



# Philips Zymed Algorithm for Philips Holter System

Simplifying your most complex Holter scans

When it comes to achieving clinical excellence across the cardiac care continuum, performance is the top priority. That is why the Zymed Holter analysis algorithm is designed to be powerful and precise—while also being easy to use.

## EASI 12-lead

- A growing number of caregivers have come to rely on EASI derived 12-lead ECG data to help them accurately assess a patient's medical condition.
- The Zymed algorithm uses EASI to derive consistent, accurate, full 12-lead ECG information using only five electrodes to detect and document cardiac arrhythmias and ST changes.
- EASI allows you to view and/or document ECGs in the familiar 12-lead format at any point in the scan.
- EASI lead placement on easy-to-find anatomical locations reduces artifact and promotes patient comfort.

## Ease of use

- Limited operator interaction required. With a few mouse clicks, the algorithm retrieves and analyzes patient data and presents results in a customized report format.
- Easy-to-use interface that allows users to dynamically teach the algorithm to recognize new templates and change its behavior regarding existing morphologies.
- Beat annotations above each beat to facilitate easy review and editing.

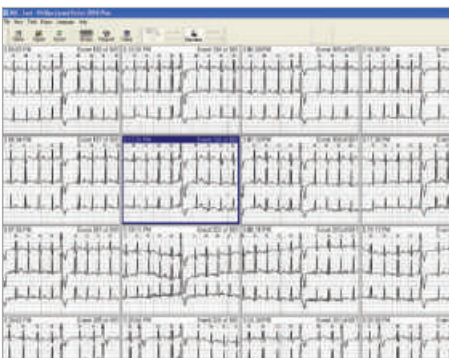
## Fast, flexible Zymed Smart Tools

- Zymed algorithm offers editing tools designed to meet the needs of retrospective and prospective scanners alike and can be scaled to fit the needs of power users.

- Zymed Smart Tools combine the power of the Zymed algorithm and the ease of use of the Philips interface with single-click interactive editing.
- Zymed Smart Tools dynamically learn and adapt beat classification, making your scan fast and efficient while providing the clinical accuracy that you demand.

## Accurate beat detection – the key to effective arrhythmia analysis

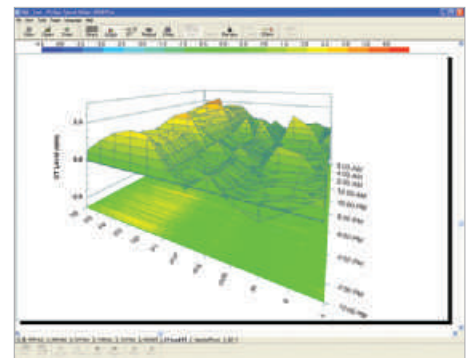
- Highly accurate and clinically validated beat detection.
- Very effective in separating T waves from actual beats, one of the biggest challenges in arrhythmia analysis.
- Comprehensive beat detection methodology that uses data from all three channels to distinguish real beats from artifacts.



Validate thousands of events within seconds using Event Review.



Verify beat classes quickly with tools designed to streamline the editing process.



Get three-dimensional views of the heart using ST 3D analysis.

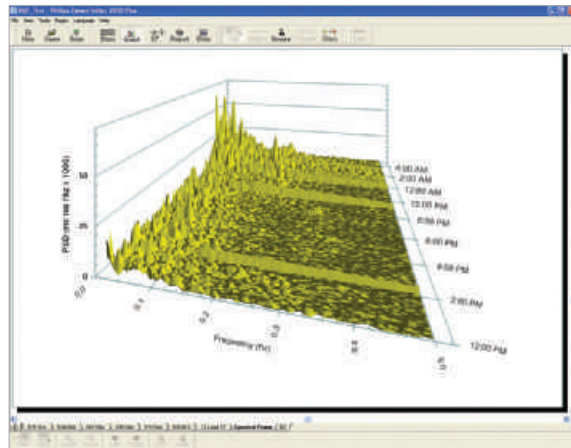
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### Accurate beat classification

- To help ensure artifact-free analysis, channels are turned on and off dynamically with each beat based on artifact content.
- Each beat is categorized by matching it against a dynamic, ECG specific library of rhythm and shape templates.
- For improved accuracy, template matching utilizes all three channels with special considerations for small or unavailable channels.
- If a beat does not match an existing template, the algorithm will extract certain features (rhythm, rate, width, area, etc.) and apply rules to automatically differentiate between normal and ventricular beats based on a weighted features score.
- After initial classification, beat information is further processed to screen for artifacts, thereby preventing miscounting of artifacts as normal or ventricular.

### Multiple scanning styles

- Select from four distinct scanning styles (Retrospective, Paging, Superimposition, and Quickscan).
- Quickscan, a Philips exclusive feature, combines the automation of retrospective scanning and the interactive capabilities of prospective scanning.



Assess Heart Rate Variability – both time and frequency domain.

### Enhanced flexibility

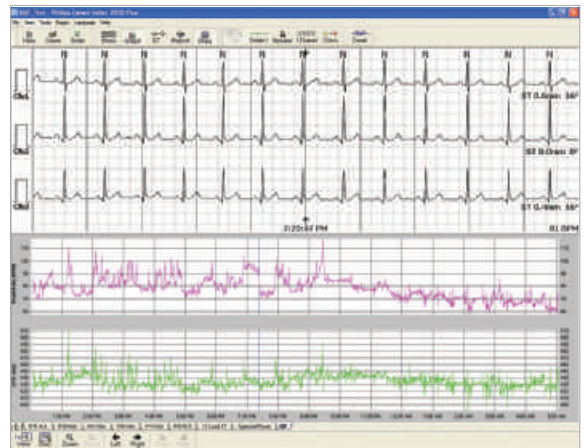
- Take advantage of comprehensive and flexible algorithm settings (rule sets) designed to provide highly accurate scans.
- Create and personalize rule sets for specific patient types or research protocols.
- Modify or change algorithm rule settings on the fly during the course of the scan.

### Advanced pacemaker analysis

- Differentiates between paced and non-paced beats with a high degree of accuracy.
- Determines if beats are singly paced, dually paced or paced with fusion as part of the beat classification process.
- Analyzes and reports failure to sense, failure to capture, and failure to output.

### Advanced capabilities:

- Heart rate variability with both time and frequency domain analysis.
- 3-channel ST segment analysis with ST episode reporting.
- 12-lead ST segment analysis with 3-D graphics that provide multiple views of the heart.
- Accurate QT analysis on every normal QRS, with options for uncorrected QT analysis or correction by all the industry-standard correction algorithms.
- Clinical accuracy of QT analysis validated against the PhysioBank QT database.
- Up to 1 minute resolution in reporting QT totals.



Ensure accurate QT analysis with beat-by-beat view and fiducial points.



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