

Norav Stress ECG Tango+ Interface Notes

To setup Tango+ with the Norav Stress ECG system, simply follow the directions below.

1. Verify Correct RS-232 and ECG Trigger Cables

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

Norav Stress ECG Connection
9 pin female



Tango+ Connection
9 pin female



- **ECG Trigger Cable** – provides the ECG signal from the stress system to the Tango+.
 - SunTech Part Number = 91-0011-00
 - Connection Ends:

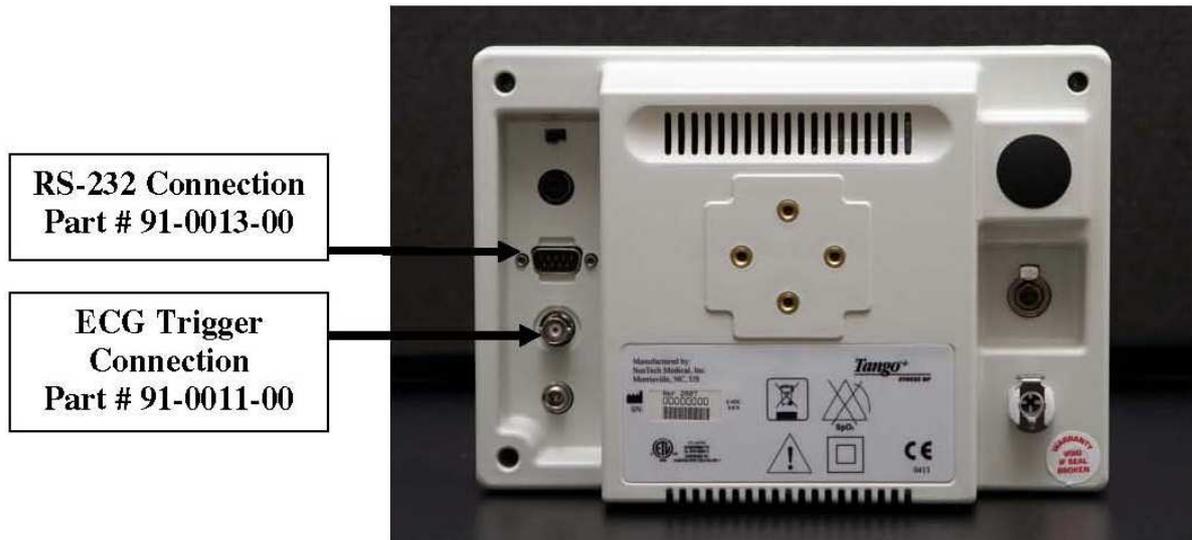
Norav Stress ECG Connection
BNC male



Tango+ Connection
BNC male



Tango+ Monitor



2. Connect the RS-232 Cable

From: the RS-232 connection on the rear panel of the Tango+.
To: a COM port on the back of the stress system PC.

3. Connect the ECG Trigger Cable

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

4. Tango+ Monitor Setup

- When the operating screen is displayed, press the **SELECT** button 2 times. This will bring up the **MAIN MENU** screen.
- Using the UP or DOWN arrows, highlight **MONITOR SET UP** and press the **SELECT** button.
- Using the UP or DOWN arrows, highlight **STRESS SYSTEM** and press the **SELECT** button.
- Using the UP or DOWN arrows, scroll through the list until **CUSTOM** is highlighted and press the **SELECT** button to confirm the choice.
- With **PROTOCOL** highlighted, press the **SELECT** button.
- Using the UP or DOWN arrows, scroll through the list until **SUNTECH** is highlighted and press the **SELECT** button to confirm the choice.
- Press the DOWN arrow to highlight **ECG Trigger**, and press the **SELECT** button.
- Using the UP or DOWN arrows, scroll through the list until **DIGITAL** is highlighted and press the **SELECT** button to confirm the choice.
- Using the UP or DOWN arrows, select **EXIT** twice to return to the operating screen.

5. Norav Stress ECG System Setup

- a. In the Stress ECG software, go to **Setup -> Environment**
- b. Open the **Automatic BP COM Port** scroll box and choose the communications port to which you connected the RS-232 cable in Step 2.
- c. Check **Measure BP by automatic device** option.
- d. Click **Advance** header, select **R-wave Trigger/Rising** option on **USB** frame.
- e. Click **OK** to close the Setup dialog.
- f. To check functionality, start a new stress test and when you click the **Measure BP** option under the **Test** main menu, the Tango+ will take a measurement.

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:

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 **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.
4. Verify the Tango+ calibration by manually inflating and checking the manometer against the pressure reading on the Tango+ display.

Once the calibration has been completed, use the UP or DOWN arrows to select **EXIT** twice and return to the operating screen.