

\*\*\*\*\*Draft\*\*\*\*\*  
09/18/20  
lvgl  
\*\*\*\*\*Draft\*\*\*\*\*

Forked [https://github.com/cejasmamas/ultibo\\_lvgl](https://github.com/cejasmamas/ultibo_lvgl)

git clone https://github.com/develone/ultibo\_lvgl.git

unzipped these 2 files lv\_examples.zip lvgl.zip which provides the C sources.

I created a script compile.sh based on compile.bat

Rather than compiling everything when a change is made in ultiboClvg.c. I split the compile into 2 files. The first compiles most of the function /home/devel/Ultibo\_Projects/ultibo\_lvgl is done with "./compile.sh". This creates liblvgl.a. The liblvgl.a is copied to the RPi3 folder. The 2nd is done in /home/devel/Ultibo\_Projects/ultibo\_lvgl/RPi3 with "./compilelib.sh". The script copies liblvgl.a to libultiboClvg.a compiles and adds ultiboClvg.o

compile.sh

```
#!/bin/bash
rm -f *.o libultiboCgeneric.a
arm-none-eabi-gcc -O2 -mabi=aapcs -marm -march=armv7-a -mfpv3-d16 \
-mfloat-abi=hard -D__DYNAMIC_REENT__ -I libtess2/Include/ -c ultiboClvg.c lvgl/src/lv_core/
*.c \
lvgl/src/lv_draw/*.c lvgl/src/lv_font/*.c lvgl/src/lv_gpu/*.c lvgl/src/lv_hal/*.c \
lvgl/src/lv_misc/*.c lvgl/src/lv_themes/*.c lvgl/src/lv_widgets/*.c \
lv_examples/src/lv_demo_printer/*.c lv_examples/src/lv_demo_printer/images/*.c \
lv_examples/src/lv_demo_benchmark/*.c lv_examples/assets/*.c
arm-none-eabi-ar rcs libultiboClvg.a *.o
arm-none-eabi-objdump -d libultiboClvg.a > libultiboClvg.txt
```

```
#!/bin/bash
rm -f *.o liblvgl.a RPi3/liblvgl.a
arm-none-eabi-gcc -DUltibo -D_POSIX_THREADS -O2 -mabi=aapcs -marm -march=armv7-a -
mfpv3-d16 \
-mfloat-abi=hard -D__DYNAMIC_REENT__ -I libtess2/Include/ -c lvgl/src/lv_core/*.c \
lvgl/src/lv_draw/*.c lvgl/src/lv_font/*.c lvgl/src/lv_gpu/*.c lvgl/src/lv_hal/*.c \
lvgl/src/lv_misc/*.c lvgl/src/lv_themes/*.c lvgl/src/lv_widgets/*.c \
lv_examples/src/lv_demo_printer/*.c lv_examples/src/lv_demo_printer/images/*.c \
lv_examples/src/lv_demo_benchmark/*.c lv_examples/assets/*.c \
lv_examples/src/lv_demo_stress/*.c lv_examples/src/lv_demo_widgets/*.c \
lv_examples/src/lv_demo_keypad_encoder/*.c
```

```
arm-none-eabi-ar rcs liblvgl.a *.o
arm-none-eabi-ar t liblvgl.a > liblvgl_obj.txt
arm-none-eabi-objdump -d liblvgl.a > liblvgl_disasm.txt
cp liblvgl.a RPi3/
rm -f *.o
```

```
compilelib.sh
#!/bin/bash
rm -f *.o libultiboClvgl.a
arm-none-eabi-gcc -O2 -DUltibo -D_POSIX_THREADS -mabi=aapcs -marm -march=armv7-a -
mfpu=vfpv3-d16 \
-mfloat-abi=hard -D__DYNAMIC_REENT__ -I libtess2/Include/ -I./ -c ultiboClvgl.c
cp liblvgl.a libultiboClvgl.a
arm-none-eabi-ar rcs libultiboClvgl.a ultiboClvgl.o
arm-none-eabi-ar t libultiboClvgl.a > libultiboClvgl_obj.txt
arm-none-eabi-objdump -d libultiboClvgl.a > libultiboClvgl_disasm.txt
```

Project needed a fix.

```
git remote add upstream https://github.com/cejasmamas/ultibo\_lvgl
```

```
git fetch upstream
```

```
git merge upstream/master
```

```
git push origin master
```

```
https://github.com/develone/Ultibo\_Projects/tree/master/ultibo\_lvgl
```

```
git clone https://github.com/develone/Ultibo\_Projects.git
```

```
cd Ultibo_Projects/ultibo_lvgl
```

```
unzip lv_examples.zip
```

```
unzip lv_examples.zip
```

```
~/Ultibo_Projects/ultibo_lvgl/
./compile.sh
```

```
~/Ultibo_Projects/ultibo_lvgl/RPi3
libultiboClvgl.a
```

```
File Edit Search View Source Project Run Tools Window Help

ultibolvgl

function NonBlockingMouse(Parameter:Pointer):PtrInt;
  ConsoleWindowWriteLn(WindowHandle, '');
.
.
  ConsoleWindowWriteLn (WindowHandle, 'Local Address ' + IPAddress);
  SetOnMsg (@Msg);
  {Create and start the HTTP Listener for our web status page}
185  HTTPListener:=THTTPListener.Create;
  HTTPListener.Active:=True;
  {Register the web status page, the "Thread List" page will allow us to see what is happening in the example}
  WebStatusRegister(HTTPListener, '', True);
  {Wait a couple of seconds for C:\ drive to be ready}
190  ConsoleWindowWriteLn(WindowHandle, 'Waiting for drive C:\');
  while not DirectoryExists('C:\') do
  begin
    {Sleep for a second}
    Sleep(1000);
  end;
195  ConsoleWindowWriteLn(WindowHandle, 'C:\ drive is ready');
  ConsoleWindowWriteLn(WindowHandle, '');
198  ScreenWidth := FramebufferProperties.PhysicalWidth;
```

