



How to drive 7.33 inch E Ink display(GDEP0733T01)



Dalin Good Display Co., Ltd.

Program Download

※ Program Source: GitHub vroland/epdiy:

<https://github.com/vroland/epdiy>

1. Download the software (ESP-IDF 4.3 PowerShell) (provided by Espressif official website)."

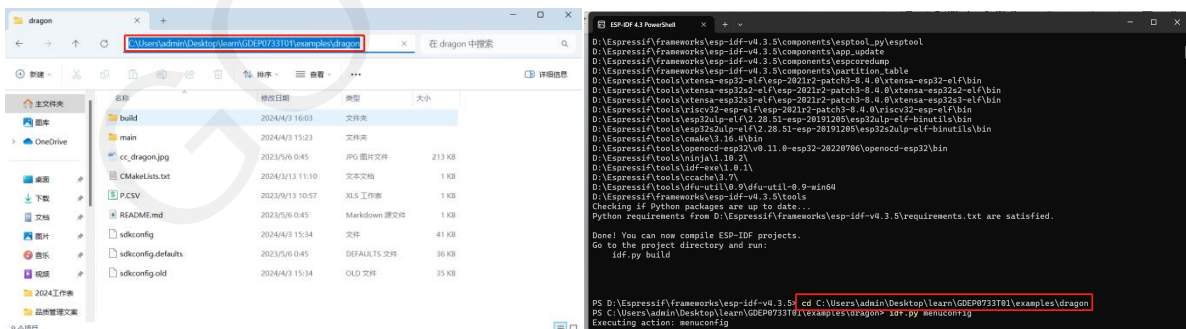
```

ESP-IDF 4.3 PowerShell
D:\Espressif\frameworks\esp-idf-v4.3.5\components\esptool_py\esptool
D:\Espressif\frameworks\esp-idf-v4.3.5\components\app_update
D:\Espressif\frameworks\esp-idf-v4.3.5\components\espcoredump
D:\Espressif\frameworks\esp-idf-v4.3.5\components\partition_table
D:\Espressif\tools\xtensa-esp32-elf\esp-2021r2-patch3-8.4.0\xtensa-esp32-elf\bin
D:\Espressif\tools\xtensa-esp32s2-elf\esp-2021r2-patch3-8.4.0\xtensa-esp32s2-elf\bin
D:\Espressif\tools\xtensa-esp32s3-elf\esp-2021r2-patch3-8.4.0\xtensa-esp32s3-elf\bin
D:\Espressif\tools\riscv32-esp-elf\esp-2021r2-patch3-8.4.0\riscv32-esp-elf\bin
D:\Espressif\tools\esp32ulp-elf\2.28.51-esp-20191205\esp32ulp-elf\binutils\bin
D:\Espressif\tools\esp32s2ulp-elf\2.28.51-esp-20191205\esp32s2ulp-elf\binutils\bin
D:\Espressif\tools\cmake\3.16.4\bin
D:\Espressif\tools\openocd-esp32\v0.11.0-esp32-20220706\openocd-esp32\bin
D:\Espressif\tools\ninja\1.10.2\
D:\Espressif\tools\idf-exe\1.0.1\
D:\Espressif\tools\ccache\3.7\
D:\Espressif\tools\dfu-util\0.9\dfu-util-0.9-win64
D:\Espressif\frameworks\esp-idf-v4.3.5\tools
Checking if Python packages are up to date...
Python requirements from D:\Espressif\frameworks\esp-idf-v4.3.5\requirements.txt are satisfied.

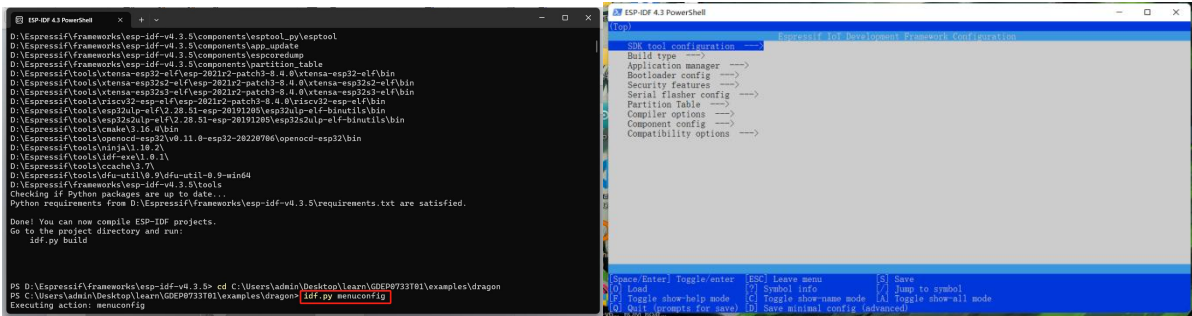
Done! You can now compile ESP-IDF projects.
Go to the project directory and run:
idf.py build

PS D:\Espressif\frameworks\esp-idf-v4.3.5> cd C:\Users\admin\Desktop\learn\GDEP0733T01\examples\dragon
PS C:\Users\admin\Desktop\learn\GDEP0733T01\examples\dragon> idf.py menuconfig
Executing action: menuconfig
    
```

