

Quick Start Guide

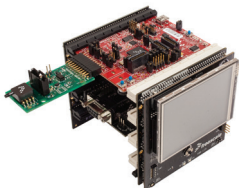
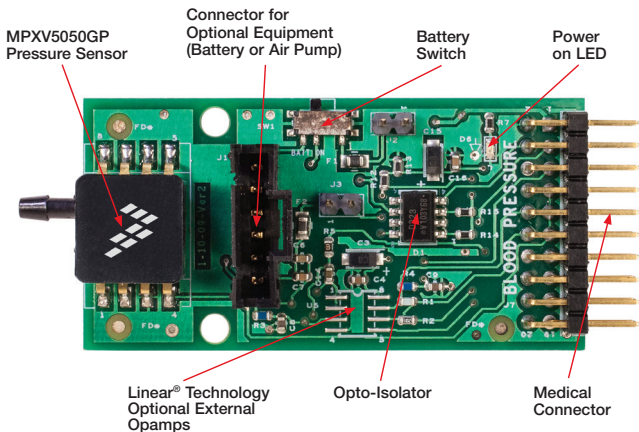
MED-BPM

Blood Pressure Monitor
Plug-in Board



TOWER SYSTEM

Get to know the MED-BPM Board



MED-BPM Freescale Tower System

The MED-BPM plug-in board is compatible with the Freescale Tower System, a modular development platform that enables rapid prototyping and tool re-use through reconfigurable hardware. Elevate your design to the next level with this industrial powerhouse by building your Tower System today.



MED-BPM Features

MED-BPM is a development board that eases and accelerates the design of blood pressure monitoring applications. It is suitable for portable medical applications designed to operate within the 3 to 3.3 V range.

Features

- Tower System compatible
- Comprehensive hardware and software solution for blood pressure monitoring applications
- Contains an integrated Freescale MPXV5050GP pressure sensor

Step-by-Step Installation Instructions

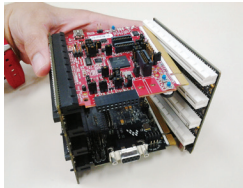
In this quick start guide, you will learn how to set up the MED-BPM and Tower System and run the included demonstrated software. For more detailed information, review the user manual at freescale.com/healthcare.

1 Verify the Jumper Configuration

Verify the jumper configuration on each board according to the Jumper Configurations table found later in this guide.

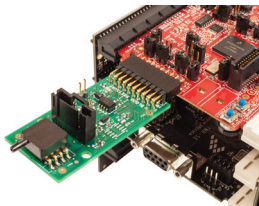
2 Assemble the Tower System

Assemble the Tower System by matching primary and secondary sides on the serial and MCU boards to corresponding elevators.



3 Connect the MED-BPM AFE

Connect the MED-BPM AFE to the medical connector on TWR-K53N512 board as shown below.



4 Download and Install Software

Download and install IAR Embedded Workbench 6 for ARM. A 30-day trial version can be downloaded from iar.com.

5 Install the Drivers

Install P&E Micro drivers. The installer is located in IAR installation folder\arm\drivers\pemicro.

Name	Date modified	Type	Size
DRIVERS11_instal_120720	8/21/2012 1:52 PM	Application	4,303 KB
DEMMicro_CrossCOM_v100	8/21/2012 1:43:04	Win7/Win Etc	100 KB

6 Connect a USB Cable

Connect a USB cable from the computer to the USB port on the TWR-K53N512 board. Wait for drivers to install.



7 Download the Application Note

Go to **freescale.com** and conduct a parametric search for AN4328. Download AN4328SW.zip.

8 Open the File

Open the file MED-BPM K53.eww using IAR from \Software\MED-BPM\MK53N512\app\cdc\iar_ew\kinetis.

9 Load the Firmware

Click the Debug button to load the firmware to the MCU.



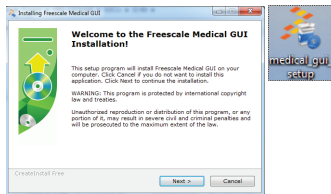
Step-by-Step Installation Instructions

Continued

10 Install the Software

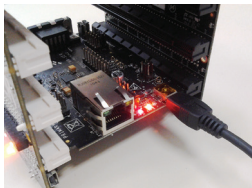
Install the Medical GUI software. It can be downloaded from freescale.com.