198: 1      INS    /home/devel/Ultilbo\_Projects/ultibo\_lvgl/RPI3/ultibolvgl.lpr

## Run/Compile

```
File Edit Search View Source Project Run Tools Window Help

ultibolvgl.lpr

function NonBlockingMouse(Parameter:Pointer):PtrInt;
  ConsoleWindowWriteLn(WindowHandle, '');
.
.
  ConsoleWindowWriteLn (WindowHandle, 'Local Address ' + IPAddress);
  SetOnMsg (@Msg);
  {Create and start the HTTP Listener for our web status page}
185  HTTPListener:=THTTPListener.Create;
  HTTPListener.Active:=True;
  {Register the web status page, the "Thread List" page will allow us to see what is happening in the example}
  WebStatusRegister(HTTPListener, '', True);
  {Wait a couple of seconds for C:\ drive to be ready}
190  ConsoleWindowWriteLn(WindowHandle, 'Waiting for drive C:\');
  while not DirectoryExists('C:\') do
  begin
    {Sleep for a second}
    Sleep(1000);
  end;
195  ConsoleWindowWriteLn(WindowHandle, 'C:\ drive is ready');
  ConsoleWindowWriteLn(WindowHandle, '');
198  ScreenWidth := FramebufferProperties.PhysicalWidth;
```

198: 1      INS    /home/devel/Ultilbo\_Projects/ultibo\_lvgl/RPI3/ultibolvgl.lpr

Compile Project, OS: ultibo, Target: ultibolvgl, Success, Hints: 12

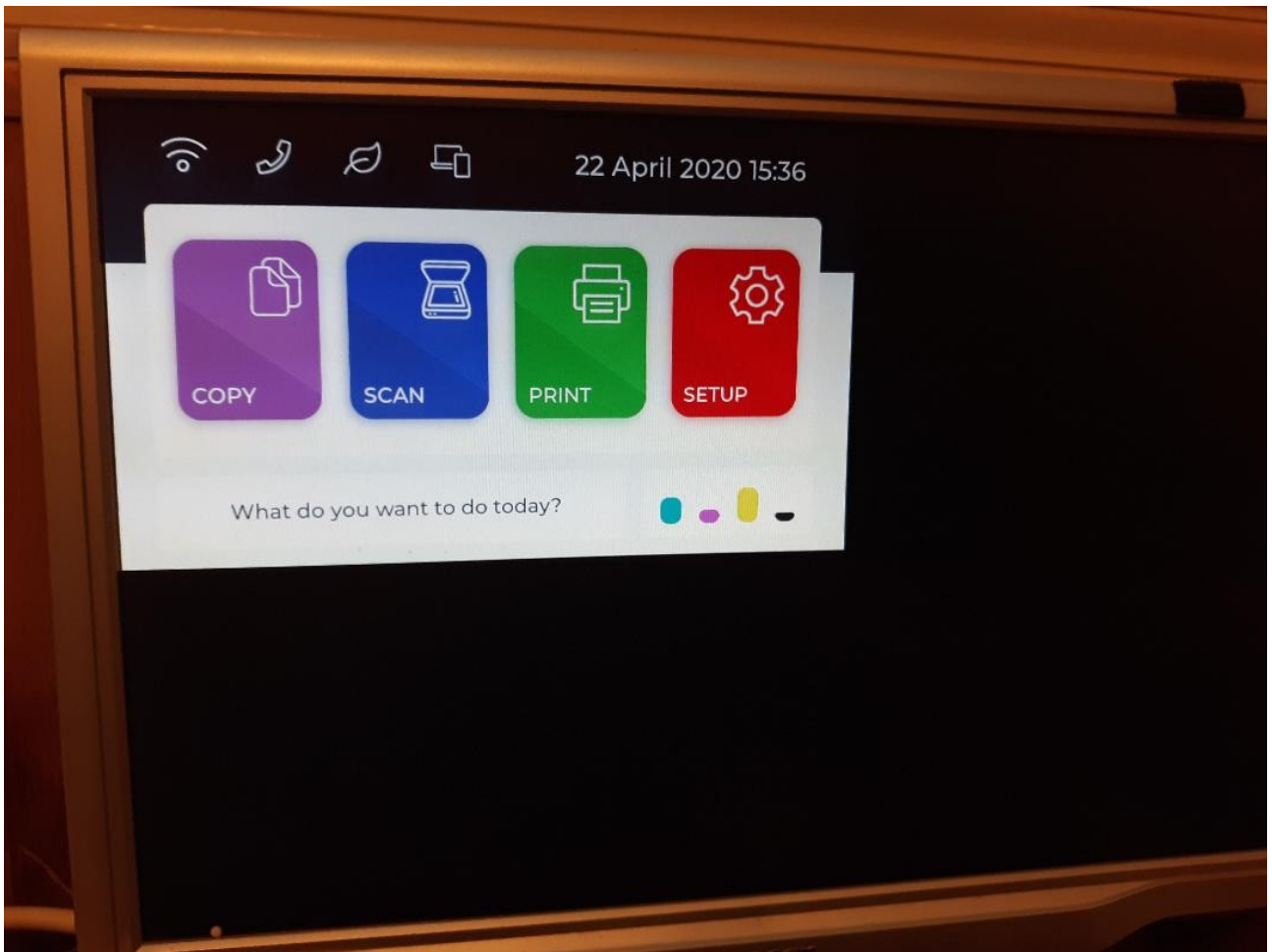
- ultibolvgl.lpr(192,21) Hint: Parameter "Parameter" not used
- ultibolvgl.lpr(302,17) Hint: Conversion between ordinals and pointers is not portable
- ultibolvgl.lpr(307,72) Hint: Variable "ThreadMouseHandle" does not seem to be initialized
- ultibolvgl.lpr(49,2) Note: Local variable "MyLoggingDevice" not used
- ultibolvgl.lpr(52,2) Note: Local variable "TCP" not used
- ultibolvgl.lpr(112,12) Hint: Local proc "getScreenPitch" is not used
- ultibolvgl.lpr(117,12) Hint: Local proc "getScreenBuffer" is not used
- ultibolvgl.lpr(122,13) Hint: Local proc "getKey" is not used
- ultibolvgl.lpr(139,12) Hint: Local proc "getScreenSize" is not used
- ultibolvgl.lpr(145,12) Hint: Local proc "getMouseXY" is not used

