CONTROL PANEL 128x64

USER GUIDE

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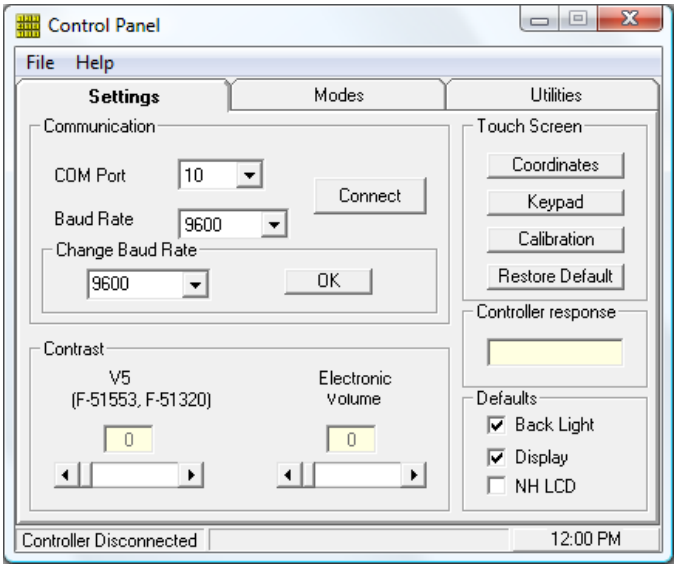
1. CONTROL PANEL 128x64 USER GUIDE

This guide describes use of the Control Panel 128x64 software for evaluation of TC51320, TC51553, TC553/852 and TC55472 LCD Controller Boards.

1.1. CONTROL PANEL 128X64 SETTINGS

Settings tab contains Communication, Change Baud Rate, Contrast, Touch Screen, Controller Response and Defaults sections.

Figure 1-1 Settings Screen

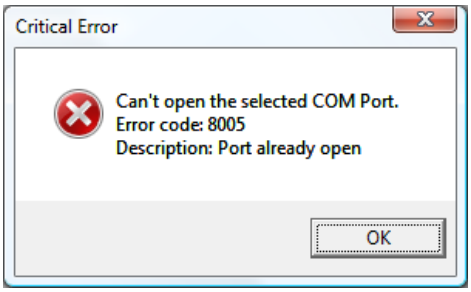


To establish communication with LCD controller:

1. Select COM port.
2. Select Baud Rate.
3. Click Connect.

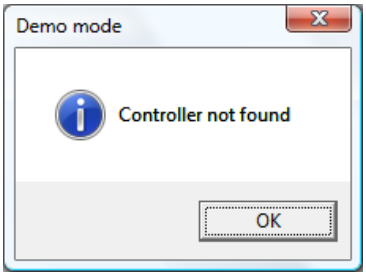
Program will verify a physical connection with LCD controller. If the selected COM port is busy, the Critical Error message will appear.

Statement 1-1 Critical Error



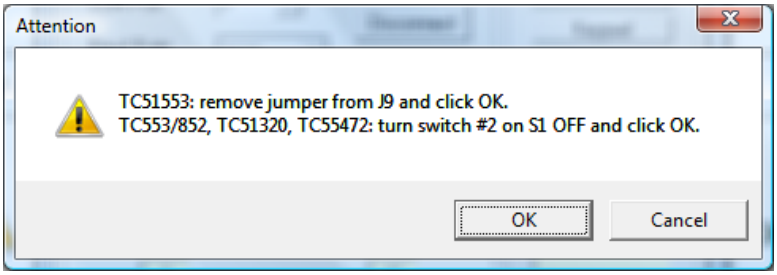
If the selected COM port is busy (open), try to connect to a different COM port. If no connection is detected, the Demo Mode message will appear.

