

# Care Center MD<sup>®</sup> OR 9500 USB Tango+ Interface Notes

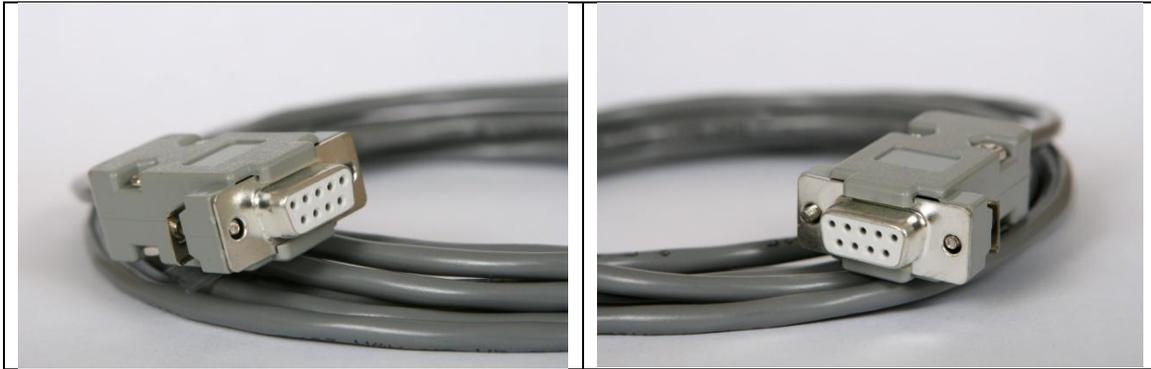
To setup Tango+ with the CareCenter MD or 9500 stress system, simply follow the directions below

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

- Mortara part number = XKTCCMD02A
- **RS-232 Cable** – used to communicate with the CareCenter MD PC. 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 CareCenter MD display and reports.
  - SunTech Part Number = 91-0013-00
  - Connection Ends:

**CareCenter MD Connection**  
**9 pin female**

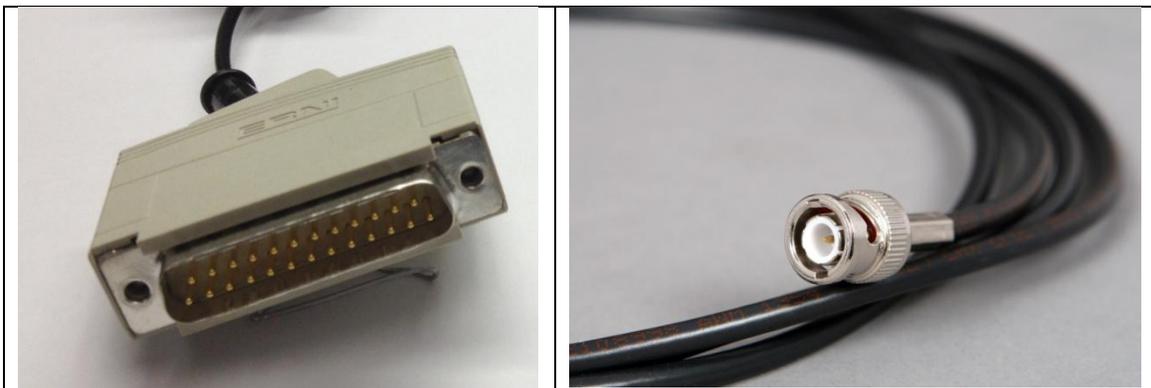
**Tango+ Connection**  
**9 pin female**



- **ECG Trigger Cable** – provides the ECG signal from the CareCenter MD acquisition module to the Tango+. This is a custom designed parallel port to BNC cable.
  - SunTech Part Number = 91-0066-00
  - Connection Ends:

**CareCenter MD Connection**  
**25 pin male Parallel Port**

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



## Tango+ Monitor

**RS-232 Connection**  
**9-pin female**  
**Part # 91-0013-00**

**ECG Trigger Connection**  
**BNC male**  
**Part # 91-0066-00**



### 2. Connect the RS-232 Cable

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

To: one of the COM ports on the back of the CareCenter MD or 9500 PC.

### 3. Connect the ECG Trigger Cable

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

To: the Parallel Port on the back of the CareCenter MD or 9500 PC.

### 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.
- Set the following options:
  - Protocol: **MARQUETTE**
  - ECG Trigger: **DIGITAL** ↓
- Using the UP or DOWN arrows, select **EXIT** three times to return to the operating screen.

### 5. CareCenter MD or 9500 System Setup

- Turn the CareCenter MD or 9500 stress system on.
- Start CareCenter MD by clicking the desktop icon (if not automatically started).
- Select File | Options.
- On the left hand side go to **Devices** → **SunTech Tango**.
- Mark the checkbox '**Enable Blood Pressure unit**'.

- f. Select the correct interface (COM1, COM2, etc).  
This is the RS-232 port that connects to the Tango+.
- g. Click on the **Test** button to check the connection to the Tango+ device.
- h. Select an appropriate **Maximum time for BP measurement**. (This is the hold-back time to start the BP measurement before the end of an exercise stage to finish the measurement inside that stage).
- i. Click **Save**.
- j. On the left hand side go to **Devices** → **CareCenter MD (USB)**.
- k. Enable "**CareCenter MD (USB)**".
- l. Select Enable QRS-Trigger, and select the following options:
  - a. For **Interface** select **LPT**
  - b. For the port address of LPT1 enter: **0378**  
*Note: This is the typical value, for more information consult your IT department.*
  - c. For **Duration** select **50ms**
  - d. Select **TTL active LOW**.
- m. Click **Save**.
- n. Exit the **Options** menu.

## 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.