Green bar compile & link successful.

tftp 192.168.1.245 < cmdstftp

tftp> tftp> Sent 5044228 bytes in 27.4 seconds

After the reboot.



Remote shell

```
File Edit Tabs Help
Ultibo Core (Release: Beetroot Version: 2.0.807 Date: 3 September 2020)
(Type HELP for a list of available commands)
>
```

## Remote shell help

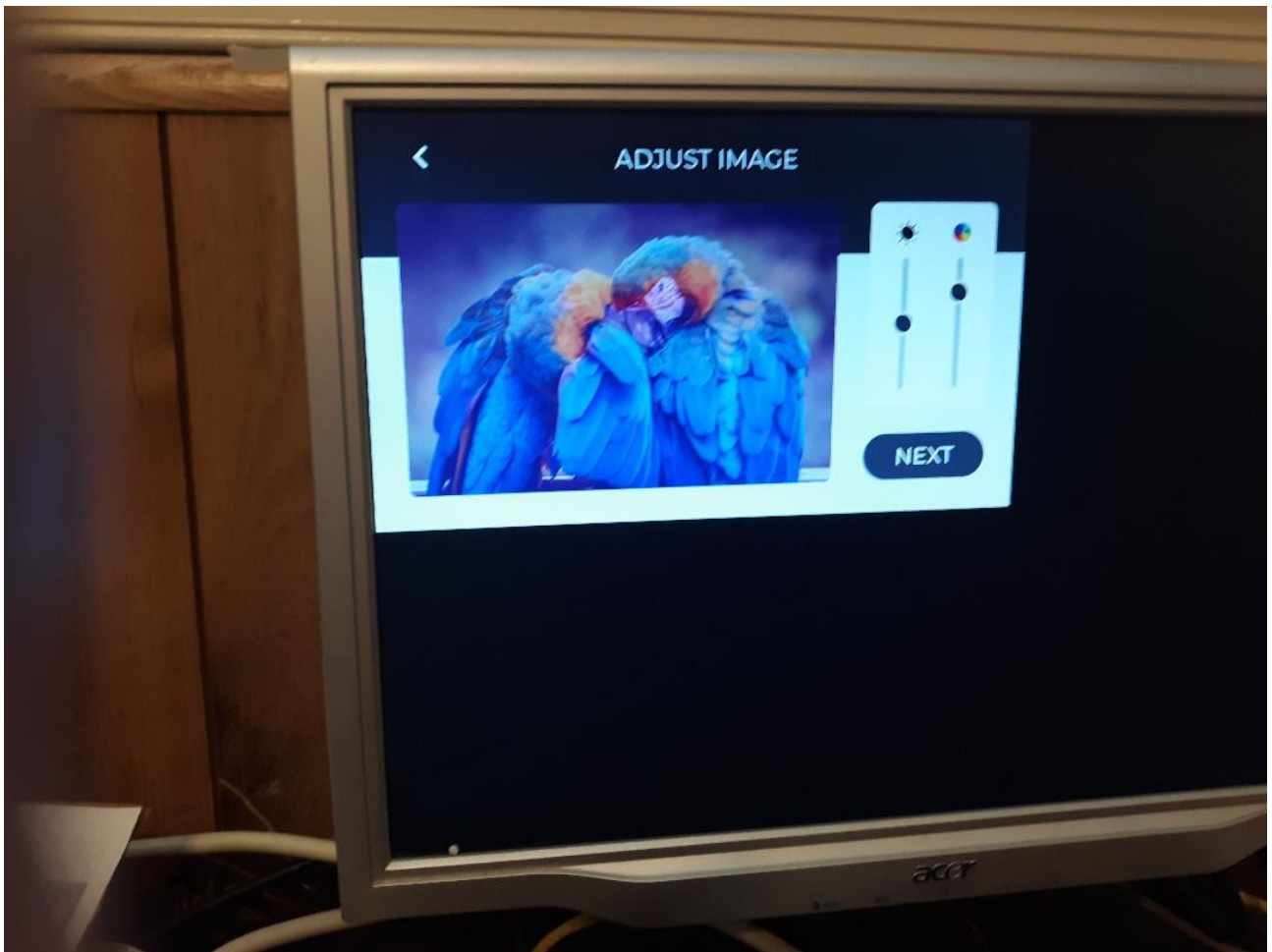
```
File Edit Tabs Help
Connected to 192.168.1.245.
Escape character is '^['.

Ultibo Core (Release: Beetroot Version: 2.0.807 Date: 3 September 2020)
(Type HELP for a list of available commands)
Available commands:
HELP
INFO
VER
TIME
CLS
RESTART
SHUTDOWN
UPTIME
THREAD
MEMORY
DEVICE
FILESYSTEM
CONTROLLER
DISK
PARTITION
VOLUME
DRIVE
CACHE
DIR
CD
MD
RD
TYPE
COPY
MOVE
DEL
REN
ATTRIB
TOUCH
VOL
LABEL
DELTREE
XCOPY
UPDATE
LOGOUT
>
```

