“With the VET-ECG system I can easily record high quality, standardized ECGs in my patients on all of my Apple devices and instantly analyze and demonstrate the results for my clients.”

Dr. Herbert Maisenbacher III, DACVIM Cardiology, Veterinary Heart Care & Dextra

All products are for veterinary use only -not for human use-.
Overview

Wireless Bluetooth enabled miniaturized ECG system

VET-ECG
12-Channel Clinical Diagnostic ECG with optional Holter

VET-Scout
2-Channel Holter and online monitor
How does it work?

Start transmitter
and record live ECGs

Bluetooth or USB

USB, Email, Internet

Analyze, document and manage
ECGs on PC/MAC

Edit, view and share recorded ECGs on mobile devices
VET-ECG and VET-Scout both use the same recorder design

Recorder is about the size of 9 V battery

Size: 61 x 37 x 18 mm

Weight: 42 g incl. Li-Polymer battery

Bluetooth: Class 1

Rugged: water-resistant, shock proof

Integrated USB controller and charger

Flash memory 2GB

Data transfer: Bluetooth or USB download

Electrode cables: 60 & 120cm or custom, artifacts minimized, EU & US color coding
## Recorder technical data

<table>
<thead>
<tr>
<th></th>
<th>VET-ECG 12-channels</th>
<th>VET-Scout 2-channels differential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead Capability</strong></td>
<td>10, 6, 3 + 3D Accelerometer</td>
<td>5 or 3</td>
</tr>
<tr>
<td><strong>Recording</strong></td>
<td>24 h</td>
<td>3 d / 7 d*</td>
</tr>
<tr>
<td><strong>Online Monitoring</strong></td>
<td>24 h</td>
<td>48 h / 96 h*</td>
</tr>
<tr>
<td><strong>Sampling rate</strong></td>
<td>500,1000,2000 Hz</td>
<td>150 Hz</td>
</tr>
<tr>
<td><strong>Filter</strong></td>
<td>50/60Hz &amp; Muscle</td>
<td></td>
</tr>
<tr>
<td><strong>ECG</strong></td>
<td>Resting &amp; Holter</td>
<td>Holter, ICU online monitor</td>
</tr>
<tr>
<td><strong>Holter</strong></td>
<td>24 h optional (Software activation)</td>
<td>3d / 7d* integrated</td>
</tr>
<tr>
<td><strong>Telemetry</strong></td>
<td></td>
<td>effective data compression</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Live online via BT and GSM (optional)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Operate up to 21 VET-Scout in parallel</td>
</tr>
</tbody>
</table>

* High Capacity Battery

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Interface/Software options

APPLE “Multi-ECG” App

for iPhone, iPad for ECG recording / view / share functions (email & server upload)

ANDROID “Multi-ECG” App

for Android tablets for ECG recording / view / share functions (email & server upload)

VET-ECG Software

for PC/Mac computer with ECG recording / view/ share & optional interpretation

CardioExplorer

for Windows PC and multi user networks for advanced ECG & Holter Analysis.

Controls/operates multiple recorders in parallel for live patient monitoring.

Ideal for in-hospital and remote animal supervision and telemedicine: providers.
Telemetry /Server uplink

Email exchange
For mobile and stationary users of recorded & downloaded raw and pdf files

Externally hosted server uplink
For users operating in separate organizations, ideal for telemedical interpretation and analysis services

Internal/external Network integration
Optional, customizable CardioExplorer software manages multiple clients within network in-hospital or cloud connected. Live display of multiple recorders parallel connected via BT or via BT to network. Optional email, txt message event alarm via cellular GSM

WAP-Access point technology
For remote live supervision of patients and Holter users at home or in hospital

Optimized 80% data compression to enhance data transmission efficiency
Current Applications

**VET-ECG** for mobile and in-hospital use
- Small recorder size ideal for ambulant/outpatient visits
- Fast wireless data exchange with experts/colleague
- Display on personal/preferred mobile device

**VET-Scout** for remote long-term and live online monitoring
- Ideal for vital-stats monitoring of animals in ICU or during transport
- Perfect for small and large animal event monitoring (non-obtrusive)
- Extended operational time up to 7 days (96hrs online)
- With *CardioExplorer* software remote monitoring via internet connection.
- WAP Accesspoint technology enables in-hospital network & telemedicine
- Server uplink function enables easy sharing with experts via internet
**Mobile use**

**VET-ECG** and **VET-Scout** connect to Apple or Android based mobile phones/tablets

Simply download APP from Google Play or Apple iTunes store

App functions include ECG

- Recording,
- Viewing,
- Editing (notes, findings, patient history)
- Sharing (email or server uplink)
In-hospital use

**VET-ECG** recorded ECGs can be viewed, shared and analyzed with easy to use VET-ECG software for PC/Mac and for mobile computers with Bluetooth

