

Установка модуля IR

По умолчанию драйвер ИК-приемника отключен. Чтобы его включить нужно:
Зайти на Orange Pi Zero по SSH и ввести команду:

```
sudo orangepi-config
```

Откроется меню настроек Orange Pi Zero. Далее идем по пути:

```
admin@HOME-CENTER: ~  
Configuration utility, Orange Pi 1.0.2 user-built, 192.168.0.66  
#####  
l##### orangepi-config #####  
x  
x Configure Debian bullseye based OrangePi for the OPI Zero3 x  
x  
x SoC runs between 600 and 1200 MHz using conservative governor. x  
x  
x Support: http://www.orangepi.org x  
x  
l#####  
x x System System and security settings x x  
x x Network Wired, wireless, Bluetooth, access point x x  
x x Personal Timezone, language, hostname x x  
x x Software System and 3rd party software install x x  
x x Help Documentation, support, sources x x  
x m#####  
t#####  
x x < OK > < Exit > x  
x#####
```

```
admin@HOME-CENTER: ~  
Configuration utility, Orange Pi 1.0.2 user-built, 192.168.0.66  
#####  
l##### System settings #####  
x l#####  
x x Bootenv Edit boot environment x x  
x x CPU Set CPU speed and governor x x  
x x Avahi Announce system in the network x x  
x x Hardware Toggle hardware configuration: UART, I2C, etc. x x  
x x SSH Reconfigure SSH daemon x x  
x x Firmware Run apt update & apt upgrade x x  
x x ZSH Install ZSH with plugins and tmux x x  
x m#####  
t#####  
x x < OK > < Back > x  
x#####
```

```

admin@HOME-CENTER: ~
Configuration utility
Toggle hardware configuration
Use <space> to toggle functions and
save them. Exit when you are done.
l
[ ] disable-leds
[ ] disable-uart0
[*] i2c
[ ] ph-i2c1
[ ] ph-i2c2
[ ] ph-i2c3
[ ] ph-i2c4
[ ] ph-pwm12
[ ] ph-pwm34
[ ] ph-uart2
[ ] ph-uart5
[ ] pi-i2c0
[ ] pi-i2c1
m
50%
< Save > < Back >

```

Включение происходит нажатием на пробел.

Нажмите на **кнопку Сохранить** , а затем на кнопку **Выход** и **Перезагрузка**.

После перезагрузки снова заходим по SSH и вводим команду:

```
lsmod | grep -i cir
```

```
admin@HOME-CENTER: ~  
admin@HOME-CENTER:~$ lsmod | grep -i cir  
sunxi_cir                20480  0  
rc_core                  49152  3 sunxi_cir,ir_rc6_decoder  
admin@HOME-CENTER:~$
```

Драйвер установлен.

Далее:

