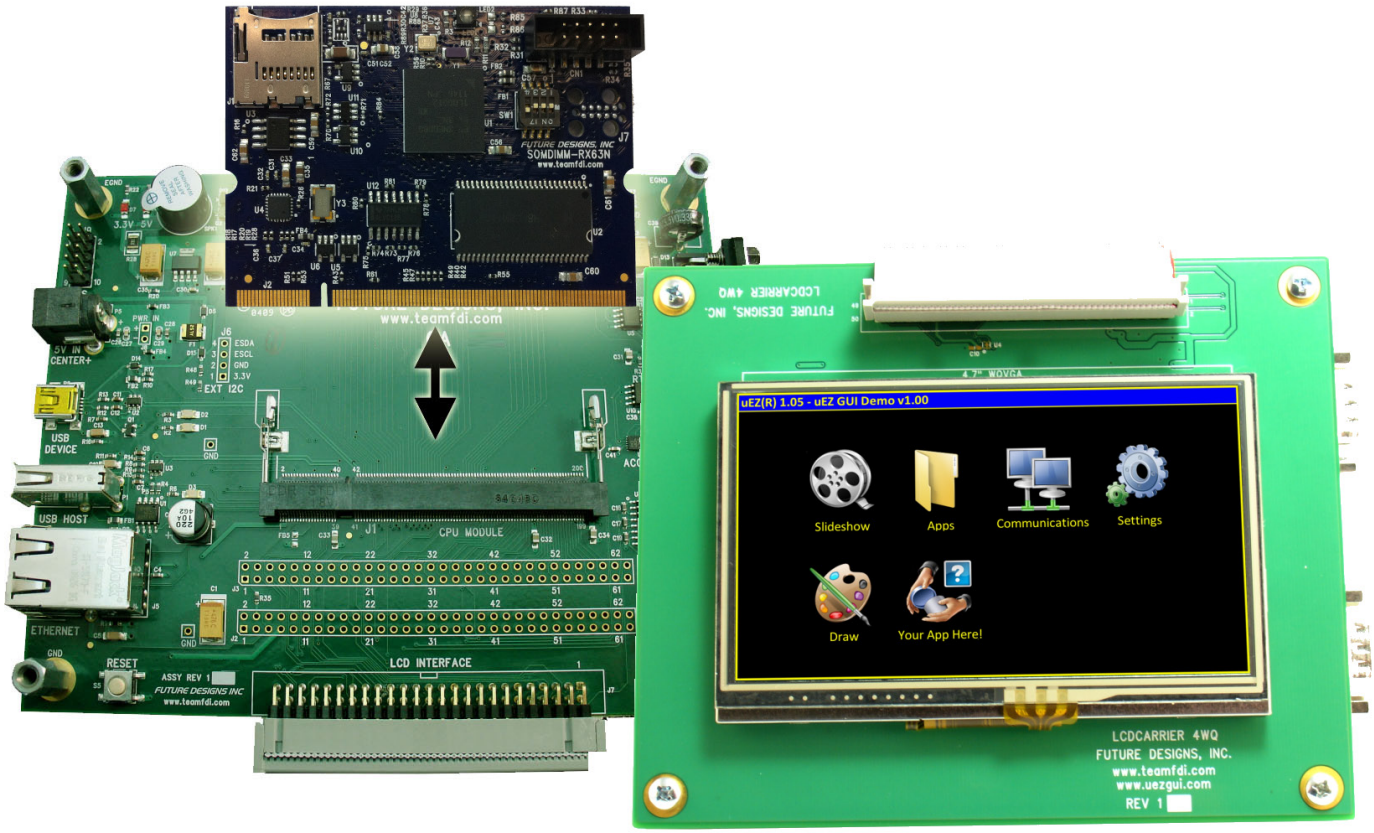
Quick Start Guide for RX63N Touch Screen LCD Kit



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1. Introduction

The DK-TS-KIT is optimized to save development time in typical embedded control applications. Its modular format uses a base carrier board, a core CPU DIMM board and an LCD carrier board. The base carrier board includes expansion connectors for added flexibility and a range of configurations.

