

Midmark Diagnostics IQmark EZ Stress Tango+ Interface Notes

To setup Tango+ with the IQmark EZ stress software, simply follow the directions below.

1. IQmark Stress Output Module Kit

- In order to use the Tango+ device with EZ Stress, an IQmark Stress Output Module Kit (Midmark part number = 4-000-0320) is required.
- Please refer to the IQmark Stress Output Module Operation Manual for instructions on how to install and configure this device.
- The stress output module provides a digital QRS synchronization pulse to the Tango+ Device.

2. Verify Correct RS-232 and ECG Trigger Cables

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

EZ Stress Connection
9 pin female

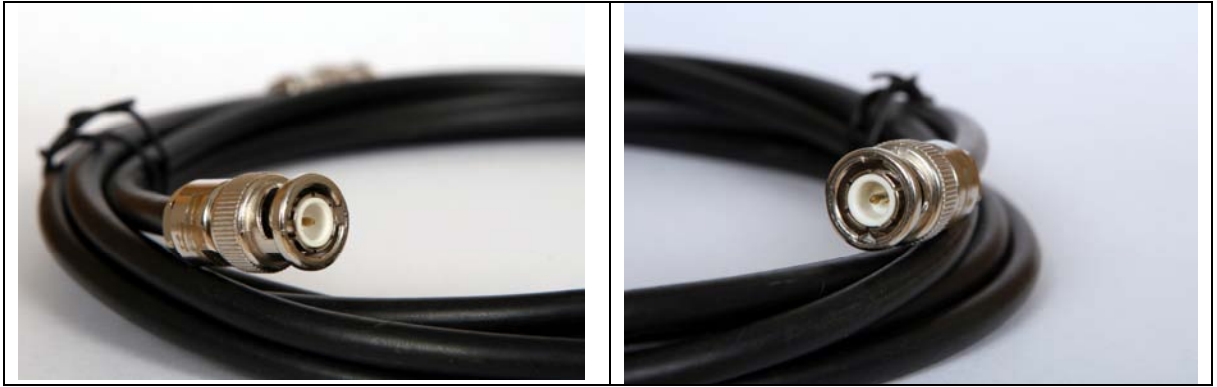
Tango+ Connection
9 pin female



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

EZ Stress Connection
BNC male

Tango+ Connection
BNC male

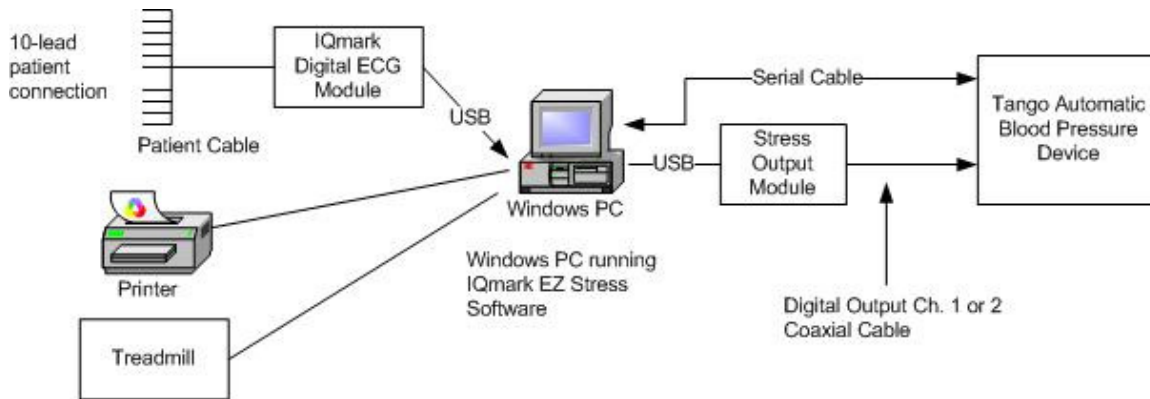


Tango+ Monitor

- RS-232 Connection**
Part # 91-0013-00
- ECG Trigger Connection**
Part # 91-0011-00



CONNECTION DIAGRAM:



3. IQmark Stress Output Module Kit Setup

- a. Connect the stress output module to one of the USB ports on the PC.

4. 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 PC*

*Note – If there are no available COM ports on the PC, then it will be necessary to use a USB to serial port adapter for the Tango+ unit. Install the USB adapter according to the instructions provided by the manufacturer. Then connect the USB adapter to the PC and the Tango+ to the serial port connector of the USB adapter.

5. Connect the ECG Trigger Cable

From: the BNC External ECG connection on the rear panel of the Tango+
To: Channel 1 or Channel 2 (digital output BNC connection) on the Stress Output Module

6. Tango+ Monitor Setup

- a. When the main 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 **IQmark EZ Stress** 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.

6. IQmark EZ Stress System Setup

- a. Display the EZ Stress Settings dialog and click on the Hardware tab.
- b. Select "SunTech Tango" from the drop down combo box in the Automatic BP module control group.

- c. Select the COM port that the Tango+ unit is connected to from the Serial Port Combo box.

7. Configuration of IQmark EZ Stress System Setup to Control Tango+

- The EZ Stress software may be configured to control the Tango+ unit in the following ways:
 - 1) Automatic measurements initiated by the EZ Stress software at each stage of the Pre-Exercise phase.
 - 2) Automatic measurements at timed intervals of the Exercise phase of the test.
 - 3) Automatic measurements at timed intervals of the Recovery phase of the test.

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.