Panorama®

Arrhythmia Analysis
Frequently Asked Questions

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What ECG vectors are used for Beat Detection?

3-wire lead set	Viewed ECG vector
5-wire lead set and 12 lead	II and V

What ECG vectors are used for Beat Typing?

3-wire lead set	Viewed ECG vector
5-wire lead set and 12 lead	I, II, and V

What ECG vectors are used for V-Fib Detection?

3-wire lead set	Viewed ECG vector
5-wire lead set and 12 lead	II and V

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How is the Heart Rate calculated?

Leads use the mean R-R interval of the last 16 beats if the HR > 48 bpm. If the Heart Rate derived from the last 4 beats is ≤ 48 bpm, then that rate is used for HR. PVCs and Paced beats are included.

What is the algorithm's definition of Asystole?

No QRS detection for a configurable time period (3-10 Seconds)

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What is the algorithm's definition of V-Fib?

Presence of a Fib waveform with no recognizable P, QRS, or T waves in a 5 second window

What is the algorithm's definition of V-Tach?

When the PVC rate and number of consecutive PVCs for the configurable V-Tach setting have been met.

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What are the user configurable options for the V-Tach rate?

The V-Tach rate can be set between 100-180 bpm

What are the user configurable options for the V-Tach threshold?

The V-Tach threshold can be set between 3-15 consecutive PVCs

What is the algorithm's definition of Run?

The PVC Rate meets criteria for V-Tach rate but did not meet the number of consecutive PVCs to be called V-Tach

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What is the algorithm's definition of Ventricular Rhythm?

Number of consecutive PVCs is >2 and the V-Tach rate is not reached

What is the algorithm's definition of Irregular Heart Rate?

When the measured variations in the R-R interval over a period of time exceed a preset limit established by the arrhythmia analysis algorithm

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What is the algorithm's definition of Bigeminy?

Three or more N-V or V-N consecutive sequences

What is the algorithm's definition of Trigeminy?

Three or more N-N-V or V-N-N consecutive sequences

What is the algorithm's definition of Bradycardia?

Heart rate 10% lower than selected Low HR alarm limit

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What does Relearn do?

Selecting "Relearn" updates the ST and Arrhythmia templates

Note: Relearn sets new ST baselines and the ability to compare to initial baseline will be lost.

Note: Ensure waveform being learned is the patient's baseline rhythm and not a lethal arrhythmia or artifact.

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When does an Automatic Relearn occur?

3-wire lead set

    Change in viewed ECG vector

3-wire lead set, 5-wire lead set and 12 lead

    Initial admission

    Resume monitoring after a Standby mode

    Arrhythmia and/or ST is enabled

    After correction of lead fault of >60 sec

When should a Manual Relearn be done?

Suspected false alarm calls

Change in patient's dominant beat and/or rhythm occurs

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What arrhythmia calls can be made during a Learn period?

Only calls during Learn:

- Asystole (once 3 beats have been detected)
- V-Fib (once 3 beats have been detected)

What does the message "ECG Noise" mean?

The algorithm has detected noise in the ECG waveform and cannot perform arrhythmia analysis during this time. Correct the noise to return to arrhythmia processing.

Does adjusting the wave gain (size) of the ECG waveform impact algorithm performance or heart rate calculation?

No.

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The monitor is calling "Asystole" or "Low Heart Rate" despite the visual presence of an ECG waveform. What could be the issue?

Alarm may be latched (Asystole)

- Acknowledge a latched alarm by selecting over the patient's digital or waveform area to clear the latched alarm if condition is resolved.

The QRS complexes are too small for detection by the algorithm.

- Move ECG patches closer together to increase the voltage of the QRS complexes.

- Select "Relearn" to establish new baseline templates

- Change displayed lead (if using 3-wire lead set)

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Why is the V-Tach alarm called when V-Tach is not present in the waveform?

Alarm may be latched (V-Tach)

- Acknowledge a latched alarm by selecting over the patient's digital or waveform area to clear the latched alarm if condition is resolved.

Baseline rhythm has changed and arrhythmia templates need to be updated

- Select "Relearn" to establish new baseline templates

Artifact may be present

- Poor connectivity or skin contact
  - Secure ECG lead wires and cables

- Electrocautery interference

The algorithm may not clearly distinguish the QRS complexes from T waves that are similar in height

- Reposition ECG patches to establish taller QRS complexes

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Are there any special considerations for patients with permanent Pacemakers?

HR is calculated from the patient's QRS complex, not the Pacemaker enhancement.

- Reposition electrodes away from the pacemaker device to reduce "pacemaker noise"