
Config.txt configuration:

```
sudo nano /boot/config.txt
```

```
“
hdmi_force_hotplug=1
hdmi_group=2
hdmi_mode=87
hdmi_cvt=800 480 60 6 0 0 0
max_usb_current=1
dtparam=audio=on
start_x=1
gpu_mem=128
dtparam=spi=on
dtparam=i2c_arm=on
dtoverlay=w1-gpio,gpiopin=4
avoid_warnings=1
disable_overscan=0
“
```

Create new user:

```
sudo adduser smartcharger
password: smart1234
```

Autologin user set:

```
sudo nano /etc/lightdm/lightdm.conf
```

```
“
autologin-user=smartcharger
“
```

```
sudo nano /etc/systemd/system/getty@tty1.service.d/autologin.conf
```

```
“
[Service]
ExecStart=
ExecStart=-/sbin/agetty --autologin smartcharger --noclear %I 38400 linux
“
```

```
sudo systemctl enable getty@tty1.service
```

Set user to root:

```
sudo visudo
```

```
smartcharger ALL=(ALL) NOPASSWD: ALL
```

Remove PI user:

```
sudo deluser -remove-home pi
```

Disable screen sleep

```
sudo nano /etc/lightdm/lightdm.conf
```

```
“  
xserver-command=X -s 0 dpms  
“
```

```
sudo nano /etc/kbd/config
```

(edit values)

```
“  
BLANK_TIME=0  
POWERDOWN_TIME=0  
“
```

Update raspberry:

```
sudo apt-get update  
sudo apt-get upgrade
```

Set device hostname:

```
sudo nano /etc/hosts
```

Change raspberrypi to smartcharger

Install PI4J library for java:

```
curl -sSL https://pi4j.com/install | sudo bash
```

Install RXTX library for serial communication java:

```
sudo apt-get install librtx-java
```

Install Waveshare Touch driver:

<https://github.com/derekhe/waveshare-7inch-touchscreen-driver>

```
git clone https://github.com/derekhe/waveshare-7inch-touchscreen-driver
```

```
cd waveshare-7inch-touchscreen-driver
chmod +x install.sh
sudo apt-get update
sudo ./install.sh
sudo restart
```

HIDE CURSOR:

```
(Create file)
sudo nano /etc/X11/xinit/xserverrc

"
#!/bin/sh

exec /usr/bin/X -nocursor -nolisten tcp "$@"
"
```

Automatic start application script:

```
(Create file)
sudo nano /home/smartcharger/.xinitrc

"
export DISPLAY=:0.0
xhost +

sudo xset s off
sudo xset -dpms
sudo s noblank

sudo bash ~/applauncher.sh
"
```

GUI Application without desktop:

```
(Create file)
sudo nano /etc/rc.local

"
su -s /bin/bash -c startx smartcharger &
"
```

change sudo raspi-config to console auto login !

Edit user privileges:

```
sudo apt-get install xserver-xorg-legacy
```

(Create file)
sudo nano /etc/X11/Xwrapper.config

```
"  
allowed_users=anybody  
needs_root_rights=yes  
"
```

Disable boot logo:

sudo nano /boot/cmdline.txt

for disable text set console to tty0
enable tty3

```
"  
dwc_otg.lpm_enable=0 console=ttyAMA0,115200 console=tty3 root=/dev/mmcblk0p2  
rootfstype=ext4 elevator=deadline fsck.repair=yes logo.nologo rootwait  
"
```

When you want to run GUI app from SSH, first need to run commands to set display:

export DISPLAY=:0.0
xhost +

Setup Startx

sudo nano /etc/xdg/lxsession/LXDE/autostart

(Add line below)

```
"  
@lxpanel --profile LXDE  
@pcmanfm --desktop --profile LXDE  
@xscreensaver -no-splash  
@xset s off  
@xset -dpms  
@xset s noblank  
@lxterminal  
"
```

ERROR: No space left on device

sudo raspi-config

and select expand rootfs

Add user to SPI

```
sudo adduser smartcharger spi
```

Set serial device names

<http://hintshop.ludvig.co.nz/show/persistent-names-usb-serial-devices/>

list of usb devices: lsusb

get serial of device: udevadm info -a -n /dev/ttyUSB1 | grep '{serial}' | head -n1

```
SUBSYSTEM=="tty", ATTRS{idVendor}=="10c4", ATTRS{idProduct}=="ea60",  
ATTRS{serial}=="2100", SYMLINK+="energymeter"  
SUBSYSTEM=="tty", ATTRS{idVendor}=="10c4", ATTRS{idProduct}=="ea60",  
ATTRS{serial}=="2101", SYMLINK+="evcc"  
SUBSYSTEM=="tty", ATTRS{idVendor}=="10c4", ATTRS{idProduct}=="ea60",  
ATTRS{serial}=="2102", SYMLINK+="rfid"
```

Enable serial ports for USER !

```
sudo usermod -a -G dialout smartcharger
```

You need to change permission for open applauncher.sh and run.sh to anybody!!

```
$ sudo adduser smartcharger sudo
```

```
$ sudo adduser smartcharger adm
```