

# Welch Allyn CardioPerfect Workstation Tango+ Interface Notes

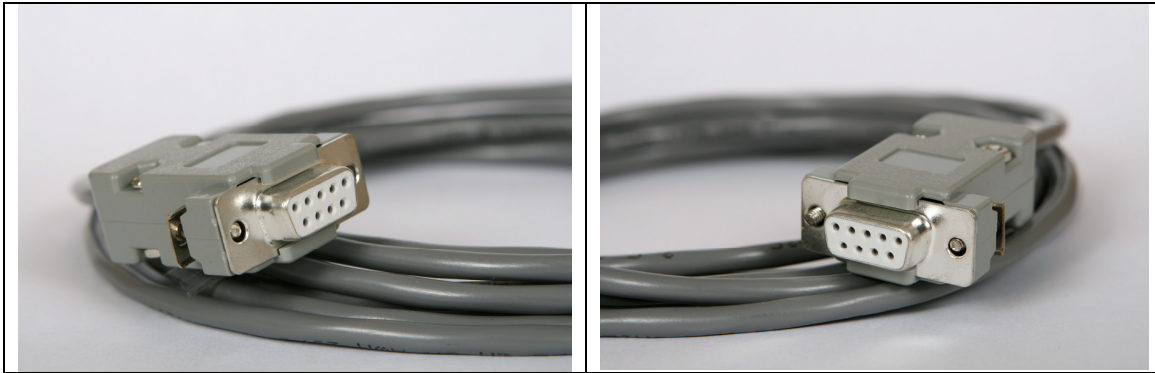
To setup Tango+ with the CardioPerfect stress system, simply follow the directions below.

## 1. Verify Correct RS-232 and ECG Trigger Cables

- **RS-232 Cable** – used to communicate with CardioPerfect. This cable enables CardioPerfect to prompt Tango+ when it needs a BP measurement, and allows the Tango+ BP reading to be transferred to the CardioPerfect display and reports.
  - SunTech Part Number = 91-0013-00
  - Connection Ends:

**CardioPerfect Connection**  
**9 pin female**

**Tango+ Connection**  
**9 pin female**



- **ECG Trigger Cable** – provides the ECG signal from CardioPerfect to the Tango+.
  - SunTech Part Number = 91-0018-01
  - Connection Ends:

**CardioPerfect Connection**  
**1/8" phono plug**

**Tango+ Connection**  
**BNC male**



## Tango+ Monitor

**RS-232 Connection**  
Part # 91-0013-00

**ECG Trigger Connection**  
Part # 91-0018-01



### 2. Connect the RS-232 Cable

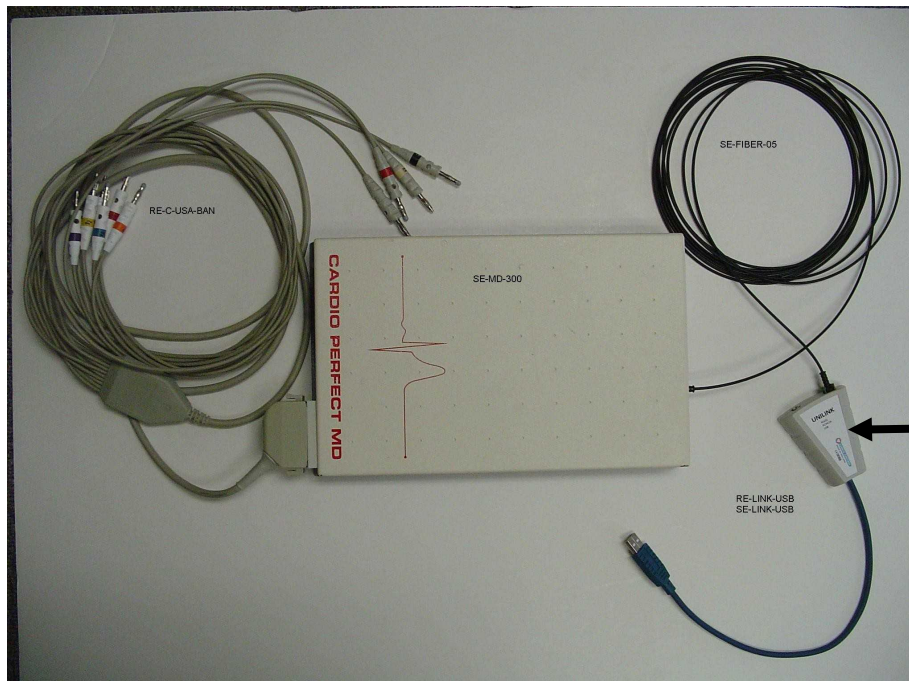
From: the RS-232 connection on the rear panel of the Tango+.