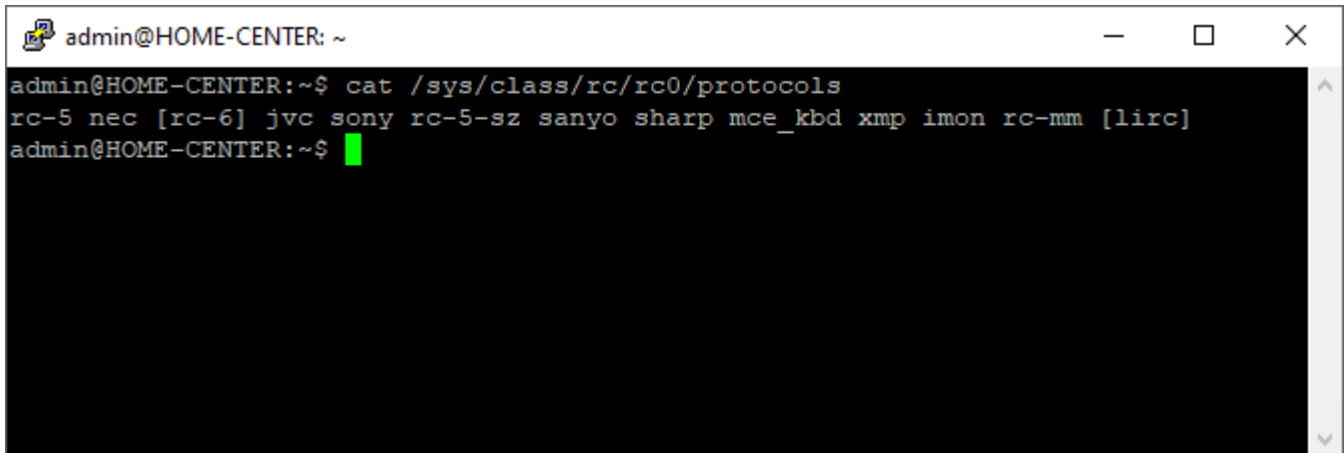
```
dmesg | grep -i ir
```

```
admin@HOME-CENTER: ~  
[ 6.237942] systemd[1]: Condition check resulted in Dispatch Password Requests to Console Directory Watch  
when bootplash is active being skipped.  
[ 6.251295] Registered IR keymap rc-empty  
[ 6.258526] rc rc0: sunxi-ir as /devices/platform/soc/7040000.ir/rc/rc0  
[ 6.258717] rc rc0: lirc_dev: driver sunxi-ir registered at minor = 0, raw IR receiver, no transmitter  
[ 6.258848] input: sunxi-ir as /devices/platform/soc/7040000.ir/rc/rc0/input0  
[ 6.269526] sunxi-ir 7040000.ir: initialized sunXi IR driver  
[ 6.350581] WCN: combin_img 0 marlin firmware write finish and successful  
[ 6.412830] WCN: sdio_config irq:[inband]  
[ 6.547012] wifi ini path = /lib/firmware/wifi_2355b001_lant.ini  
[ 11.892942] IR RC6 protocol handler initialized  
[ 12.456380] Bluetooth: HCI UART protocol Three-wire (H5) registered  
[ 14.130333] dwmac-sun8i 5020000.ethernet eth0: PHY [stmmac-0:01] driver [YT8531 Gigabit Ethernet] (irq=PO  
LL)  
[ 25.481924] Bridge firewalling registered  
admin@HOME-CENTER:~$
```

Модуль инициализирован.

Чтобы посмотреть поддерживаемые протоколы, введите команду:

```
cat /sys/class/rc/rc0/protocols
```



```
admin@HOME-CENTER: ~  
admin@HOME-CENTER:~$ cat /sys/class/rc/rc0/protocols  
rc-5 nec [rc-6] jvc sony rc-5-sz sanyo sharp mce_kbd xmp imon rc-mm [lirc]  
admin@HOME-CENTER:~$
```

В квадратных скобках активный протокол.

Команда для активации вашего пульта (RC-6) будет такой:

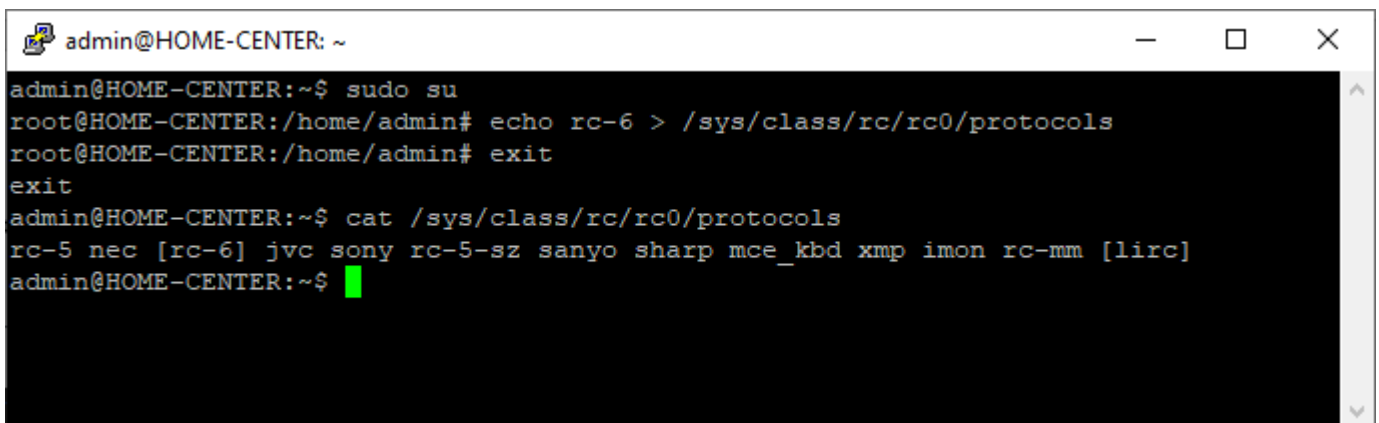
```
sudo su
```

```
echo rc-6 > /sys/class/rc/rc0/protocols
```

```
exit
```

