

Cambridge Heart CH 2000/HearTwave II Tango+ Interface Notes

To setup Tango+ with the Cambridge Heart stress system, simply follow the directions below.

1. Verify Correct Combined RS-232/ECG Trigger Cable

- This cable is required for the Tango+ monitor to be able to take a BP measurement. It is also used to communicate with the CH 2000/HearTwave II. This cable enables the CH 2000/HearTwave II to prompt Tango+ when it needs a BP measurement, and allows the Tango+ BP reading to be transferred to the CH 2000/HearTwave II display and reports.
 - SunTech Part Number = 91-0065-00
 - Connection Ends:

**Tango+ ECG Connection
BNC male**



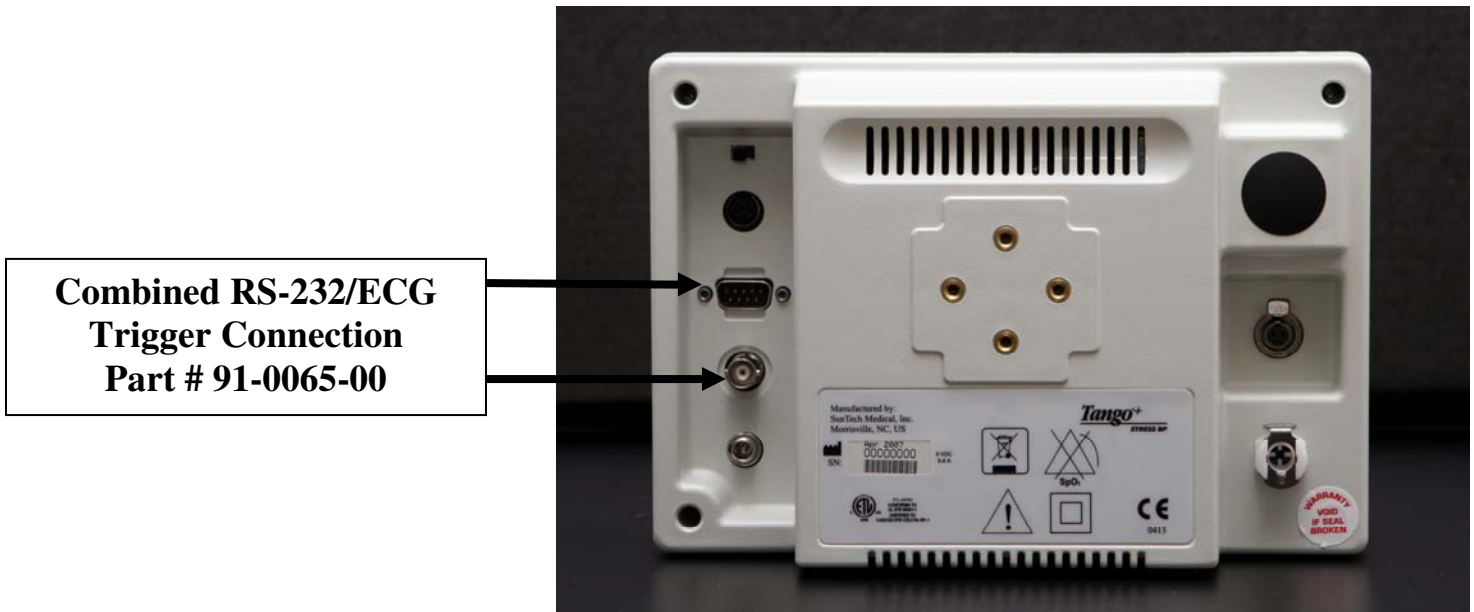
**Tango+ RS-232 Connection
9 pin female**



**CH 2000/HearTwave II Connection
9 pin female**



Tango+ Monitor



2. Connect the combined RS-232/ECG Trigger Cable

- From: the BNC External ECG connection on the rear panel of the Tango+ (BNC) and the RS-232 connection on the rear panel of the Tango+ (9 pin male)
- To: the NIBP port on the back of the CH 2000/HearTwaveII (9 pin female).

