

## MT-101/200 Holter System



Big in performance –  
small in format.



# SCHILLER

The Art of Diagnostics

# High-tech recorder MT-101

## Making good things even better!

SCHILLER is proud to introduce the compact and light-weight advanced version of our MICROVIT MT-100/200. The MICROVIT MT-101 is designed for 2- or 3-channel ECG recordings, depending on the ECG cable you use (4 or 6 leads).

Nevertheless, the former 2/3-channel MT-100 recorder is compatible with the more sophisticated MT-200 Analysis Software Version based on WINDOWS™ 2000/XP.

The **MT-101/200 System** operates in stand-alone mode as well as integrated into the CS-200 System, AT-110 and PT-160.



### Data transmission:

Alternatively the SD Card can be simply taken out of the Holter and the data can be transmitted with an external card reader



## Digital long-term comfort

- Backlit graphical LCD and multilingual menu control
- Choose between a 2- and 3-channel ECG by using either a 4- or 6-lead patient cable
- Memory: Storage on SD card
- Sampling rate: Adjustable 500 Hz
- Galvanically isolated and defibrillation-protected ECG
- USB interface



## for physicians and patients

- Rechargeable, environmentally-friendly battery of  $\geq 2300$  mAh capacity can be used as well as single-use alkaline batteries (AA)
- Before starting a Holter recording you can check the quality of the ECG signals in the MT-200 program or directly on the MT-101 LCD
- Recording capacity: Up to max. 72 hours (with minimum 64 MB)
- Data transmission from the MT-101 to the MT-200 analysis programme via integrated USB interface or via external SD card reader
- Holter carrying pouch made out of kind to skin Neoprene material

# High-intelligence analysis MT-200

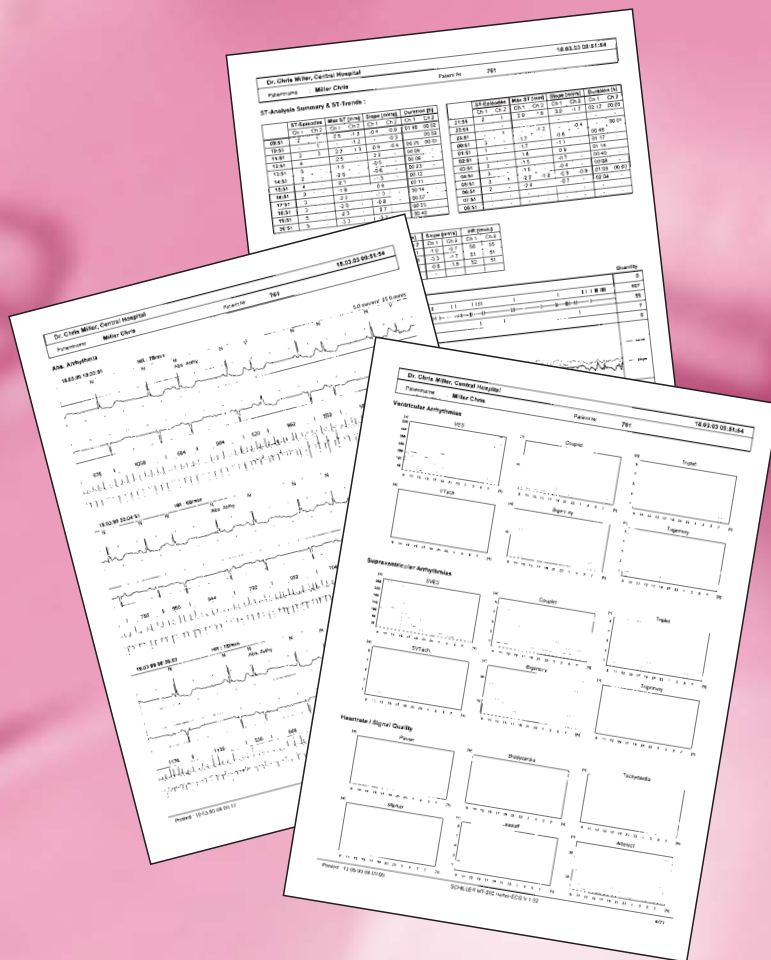
## Autonomous thinking!

