



# Customer Service Bulletin

## Monitoring Products

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**Bulletin Type: MANDATORY**

**Date: 2010-08-18**

**SAP DIR #: 20012065**

**Subject:** Propaq LT Service Manual Charging Cradle Verification Test Update

**Distribution Scope:** Propaq LT Customers, WA Technical Support, US/C Product Service Centers, International Product Service Centers, and Authorized Service Providers

**Product Referenced:** Propaq LT – Models 802LTxx

**Details:** This CSB provides a new charging cradle service manual verification test procedure and checklist report form. The new procedure and form must be referenced in place of those documented in all released service manuals. Note that future releases of the Propaq LT service manual may contain these updates. This CSB will not apply to those manuals.

**Service Manuals Affected:**

SW Version	CD P/N	Hardcopy P/N	Manual P/N
1.1X	810-1825-00	810-2341-00	810-1827-00
1.3X	810-1825-01	810-2341-01	810-1827-01
1.5X	810-2712-00	810-2710-00	810-2713-00

**Reference to Standards:**

- 21 CFR Part 820, ISO 13485, MPD SOP-0002

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## Procedure:

### Charging cradle

This procedure verifies charger operation. It does not verify charger accuracy. Voltage and current are reported on the service screens with wide tolerances, due to measurement limitations of the monitor and limitations in how the cradle reports charging currents. Charger voltages and currents are tested to very narrow tolerances at the factory.




### Inspecting the monitor connector

Inspect the 17-pin monitor connector to verify that it is clean and free of debris.


### Fully discharging the battery

With the monitor out of the cradle, run the monitor until it does a low-battery shutdown.

### Charging/LED operation

1. Observing correct polarity, connect the DC input cable (008-0290-XX) to the power supply.
2. Set the power supply for 28 VDC.
3. Connect the DC input cable from the power supply to the cradle.
4. With the monitor removed from the cradle, verify that the input current to the cradle is less than 50 mA, the power indicator on the cradle is green, and the status indicator on the cradle is OFF.
5. Disconnect the power cable from the cradle and the power supply.
6. Connect the AC power adapter (503-0142-XX) to the cradle, and verify that the power indicator on the cradle is ON and the status indicator on the cradle is OFF.
7. Dock the monitor into the cradle, and turn on the monitor if it does not turn on spontaneously.
8. Verify that the status indicator on the cradle is green.
9. After the monitor completes its power-up diagnostics, navigate to **Setup > Service > Battery** and press 
10. Verify that the charge current is between 800 mA and 1100 mA and that the charger state is **2**.
11. Verify that the battery icon on the monitor is green with a lightning bolt.
12. Press  to start the NIBP pump.  
Note: Pump startup may be delayed until power up NIBP testing is completed.
13. Verify after several seconds of pumping that the charge current is less than 220 mA.
14. Verify after several seconds of pumping that V BAT is between 8.15 V and 8.55 V.
15. Press  to stop the NIBP pump.

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16. Leave the monitor in the cradle until the status indicator on the cradle goes off.
17. Verify that the battery icon on the monitor display contains no lightning bolt.
18. Navigate to **Setup > Service > Battery**, press , and verify that the charger state is **6**.
19. Remove the monitor from the cradle and let the monitor continue to run for a minute.
20. Install the monitor in the cradle and verify that the status indicator on the cradle is briefly green and then goes off.

#### Charge time (optional procedure)



A normally discharged battery pack typically requires 3 hours (4 hours maximum) to fully charge, whether the monitor is on or off during charging.

Note: A normally discharged battery pack is one on which a monitor has recently run for more than 5 minutes just before a monitor shutdown for low-battery.

1. Plug the monitor with the discharged battery into a powered cradle, in an environment with temperature in the range 0° C to 40° C.
2. Note the time required for the status indicator on the cradle to change from green to off. This may be timed during step 16 above.

## Checklist and test results report form

Use a copy of this form to track your progress through the validation tests.

Test	Specification	Result	Pass	NA	Fail
<b>Charging/LED operation</b>					
4	Input current, cradle	< 50 mA			
	Status, cradle powered, monitor not inserted	Power indicator: ON			
		Status indicator: OFF			
6	Status, power adapter connected	Power indicator: ON			
		Status indicator: OFF			
8	Status, monitor running with discharged battery	Status indicator: GREEN			
10	Charge current, battery fully discharged	800 mA – 1100 mA			
	Charger state, battery fully discharged	2			
11	Status, battery charging	 (green)			
13	Charge current, pump running	0 mA – 220 mA			
14	Battery voltage, pump running	8.15 V – 8.55 V			
17	Status, battery fully charged	 (green)			
18	Charger state, battery fully charged	6			
20	Status, cradle transition	Status indicator: green then OFF			
<b>Battery charge time (optional)</b>					
2	Charge time	< 4 hours			

(see service manual for balance of checklist and test result report forms)

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**Quality Documents:**      **All service centers using SAP to record service transactions:** For each monitor serviced, record the service activity in SAP.

**All other service centers and Field Service:** For each monitor serviced, complete and file a service report and attach to the service DHR.

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**Notes:**

1. Contact the Welch Allyn Complaints Department to initiate or process a medical device complaint resulting from this or other issues.
2. Drawings, illustrations, and part numbers in this document are for reference purposes only and subject to change.

**End of Bulletin**

<b>Revision History</b>					
<b>Version</b>	<b>Description</b>	<b>Change #</b>	<b>Init</b>	<b>Release Date</b>	<b>Appr</b>
A	Initial Release	D*	D*	D*	D*

D\* - Refer to SAP DIR for Change Number, Init, Release Date, and Approver