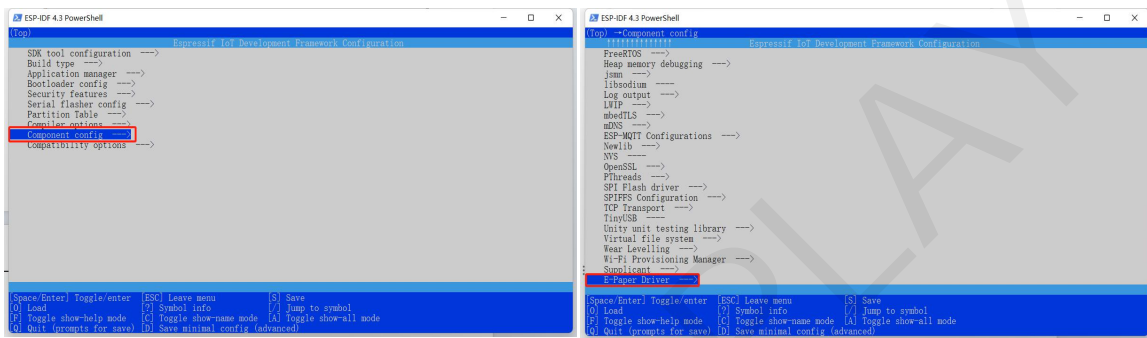
2. First, type cd + space + program address and press Enter to navigate the compiler to the program address.



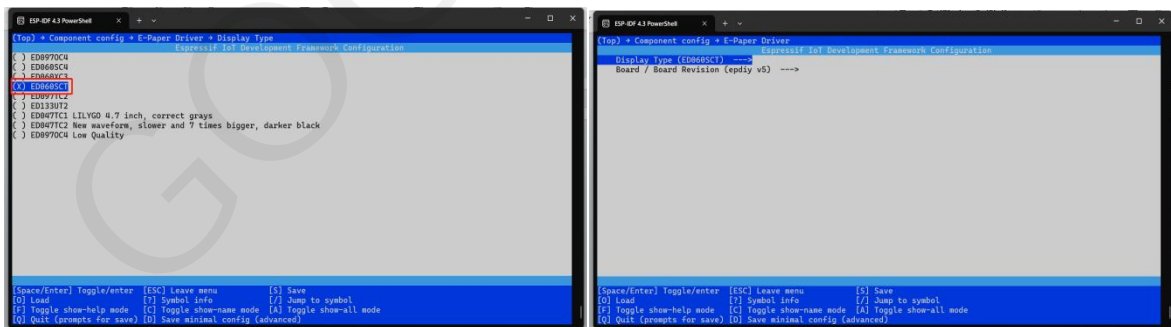
3. Set the screen model. Type idf.py menuconfig and press Enter to navigate to the program system.