The MT-200 Analysis Software executes the most complicated operations for you:

- Analysis of 2 channels in different combinations
- ST Analysis
- HR Trend overview
- HR Variability
- Pacemaker Templates
- Reclassification in less than 2 seconds with "Drag&Drop" function

The user-friendly Windows interface and the simple mouse handling make it very easy to operate the application: transfer ECG from MT-101 to MT-200, start analysis and print report – finish!

- Template Matching
- Generation of PDF files
- E-mail function
- Multiple analysis
- Connection to the SCHILLER SEMA-200 Data Management System



## No need to worry about data loss!

Since the patient data and the start time are stored directly in the MT-101 via the PC when you start recording, the system guarantees you a high level of data security. Data losses and confusion between ECGs' are things of the past. All the recorded data is dynamically compressed and stored to the 64 MB SD memory card. Thanks to the flash memory, the data remains stored in the SD card, even if the batteries are flat or the patient removes them.

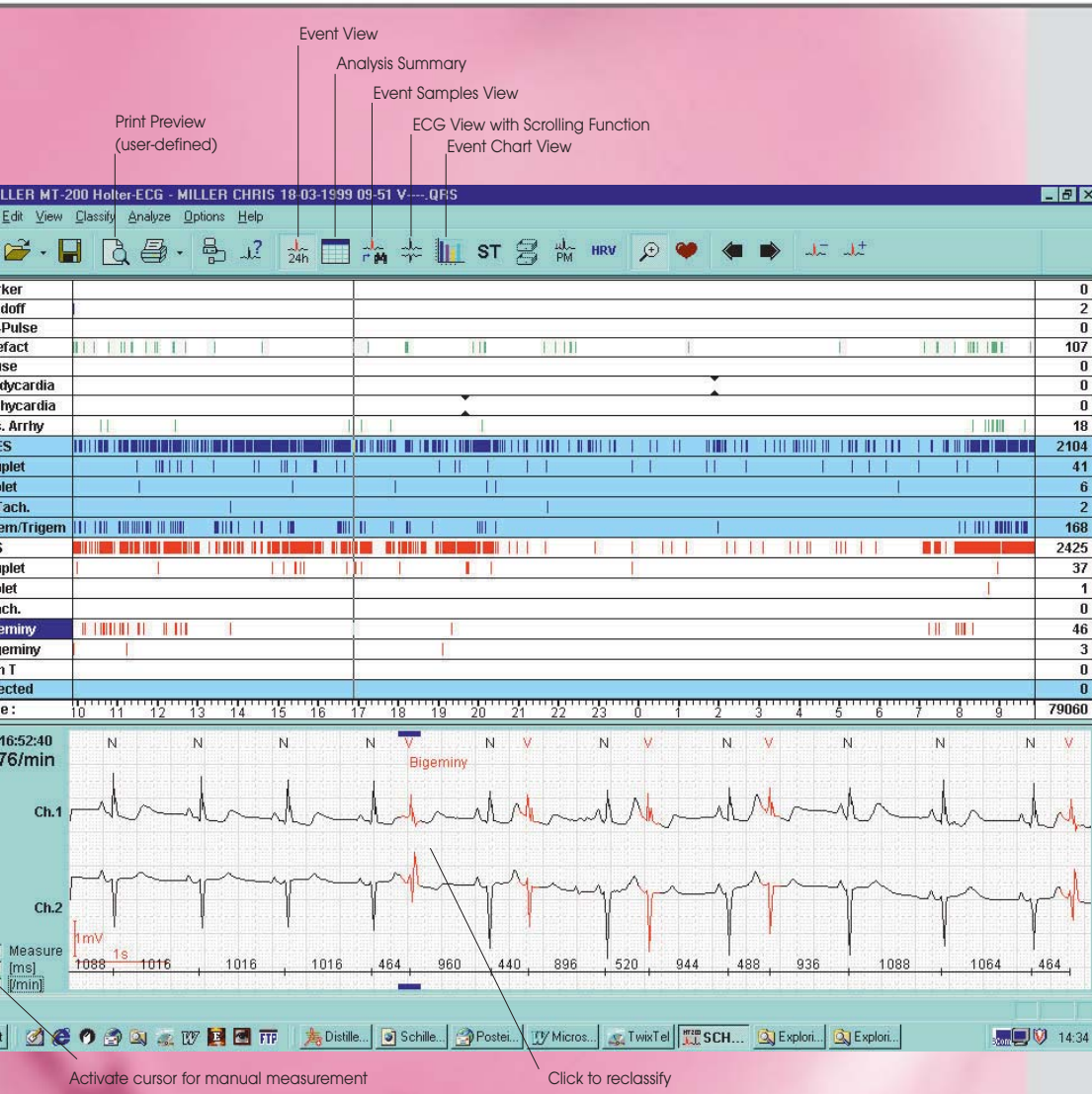
## Compatible and flexible!