This Quick Start Guide supports the following DK-TS-KIT part numbers:

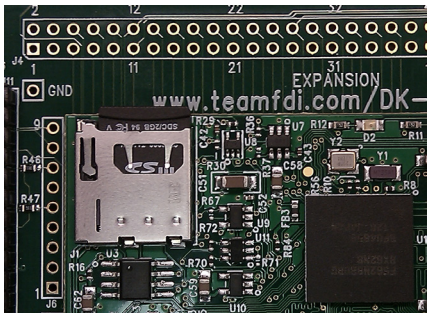
- **DK-43WQT-RX63N** 4.3” WQVGA Touch Screen LCD Kit for the RX63N
- **DK-47WQT-RX63N** 4.7” WQVGA Touch Screen LCD Kit for the RX63N

2. Kit Contents

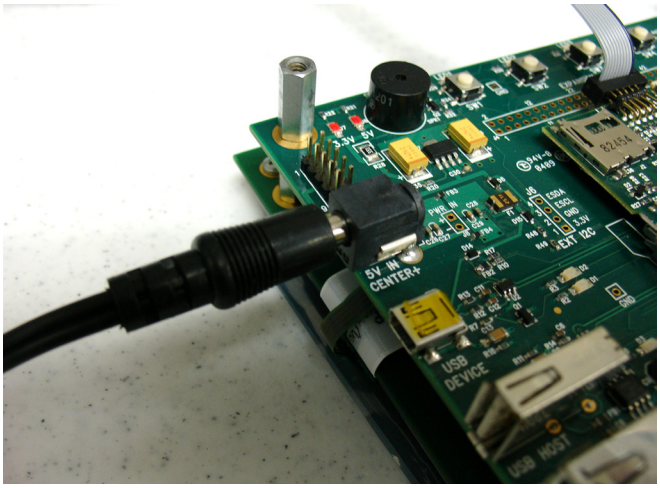
- DK-TS-RX63N Touch Screen Kit with LCD
- 5V Power Supply
- Quick Start Guide
- Segger Mini-JTAG Debugger and JTAG cable and FDI JLINK RX adapter board
- 2GB microSD Card
- Ethernet Cable
- USB Cables (x1)

3. Startup Procedure

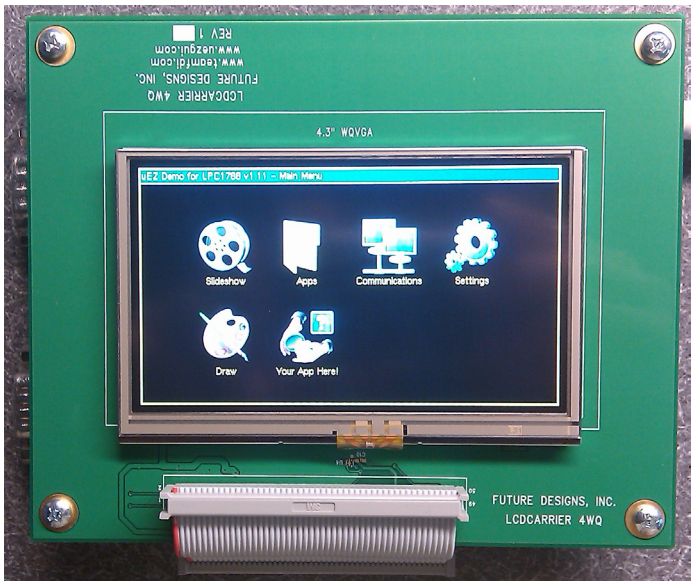
A. Insert the microSD card into the SOMDIMM-RX63N provided with the kit. The SD card contains the files required for the slide show to run. This will allow the slideshow to operate once the unit is powered up.



B. Connect the included 5V power supply to the DK-TS-KIT power connector (P5). The power supply MUST be a regulated 5VDC, 2.1mm, center positive power supply. The use of ANY other power supply may result in damage to the kit and subsequently, void the warranty.



C. The following screens should appear once power has been applied to the kit:



D. At this point the unit is ready for software demonstrations.

4. Demonstration Software Main Menu

The Demonstration Software has the following options:

- **Slideshow**
  Selecting the slideshow icon will cause the presentation files to be read from either the Flash Drive or the MicroSD card depending on which one is present. This will take several seconds and the LCD should show "Loading slideshow ……" This demonstration allows the user to manually scroll up and down through the slide show by "dragging" a stylus or finger at least half way across the screen. To return to the main menu scroll back past the first slide, this will return you to the main menu. After approximately 30 seconds of no activity the slideshow will begin to auto scroll. The user can regain manual control at any time by "dragging" forward or backwards to the next slide.