Statement 1-2 Demo Mode



The program loads with a default 9600bps Baud Rate. The Change Baud Rate section allows establishing communication with the controller at a different Baud Rate. Select required Baud Rate from a drop down menu and press OK. The Attention message will appear on a screen. Turn OFF switch #2 on S1 (TC51320, TC553/852 and TC55472 controllers) or remove jumper from J9 (TC51553 controller) and click OK. The baud rate is stored and will default to the stored value. Click Connect button in the Communication section to establish communication with the controller.

Statement 1-3 Attention



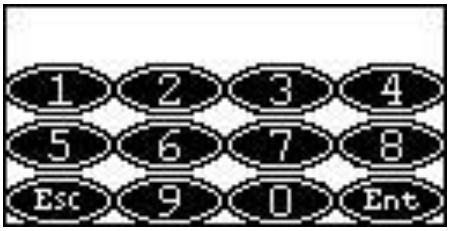
Contrast controls liquid crystal drive voltage issued from the built-in LCD power supply voltage regulating circuit and adjusts the LCD density (contrast).
Kyocera F-51320 and F-51553 LCDs support V5 and Electronic Volume features.
Kyocera F-51852 LCD supports Electronic Volume feature only.
Kyocera F-55472 LCD supports V0 and Electronic Volume features.
Change voltage and Electronic Volume values by moving the sliders to the appropriate positions. The voltage and Electronic Volume values are stored and will default to the stored values.

Controller Response section displays the controller response and is updated every time touch on the touch screen is detected or when controller is ready for a next command. The controller responds with exclamation mark "!" (0x21) when it's ready for the next command.

Defaults section allows setting the default controller state at power-up. The controller's factory defaults are: backlight "ON", LCD "ON", and Kyocera F-55472 LCD. To set the controller to operate with Newhaven Display NHD-C12864WO Series LCDs, select the "NH LCD" option.

Touch Screen section allows selecting the required touch screen response. By selecting Coordinates, the controller will respond by sending XY coordinates of a touch location. By selecting Keypad, the controller will send ASCII code of each number, see Keypad Example.

Example 1-1 Keypad



"Esc" button will send 0x1B, "Ent" button will send 0x0D. The controllers are calibrated for touch screen. Any command sent from main computer or microprocessor will disable touch screen. To re-enable the touch screen, appropriate command is required.

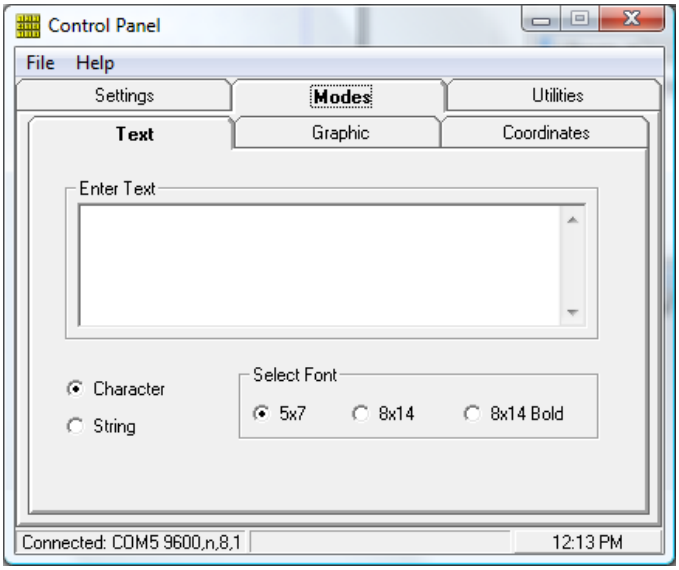
Calibration allows user to calibrate the touch screen. To begin touch screen calibration click Calibration button. You will be asked to touch the upper right corner, then the upper left corner, then the lower left corner, and then the lower right corner of the touch screen. A “Dot” will appear on the screen to indicate where to make touch. After successful calibration the controller will display "Done!" on a screen.

Restore Default button allows to return to the factory default calibration.