After analysis of the recording, data can be saved either in original or in PDF format. This facilitates data export via E-mail (e.g. to the hospital's internal intranet or to external colleagues) and generally enables a more flexible handling with data. In addition, the MT-200 programme is compatible with the new SCHILLER SEMA-200 Software (as of Version 2.14), which offers entirely paper-free archiving of all ECG patient data.

## For perfect diagnosis!

With a 17" screen, you can have a true-to-scale display of ECG records for up to 30 minutes! Thanks to the Super VGA resolution, you can even diagnose P-waves perfectly on-screen! A graphic display shows all events over a 24-hour period on one screen page, where you can modify the amplitude size and speed whenever you like.



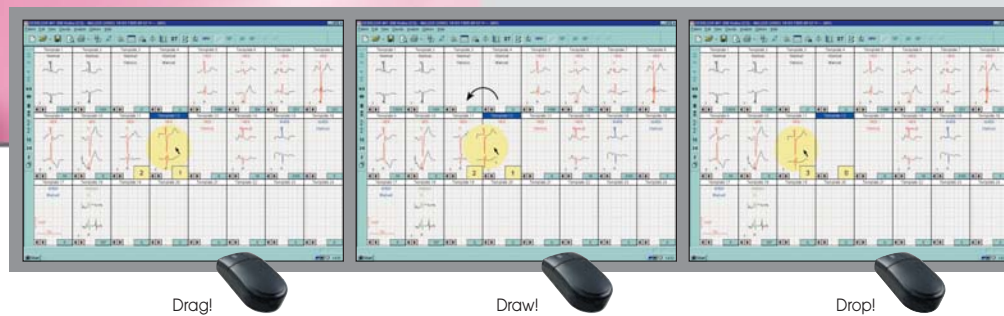


### The event screen is unique!

Throughout the recorded period, the view shows the arrhythmias that have been detected, divided into groups: SVES, VES and miscellaneous. This type of display, with grouping and colour-coding, is the "optimal overall assessment tool" for practitioners!



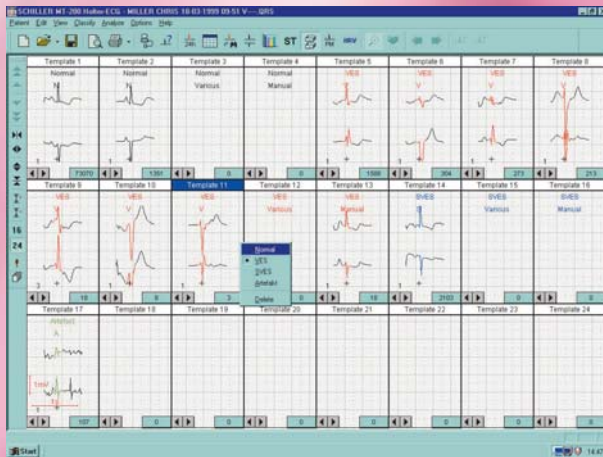
MT-101 recorder with MT-200 evaluation software



### Fantastic: Reclassify in just 2 seconds

The "Drag&Drop" function means that you can regroup one whole class with another: click (Drag), move the mouse key to the target class you want (Draw), and release (Drop). In just 2 seconds, the whole class is reclassified and evaluation of the results is automatically adjusted!