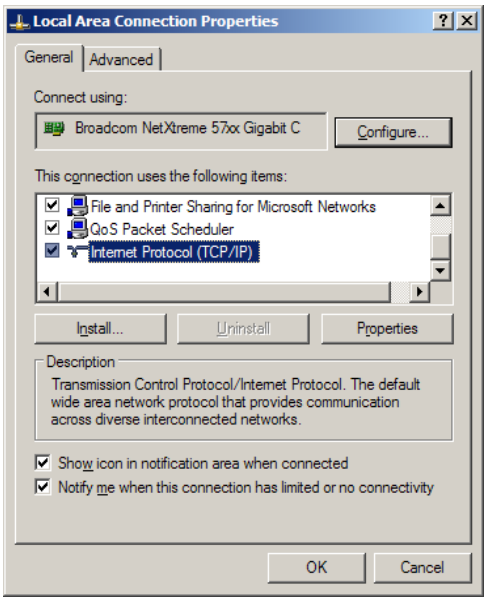
  The slideshow files can also be copied to a USB Flash Drive card and executed from there (with the proper USB Host drivers loaded).

  Slideshow customization:
  For best results, always use caps in the filename. Images must be in 24 bit uncompressed Targa (.TGA) format. Adobe Photoshop, GIMP, and many other graphics programs can save images in this format.

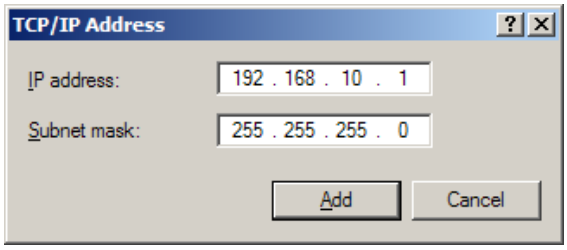
  When using DK-TS KIT's with a WQVGA LCD (e.g. DK-TS-43WQT-RX63N), the images must be 480 x 272 in size and use the file names WQSLID01.tga, WSLID02.tga, WQSLID03.tga, etc.

- **Draw**
  A very simple art program is provided. Use the touch screen to draw lines in the box to the right. Clicking on **Color** allows the color to be changed between various options. Hint – use black to erase. **Save** stores the graphic image as the file IMAGE.RAW on the microSD card. **Load** recalls the saved graphic image from the microSD card. If the microSD card is not present then the unit will respond with an error message.

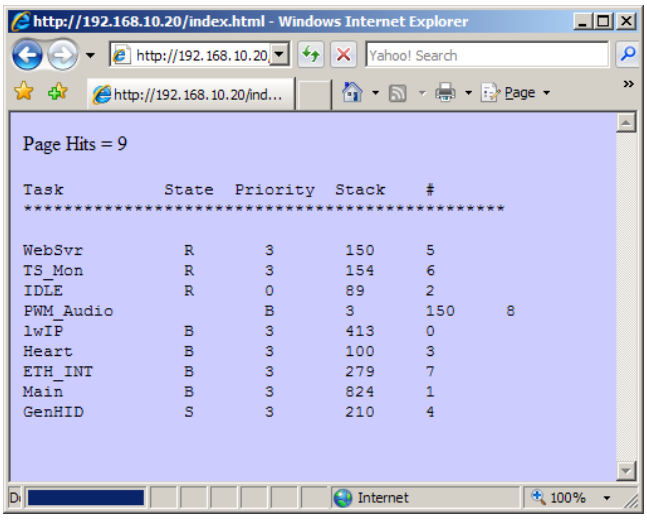
- **Console**
  Presents an output screen showing what a remote user sees when Telnetting into the console. Connect the Ethernet cable provided in the kit to the Ethernet port (J5) on the DK-TS-Kit. On a Windows PC, configure the PC for a static IP address of 192.168.10.20 as follows. On the PC start by going to the **Control Panel** and select **Network Connections**. Then double click the **Local Area Connection** (or similarly named) and click **Properties**. The following dialog should appear. Scroll down to "Internet Protocol (TCP/IP)", select, and then click **Properties**.