1.2. CONTROL PANEL 128X64 MODES

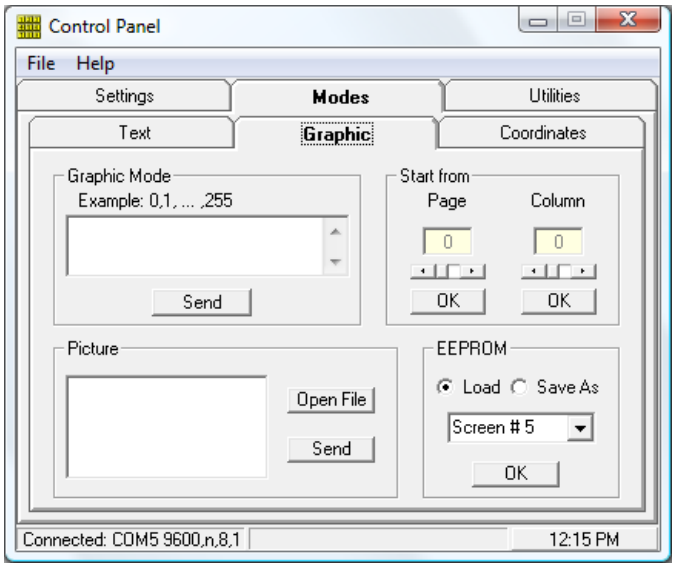
Modes tab contains Text, Graphic and Coordinates groups.

Figure 1-2 Text Screen



Text tab allows sending single character or text string to the LCD and selecting font size: 5x7, 8x14 or 8x14 Bold. Different font sizes can be freely mixed on the screen.

Figure 1-3 Graphic Screen

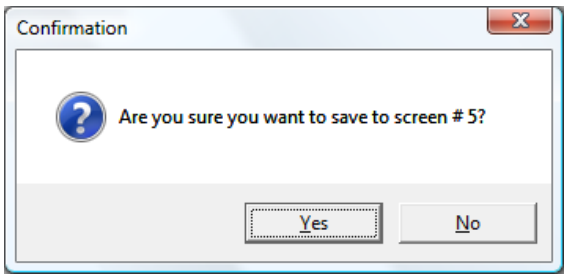


Graphic tab allows user to create graphic images. Input any number from 0 to 255 in the provided window, use comma as a delimiter (e.g.: 1,5). Pressing Send will send data to the controller.

The Control Panel software allows opening 128x64 pixels bitmapped pictures and sending them to the display. Press Open File to open bmp or jpg file from your PC. The selected picture will show up in the provided window. Pressing Send will send a picture to the controller.

The EEPROM section allows user to Load and Save images to and from external EEPROM. To Save an image in the external EEPROM, select Save As and specify screen number. To Load an image from external EEPROM, select Load and specify screen number. Pressing OK will send a selected command to the controller. To prevent an accidental overwriting of the existing screen, the program requires a confirmation every time OK is pressed.

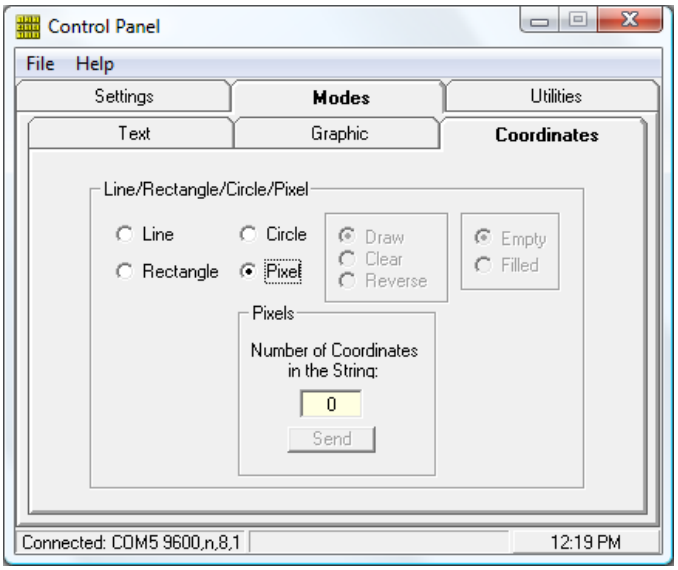
Statement 1-4 Error



Start from section allows selecting Start Page and Start Column values. Select Page and Column numbers by moving sliders to the appropriate positions. Pressing

OK below Page will send the Start Page value and pressing OK below Column will send the Start Column value.