И проверяем командой:

```
cat /sys/class/rc/rc0/protocols
```



```
admin@HOME-CENTER: ~  
admin@HOME-CENTER:~$ sudo su  
root@HOME-CENTER:/home/admin# echo rc-6 > /sys/class/rc/rc0/protocols  
root@HOME-CENTER:/home/admin# exit  
exit  
admin@HOME-CENTER:~$ cat /sys/class/rc/rc0/protocols  
rc-5 nec [rc-6] jvc sony rc-5-sz sanyo sharp mce_kbd xmp imon rc-mm [lirc]  
admin@HOME-CENTER:~$
```

Проверяем работу пульта:

```
cat /dev/input/event0 | xxd
```

и нажимаем на любую кнопку пульта, в терминале должны появиться данные:

```
admin@HOME-CENTER: ~  
admin@HOME-CENTER:~$ cat /dev/input/event0 | xxd  
00000000: 9d29 1167 0000 0000 2648 0b00 0000 0000  .).g....&H.....  
00000010: 0400 0400 2204 0f80 9d29 1167 0000 0000  ...."....).g....  
00000020: 2648 0b00 0000 0000 0000 0000 0000 0000  &H.....  
00000030: 9d29 1167 0000 0000 1ce8 0c00 0000 0000  .).g.....  
00000040: 0400 0400 2204 0f80 9d29 1167 0000 0000  ...."....).g....  
00000050: 1ce8 0c00 0000 0000 0000 0000 0000 0000  .....  
█
```

Или командой:

`evtest /dev/input/event0`

```
admin@HOME-CENTER: ~  
admin@HOME-CENTER:~$ evtest /dev/input/event0  
Input driver version is 1.0.1  
Input device ID: bus 0x19 vendor 0x1 product 0x1 version 0x100  
Input device name: "sunxi-ir"  
Supported events:  
  Event type 0 (EV_SYN)  
  Event type 1 (EV_KEY)  
    Event code 152 (KEY_SCREENLOCK)  
  Event type 2 (EV_REL)  
    Event code 0 (REL_X)  
    Event code 1 (REL_Y)  
  Event type 4 (EV_MSC)  
    Event code 4 (MSC_SCAN)  
Key repeat handling:  
  Repeat type 20 (EV_REP)  
    Repeat code 0 (REP_DELAY)  
      Value      500  
    Repeat code 1 (REP_PERIOD)  
      Value      125  
Properties:  
  Property type 5 (INPUT_PROP_POINTING_STICK)  
Testing ... (interrupt to exit)  
Event: time 1729179019.976729, type 4 (EV_MSC), code 4 (MSC_SCAN), value 800f041e  
Event: time 1729179019.976729, ----- SYN_REPORT -----  
Event: time 1729179020.083175, type 4 (EV_MSC), code 4 (MSC_SCAN), value 800f041e  
Event: time 1729179020.083175, ----- SYN_REPORT -----  
Event: time 1729179026.361630, type 4 (EV_MSC), code 4 (MSC_SCAN), value 800f041f  
Event: time 1729179026.361630, ----- SYN_REPORT -----  
Event: time 1729179026.468087, type 4 (EV_MSC), code 4 (MSC_SCAN), value 800f041f  
Event: time 1729179026.468087, ----- SYN_REPORT -----  
█
```

Все хорошо, пульт работает.

Чтобы настройки сохранить после загрузки, нужно добавить в CRON запись:

`sudo crontab -e`

`@reboot echo rc-6 | sudo tee /sys/class/rc/rc0/protocols`

```
admin@HOME-CENTER: ~
GNU nano 5.4 /tmp/crontab.ZcoJPW/crontab
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h dom mon dow  command
@reboot echo rc-6 | sudo tee /sys/class/rc/rc0/protocols

^G Help      ^O Записать  ^W Поиск    ^K Cut       ^T Execute  ^C Location
^X Выход     ^R Читфайл  ^\ Замена  ^U Paste     ^J Выводить ^_ К строке
```