# Insight into the smallest details!

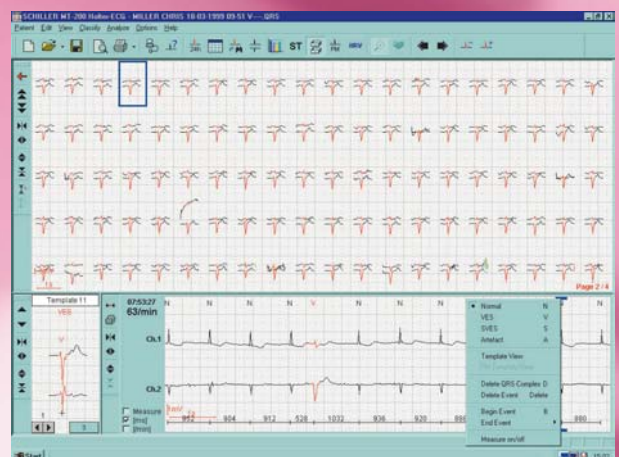


24 different template classes, with all complexes in each class, displayed at will.

Simply by clicking with the mouse, you can view the individual QRS complexes in this template.

## Overview of 100 QRS complexes!

And that's still not all – at the same time, the Zoom window shows you the enlarged multi-channel ECG display with an indication of the time, heart frequency and the legend before or after this QRS complex. At the bottom left, you are shown the reference beat and the number QRS complexes for this template.



## Another unique option! Template matching

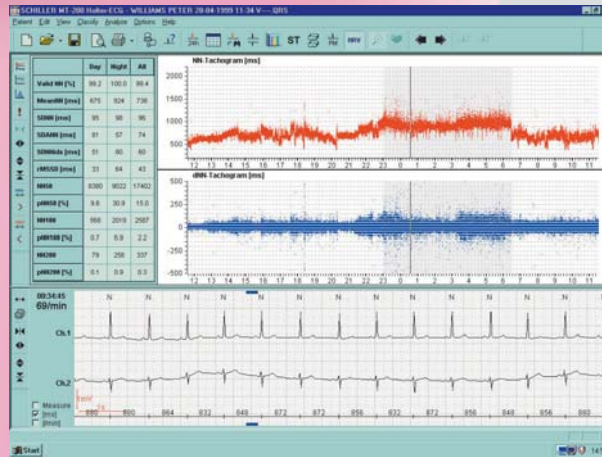
The MT-200 program automatically classifies 20 different ventricular and supraventricular events with a very high level of reliability (Couplet, Triplet, Bigeminus, Trigemini, Absolute Arrhythmia, Tachycardia etc.). With the MT-200 program, QRS complexes with similar forms are automatically grouped into one template.

To give you a comprehensive overview of the different types of cardiac excitation spread, the program generates:

- A Maximum of 12 "normal" classes
- 1 "artefact" class
- A maximum of 300 different ventricular extrasystole "VES" classes
- And a maximum of 12 different supra ventricular extrasystole "SVES" classes

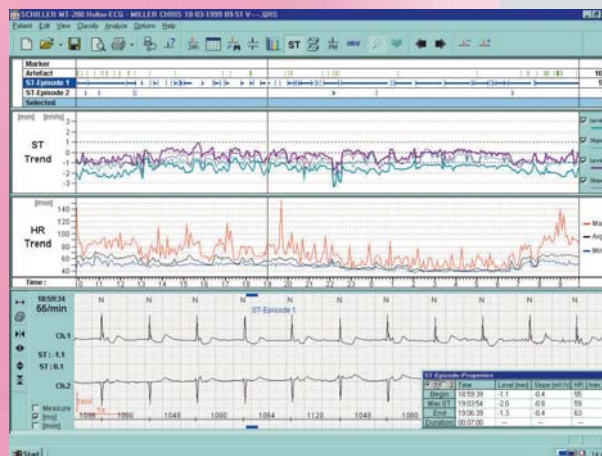
However, you can also carry out your own re-classifications.