3. Tango+ Monitor Setup

- When the main screen is displayed, press the **SELECT** button 2 times. You should be in the **MAIN MENU**. Use the UP or DOWN arrows, go to **MONITOR SET UP**. Press the **SELECT** button.
- Use the UP or DOWN arrow buttons to highlight **STRESS SYSTEM**. Press the **SELECT** button once. Use UP or DOWN arrows until **CH 2000** is highlighted and press the **SELECT** button to confirm the choice.
- Use UP or DOWN arrows to select Exit twice to return to the operating screen.

4. Stress System Setup (Note: requires software version 2.0.3 or greater for CH-2000)

- From the EXERCISE SYSTEM CH 2000/HearTwaveII screen, select **SYSTEM SETUP**.
 - Select **DEVICES I/O**.
 - Select **NIBP**.
 - Select **SunTech Tango**.
 - Select **OK**. If a window opens and asks if you would like to back up system, select **Don't Backup**.
- BP Prompts: Manual blood pressure readings can be initiated on the keyboard by pressing BP/Event on the numeric keypad.
 - For assistance with the protocols, call Cambridge Heart Service at 800-CAM-WAVE.

FAQs for Tango+

Q. The Tango+ displays a status message. What does it mean and what do I do?

A. See the Quick Set-Up guide (that is attached to your Tango+) or the Troubleshooting section in your User's Guide for details on the Status Message and solution.

Q. The Tango+ monitor returns results of 0/0 after blood pressure measurements. What do I need to do to get a BP reading?

A. There are certain noisy conditions where the Tango+ cannot accurately measure BP. When the Tango+ encounters these situations, it returns a reading of 0/0. Placement of the microphone attached to the cuff is critical for reliable operation of the Tango+. Follow the instructions in the **Cuff Tutorial** (located on the SunTech Medical website under Products → Tango+) for correct microphone placement. Follow steps 1 and 2 in Conducting the Stress Test in the User's Guide to provide the best conditions to obtain a measurement.

Q. Can I use a heart rate or blood pressure simulator to test whether the Tango+ is working correctly with my stress system?

A. You cannot use a heart rate or blood pressure simulator to test whether the Tango+ is working with your stress system. The Tango+ monitor requires that the ECG signal and the Korotkoff sounds, collected by the microphone in the cuff, originate from the same source, meaning the patient.

Q. I cannot clearly see the Tango+ display. How do I fix this?

A. If you cannot clearly read Tango+, you can adjust the contrast of the display by following these steps:

1. When the operating screen is displayed, press the **SELECT** button 2 times. This will bring up the **MAIN MENU** screen.
2. Using the UP or DOWN arrows, highlight **MONITOR SET UP** and press the **SELECT** button.
3. Using the UP or DOWN arrows, highlight **CONTRAST** and press the **SELECT** button.
4. Using the UP or DOWN arrows, modify the contrast of the screen. When you are finished, and press the **SELECT** button to confirm the choice.
5. Using the UP or DOWN arrows, select **EXIT** twice to return to the operating screen.

Q. My Tango+ displays a message, "Please VERIFY CALIBRATION" or "Equipment Maintenance and Calibration Required." What do I do?

A. Verification of Pressure Calibration

Equipment Required:

1. Calibrated electronic manometer or equivalent.
2. 500mL volume or the Orbit-K Adult Plus cuff wrapped around something that will not break or crush (no glass).
3. Hand Inflation Bulb with bleed valve.
4. Tubing, Tee pieces, and miscellaneous connectors or you can order the T-Tube Kit (SunTech Part # 98-0030-00).

Procedure:

5. When the operating screen is displayed, press the **SELECT** button 2 times. This will bring up the **MAIN MENU** screen.

6. Using the UP or DOWN arrows, highlight **MONITOR SET UP** and press the **SELECT** button.
7. Using the UP or DOWN arrows, highlight **VERIFY CALIBRATION** and press the **SELECT** button. The monitor will close its bleed valves and will display on its screen the pressure applied to the patient hose connector.
8. Verify the Tango+ calibration by manually inflating and checking the manometer against the pressure reading on the Tango+ display.
9. Once the calibration has been completed, use the UP or DOWN arrows to select **EXIT** twice and return to the operating screen.