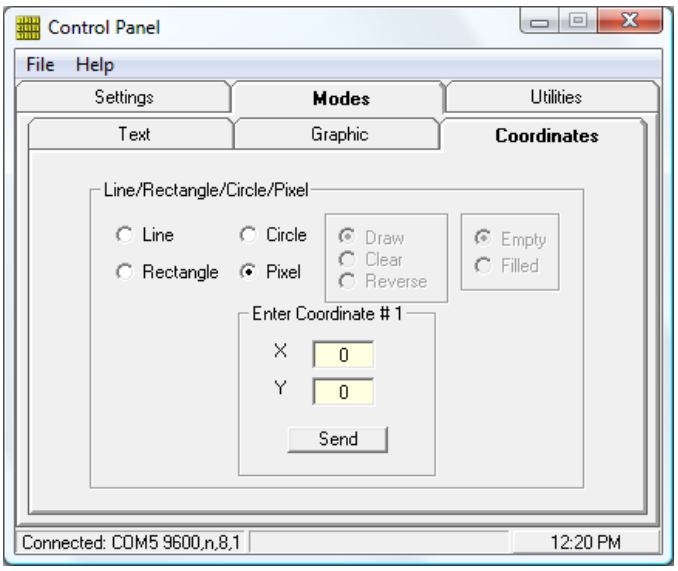
Figure 1-4 Coordinates Screen



Coordinates tab allows turning ON/OFF any pixel on the screen and draw line, rectangle or circle.

To work with pixels: select Pixel, input number of coordinates in the string and click Send. The Coordinates tab will change its appearance, see below.
Enter XY coordinates and press Send. XY values will be sent to the controller. When the specified number of coordinates is reached, the Coordinates tab will return to its original appearance.

Figure 1-5 Coordinates Pixel

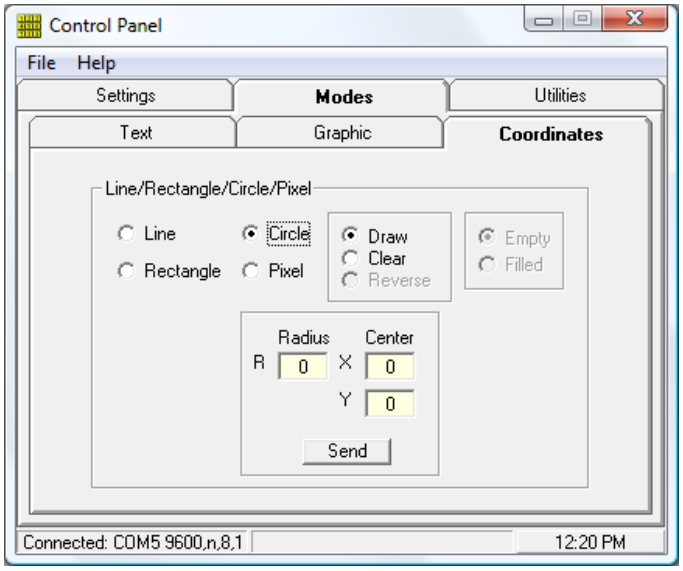


To draw a line: select Line, Draw, enter Start and End coordinates and click Send.
To clear a line: select Line, Clear, enter Start and End coordinates and click Send.

