 4.9 x 1.4 x 1.1 in., approx. 0.34 lbs

**Measuring method, Measuring accuracy, Flow impedance** same as SP-250

**Scope of delivery:**

– 1 pneumotach sensor; choice of SP-250 disposable (P/N 2.100022) or SP-260 reusable sensor (P/N 2.100551)

– Accessories: 2 nose clips and either 1 pack of disposable plastic mouthpieces for SP-250 (P/N 2.100077) or 1 pack of disposable filters for SP-260 (P/N 2.100123)

– 1 operating manual

**Scope of delivery for CARDIOVIT AT-102 Standard:**

CARDIOVIT AT-102 Resting ECG with 12 simultaneous leads, pacemaker detection, automatic ECG measurement

**Accessories:**

- 1 10-lead patient cable
- 1 set of electrodes or disposable electrodes
- 1 power cable
- 1 pack chart paper
- Operating manual

**Software options:**

- ECG interpretation: Software C™ ECG analysis software for adults and children
- Thrombolysis
- Basic exercise test
- Worklist
- SEMA-200 PC software to save, validate and archive ECG and spirometry data on PC

**Hardware options:**

- Equipment trolley (classic)
- Spirometry sensor SP-250 or SP-260
- Calibration syringe
- Vacuum electrode system VAC-100
- External monitor connection
- Internal SCHILLER Communication Module (SCM)
- Barcode-Scanner
- internal WLAN/Wi-Fi on SCM
- Integrated modem/fax on SCM
- Ergometer (ERG-911)
- Treadmill (MTM-1500)
- Blood pressure recorder (ERG-911)

**Technical Data are subject to change without notice.**

\* Option







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