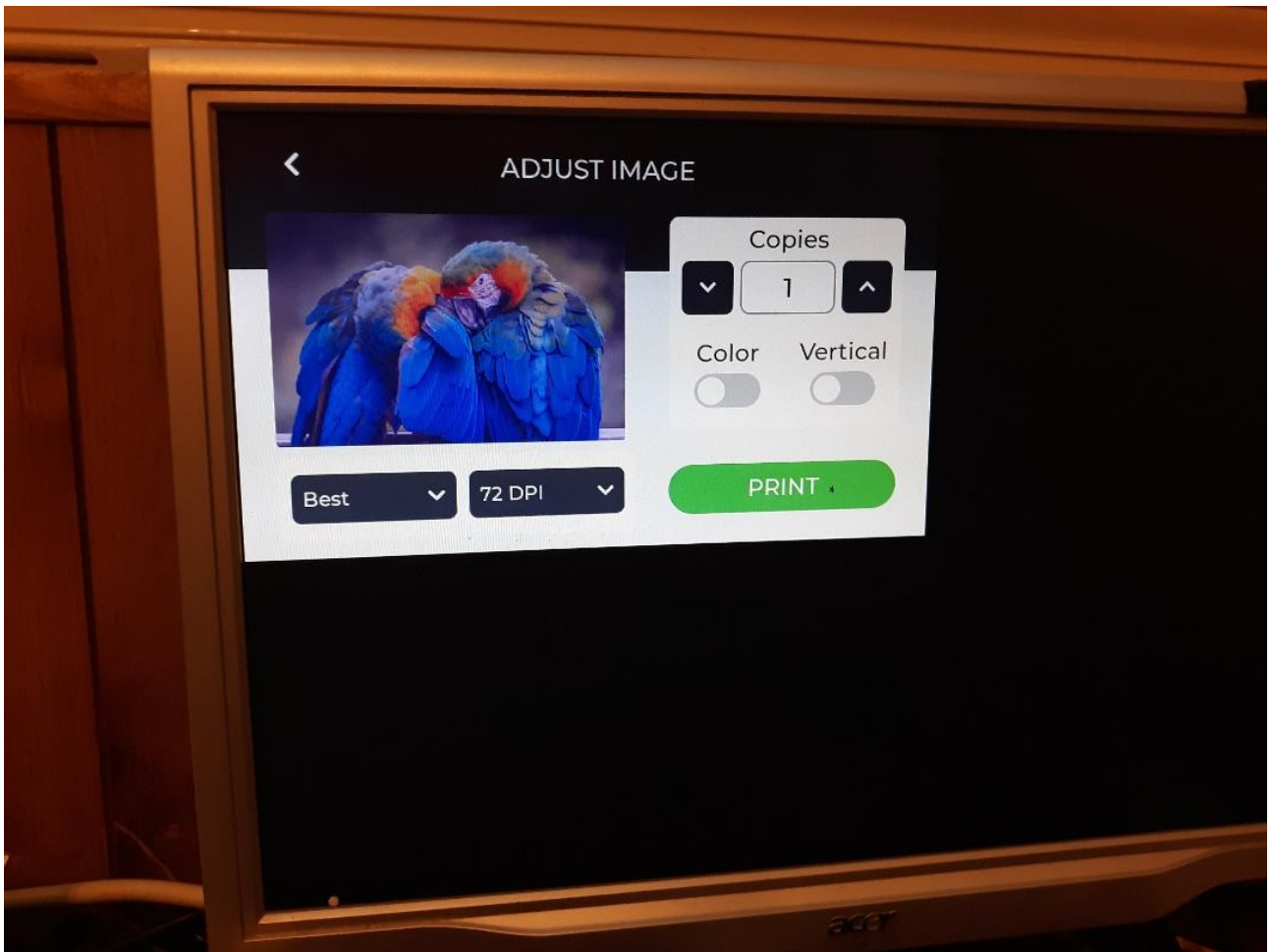
## Depress Settings



Depress Copy

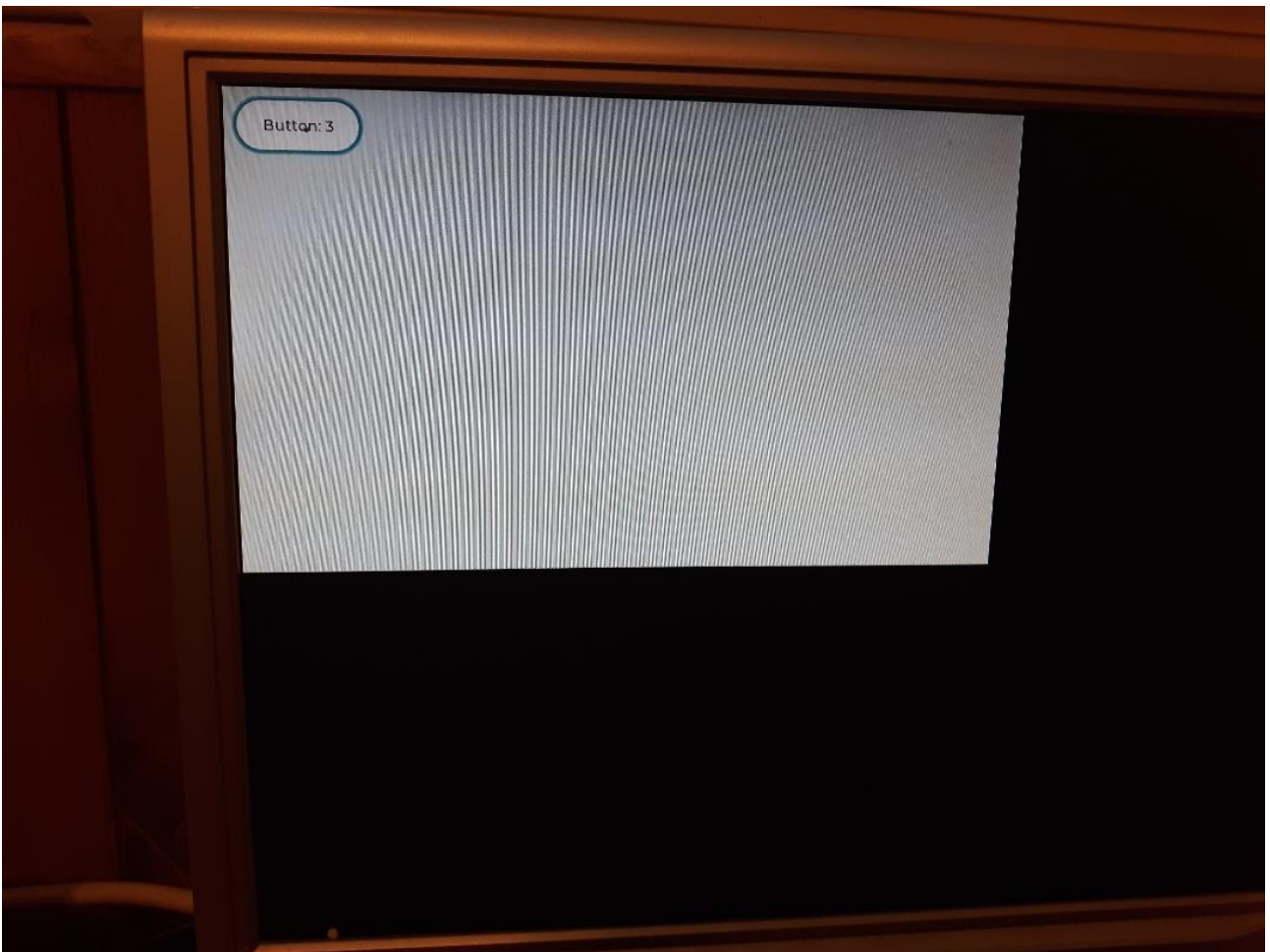


Depress Next

