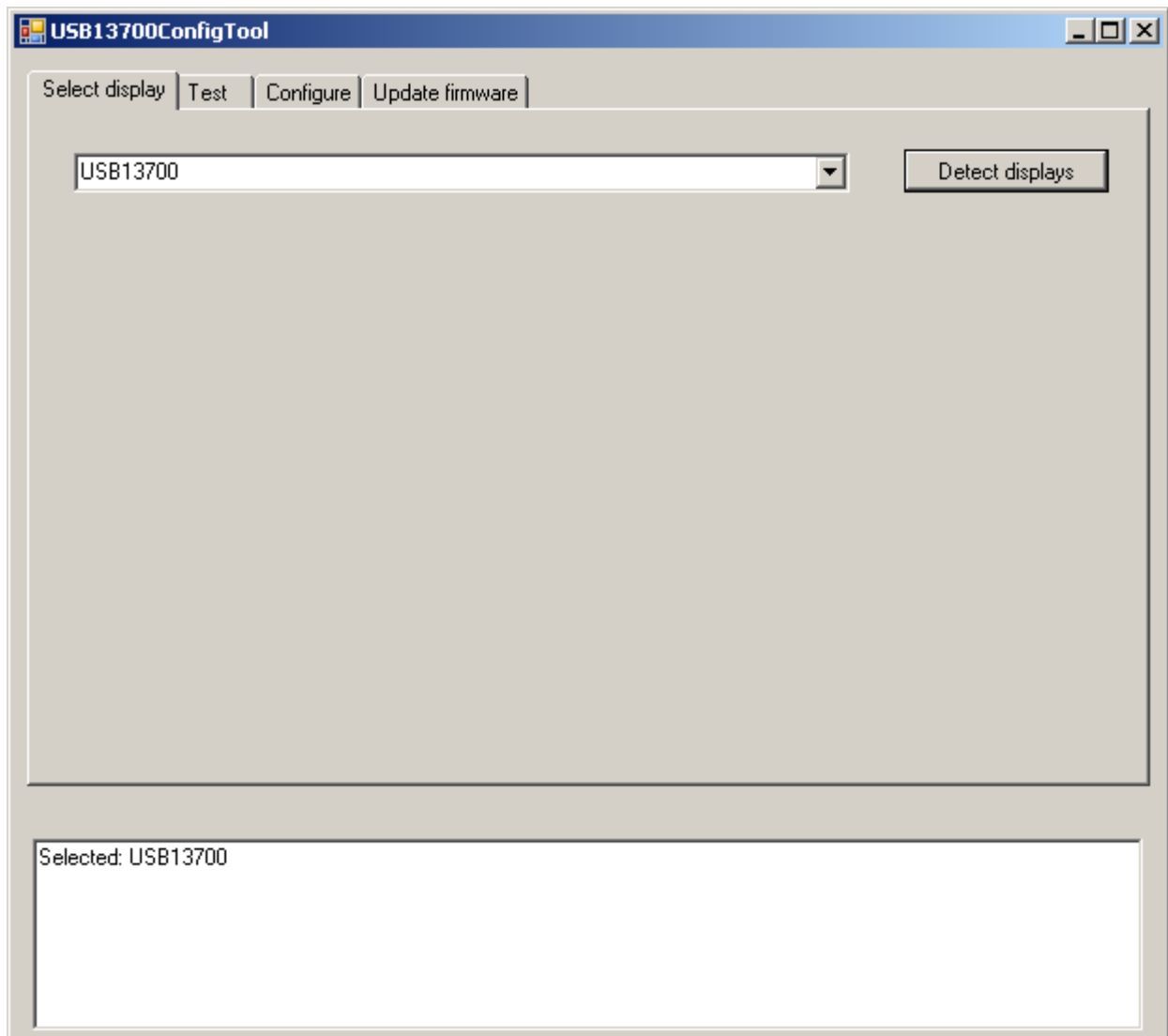


# Configuration Tool

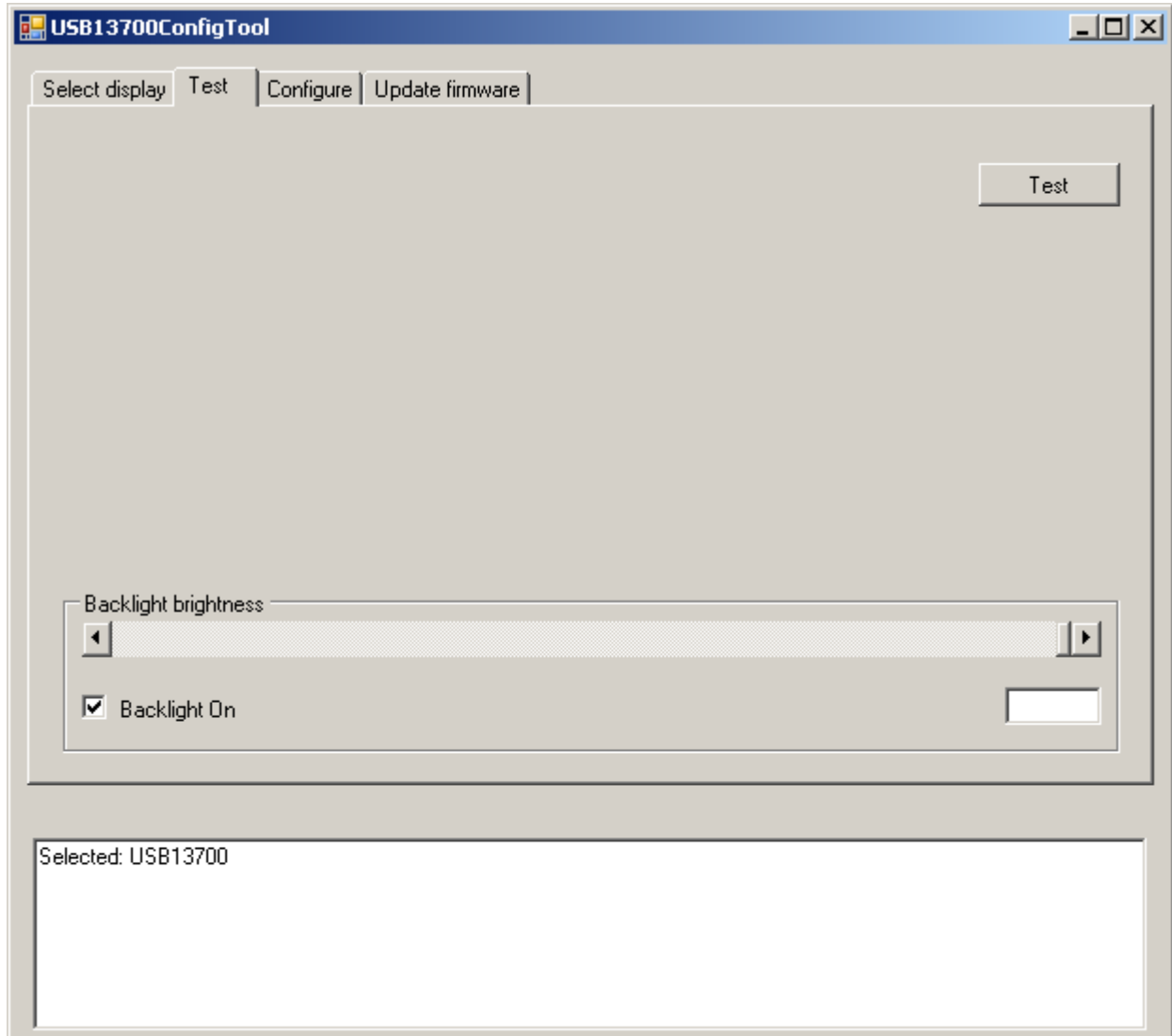
Configuration tool allows configuring the controller to match the display and also to do simple testing of the features.

First press the 'Detect displays' button to detect the connected USB13700 controllers. If you have more than one display connected you can select the one you wish to use.