# For fast, clear analysis.



## Analysis of Heart Rate Variability in the time domain

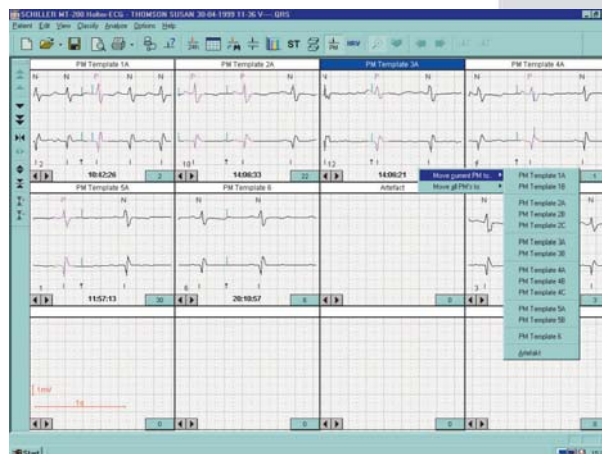
The SCHILLER analysis graphically highlights the important difference between day (active phase) and night (quiescent or resting phase). All the numerical values are also split into day, night and total.



## ST and HR trend overview

Displays the ST amplitude and slope for both channels throughout the entire recording period. ST changes can be detected immediately and can be compared with the HR trend.

A large range of options so that you can select the ones you need!



## Display of Pacemaker Templates

Pacemaker templates show pacemaker pulses occurring in the atrium, the ventricle, and in both. Templates are also given for pacemaker malfunctions such as in the T-wave.

**Technical Data:****ECG:****ECG amplifier:**

- Galvanically isolated 5.5 kVDC
- Input impedance: >10 MΩ
- Maximum electrode potentials: ± 300 mVDC
- Common mode rejection: > 80 dB
- Dynamic range: ± 5.12 mVAC
- Frequency range: 0.05 – 150 Hz (-3 dB)
- Digital resolution: 2.5 µV, 12 bit
- Sampling frequency: 500 Hz
- Pacemaker detection: ± 2.200 mV / 0.1..2 ms

**Patient cable:**

- 2-lead: 4 electrodes
- 3-lead: 6 electrodes

**System:**

**Dimensions:** 94 x 61 x 20 mm, approx. 110 g (including battery)

**Data recording:** Simultaneous 2- or 3-channel recording, differential

**Power consumption:** ~95 mW (recording)

**Battery:**

- 1 pc. AA Alkaline 1.5 V (Energizer or equivalent)
- Rechargeable accumulator, 1 x AA NiMH with 1.2 V and capacity ≥ 2300 mAh

**Storage medium:** 64 MB SD Memory Card

**Data transmission from MT-101:** With integrated USB interface or removable SD card

**User interface:**

- Graphic LCD, 98 x 64 dots
- 2 button operation with menu-controlled system software
- Built-in real time clock with various date formats
- Battery status
- Recording status
- Voice recording for patient data
- Various languages

**PC requirements:**

- WINDOWS™ 2000 or XP
- Pentium 600 MHz or better
- 4 GB hard disk (10 GB recommended; one record approx. 15 MB)
- Software requires 10 MB free hard disk space
- 128 MB RAM (256 MB RAM recommended)
- Monitor resolution XGA 1024 x 768

**Software features MT-200:**

- Save in PDF-Format (Portable Document Format)
- E-Mail-Function
- Multiple analysis
- Connection to the SCHILLER SEMA-200 Data Management System
- HR trend
- ST analysis (option)
- HR variability (option)
- Template matching (option)
- Pacemaker templates (option)

**Accessories:**

- Also available with PCMCIA adapter

**Standards:**

**Safety Standards:** IEC/EN 60601-1; UL 60601-1; C22.2 No. 601.1-M90;

IEC/EN 60601-2-47; IEC/EN 60601-1-2 (EMC)

**Protection Class:** Internal power supply

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

**Conformity:** CE 0123 according Directive 93/42/EEC (Medical Devices)

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

**Ambient conditions:**

- Temperature during operation: 10° to 40° C
- Temperature during storage: -10° to 50° C
- Relative air humidity: 25 to 95 % (non-condensing)
- Pressure: 700 to 1060 hPa

Technical data and images are subject to technical changes due to continuous innovation.