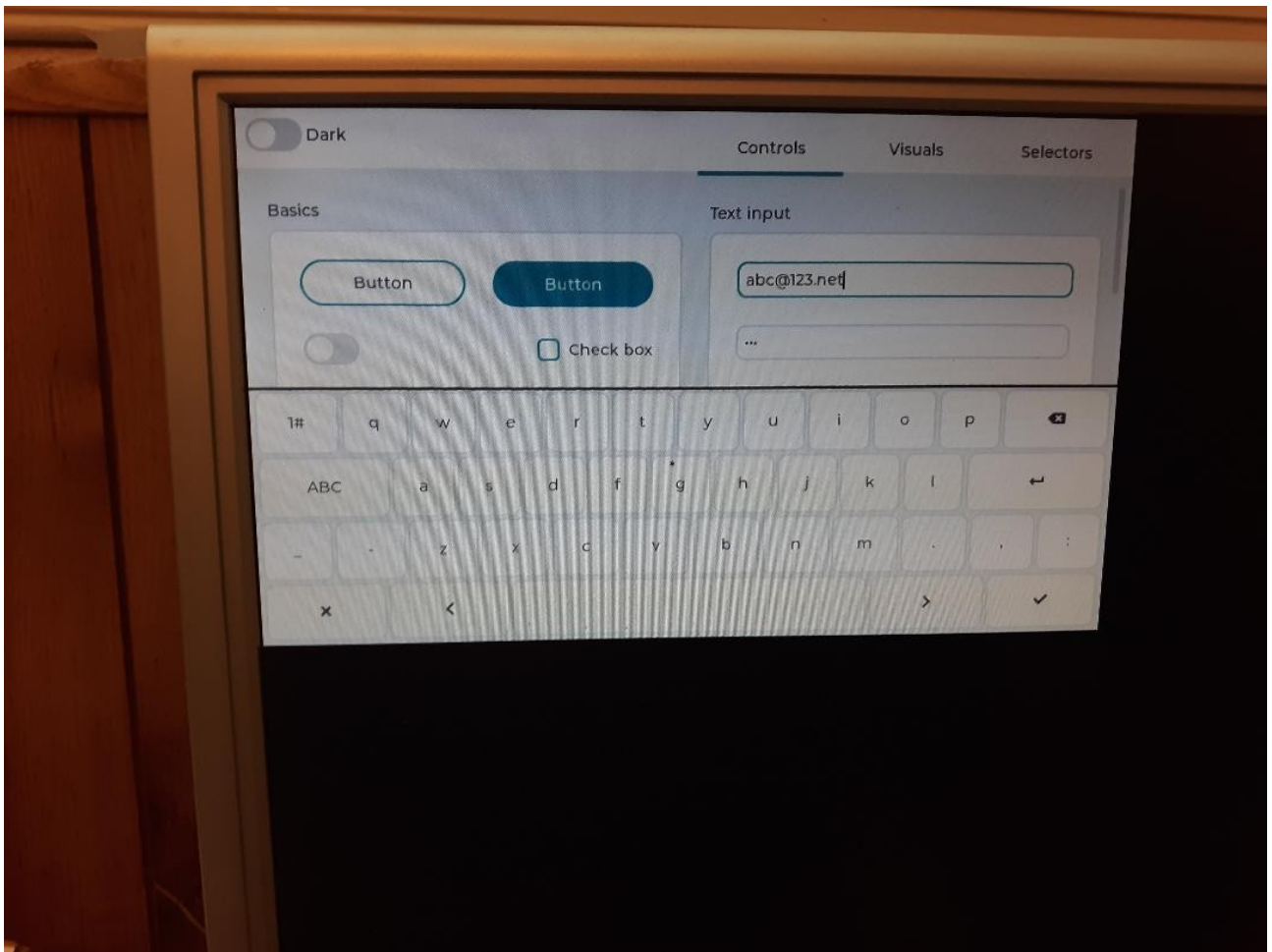


Modifying ultiboClvgl.c commenting `lv_demo_printer();` and adding `lv_ex_get_started_1();`.