- ECG recording, sharing
- ECG interpretation (optional)
CardioExplorer is a sophisticated and easy to use software

- for PC/ Mac*, multi-client, network ready
- Bluetooth interface
- Online programming & control of multiple recorders in parallel
- Online screening, trend, morphology
- Reclassification, trend & HRV analysis,
- Direct access to all events
- Template analysis with drag & drop
- Full screen view and scroll function
- MS-Word, PDF export & automated reports

*Requires virtual machine
CardioExplorer Database

- Patient data administration with various filter and sort functions
- Recorder programming and online control
- Import/export and data archive
- Network readiness with multiple user profile and template access
CardioExplorer Online screen

- Patient online monitoring and instant live ECG screening
- Instant online ECG analysis enables real-time classification of recorded data
- Automatic patient supervision with adjustable alarm settings
- Individually customizable analysis parameter
- Flexible program settings for research purposes enabling data set comparison
CardioExplorer Summary screen

- Saved ECG data will be displayed in a summary screen providing initial event overview
- Mark, measure and edit detected events and reclassify signals if necessary
- Click and mark entire elements for automatically generated report
- Predefine and generate entire report per mouse-click
- Use local and server based automated word templates
CardioExplorer Template analysis

- Edit, “clean-up”, group and summarize various signals into morphologies
- Easily re-classify signals, groups and single ECG signal traces
- View QRS-complex groups in 3D to verify your results
CardioExplorer Trend analysis

- Trend analysis displays HR frequency, RR times and ST variations over time for select time windows or entire recorded ECG
- Interesting sections can be selected via mouse-click and instantly analyzed
CardioExplorer ECG overview

- Visualize up to one hour of recorded data for analysis in the overview screen at once
- Mark suspicious signal traces per mouse-click to see the related sequence in the separate ECG-window
- Watch the entire ECG with the full screen function or scroll to all pages one by one
CardioExplorer ECG Variability analysis

- Analyze heart rate variability over time and over frequency range
- All standard parameter will be calculated and summarized
- Export all ECG raw data/RR-times for additional analysis into HRV scanner or Kubios-HRV
# VET-ECG Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Range</td>
<td>+/- 6 mV</td>
</tr>
<tr>
<td>Sampling Rate</td>
<td>500 Hz (optional 1000 Hz)</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>0.05 – 150 Hz (-3 dB)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>10 uV (digital resolution)</td>
</tr>
<tr>
<td>Max. Electrode potential</td>
<td>+/- 300 mVdc</td>
</tr>
<tr>
<td>Time Constant</td>
<td>&lt;=3.2 s</td>
</tr>
<tr>
<td>CMRR</td>
<td>&gt; 100 dB</td>
</tr>
<tr>
<td>Dimensions</td>
<td>37x62x16 mm (WxLxH)</td>
</tr>
<tr>
<td>Weight</td>
<td>42 g (incl. Battery)</td>
</tr>
<tr>
<td>Data Acquisition</td>
<td>Simultaneously, max. 12 Channel, 24h</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>42 mW</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Input: 100 - 240V~/50Hz/ 60Hz Filter Output: 5V/=1000mA</td>
</tr>
<tr>
<td>Memory</td>
<td>integrated Flash (max. 32 GB)</td>
</tr>
<tr>
<td>Data Transfer</td>
<td>about 30 sec / 24 h</td>
</tr>
<tr>
<td><strong>Standards</strong></td>
<td></td>
</tr>
<tr>
<td>Conformity</td>
<td>CE according to 93/42/EWG</td>
</tr>
<tr>
<td>FCC</td>
<td>PVH0925</td>
</tr>
<tr>
<td>Conditions for Operation</td>
<td>Temperature: +10°C bis +50°C Ambient pressure: 600-1200hPa Relative humidity: 0-95%</td>
</tr>
<tr>
<td>Conditions for Transport and Storage</td>
<td>Temperature: -20°C bis +60°C Ambient pressure: 500-1060 hPa Relative humidity: 5-90%</td>
</tr>
<tr>
<td>Classification</td>
<td>Safety Class II / Typ BF Device of class IIa</td>
</tr>
</tbody>
</table>

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Summary

- **VET-ECG** and **VET-Scout** combine the latest in:
  - miniaturized clinical diagnostic with the smallest wireless ECG and Holter
  - mobile computing with Bluetooth connectivity
  - wireless/cloud based data exchange and server uplink
  - professional and versatile analytic and monitoring software for single user and multi-client platforms
  - multi-platform approach compatible to Apple, Android, Windows and iOS

- It is the only ‘Made for Apple’ diagnostic ECG currently available

- It is an All-in-One system that includes real-time resting, exercise ECG, Holter, event monitor and telemetry

- **VET-ECG** and **VET-Scout** are ideal partners for mobile users, in-hospital monitoring and telemedicine service providers