**Asia****SCHILLER Asia-Pacific**

7 Jalan Ara SD 7/3B  
Bandar Sri Damansara,  
52200 Kuala Lumpur  
Malaysia  
Phone +603 6272 3033  
Fax +603 6272 2030  
sales@schiller.com.my  
www.schiller-asia.com

**Austria****SCHILLER Handelsgesellschaft mbH**

Kampffüllerweg 24  
A-4040 Linz  
Phone +43 732 70 99-0  
Fax +43 732 757 000  
sales@schiller.at  
www.schiller-austria.com

**C.I.S. & Russia****SCHILLER AG**

Moscow Representative Office  
Office 414, 1-st Yamskogo Poly Street 15  
125124 Moscow, Russia  
Phone/Fax  
+7 (495) 970 11 33,  
+7 (495) 956 29 10  
mail@schiller-ag.com  
www.schiller-cis.com

**France****SCHILLER Médical S.A.S.**

4, rue Louis Pasteur  
F-67162 Wissembourg/Cedex  
Phone +33 3 88 63 36 00  
Fax +33 3 88 94 12 82  
info@schiller.fr  
www.schiller-france.com

**Germany****SCHILLER Medizintechnik GmbH**

Rudolf-Diesel-Strasse 14  
D-85521 Ottobrunn  
Phone +49 89 62 99 81-0  
Fax +49 89 609 50 90  
info@schillermed.de  
www.schiller-germany.com

**India****SCHILLER Healthcare India Pvt. Ltd.**

D.C. Silk Mills Compound, 'A' Wing, 1st floor  
5, Chunawala Estate, Kondivita Lane  
Andheri-Kurla Road, Andheri (E)  
Mumbai - 400 059, India  
Phone +91 22 2826 3520  
Fax +91 22 2826 3525  
mail@schillerindia.com  
www.schillerindia.com

**Japan****SCHILLER Japan, Ltd.**

Biomedical Research Building 218  
1-2-3 Kasumi, Minami-ku  
Hiroshima 734-8551  
Phone +81 82 250 2055  
Fax +81 82 253 1713  
koji.maekawa@schiller.jp  
www.schiller.jp

**Spain****SCHILLER ESPAÑA, S.A.**

Ctra. de la Coruña  
A-6 km.18,200  
E-28230 Las Rozas/Madrid  
Phone +34 91 713 01 76  
Fax +34 91 355 79 33  
schiller@schiller-es.com  
www.schiller-spain.com

**Switzerland****SCHILLER-Reomed AG**

Riedstrasse 14  
CH-8953 Dietikon  
Phone +41 44 744 30 00  
Fax +41 44 740 37 10  
sales@schiller-reomed.ch  
www.schiller-reomed.com

**Turkey****SCHILLER TÜRKİYE**

Halil Rifat Paşa Mah.  
Darülaceze Cadd.  
Perpa Ticaret Merkezi  
B/Blok No: 41 K: 2  
Okmeydanı-Sisli - İstanbul  
Phone +90 212 210 8681 (pbx)  
Fax +90 212 210 8684  
sales@schiller-turkiye.com  
www.schiller-turkiye.com

**USA****SCHILLER America Inc.**

11300 NW 41st Street  
Miami, Florida 33178  
Phone +1 786 845 06 20  
Fax +1 786 845 06 02  
sales@schilleramerica.com  
www.schilleramerica.com

Your specialist:

**SCHILLER**

The Art of Diagnostics