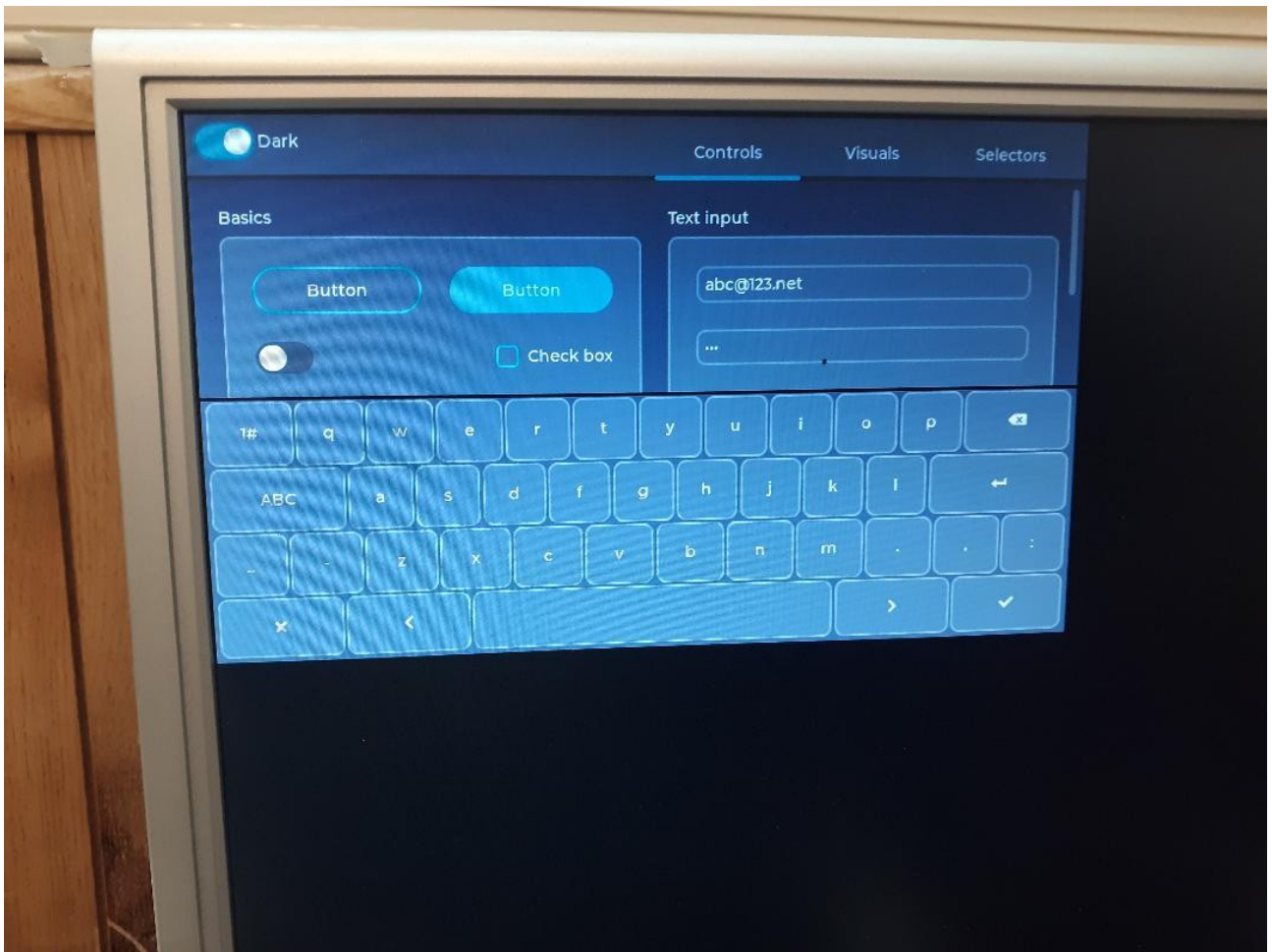




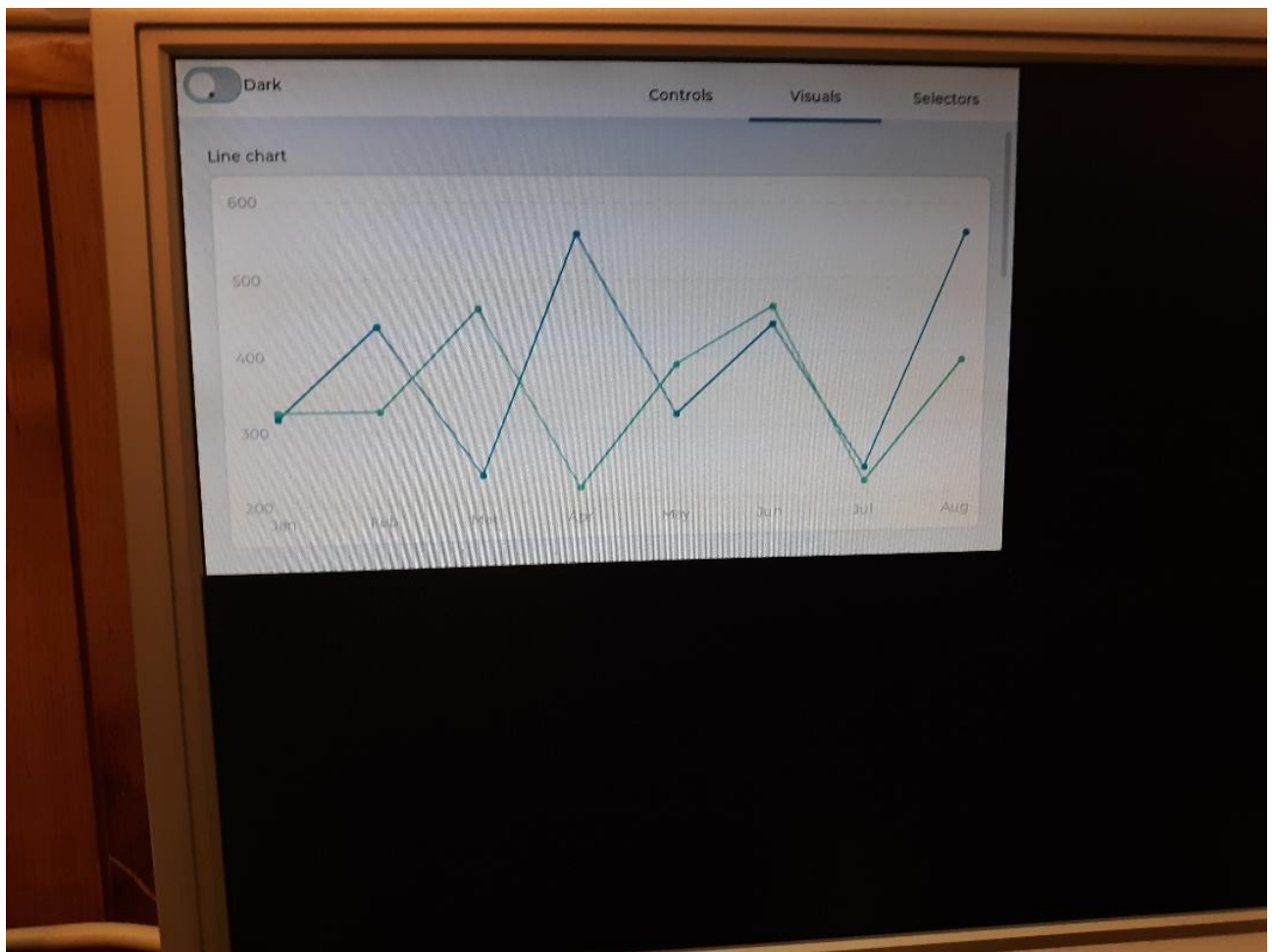
When the Button is depressed with left mouse button the number increaes.  
widegt1