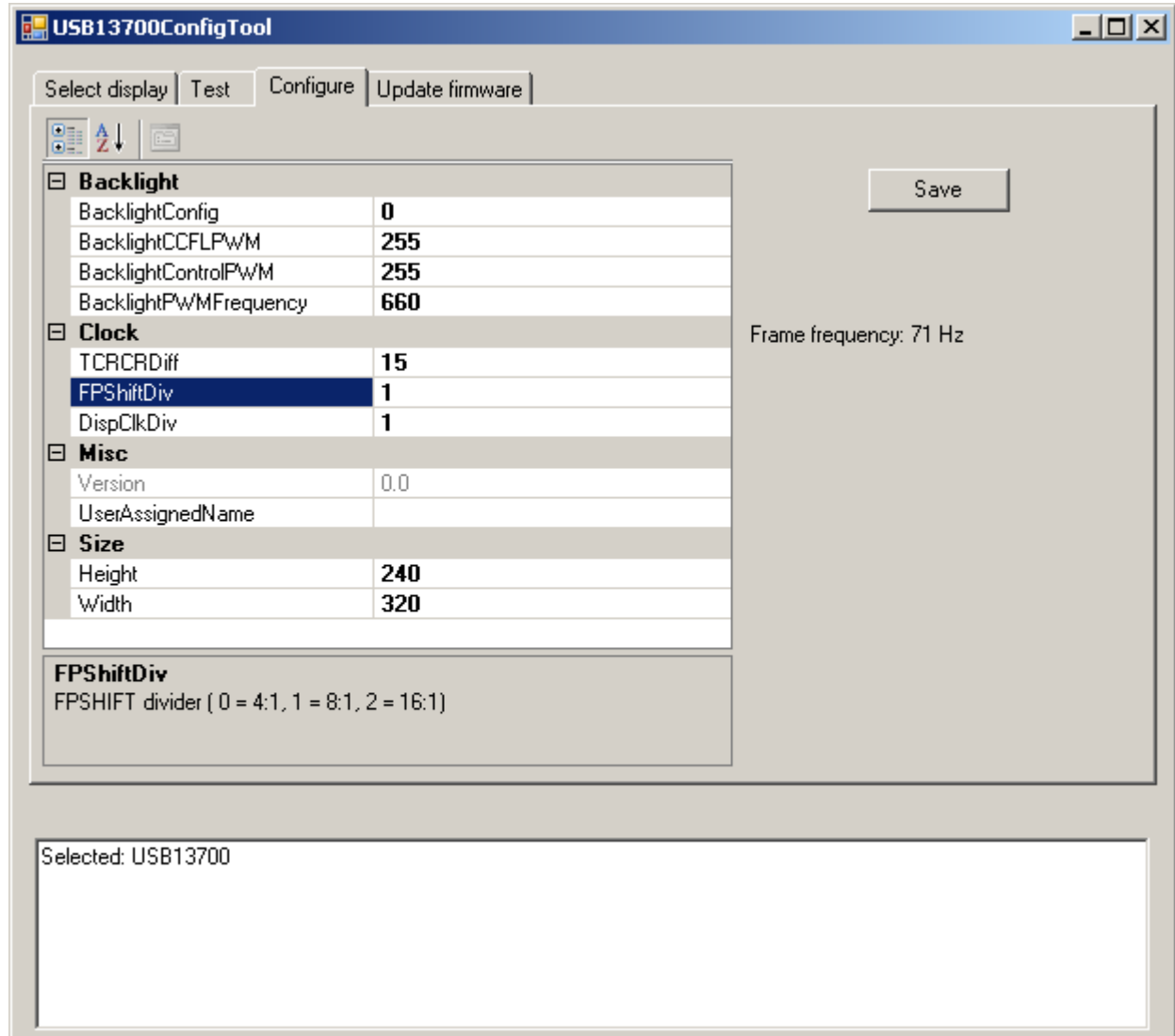
In the Test tab you can do some simple testing. Pressing the 'Test' button shows 5 horizontal lines on the display. Two lines to the top of the display, two lines to the bottom and one line in the middle.

With the 'Backlight brightness' slider you can try different backlight brightness values. And 'Backlight On' is on/off control of the backlight.



## Configure tab

If you have selected a display then selecting the Configure tab shows the current settings for that display.



## Backlight

### BacklightConfig

Value of BacklightConfig selects which output pin is used for the PWM brightness control. Value of 0 selects the normal backlight brightness control pin (pin 2 in the backlight connector as the switching is done on the ground side). Value of 1 selects the CCFLControl pin (pin 4 in the backlight connector) as the backlight brightness output pin. In this mode pin 2 works only as on/off switch.

### BacklightCCFLPWM

This selects the default brightness value for the CCFLControl output when the controller is powered on. Possible values 0-255.

### BacklightControlPWM

This selects the default brightness value for the BacklightControl output when the controller is powered on. Possible values 0-255.

### **BacklightPWMFrequency**

PWM frequency of the backlight brightness control. Possible values 0 - 10000 Hz.

## **Clock**

Clock settings select the pixel clock used meaning the frame frequency is determined by these. The resulting frame frequency using the selected settings for the current resolution is shown.

### **DispClkDiv**

S1D13700 clock divider. The formula for the clock is  $CLK = 30 \text{ Mhz} / (\text{DispClkDiv} + 1)$

So the highest possible clock is 15 Mhz with DispClkDiv value 1.

DispClkDiv	Clock frequency
1	15 MHz
2	10 MHz
3	7.5 MHz
4	6 MHz
5	5 MHz
6	4.29 MHz
7	3.75 MHz
8	3.33 MHz
9	3 MHz
10	2.73 MHz

This selects the S1D13700 input clock.

### **FPSHiftDiv**

S1D13700 has a built in clock divider that can be set to be either 4:1, 8:1 or 16:1. The output of this divider is the FPSHIFT cycle time.

Value of 0 for FPSHiftDiv selects 4:1 divider, value 1 selects 8:1 divider and value 2 selects 16:1 divider.

FPSHiftDiv	Divider
0	4:1
1	8:1
2	16:1

With DispClkDiv setting of 2 and FPSHiftDiv setting 0 the FPSHIFT clock is  $10 \text{ Mhz} / 4 = 2.5 \text{ Mhz}$ .

