A Closer Look

Electrocautery Mode in BSC Defibrillators and Pacemakers

Boston Scientific pulse generators have a programmable electrocautery mode that can be used to prevent noise-induced inappropriate therapy and help prevent pulse generator circuitry damage during a medical procedure where electrosurgical equipment is used. Prior to such procedures, consider programming the pulse generator to an electrocautery mode. **NOTE:** Other options to manage device therapy (programming or magnet application) are described in pulse generator Instructions for Use (Reference Guide and Physician’s Technical Manual).

Electrocautery Mode in Boston Scientific Defibrillators

**Electrocautery Protection Mode** for current generations of Boston Scientific defibrillators¹, or **Off-Electrocautery Mode** for older generations of BSC defibrillators², deactivates the tachyarrhythmia detection and therapy features of the pulse generator during use of electrosurgical or other electronic surgical equipment. When the electrocautery mode is enabled by the physician, bradycardia pacing is still functional; however, the pacing mode switches to an asynchronous pacing mode. For example, any Dual mode changes to DOO, any Ventricular mode changes to VOO and any Atrial mode changes to AOO. Pacing is at the Lower Rate Limit (LRL) and outputs remain at the programmed settings. Once enabled, Electrocautery Protection/Off-Electrocautery does not require constant telemetry to remain enabled.

**NOTE:** If a higher asynchronous rate is desired, the LRL should be adjusted prior to enabling the electrocautery mode.

**CAUTION:** The pulse generator will not detect or deliver therapy for tachyarrhythmias when electrocautery mode is enabled. When use of electrosurgical equipment is complete, it is important to cancel Electrocautery Protection Mode/Off-Electrocautery and to verify the programmed parameter settings.

Electrocautery Mode in Boston Scientific Pacemakers

**Electrocautery Protection Mode** in current generation BSC pacemakers³ provides asynchronous pacing at the programmed outputs and LRL. For example, any Dual mode changes to DOO, any Ventricular mode changes to VOO, and any Atrial mode changes to AOO. If Brady Mode is Off prior to enabling Electrocautery Protection, it will remain Off during Electrocautery Protection. Once enabled, Electrocautery Protection does not require constant telemetry to remain enabled.

**NOTES:**
- If a higher asynchronous rate is desired, the LRL should be adjusted prior to enabling the electrocautery mode.
- When use of electrosurgical equipment is complete, it is important to cancel Electrocautery Protection Mode and to verify the programmed parameter settings.

This article provides step by step instructions on how to use (enable and cancel) Electrocautery modes in BSC defibrillators and pacemakers.

---


³Current Generations of Pacemakers: FORMIO™, VITALIO™, INGENIO™, ADVANTIO™, EQUIO™, INLIVEN™, INTUA™, INVIVE™
STEP 1: Power On the ZOOM® LATITUDE® Programmer and start a telemetry session.

STEP 2: Review messages and/or System Summary screen. If there are any red or yellow warning screens, information or stop sign icons, call Technical Services before proceeding.

STEP 3: Enable the Electrocautery Mode.

For current generations of BSC defibrillators
- Select the Tachy Mode button at the top of the Main Application screen, which will open the Change Device Mode screen (Figure 4).
- Select the Electrocautery Protection Mode checkbox.
- Select Apply Changes button.
- Electrocautery Protection Mode is enabled (Figure 5).

For older generations of BSC defibrillators
- Select Tachy Mode at top of the Main Application screen (Figure 6).
- Select Off- Electrocautery.
- Off-Electrocautery Mode is enabled (Figure 7).

NOTES:
- To print a record of Electrocautery Mode being enabled, press one of the print speed keys on the programmer prior to activating Electrocautery Protection Mode, then enable Electrocautery Protection. An entry is made at the bottom of the printer paper that reads "Electrocautery Protection Enabled".
- Once enabled, Electrocautery Protection Mode/Off-Electrocautery will be canceled if the DIVERT, STAT SHOCK, or STAT PACE buttons are pressed, and will result in the Tachy Mode reverting to the previous mode. If the electrosurgical procedure is not complete, the electrocautery mode will need to be enabled as desired.
- When using Electrocautery Protection Mode or Off-Electrocautery for extended periods of time, consider exiting the session by powering the programmer Off once Electrocautery Protection Mode has been enabled. This will avoid prolonged ZIP telemetry use which can impact pulse generator longevity.
- The programmer may be turned Off by pressing the power button on the left side—as Electrocautery Protection does not require constant telemetry from the programmer to remain enabled. CAUTION: The user will be required to interrogate the device again in order to cancel Electrocautery Protection Mode and re-enable therapy.
STEP 3: Enable the Electrocautery Mode continued…

For current generations of BSC pacemakers:

- Select the Device Mode button at the top of the Main Application screen. This will open the Change Device Mode screen (Figure 8).
- Select the Electrocautery Protection Mode checkbox.
- Select Apply Changes button.

Electrocautery Protection Mode is enabled (Figure 9).

NOTES:

- To print a record of Electrocautery Mode being enabled, press one of the print speed keys on the programmer prior to activating Electrocautery Protection Mode, then enable Electrocautery Protection. An entry is made at the bottom of the printer paper that reads “Electrocautery Protection Enabled”.
- Except for STAT PACE, no commanded therapies, inductions, or diagnostic tests will be allowed while Electrocautery Protection is enabled.
- Electrocautery Protection will be cancelled if the STAT PACE or the Divert Therapy programmer key is pressed. If the electrosurgical procedure is not complete, the electrocautery mode will need to be enabled as desired.
- The programmer may be turned Off by pressing the power button on the left side—as Electrocautery Protection does not require constant telemetry from the programmer to remain enabled. CAUTION: The user will be required to interrogate the device again in order to cancel Electrocautery Protection Mode and resume demand pacing.

STEP 4: Cancel the Electrocautery Protection Mode.

If Electrocautery Protection Mode is enabled, the device will be returned to its previous settings by cancelling Electrocautery Protection Mode when the electrosurgical procedure is complete.

- If the ZOOM LATITUDE programmer has been powered Off, power it back On and start a telemetry session.
- Select the Cancel Electrocautery Protection button (Figures 10-12).

NOTES:

- To print a record of Electrocautery Mode being cancelled, press one of the print speed keys on the programmer prior to deactivating Electrocautery Protection Mode. then cancel Electrocautery Protection. An entry is made at the bottom of the printer paper that reads “Electrocautery Protection Disabled”.
- For BSC defibrillators, after cancelling Electrocautery Protection Mode/Off-Electrocautery Mode, the Ventricular Tachy Mode and Brady Mode will revert to the previously programmed settings.
- For BSC pacemakers, after cancelling Electrocautery Protection Mode, the Brady Mode will revert to the previously programmed settings.