2.1inch-USB-Monitor

Working with PC Windows

Software Connection

Desktop Sockets Screen USB Type-C Connection

PC Case Sockets Screen MPN Interface Connection

- 1. Double-click on setup.exe in the software directory, "Connected" on the top left corner, choose your country, click on the right arrow, and then click on "Next".

Working with Raspberry Pi Bookworm System

Software Setting

- 1. Download Waveshare PC Monitor zip.
- 2. Install the program under "Public Desktop Path and" in the PCMonitor directory.

- 3. Run the program "PCMonitor.exe".

- 4. Install the Google Chrome browser.

- 5. Open the extension page, "Manage extensions", "Developer mode" on the top left corner, choose your country, click on the right arrow, and then click on "Next".

- 6. Click the "Load unpacked" button, and then select the "chrome-extension" folder in the PCMonitor directory.

- 7. Click the extension button, and then click the "Connected" button.

- 8. Click the extension button, and then click the "Connected" button.

- 9. Click the extension button, and then click the "Connected" button.

- 10. Click the extension button, and then click the "Connected" button.

- 11. Click the extension button, and then click the "Connected" button.

- 12. Click the extension button, and then click the "Connected" button.

- 13. Click the extension button, and then click the "Connected" button.

Set Auto-start

- 1. Open the terminal.

```
sudo -s
nano /root/.config/lxsession/LXDE-pi/autostart
@xset -dpms
@xset s off
@xset s noblank
@chromium-browser --start-maximized --disable-infobars --disable-session-crashed-bubble --disable-pinch --kiosk --no-first-run --enable-chromeos-touch-compatibility --enable-chromeos-tablet-mode --enable-touch-events --enable-pinch --force-device-scale-factor=1.0 --window-position=0,0 --window-size=1920,1080 --app=http://localhost:8080/index.html
@/home/pi/.local/share/applications/chromium-browser.desktop --kiosk
```

- 2. Set the Raspberry Pi to boot to the desktop and enable auto-login to the command line.

```
sudo raspi-config
```

- 3. Navigate to "System Options" > "Boot / Auto Login" > "Console Autologin".

Displaying Customized Interfaces

- 1. Create your HTML interface and save it in the /home/pi directory.
- 2. Install Apache2 and configure it to serve your HTML files.

```
sudo apt update
sudo apt install apache2 -y
sudo rm -rf /var/www/html
sudo ln -s /home/pi/html /var/www/html
sudo chmod -R 755 /home/pi/html
sudo chmod 755 /home/pi
sudo systemctl restart apache2
```

- 3. Change the initialization window to point to your HTML file.

```
nano /root/.config/lxsession/LXDE-pi/autostart
@chromium-browser --start-maximized --disable-infobars --disable-session-crashed-bubble --disable-pinch --kiosk --no-first-run --enable-chromeos-touch-compatibility --enable-chromeos-tablet-mode --enable-touch-events --enable-pinch --force-device-scale-factor=1.0 --window-position=0,0 --window-size=1920,1080 --app=http://localhost:8080/index.html
```

- 4. Save the changes and reboot the system.

Game Function

- 1. Set up it functions for the demo.

```
sudo -s
nano /root/.config/lxsession/LXDE-pi/autostart
@xset -dpms
@xset s off
@xset s noblank
@chromium-browser --start-maximized --disable-infobars --disable-session-crashed-bubble --disable-pinch --kiosk --no-first-run --enable-chromeos-touch-compatibility --enable-chromeos-tablet-mode --enable-touch-events --enable-pinch --force-device-scale-factor=1.0 --window-position=0,0 --window-size=1920,1080 --app=http://localhost:8080/index.html
@/home/pi/.local/share/applications/chromium-browser.desktop --kiosk
```

- 2. Save the changes and reboot the system.

Game Function Introduction

Hardware Connection

- "System_data_test" defines the data transmission.
- "Game" defines the game function and supports the starting custom data series (support ASCII characters).