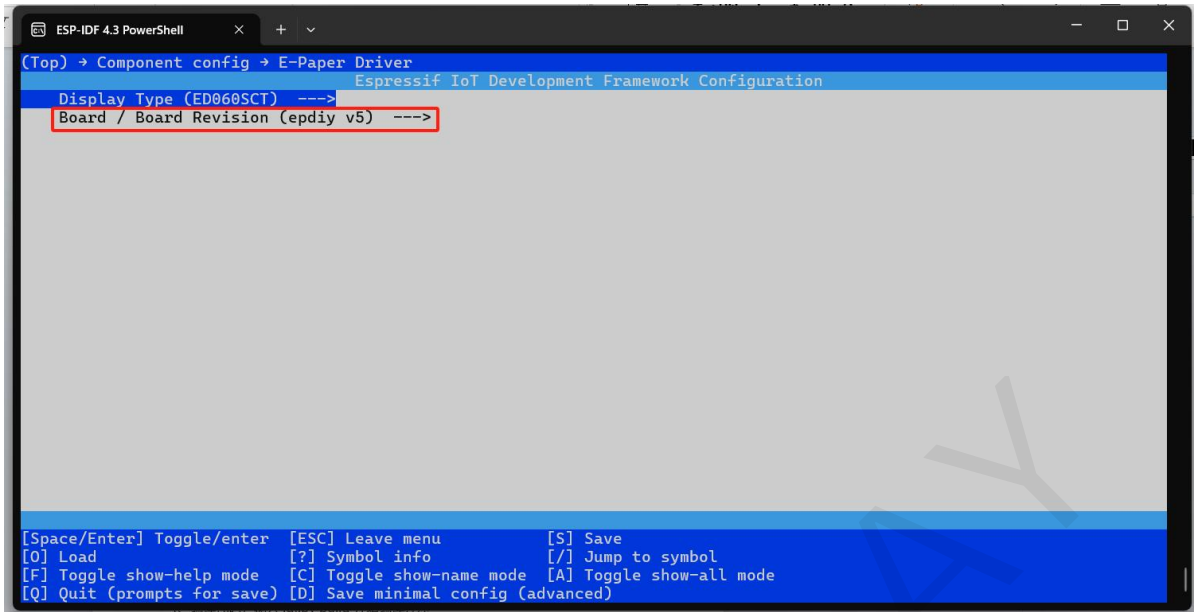
4. Select "Component config" and find "E-Paper driver".



5. Through "Display Type", select "ED060SCT" (Note: Currently, there is no 7.33-inch screen available, but you can use ED060SCT as a substitute. The interfaces of these two screens are the same. Relevant information for the 7.33-inch screen will be gradually improved as development progresses in the future).

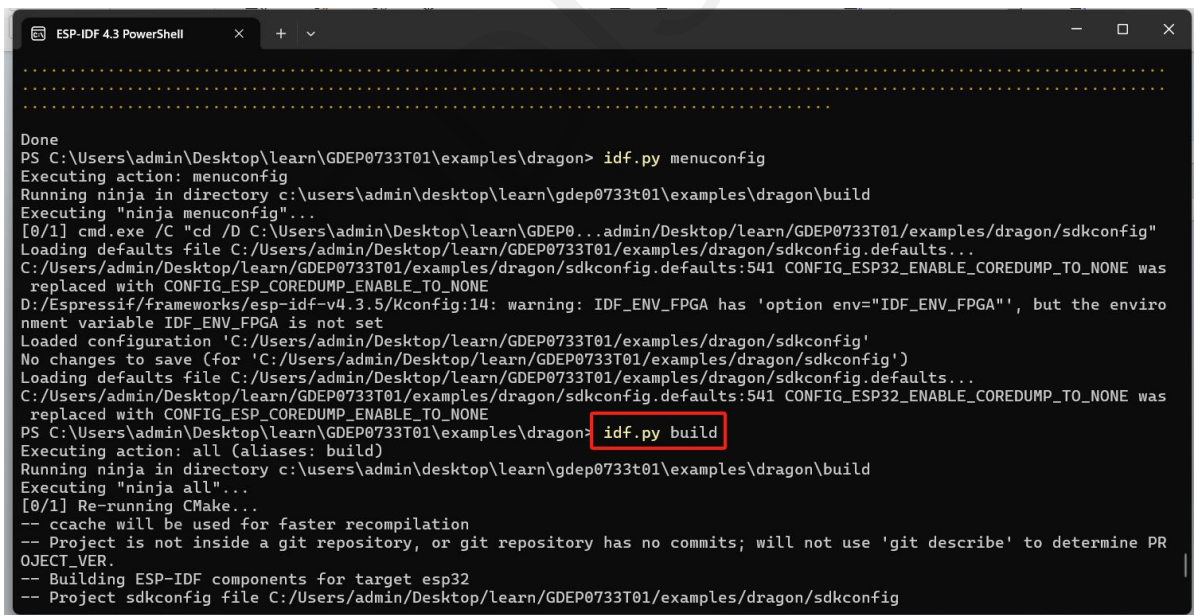


6. The system defaults to (epdiy V5), but you can also choose the model of your demo board.



- After saving the configuration, press the shortcut key Q to exit the system.