### **TCRCRDiff**

TCRCRDiff can be used to fine tune the frame frequency for the selected clock settings. Default

value is 5 and it must be higher than 2. If this is set to be lower than 2 then the default value is used. Maximum value for TCRCRDiff is  $253 - \text{DisplayWidth}/8$ .

## **Misc**

### **UserAssignedName**

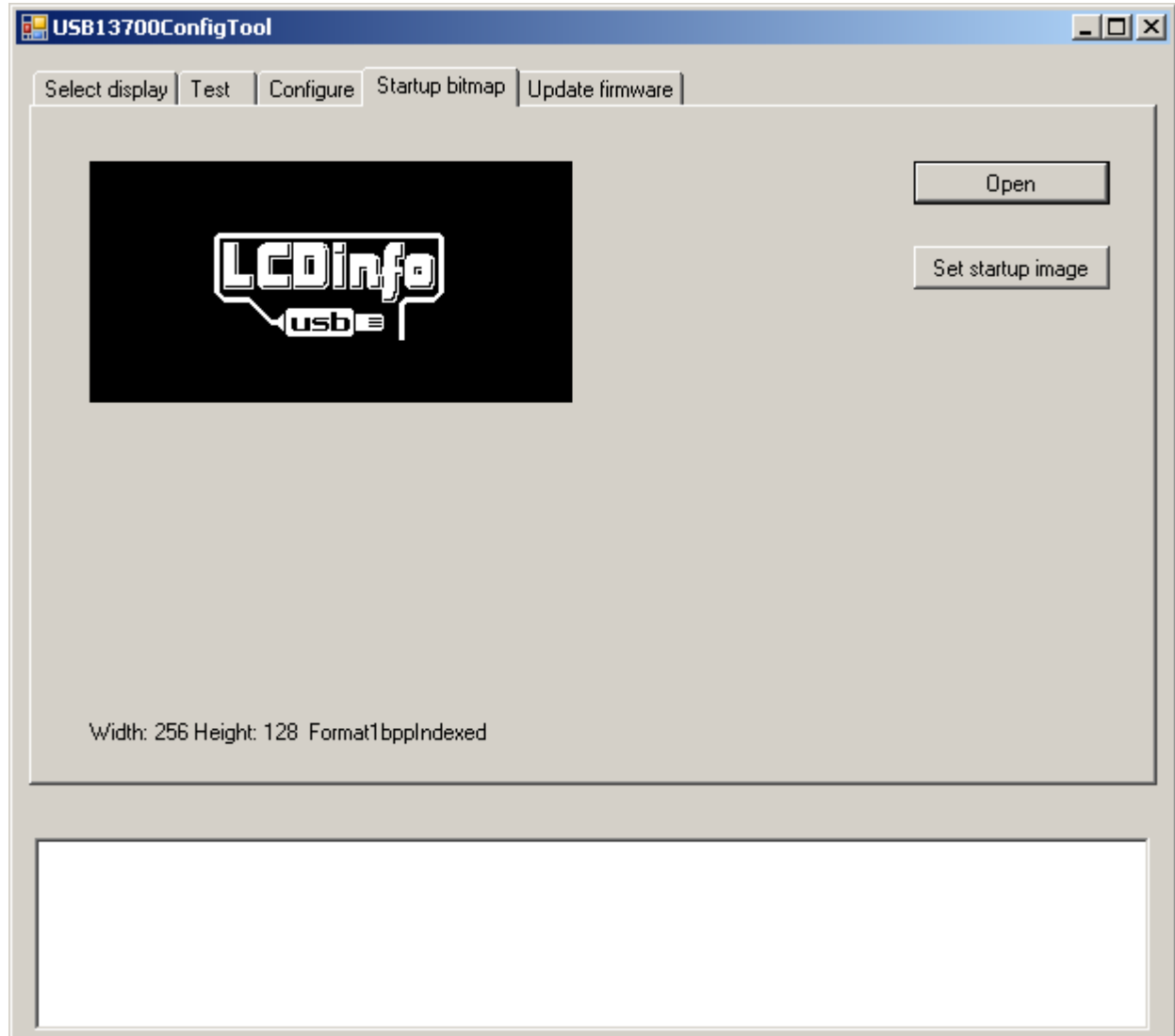
It is possible to give each display a unique name string. This can be helpful if more than one display is connected to easily separate the displays.

### **Size**

Select the resolution of the connected display.

## Startup bitmap tab

Here you can change the image that is shown on the display when the USB13700 board is powered on.



Use the *Open* button to open and preview the image.

Then press the *Set startup image* button to save the image to the controller memory.

## Update firmware tab

This can be used to update the controller firmware. If a display was selected when opening this tab then the current firmware version and the latest available firmware version are shown. The firmware of the controller can be updated by pressing the 'Update' button. Updating the firmware restores all the previously saved settings to defaults.