Note: Make sure you have already installed Java® JDK on your computer. Look for JDK folder in: C:\Program Files\Java



11 Change the Connection

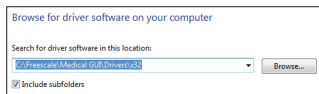
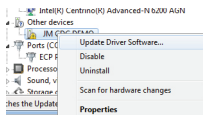
Disconnect the USB cable from the TWR-K53N512 and connect it to the TWR-SER board.



12 Install Drivers for JM CDC Demo

If the driver is not installed automatically, open Device Manager and install drivers for JM CDC Demo. Drivers can be found here:

- 32-bit version:
C:\Freescale\Medical GUI\Drivers\32
- 64-bit version:
C:\Freescale\Medical GUI\Drivers\64



Note: Open the Device Manager by opening the start menu, right-clicking on Computer and selecting Manage. Device manager is on the left options tree.

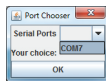
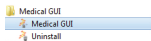
13 Look for the COM Number

In the device manager, look for the COM number assigned to “Virtual Com Port.”



14 Open the Medical GUI

Open the Medical GUI and select the Virtual Com Port from previous step.



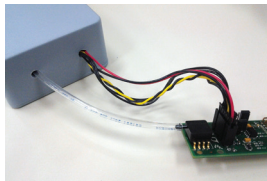


Step-by-Step Installation Instructions

Continued

15 Connect the Air Tube and Electrical Connector

Connect the air tube and the electrical connector from the gray box to the MED-BPM board. Gray box content can be consulted in AN4328.



Note: MED-BPM requires 2x AA batteries. Make sure they are loaded into the gray box and fully charged. SW1 on MED-BPM must be in the BATT ON position.

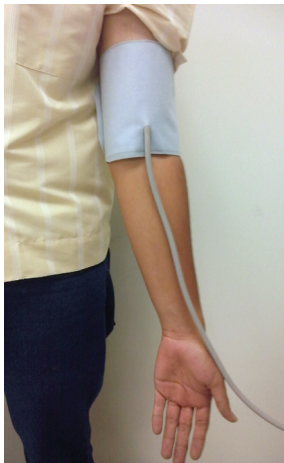
16 Attach the Second Air Tube

Attach the second air tube from the gray box to the arm cuffs' air tube.



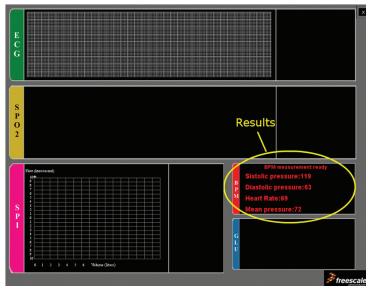
17 Put On the Arm Cuff

Place the arm cuff tightly around your left arm as shown in the image below.



18 Start Measurements

In the main screen, click the BPM section (red) to start measurements. Wait for the test to complete before disconnecting.



MCU-Boot Jumper Options

The following is a list of jumper options. The default installed jumper settings are shown in white text within the green boxes.

TWR-K53N512 Jumper Configurations

Jumper	Position	Function
J1	Open	R71 to ADC1_DM1
J3	Open	FlexBus Latch OE
J4	2-3	Medical Connector Pin 4 Function
J11	1-2	External Oscillator Selection
J15	Connected	Core VDD
J17	Connected	Oscillator Power Enable
J18	Connected	USB0_VBUS Voltage In
J24	1-2	SYS_PWR Select
J28	Open	Disable JM60 Bootloader
J34	Open	Oscillator OE Control

TWR-SER Jumper Configurations

Jumper	Position	Function
J10	1-2	VBDEV Source
J16	3-4	USB Mode Select
J2	1-2	CLK_SEL Source



Visit freescale.com/healthcareAFE for the latest information, including:

- AN4328 application note

Support

Visit freescale.com/support for a list of phone numbers within your region.

Warranty

Visit freescale.com/warranty for complete warranty information.

For more information, visit freescale.com/Tower

Join the online Tower community at towergeeks.org

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