Real-Time Left Ventricular (LV) Electrograms

Real-time LV electrograms can be used to assess LV lead performance and to assist in optimizing programmable parameters such as AV Delay and LV Offset. Table 1 lists all programmable LV Electrode Configuration and LV Sense Configuration combinations that support real-time LV electrograms for CRT-D and CRT-P device families.

Table 1. Configurations That Support Real-Time LV Electrograms

<table>
<thead>
<tr>
<th>Device Family</th>
<th>LV Electrode Configuration</th>
<th>LV Sense Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>COGNIS®</td>
<td>Dual</td>
<td>LVtip»Can, LVtip»RVcoil, LVring»Can, LVring»RVcoil, LVtip»LVring</td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td>LVtip»Can, LVtip»RVcoil</td>
</tr>
<tr>
<td>LIVIAN® and CONTAK RENEWAL® (all models)¹</td>
<td>Dual</td>
<td>LVtip»LVring</td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td>LVtip»Can, LVring»Can, LVtip»LVring</td>
</tr>
<tr>
<td>CONTAK RENEWAL TR and TR 2²</td>
<td>Dual</td>
<td>LVtip»Can, LVring»Can, LVtip»LVring</td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td>LVtip»Can</td>
</tr>
</tbody>
</table>

a. Real-time LV electrograms are unavailable when the LV Electrode configuration is programmed to Single, or when the Dual Electrode LV Sense configuration is programmed LVtip>>RVcoil.
b. Real-time LV electrograms are unavailable when the LV Sense configuration is programmed to LVtip>>RVring or LVring>>RVring.
c. If a dedicated bipolar lead is used in the RV, the LV Sense Configuration utilizes the RVring rather than RVcoil.

SUMMARY
Real-time left ventricular (LV) electrograms can be useful in assessing LV lead performance and can provide a left-side ventricular view of cardiac events. This article lists the lead configurations in which real-time LV electrograms are available and the steps required to display and print them.

CRM PRODUCTS REFERENCED
The following are trademarks of Cardiac Pacemakers, Inc., a Boston Scientific company: ZOOM LATITUDE and the device families in Table 1.

Products referenced herein may not be approved in all geographies. For comprehensive information on device operation, reference the appropriate product labeling.

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LV Electrogram Display and Printing

When any of the lead configuration combinations listed in Table 1 are programmed in the device, the real-time LV electrogram channel and associated LV event markers will be available for display and/or printing via the ZOOM® LATITUDE® programmer.

- **To display the real-time LV electrogram channel** (Figures 1 and 2):
  1. Select the desired electrogram channel.
  2. Select the LV electrogram option from the drop-down menu. If the LV electrogram channel is not available to select, the device may not be programmed to a configuration that supports real-time LV electrograms (review information in Table 1).

- **To print real-time electrograms**:
  1. To begin printing, press the desired paper speed key on the programmer (i.e., 10, 25, 50, or 100 mm/sec).
  2. To end printing, press the “0” paper speed key on the programmer.