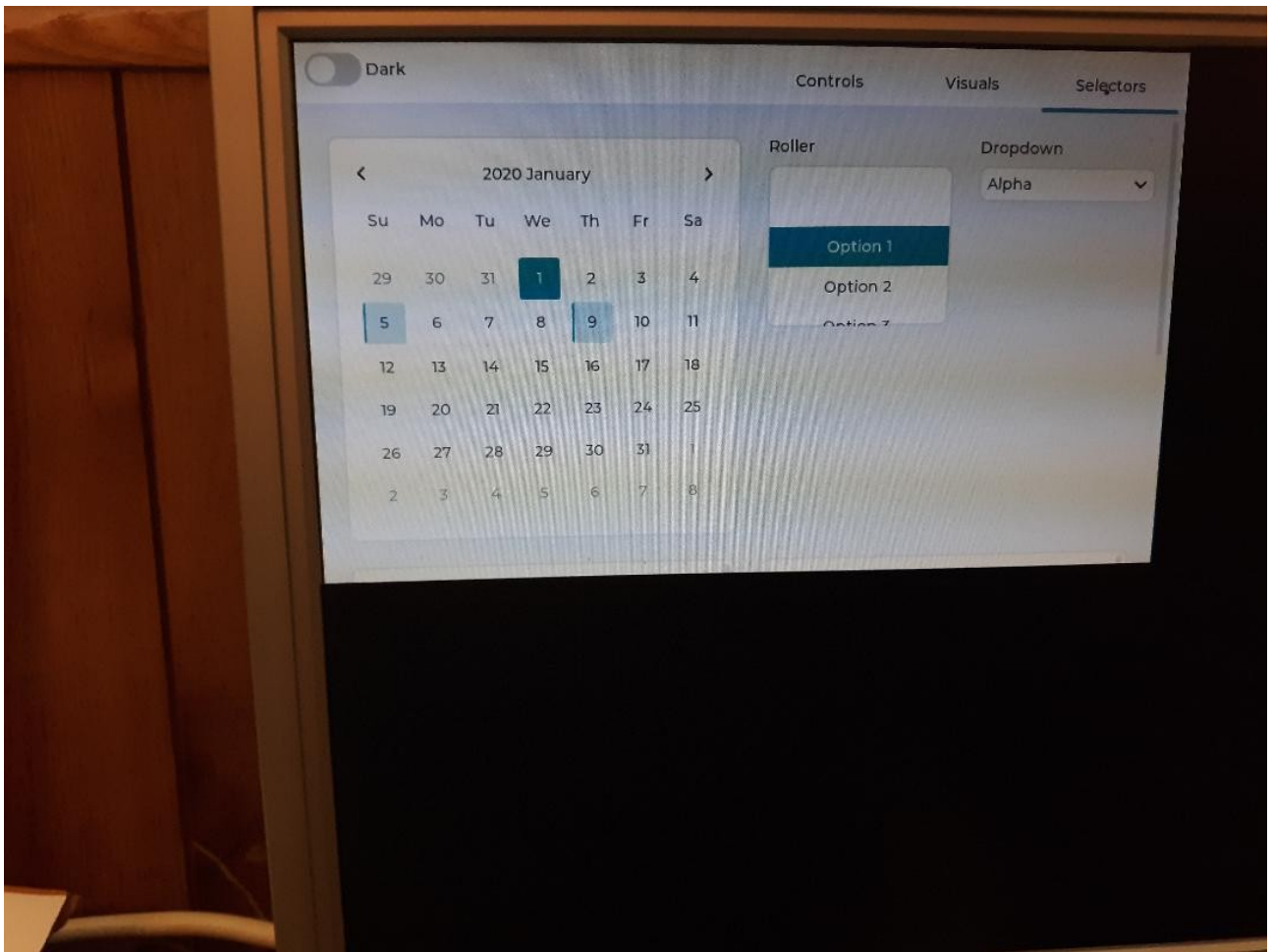
widget2



widgett3



widget4



widget5



Dark

Controls

Visuals

Select

Basics

Text input

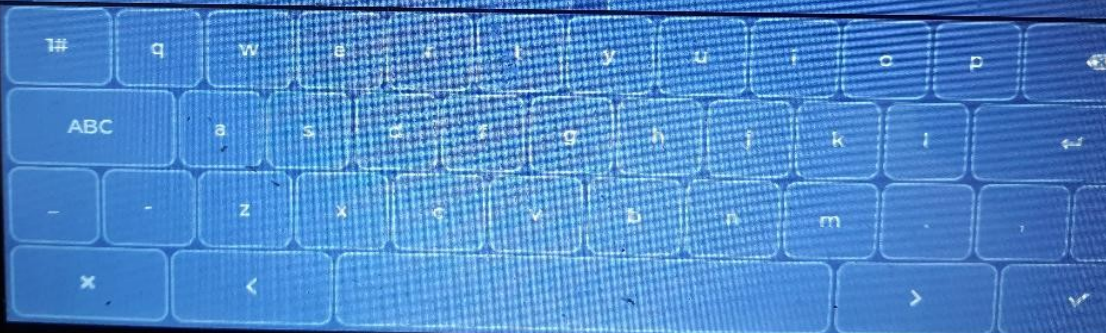
Button

Button



Check box

abc@123.net



Browser tabs: (218 unread) - develop... x | cejasmasmas/ultibo\_lv x | LVGL - ultibo.org x | Yahoo Finance - Stock x | Ultibo Core (Release: Beetr... x

Address bar: 192.168.1.245/status

Ultibo Core (Release: Beetr... Version: 2.0.807 Date: 3 September 2020)

General	General	
Platform		
Memory	Release Name:	Beetroot
Heap Blocks	Release Version:	2.0.807
CPU	Release Date:	3 September 2020
FPU		
GPU	Time (Local):	17-9-20 16:58:21
RTL	Time (UTC):	17-9-20 16:58:21
Clock		
Locale	Timezone:	UTC
Threading		
Thread List	Daylight Start:	None
Scheduler	Daylight Date:	N/A
Devices		
Drivers	Standard Start:	None
Handles	Standard Date:	N/A
USB		
MMC / SD	Uptime:	0 days 00:00:57
Network		
Storage		
Filesystem		
Disk Cache		
Keyboard		
Mouse		
Framebuffer		
Environment		
Page Tables		
Vector Tables		
IRQ / FIQ / SWI		
Configuration		

web cpu

(218 unread) - develonexcejasmamas/ultibo\_lvLVGL - ultibo.orgYahoo Finance - StockUltibo Core (Release: Beetroot)

