**GREATER SPECIFICITY, GREATER CERTAINTY**

Confirm Rx™ ICM with SharpSense™ Technology uses additional discriminators to confirm or reject detections made by existing Confirm Rx™ ICM algorithms—significantly improving the accuracy of Atrial Fibrillation (AF), Bradycardia and Pause detected episodes.

By maintaining a high relative sensitivity and improving the Positive Predictive Value (PPV), Confirm Rx™ ICM with SharpSense™ Technology monitors and stores true arrhythmic events.

Greater specificity means greater certainty—allowing you to decide clearly and confidently on a diagnosis, and enabling more patients to live fuller lives.

### ENHANCEMENT GOALS

<table>
<thead>
<tr>
<th>ALGORITHM</th>
<th>DISCRIMINATOR</th>
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<tbody>
<tr>
<td>1. Base algorithm</td>
<td>1. Analysis by SharpSense™ Technology</td>
</tr>
<tr>
<td>2. Initial detection</td>
<td>2. True STORE EPISODE</td>
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### HOW SHARPSENSE™ TECHNOLOGY DISCERNS

<table>
<thead>
<tr>
<th>ARRHYTHMIA</th>
<th>SHARPSENSE™ TECHNOLOGY</th>
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<tr>
<td>ATRIAL FIBRILLATION (AF)</td>
<td>- Base AF algorithm is published in DETECT AF to have 100% patient sensitivity.</td>
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<tr>
<td></td>
<td>- SharpSense™ Technology builds on base AF algorithm to improve specificity with minimal impact on sensitivity.</td>
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<tr>
<td></td>
<td>- Analyzes 30 seconds of pre-trigger rhythm.</td>
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<td></td>
<td>- Calculates ensemble average to detect P-waves.</td>
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<tr>
<td>BRADYCARDIA</td>
<td>- Calculates customized secondary threshold based on beats in 4 window.</td>
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<td></td>
<td>- Considers R-wave variability and accounts for P-wave, R-wave and T-wave characteristics.</td>
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<tr>
<td>PAUSE UNDERSENSING</td>
<td>- Calculates customized threshold based on beats in 6-second pre-trigger window from last sensed beat.</td>
</tr>
<tr>
<td></td>
<td>- Considers R-wave variability and accounts for P-wave and R-wave characteristics.</td>
</tr>
<tr>
<td>PAUSE LOSS OF CONTACT (LOC)</td>
<td>- Evaluates 2-second pre-trigger window for presence of signature noise pattern.</td>
</tr>
</tbody>
</table>

97% REDUCTION IN FALSE DETECTION

More discerning—better seeing. SharpSense™ Technology harnesses the power of extra discriminators to improve accuracy. False detection of potential events is now reduced by 97%.

### CAPTURING THE RHYTHM OF LIFE

Contact (LOC) and PAUSE LOSS OF CONTACT (LOC) allow for confirmation of arrhythmia detection, and allows for additional review of episodes that were initially flagged.
ACCURATELY DISCERN AF

Before logging an AF event, SharpSense™ Technology analyzes the previous 30 seconds for the presence or absence of P-wave characteristics.

97.2% RELATIVE SENSITIVITY FOR AF

CORRECTLY CAPTURE BRADYCARDIA

SharpSense™ Technology confirms Bradycardia episodes by dynamically increasing sensitivity between Bradycardia beats and applying a secondary threshold based on P-wave, R-wave and T-wave characteristics.

98.6% RELATIVE SENSITIVITY FOR BRADYCARDIA

PRECISELY DETECT PAUSE

To accurately identify Pause episodes, SharpSense™ Technology dynamically increases sensitivity by applying a secondary threshold, based on P-wave and R-wave characteristics, and evaluating evidence of loss of tissue contact.

98.1% RELATIVE SENSITIVITY FOR PAUSE

AF DETECTION

BASE ALGORITHM

Evaluates:
- Regularity
- Variance
- Onset

ENHANCEMENT

Verifies absence of P-waves:
- If an AF episode occurs, SharpSense™ Technology will check for P-waves by:
  - Scanning 30 seconds prior to initial AF trigger to determine qualified beats
    - SharpSense™ Technology identifies beats that are within a range of pace (40-100 bpm) — Fast Selection
    - SharpSense™ Technology layers the selected beats on top of each other to look for consistent P-wave morphology — Ensemble Average
  - Verifies the absence of P-waves
    - Stores AF episode if P-waves are not detected
    - Rejects AF episode if P-waves are detected

If P-waves are detected:

STORE EPISODE

If P-waves are not detected:

REJECT EPISODE

BASE ALGORITHM ENHANCEMENT

Evaluates:
- Regularity
- Variance
- Onset

Verifies absence of P-waves:
- No P-waves

PAUSE DETECTION

BASE ALGORITHM

If a Pause detection is triggered, SharpSense™ Technology evaluates and confirms a Pause event by:

1. Analyzing 6 seconds of EGM data prior to the last sensed beat
2. Calculating new intervals based on any new beats found with secondary threshold
3. Determining the presence of undersensed beats
   - Stores Pause episode if no signature oscillation is found
   - Removes Pause episode if oscillation is found
4. Checking for loss of contact
   - If no undersensed beats are identified, SharpSense™ Technology searches for the presence of signature oscillation
   - Stores Pause episode if signature oscillation is found
   - Rejects Pause episode if oscillation is found

PREVIOUSLY Triggered

RELATIVE SENSITIVITY

For AF: 97.2%
For Bradycardia: 98.6%
For Pause: 98.1%

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