On the next screen, the computer needs to be set to a static IP number. Enter the current IP address, subnet mask, default gateway, and DNS servers (enter the command "ipconfig /all" at a CMD window to get this information). Then click **Advanced** and then click **Add…** and enter the following information and then click **Add**. Click **OK**. Click **OK**.

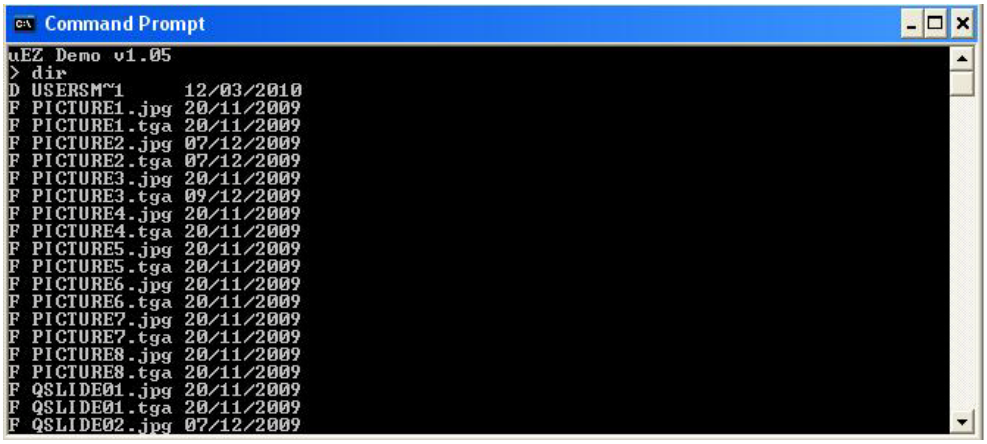


Open an internet browser and go to http://192.168.10.20 and watch the output. It should appear as follows:



You should see that the "Page Hits" total is incrementing along with other parameters listed under the task column.

Now open a CMD window and type "telnet 192.168.10.20" to connect to the DK-TS-KIT. Type "quit" to disconnect. You should also see the same results on the DK-TS LCD screen.



- **Time & Temperature**
  Selecting this icon will launch a new screen that shows the temperature from the LM75 temperature sensor on the CARRIER board, and the current time and date from the external Real Time Clock (RTC). To return to the main menu touch the exit icon. Touch "Time" to advance to the "Set Time" screen and set or update the time as necessary. Touch "Date" to advance to the "Set Date" screen and set or update the date as necessary. Once set an on-board super cap will back-up the time and date for several days (typically) if the unit is powered off.

- **Accelerometer**
  Selecting this icon demonstrates the accelerometer feature by moving a simulated ball across the screen as the CARRIER board is tilted along the X and Y axis. To return to the main menu touch the exit icon.

Settings
Selecting this icon brings up a submenu screen that contains a C**alibrate** icon, a F**unctional Test** icon, and a **FCT Loopback** icon. The Calibrate icon does a simple calibration of the LCD screen. The Functional Test provides a step by step test of all basic features of the DK-TS-KIT. The FCT Loopback puts the unit into a mode that will communicate with another DK-TS-KIT requiring specific cables and setup as defined in the SOMDIMM-RX63N Users Manual. These features are normally used for functional testing as described in the SOMDIMM-RX63N User's Manual available at http://www.teamfdi.com/development-tools-kits/products/6/SOMDIMM-RX63N

5. Additional Documentation and Software Updates

Complete Users Manuals, Schematics, and documentation are available on the Flash Drive provided in the DK-TS-KIT and are also available from the following websites (please refer to the websites for the latest updates):

- www.teamfdi.com/dk-ts-kit
- Segger Mini-JTAG Debugger (J-Link Lite RX)
  - http://www.segger.com/cms/j-link-rx.html

USB Host and USB Device drivers for the RX Family under FreeRTOS / uEZ® are currently under development by FDI and Renesas but are not yet available. Please consult our website at www.teamfdi.com for updates on availability of these RX drivers or email us at support@teamfdi.com for more information.