192.168.1.245/status/cpu

Ultibo Core (Release: Beetroot Version: 2.0.807 Date: 3 September 2020)

General

Platform

Memory

Heap Blocks

CPU

FPU

GPU

RTL

Clock

Locale

Threading

Thread List

Scheduler

Devices

Drivers

Handles

USB

MMC / SD

Network

Storage

Filesystem

Disk Cache

Keyboard

Mouse

Framebuffer

Environment

Page Tables

Vector Tables

IRQ / FIQ / SWI

Configuration

CPU

CPU Arch:CPU\_ARCH\_ARM32

CPU Type:CPU\_TYPE\_ARMV8

CPU Model:CPU\_MODEL\_CORTEX\_A53

CPU Revision:0x00000004

CPU Description:ARM Cortex-A53 MPCore

CPU Boot:CPU\_ID\_0

CPU Mask:0x0000000F

CPU Count:4

CPU Mode:0x0000001F

CPU Group:CPU\_GROUP\_0

CPU Current:CPU\_ID\_3

CPU Memory:Address: 0x00000000Size: 939524096

CPU Utilization:CPU\_ID\_0: 2.5%CPU\_ID\_1: 0.7%CPU\_ID\_2: 0.6%CPU\_ID\_3: 78.4%

System Utilization (Average):20.5%

L1 Cache Type:CACHE\_TYPE\_SEPARATE

L1 Data Cache Size:32768

L1 Instruction Cache Size:32768

L1 Data Cache Line Size:64

L1 Instruction Cache Line Size:64

L2 Cache Type:CACHE\_TYPE\_UNIFIED

L2 Cache Size:524288

L2 Cache Line Size:64