7. Compile the code by typing `idf.py build` to start compiling the program.



8. To burn the program, type `idf.py flash monitor` to start burning the program.

```

ESP-IDF 4.3 PowerShell
...
.ld
-- Adding linker script D:/Espressif/frameworks/esp-idf-v4.3.5/components/bootloader/subproject/main/ld/esp32/bootloader
 Rom.ld
-- Components: bootloader bootloader_support efuse esp32 esp_common esp_hw_support esp_rom esp_system esptool_py hal log
 main micro-ecc newlib partition_table soc spi_flash xtensa
-- Component paths: D:/Espressif/frameworks/esp-idf-v4.3.5/components/bootloader D:/Espressif/frameworks/esp-idf-v4.3.5/
 components/bootloader_support D:/Espressif/frameworks/esp-idf-v4.3.5/components/efuse D:/Espressif/frameworks/esp-idf-v4.3.
 5/components/esp32 D:/Espressif/frameworks/esp-idf-v4.3.5/components/esp_common D:/Espressif/frameworks/esp-idf-v4.3.
 5/components/esp_hw_support D:/Espressif/frameworks/esp-idf-v4.3.5/components/esp_rom D:/Espressif/frameworks/esp-idf-v4
 3.5/components/esp_system D:/Espressif/frameworks/esp-idf-v4.3.5/components/esptool_py D:/Espressif/frameworks/esp-idf-
 v4.3.5/components/hal D:/Espressif/frameworks/esp-idf-v4.3.5/components/log D:/Espressif/frameworks/esp-idf-v4.3.5/compo
 nents/bootloader/subproject/main D:/Espressif/frameworks/esp-idf-v4.3.5/components/bootloader/subproject/components/micr
 o-ec D:/Espressif/frameworks/esp-idf-v4.3.5/components/newlib D:/Espressif/frameworks/esp-idf-v4.3.5/components/partiti
 on_table D:/Espressif/frameworks/esp-idf-v4.3.5/components/soc D:/Espressif/frameworks/esp-idf-v4.3.5/components/spi_fla
 sh D:/Espressif/frameworks/esp-idf-v4.3.5/components/xtensa
-- Configuring done
-- Generating done
-- Build files have been written to: C:/Users/admin/Desktop/Learn/GDEP0733T01/examples/dragon/build/bootloader
ninja: no work to do.

Project build complete. To flash, run this command:
D:\Espressif\python_env\idf4.3_py3.11_env\Scripts\python.exe D:\Espressif\frameworks\esp-idf-v4.3.5\components\esptool_p
y\esptool\esptool.py -p (PORT) -b 460800 --before default_reset --after hard_reset --chip esp32 write_flash --flash_mod
e dio --flash_size detect --flash_freq 80m 0x1000 build\bootloader\bootloader.bin 0x8000 build\partition_table\partiti
on_table.bin 0x10000 build\dragon_example.bin
or run 'idf.py -p (PORT) flash'
PS C:\Users\admin\Desktop\Learn\GDEP0733T01\examples\dragon> idf.py flash monitor
Executing action: flash
No serial ports found. Connect a device, or use '-p PORT' option to set a specific port.
PS C:\Users\admin\Desktop\Learn\GDEP0733T01\examples\dragon>

