Touchscreen Calibration

In the event the touchscreen becomes difficult to use or a replacement has been installed, you may need to calibrate it. This can be performed using the calibration function in the **Biomed Level** menu.

To perform the calibration, attach a mouse (in the event the touchscreen is unusable) and perform the following:

1 Power ON the monitor with the mouse attached and wait for the monitor to pass the self tests.

2 Touch MONITOR SETUP key and then touch the PRIVILEGED ACCESS key.

3 Enter the biomed password (default is **Biomed**).

4 Touch MONITOR CALIBRATION.

5 Touch TOUCHSCREEN CALIBRATION and wait for the **Reset Monitor** dialog box to display. Touch the RESET MONITOR key. The monitor will reset.

6 After 15 to 20 seconds, a lighted box will appear in the upper left corner of the screen. Touch the lighted box for one or two seconds until it disappears.

7 Two more lighted boxes will appear, one at a time, in the upper right and lower right corners. Touch them as they appear.

8 After touching these three corners one at a time as the boxes appear, the touchscreen is calibrated.

NiMH Battery Maintenance

Check your maintenance records for the date of the last NiMH battery installation. If the battery has been in use for over one year, replace it (refer to *Table 3* on page 6-3 for part number and specifications). The NiMH battery replacement procedure is described in *Removing the Primary Rear Panel* on page 4-8.

Caution:
> **If the NiMH battery is replaced, module data backup holding time will be reduced until the battery has had an opportunity to become fully charged (approximately 12 hours of monitor ON time).**

Functional Tests

Bedside/Central Monitor Self-Test

A power-ON self-test is performed each time the monitor is turned ON.

Bedside Monitor Functional Tests

This procedure verifies operation of the network connectivity, alarm relay output, external SDLC connections, and battery backup. It assumes that a 90496/91496 Command module (ECG, RESP, two PRESS channels, and two TEMP channels) is available for testing purposes. If these parameters are not available, similar modules may be substituted.

Note:

To test a 91387-38 monitor configured for bedside/central operation, reconfigure the monitor as a bedside monitor before continuing.

Verifying Monitor Functions

Note:

To begin the test, make sure no modules are installed and no Flexports or other SDLC devices are connected.

1   Power ON the bedside monitor and verify the following sequence of events:

   a   The front panel LED illuminates.

   b   The **Diagnostic** menu displays. If errors are noted during power-ON, contact your Spacelabs Medical Field Service Engineer.

   c   Monitor keys display along the right side of the screen.

2   Insert the Command module without a patient cable connected. Verify that the ECG parameter key appears on the screen with **???** and the message LEADS OFF.

3   Connect a patient simulator to the ECG input with a patient cable. Set the simulator to a known rate and verify that the ECG count and the lead being monitored are displayed to the right of the ECG parameter key. Also verify that the ECG waveform appears on the screen.

4   Connect a patient simulator to the invasive pressure inputs.

5   Zero the pressures and verify that the numerics and waveforms are accurate.

Alarm Relay Output

If the monitor is configured to use the alarm relay output to interface to an external alarm device:

1   Plug the cable into the external alarm connector and initiate a high-priority alarm. Verify that the external alarm responds appropriately.

2   Turn the high-priority alarm OFF and generate a medium-priority alarm if an external alarm light capable of displaying multiple colors is attached. Verify that the external alarm responds appropriately.

3   Repeat step 2 for a low-priority alarm.

Ethernet (Wired)

Attach a 10/100BaseT cable from an active network onto the back panel connector, touch the SPECIAL FUNCTIONS key and verify that other monitors appear in the **Remote View** menu.

Verifying Battery Backup

1   Power ON the monitor.

2   Insert a single ECG module with simulator into either module housing slot.

3   Display a single ECG waveform from the simulator and wait for at least two minutes for data to collect into the trend buffers.

4   Remove the AC cord for the external power supply from the wall outlet for a minimum of two minutes.

5   Reconnect the AC cord to the wall outlet and verify that the trend data has not been lost.