

```
num-  
bers=left,  
step-  
num-  
ber=1,  
num-  
bersep=5pt,  
xleft-  
margin=5mm,  
frame=sin-  
gle,  
tab-  
size=4,  
cap-  
tion-  
pos=t,  
break-  
lines=true,  
breakatwhites-  
pace=true,  
escapein-  
side=**),  
back-  
ground-  
color=white,  
[pages=-]title.pdf
```

- 28 ., 5 ., 13 ., 13 . USB- .
: , USB, , Linux.
USB- . . .

— — , , ,
— , USB- .

« » ,
:
Linux.

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SHIFT-R
Logitech M190 [?] , SHIFT-R
Ubuntu [?].
Unix/Linux :
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HID- . HID
HID- .
USB- . USB- [?]:
usb_driver.
usb_driver.
usb_driver [?]:
name – , USB-
id_table – *usb_device_id*, USB-
probe – , ,
disconnect – ,
probe
usbhid,
/
/
/
input_dev [?]. evbit
input_report_key [?],
USB- , USB Request Block URB [?].
[?].
usb_fill_int_urb [?].
URB *struct urb* URB
URB
usb_submit_urb [?].
Linux
Linux
Softirq –
Tasklet –
Workqueue –
/sys/class/backlight/intel_backlight/max_brightness.
- MAX_BRINGHTNESS_CLASS,

HID- , : ;
USB- , ;
/sys/class/backlight/intel_backlight/brightness;

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5

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, backlight_change
, linerange = 37-55, basicstyle=, frame=single, breaklines=true]

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```
data      mouse_t.
probe.
probe, linerange = 126-206, basicstyle=, frame=single, breaklines=true
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	9	<i>exit</i>	. [language=C, caption=	exit, linerange = 297-304, basic
Makefile	10		Makefile. [language=C, caption=Makefile, linerange = , basicstyle=, frame	

4.1 : [h]

justification=centering
4.2 : [h]

justification=centering
4.3 : [h]

justification=centering

， Linux; USB- . :

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Logitech M190 Wireless Mouse []. – : <https://www.logitech.com/en-us/products/mice/m190-wireless>

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workqueue. []. – Access mode: <https://docs.kernel.org/core-api/workqueue.html> online – (10.02.2023).

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[language=C, caption=
, linerange = , basicstyle=, frame=single, breaklines

[language=C, caption=

probe, linerange = , basicstyle=, frame=single, breaklines=true]../sr

[language=C, caption=

, linerange = , basicstyle=, frame=single, b