Interface

```
Function_Start()
Function_Update(MOUSE_MOVE_X, MOUSE_MOVE_Y, MOUSE_PRESS_DOWN, MOUSE_PRESS_UP, MOUSE_PRESS_LONG, KEY_PRESS_DOWN, KEY_PRESS_UP, KEY_PRESS_LONG, KEY_PRESS_CHAR)
Function_Stop()
Function_GetTotalTime()
Function_GetFrameRate()
Function_SetFrameRate(FrameRate)
Function_GetRandomInt(Min,Max)
Function_GetRandomFloat(Min,Min)
Function_SetGameBackground(Color)
Function_DrawPixel(x,y,Color)
Function_DrawLine(x1,y1,x2,y2,Color)
Function_DrawRectangle(x1,y1,x2,y2,Color,Filled)
Function_DrawCircle(x,y,r,Color,Filled)
Function_DrawText(x,y,"Text",Font,Color,BackgroundColor)
Function_DrawNumber(x,y,Number,Font,Color,BackgroundColor)
Function_DrawTime(x,y,Time,Font,Color,BackgroundColor)
```

Function Library Introduction

Prototype

```
Function_Start()
Function_Update(MOUSE_MOVE_X, MOUSE_MOVE_Y, MOUSE_PRESS_DOWN, MOUSE_PRESS_UP, MOUSE_PRESS_LONG, KEY_PRESS_DOWN, KEY_PRESS_UP, KEY_PRESS_LONG, KEY_PRESS_CHAR)
Function_Stop()
```

Function Introduction

Function	Function Description
Function_Start()	Initialization function, called once at the beginning of the game.
Function_Update(MOUSE_MOVE_X, MOUSE_MOVE_Y, MOUSE_PRESS_DOWN, MOUSE_PRESS_UP, MOUSE_PRESS_LONG, KEY_PRESS_DOWN, KEY_PRESS_UP, KEY_PRESS_LONG, KEY_PRESS_CHAR)	Game update function, called every frame. It is the main function of the game.
Function_Stop()	Stop function, called when the game exits.

Parameter Description

Parameter	Description
MOUSE_MOVE_X	Mouse movement in the X direction.
MOUSE_MOVE_Y	Mouse movement in the Y direction.
MOUSE_PRESS_DOWN	Mouse left button pressed down.
MOUSE_PRESS_UP	Mouse left button released.
MOUSE_PRESS_LONG	Mouse left button long press.
KEY_PRESS_DOWN	Keyboard key pressed down.
KEY_PRESS_UP	Keyboard key released.
KEY_PRESS_LONG	Keyboard key long press.
KEY_PRESS_CHAR	Keyboard character input.

Function Library Introduction

Function	Function Description
Function_GetTotalTime()	Get the total time since the game started (in seconds).
Function_GetFrameRate()	Get the current frame rate.
Function_SetFrameRate(FrameRate)	Set the frame rate.
Function_GetRandomInt(Min,Max)	Get a random integer between Min and Max.
Function_GetRandomFloat(Min,Max)	Get a random floating-point number between Min and Max.
Function_SetGameBackground(Color)	Set the game background color.
Function_DrawPixel(x,y,Color)	Draw a pixel at coordinates (x, y).
Function_DrawLine(x1,y1,x2,y2,Color)	Draw a line from (x1, y1) to (x2, y2).
Function_DrawRectangle(x1,y1,x2,y2,Color,Filled)	Draw a rectangle. Filled: 0 = outline, 1 = filled.
Function_DrawCircle(x,y,r,Color,Filled)	Draw a circle. Filled: 0 = outline, 1 = filled.
Function_DrawText(x,y,"Text",Font,Color,BackgroundColor)	Draw text. Font: 1 = 8x8, 2 = 8x16, 3 = 12x24.
Function_DrawNumber(x,y,Number,Font,Color,BackgroundColor)	Draw a number.
Function_DrawTime(x,y,Time,Font,Color,BackgroundColor)	Draw time. Time: 0 = 00:00:00, 1 = 00:00:00:00.