To: the **COM2** port on the back of the CardioPerfect computer. \*Note – If the CardioSoft is running on a laptop computer, a RS-232 to USB converter is required (the RS-232 connector on the laptop should be used by the treadmill/ergometer).

### 3. Connect the ECG Trigger Cable

From: the BNC External ECG connection on the rear panel of the Tango+.

To: the phono jack on the Unilink interface cable. Note: use stereo phono jack splitter if jack is also required for echocardiogram.



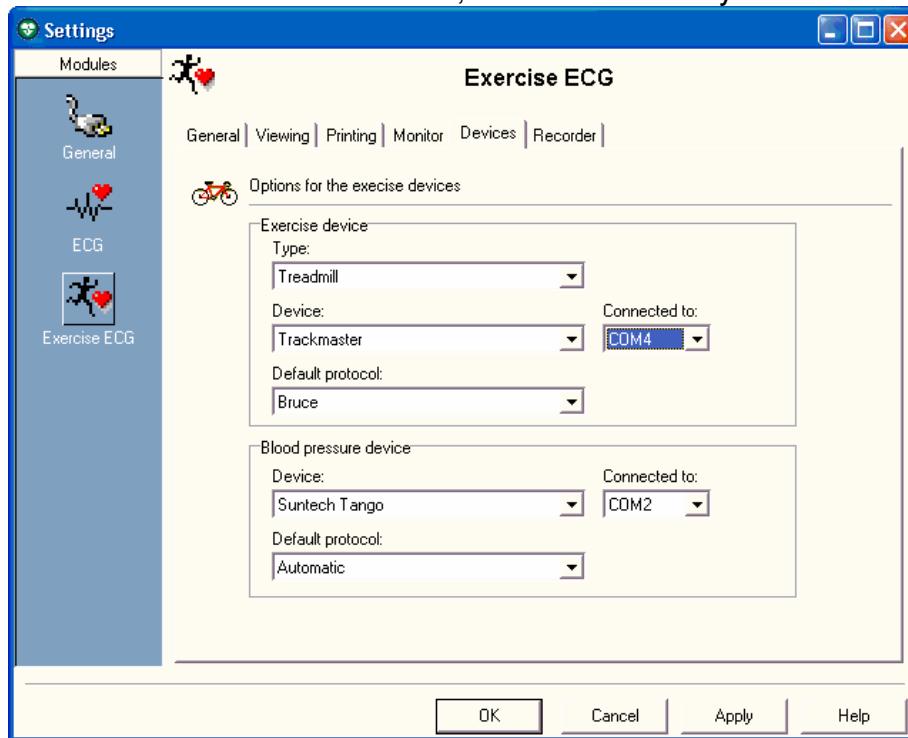
**Unilink Cable**

#### 4. Tango+ Monitor Setup

- a. When the operating screen is displayed, press the **SELECT** button 2 times. This will bring up the **MAIN MENU** screen.
- b. Using the UP or DOWN arrows, highlight **MONITOR SET UP** and press the **SELECT** button.
- c. Using the UP or DOWN arrows, highlight **STRESS SYSTEM** and press the **SELECT** button.
- d. Using the UP or DOWN arrows, scroll through the list until **CardioPerfect** is highlighted and press the **SELECT** button to confirm the choice.
- e. Using the UP or DOWN arrows, select **EXIT** twice to return to the operating screen.

#### 5. CardioPerfect System Setup

- a. From the ECG software, click **File**, then **Settings**.
- b. Select **Exercise ECG**.
- c. On the **Devices** tab, set the following parameters:  
Under **Blood Pressure Device**, **Device** is **SunTech Tango**  
**Connected to** should be set to the desired Com port, typically **COM2**  
**Default protocol** is **None** for measurements started using the Tango+ or **Automatic** for measurements started at the end of stage using the stress system.  
Note: Protocols can be customized; contact Welch Allyn for further details.



- d. Click on the **Recorder** tab, set the following parameters:  
**Analog output** is **ECG signal**
- e. Click on **OK** and then exit the Workstation Software.
- f. Reopen the workstation for the changes to take affect.
- g. Start a stress test and when you click on the BP button, the Tango+ will take a measurement.

## TIPS

You must have a patient hooked up to the stress system with a valid ECG trace and the BP cuff on the for the Tango+ to operate correctly. Refer to the Tango+ manual for proper patient hookup.

While in the Stress ECG software module, you may press the F5 key or the BP icon on the display to initiate a BP measurement.

In order to ensure that the Tango+ interfaces properly with the CardioPerfect Workstation, start the stress ECG software module immediately after collecting the resting ECG data.

## 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.