```

9. Effect display

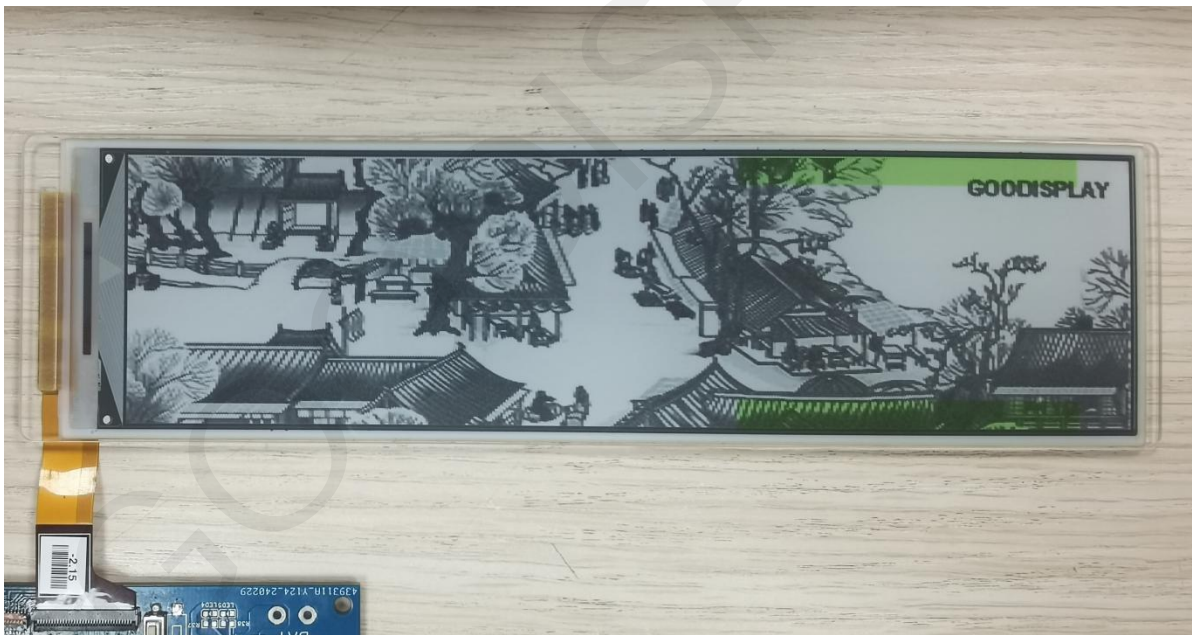
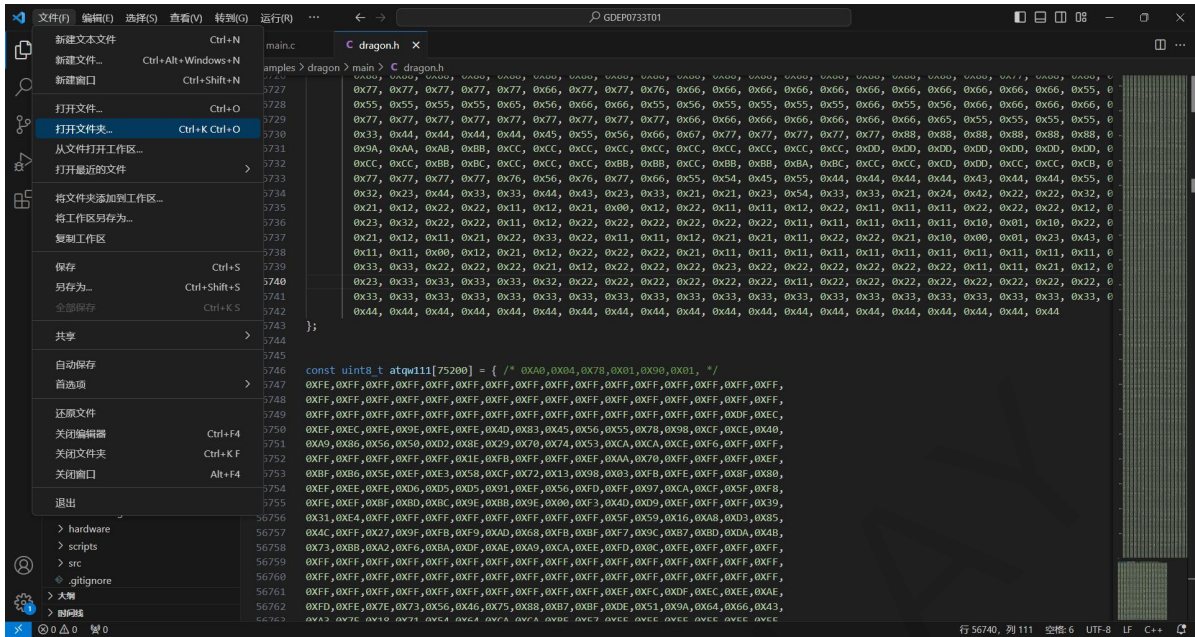
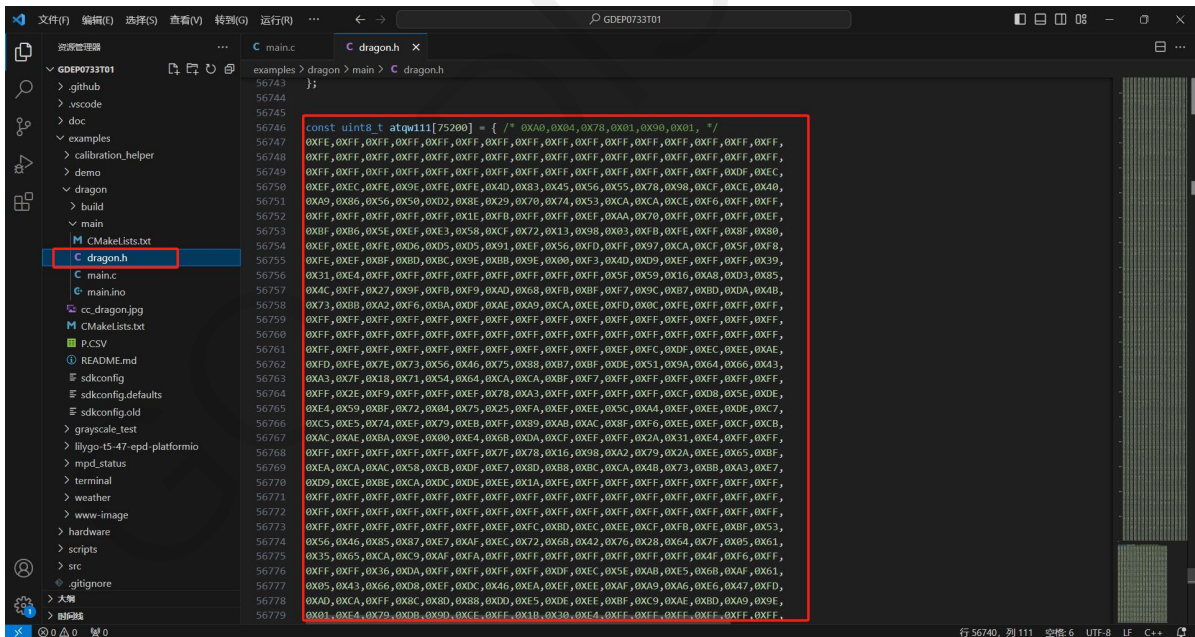


