



Quick Start Guide

MED-GLU

Glucose Metering
Plug-in Board

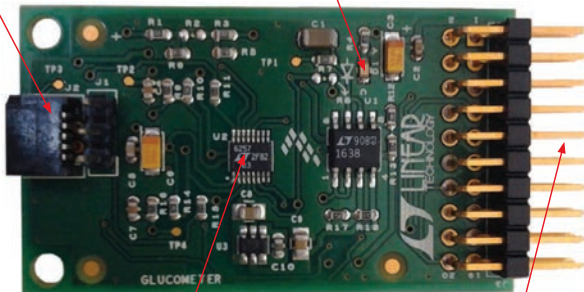


TOWER SYSTEM

Get to know the MED-GLU Board

Glucose Strip Connector

Power on LED



Linear® Optional
External Opamps

Medical
Connector



MED-GLU Freescale Tower System

The MED-GLU 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-GLU Features

MED-GLU is a single-board glucometer solution. It is reduced in size and eases the design of applications based on glucose metering. This board can be used together with the Tower System, offering a complete suite of tools including serial communication interfaces and graphic LCD screens.

Features

- Ready-to-develop glucometer solution
- Required components for glucometry embedded on board (excluding test strip)
- Tower System compatible

Step-by-Step Installation Instructions

In this quick start guide, you will learn how to set up the MED-GLU 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-GLU AFE

Connect the MED-GLU 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
DRVRS11_instal_120720	8/31/2012 1:52 PM	Application	4,303 KB
DELTAcon PowerPC v855	8/31/2012 1:43 PM	Utility Tool Etc.	190 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

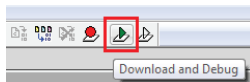
Go to **freescale.com** and conduct a parametric search for AN4364. Download AN4364SW.zip.

8 Open the File

Open the file MED-GLU K53.eww using IAR from \Software\MED-GLU 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

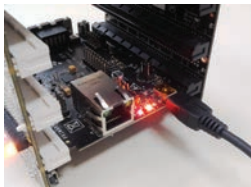
Install the Medical GUI software. It can be downloaded from **freescale.com**.

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

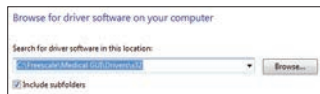
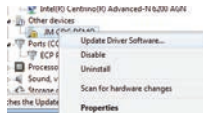
Disconnect the USB cable from the TWR-K53N512 and connect it to the TWR-SER board.



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:

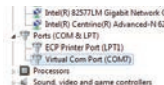
- 32-bit version:
C:\Freescal\Medical GUI\Drivers\vx32
- 64-bit version:
C:\Freescal\Medical GUI\Drivers\vx64



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.

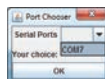
13 Look for the COM Number

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

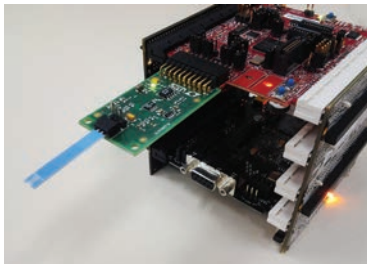
15 Prepare Solution

Prepare a solution mixing 55 ml of distilled water and 1 ml of glucose solution with 5% concentration (0.05g/ml). Draw the solution into a syringe.



16 Place Test Strip

Place the test strip on the MED-GLU board's strip connector as shown below.



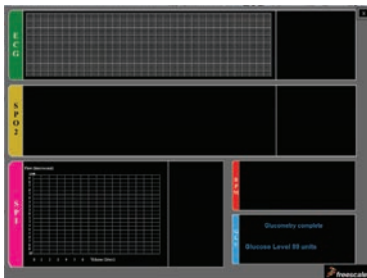
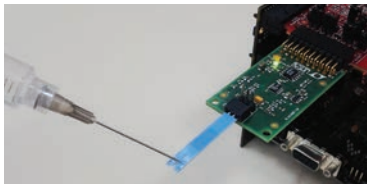
17 Start Measurements

In the main screen, click the GLU section (blue) to start measurements.



18 Place Solution on Test Strip

Place a drop of glucose solution on the test strip. Wait five seconds for results to appear on screen.





MED-GLU 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:

- AN4364 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**

Freescale and the Freescale logo are trademarks of Freescale Semiconductor, Inc., Reg. U.S. Pat. & Tm. Off. Tower is a trademark of Freescale Semiconductor, Inc. All other product or service names are the property of their respective owners. ARM is a registered trademark of ARM Limited. © 2013 Freescale Semiconductor, Inc.

