

3 Maintenance and checkout

To help ensure the equipment remains in proper operational and functional order, adhere to a good maintenance schedule.

Corrective maintenance

Service personnel shall perform the following checkout procedure after any corrective maintenance, before taking the module back into clinical use:

Performed service activity	Required checkout procedure		
	Visual inspections (section 3.1)	Electrical safety test (section 3.2)	Functional check (section 3.3)
Module casing opened either for troubleshooting purpose or for replacing any of the internal parts.	All steps	All steps	All steps
Front cover, or an other external part, replaced.	All steps	Not applicable	Not applicable

Planned maintenance

Service personnel shall perform the following checkout procedure completely every 12 months after installation:

1. [3.1. Visual inspections](#)
2. [3.2. Electrical safety tests](#)
3. [3.3. Functional check](#)

3.1 Visual inspections

Detach the module from the module slot and check that:

- the front cover is intact
- all connectors are intact and attached properly
- the module box and latch are intact

Check also the BISx Digital Signal Processing Unit to ensure that:

- the cover and the panel stickers are intact
- cables and their connections are intact
- the module and the applied parts are clean

The cleaning precautions, cleaning requirements, cleaning procedures, and recommended cleaning solutions for the monitor are described in the patient monitor's user's manual. For details about cleaning, disinfecting and sterilizing the accessories, see the instructions for use in the accessory package.

3.2 Electrical safety tests

Complete the Electrical safety tests found in the CARESCAPE monitor technical manual, chapter Installation checkout. Perform Patient leakage current tests, Patient (source) leakage current test and Patient (sink) leakage current test.

Record the values of the tests on the “Maintenance check form” on page 13-19

3.3 Functional check

Turn the monitor on. Wait until the normal monitoring screen appears.

3.3.1 Test setup

Required tools

- P/N 900508 BIS Sensor simulator


Connections

Ensure that the module is connected to the monitor.

Monitor configuration

Configure the **BIS EEG** waveform field to the monitor screen with adequate priority.

3.3.2 BIS tests

1. Module and BISx Digital Signal Processing Unit recognition
 - a. Connect the BISx Unit with the Patient Interface Cable (PIC+) to the E-BIS module.
 - b. Check that the BIS waveform field and related information appears to the screen and a ‘No sensor’ message is shown.
2. BISx Unit check
 - a. Connect the BIS Sensor simulator to the PIC+ cable.
 - b. Check that a ‘Checking sensor’ message appears to the BIS parameter window and wait for a while until all electrodes are checked. The sensor check is passed if a green circle with a check mark appears to the screen for each tested electrode.

 - c. Select **BIS Setup > Test DSC** to activate the BISx Unit test. Wait for a while and check that the test shows ‘PASS’.
3. Mark this task as complete on the checkout form.

3.3.3 Test completion

Select **Discharge patient** or **Reset case** to discard any changes made to the monitor configuration during checkout.

4. Complete on the “Maintenance check form” on page 13-19.