Image changes

1. Open the Visual Studio Code software. Click on "File" - Click on "Open Folder" (the folder where the program is located).



2. Click on the "dragon.c" file. As shown in the picture, the image program is on the right side.



3. Add the image program generated after converting images to arrays to the "dragon.c" file, and give it a suitable name. Then click on "main.c" to modify the position names in the figure to the names you have chosen. (For converting images to arrays instructions, refer to:

<https://www.good-display.com/product/542.html>

```
21
22 void idf_loop() {
23
24     EpdRect dragon_area = {
25         .x = 0,
26         .y = 0,
27         .width = dragon_width,
28         .height = dragon_height
29     };
30
31     int temperature = 25;
32
33     epd_poweron();
34     epd_fullclear(&hl, temperature);
35
36     epd_copy_to_framebuffer(dragon_area, atqw111, epd_hl_get_framebuffer(&hl));
37
38     enum EpdDrawError _err = epd_hl_update_screen(&hl, MODE_GC16, temperature);
39     vTaskDelay(2000);
40     epd_poweroff();
41
42     vTaskDelay(1000);
43
44 }
45
46 void idf_setup() {
47     epd_init(EPD_OPTIONS_DEFAULT);
48     hl = epd_hl_init(EPD_BUILTIN_WAVEFORM);
49 }
50
51 #ifndef ARDUINO_ARCH_ESP32
52 void app_main() {
```