Marquette: MAC 5000, 5500
Tango+ Interface Notes

To setup Tango+ with the MAC 5000/5500 stress system, simply follow the directions below.

1. Verify Correct RS-232, ECG Trigger, and Splitter Cables

- **RS-232 Cable** – used to communicate with the MAC 5000/5500. This cable enables the MAC 5000/5500 to prompt Tango+ when it needs a BP measurement, and allows the Tango+ BP reading to be transferred to the MAC 5000/5500 display and reports.
    - o SunTech Part Number = 91-0010-00
    - o Connection Ends:

**MAC 5000/5500 Splitter Cable Connection
8 pin mini DIN male**

**Tango+ Connection
9 pin female**

- **ECG Trigger Cable** – provides the ECG signal from the MAC 5000/5500 to the Tango+.
    - o SunTech Part Number = 91-0009-00
    - o Connection Ends:

**MAC 5000/5500 Connection
9 pin male**

**Tango+ Connection
BNC male**

- **Splitter Cable** – required for the MAC 5000/5500
    - o SunTech Part Number = 91-0069-00
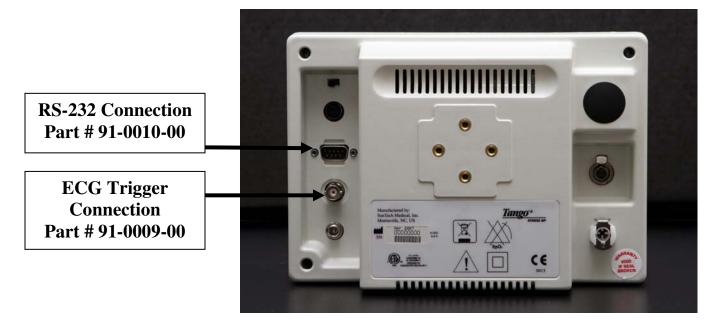   - o Connection Ends:

MAC 5000/5500 Connection
8 pin mini DIN male

Tango+ RS-232 Connection
8 pin mini DIN female

Tango+ Monitor

RS-232 Connection
Part # 91-0010-00

ECG Trigger
Connection
Part # 91-0009-00

2. Connect the Splitter Cable

Connect: the 8 pin mini din labeled **MAC5000**
To: the COM 1 port on the back of the MAC 5000/5500
Connect: the 8 pin mini din labeled **T2000**.
To: the MAC 5000/5500 connector of the cable (GE Healthcare Part # 700607-001) between the T2000 treadmill to the stress system. (Note – the cable from the T2000 to the splitter needs to be well connected; this will require depressing the actuator on the connector of the T2000 cable and pushing the connectors of the T2000 cable and the splitter closer together until they are well connected).

3. Connect the RS-232 Cable

From: the RS-232 connection on the rear panel of the Tango+.
To: the 8 pin mini DIN labeled **Tango** on the splitter.

4. Connect the ECG Trigger Cable
From: the BNC External ECG connection on the rear panel of the Tango+.
To: the ANA/TTL port on the back of the MAC 5000/5500.

5. 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 **Mac 5000** 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. MAC 5000/5500 System Setup
a. From the Start Up screen, use the Arrow Pad and scroll until the cursor is over **MORE**.
b. Then scroll to **MAIN MENU** and then press the Return key.
c. Next, choose **MORE**.
d. Then choose **SYSTEM SETUP**. System Password will appear. The default is SYSTEM.
e. Next select **EXERCISE TEST**.
f. Next select **INPUTS OUTPUTS**.
g. Go to Blood Pressure and select **SUNTECH**.
h. Make sure that TTL OUTPUT is set for **QRS DETECT**, POLARITY is **POSITIVE**,
i. WIDTH is **40 MSEC** and that the DELAY is **0**.
j. Next choose **RETURN** at the bottom of the screen
k. At the next screen, choose **RETURN**.
l. In the System Set Up menu, choose **SAVE SETUP** and then **TO SYSTEM**.
m. Then select **MAIN MENU**.
n. Select **MORE**
o. Select **MORE**

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.