Selecting Rectangle will activate Empty and Filled buttons.
To draw an empty rectangle: select Rectangle, Draw, Empty, enter Start (upper left corner of the rectangle) and End (lower right corner of the rectangle) coordinates and click Send.
To clear an empty rectangle: select Rectangle, Clear, Empty, enter Start (upper left corner of the rectangle) and End (lower right corner of the rectangle) coordinates and click Send.
To draw a filled rectangle: select Rectangle, Draw, Filled, enter Start (upper left corner of the rectangle) and End (lower right corner of the rectangle) coordinates and click Send.
To clear a filled rectangle: select Rectangle, Clear, Filled, enter Start (upper left corner of the rectangle) and End (lower right corner of the rectangle) coordinates and click Send.
To reverse pixels of the specified rectangle: select Rectangle, Reverse, enter Start (upper left corner of the rectangle) and End (lower right corner of the rectangle) coordinates and click Send.

Selecting Circle will change the Coordinates tab appearance.

Figure 1-6 Coordinates Circle



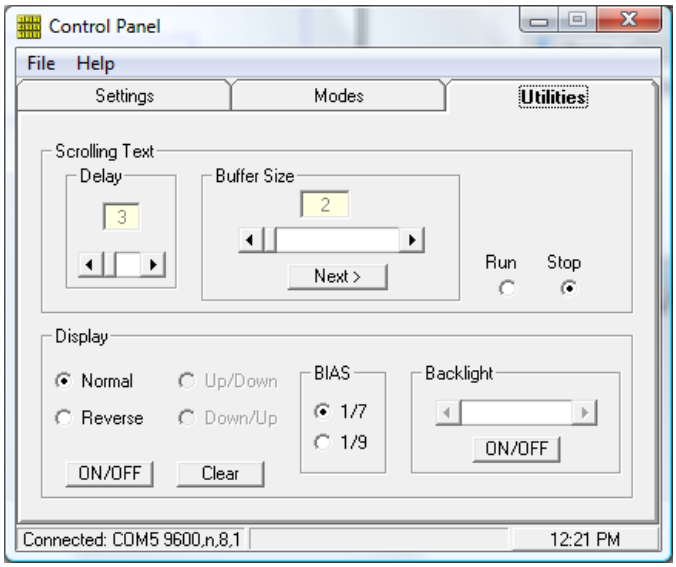
To draw a circle: select Circle, Draw, enter Radius and Center (of the circle) coordinate and click Send.
To clear a circle: select Circle, Clear, enter Radius and Center (of the circle) coordinate and click Send.

1.3. CONTROL PANEL 128X64 UTILITIES

Utilities tab contains Scrolling Text and Display sections.

Starting from firmware v2.2, the TC55472 controllers do not support the horizontal scrolling feature.

Figure 1-7 Utilities Screen



The Scrolling Text section allows entering and running the Scrolling Text. If scrolling text was previously saved in the external EEPROM and appropriate delay was specified, then select Run to start a scrolling text. To change scrolling text Delay: select Stop, move slider to the appropriate position, and select Run.
To store scrolling text in the external EEPROM: define Buffer Size (total number of characters, min 2, max 25) and press Send. Enter text in the Text window. The Characters Entered counter will display the number of entered characters. When the Characters Entered counter will reach the specified Buffer Size, the Scrolling Text section will return to its original appearance.

The Display section allows Normal/Reverse modes of the LCD. These modes are executed by LCD drive and allow the display ON/OFF state to be reversed without having to rewrite the contents of the display data RAM. In this case contents of the display data RAM are maintained.

To put an LCD to a power-save mode use Display ON/OFF button. The LCD RAM will maintain the existing data.

Pressing Clear will clear the LCD screen.

The Kyocera and Newhaven Display LCDs have two LCD BIAS Sets. Changing of LCD Bias Set (1/7, 1/9) will affect the display contrast. The LCD Bias Set is stored and will default to the stored value.

Backlight ON/OFF section allows turning backlight ON and OFF.